DR. D Y PATIL VIDYAPEETH

PUNE – 411018

CENTRE FOR ONLINE LEARNING

PIMPRI, PUNE

SYLLABUS FOR

MASTER OF BUSINESS ADMINISTRATION (M.B.A)

Academic Year 2022-23

a) Programme's Mission & Objectives:

The Online MBA program will gear its students to become successful leaders in any type of organization, from a multinational company to a fast-growing start-up, or a business of their own. Developing the skills and insights gained during the programme, our students would make significant contributions in every sphere of management and businessinevery corner of the world.

The objective of Online MBA programme will be to educate and prepare a varied group of managers with the knowledge, analytical ability and management perspectives, and skills needed to provide leadership to organizations competing in a world increasingly characterized by the diversity in the workforce, rapid technological change, and a severely competitive global marketplace. It will display competencies and knowledge in key business functional areas including accounting, finance, marketing, human resource, operations, logistics, supply chain, international business, analytics, etc.

Online MBA Programme Educational Objectives (PEOs):

1. PEO1: Graduates of the program will be able to take effective decisions on the real-world business issues and situations in the challenging corporate world by improving strategic integratedthinking.
2. PEO2: Graduates of the program will possess analytical and problem-solving competencies in various facets ofmanagement.
3. PEO3: Graduates of the program will exhibit value-centered leadership skills in diversified and multidisciplinaryareas.
4. PEO4: Graduates of the program will be able to communicate effectively with all stake holders of the organization andsociety.
5. PEO5: Graduates of the program will be able to demonstrate global and cross-cultural understanding for exploring innovative business practices to enhanceprofitability.
6. PEO6: Graduates of the program will exhibit intrapreneurial and entrepreneurialskills.
7. PEO7: Graduates of the program will take ethical decisions in the day to dayactivities.

After the completion of the Online MBA, aspirants would have enhanced their managerial competencies to take on the corporate challenges in various sectors of the Indian economic environment. The Online MBA programme is designed by academic and industry experts with the intention of improving various skill sets of the participants.

Effective decision making by improving strategic integrated thinking, managing resources such as human, finance, infrastructure etc., improving operational efficiency of various business processes, qualitative and quantitative techniques will be some of the few managerial competencies focused as the programme's outcome.

b) Relevance of the Program with DPU's Mission and Goals

Our Vision:

To help build an enlightened, culturally and economically vibrant India developed through education in diverse disciplines and imparting online management education for the socio-economic development of India.

Our Mission:

To contribute to the socio-economic and ethical development of the nation, by providing high-quality education through institutions that have dedicated faculty and state-of-the-art infrastructure, and developing competent professional and liberal-minded citizens.

With this mission, the University has been providing quality education in the Faculties of Medicine, Dentistry, Allied Medical Sciences, Nursing, Biotechnology & Bioinformatics, Management and Distance Learning through seven institutions. In each of these programmes, the University ensures the pursuit of knowledge and the creation of new ideas.

Linkage with Program Mission:

The online programwillallow learners to learn at their own pace along with pursuing their other professional endeavors. Adequate counseling will be done for the students to assist them to make an informed decisionand to choose from a range of specializations offered by the Centre. The students' support services willtake timely feedbackto ensure timely response and enhance theoverall quality standards.

(c) Nature of Prospective Target Group of Learners:

Any graduate, employed, self employed, unemployed or housewives aspiring to acquire knowledge for higher career growth.

(d) Appropriateness of Program to be Conducted in Online Learning Mode to Acquire Specific Skills and Competence:

After the completion of the Online MBA, aspirants would haveenhanced their managerial competencies to take on the corporate challenges in various sectors of the Indian economic environment. The Online MBA programme is designed by academic and industry experts with the intention of improving various skill sets of the participants.

Effective decision making by improving strategic integrated thinking, managing resources such as human, finance, infrastructure, etc., improving operational efficiency of various business processes, qualitative andquantitative techniques will besome of the few managerial competencies focused as the programme's outcome.

Programme Outcomes (POs):

At the end of the Online MBA programme the learner will possess:

1. Generic and Management Domain Knowledge– They will not just be able to understand the general and management terms, concepts, ideas, and principles, but will be able to apply, illustrate, analyze, and synthesize to the solutions of real-world complex businessissues.
2. Problem Solving & Innovation Ability- They will come out with unique creative, innovative, or out of the box solutions for the corporateworld.
3. Critical Thinking Ability– They will improve the critical and strategic integrated thinking to conduct investigation of multidimensional business problems using research-based knowledge and research methods to arrive at data-drivendecisions.
4. Effective Communication Ability– They will be able to communicate effectively with all the stakeholders of the organization andsociety.
5. Leadership and Teamwork Ability- They will exhibit leadership skills in diversified and multidisciplinary areas. They will be able to collaborate in an organizational context and across organizational boundaries and lead themselves and others in the achievement of organizational goals and optimize outcomes for allstakeholders.
6. Global Orientation Ability– They will be able to approach any relevant business issues from a global perspective and exhibit an appreciation for the cross-cultural aspects ofbusinesses.
7. Entrepreneurship Ability– They will be able to identify the entrepreneurial opportunities, and leverage managerial & leadership skills for founding, leading, and managing startups as well as professionalizing and growing familybusinesses.
8. Environment and Sustainability Ability– They will be able to demonstrate the knowledge of environmental awareness and the need for sustainable development to achieve business goals of the corporateworld.
9. Social Responsiveness Ability- They will be able to take ethical decisions in the day to day activities by demonstrating socialresponsiveness.
10. Life-Long Learning Ability– They will not only acquire new knowledge and skills and assimilate them into the improved business processes but also help others in learning new knowledge and

skills. They will contribute in making the organization a learningorganization.

Graduate Attributes (GAs):

At the end of the Online MBA programme the learner will exhibit:

GA1: Managerial Competencies
GA2: Proficiency in Communication, Collaboration, Teamwork and Leadership GA3: Competence in Creativity & Innovation
GA4: Global Orientation
GA5: Proficiency in ICT & Digital Literacy
GA6: Entrepreneurship & Intrapreneurship Orientation GA7: Result Oriented Efforts
GA8: Professionalism, Ethical, Values Oriented & Socially Responsible Behaviour GA9: Life-Long Learning Orientation

(e) Instructional Design:

For the Online MBA programme development, a thorough process is followed right from the needassessment to the preparation of ane-learning material. The programme development process at Dr. D.Y. Patil Vidyapeeth's Centre for Online Learning goes through three stages namely:

a. **Program Formulation**: Needassessment, defining target groups, course identification based on the level of the program to provide desired knowledge, competencies and skills, and adoption of a house style.
b. **Instructional Design**: Formulating structure, decision on appropriate media components: text, audio, video, multimodal, etc., finalizing unit-wise course outlines for all courses, deciding strategies for course delivery and designing online student assessments.
c. **Courseware Development**: Content development, content editing, format editing, development of graphics, illustrations, animations, etc., finalizing the e-content anduploading courseware on the LMS, andperiodic assessment thereby revisingand updating thee-material. Online Programme/course is designed and developed by the in house faculties in collaboration with course experts from academics and industries. Online learning material is designed and developed by thoroughly following thefour-quadrant approach as suggested in the UGC regulations 2018 for online programmes/courses. The four-quadrant approach is as follows:

Quadrants	Description
Quadrant-I (e-Tutorial)	Shall contain Video and Audio Content in an organized form, Animation, Simulations, video demonstrations, Virtual Labs, etc, along with the transcription of the video.
Quadrant-II (e-Content)	Shall contain self instructional material, e-Books, illustrations, case studies, presentations, Web Resources such as further references, Related Links, Open source Content on Internet, Video, Case Studies, books including e-books, research papers & journals, Anecdotal information, Historical development of the subject, Articles, etc.
Quadrant-III (Discussion Forum)	Discussion forum for raising of doubts and clarifying them on a near real time basis by the Course Coordinator or his team.
Quadrant-IV (Assessment)	Shall contain problems and solutions, which could be in the form of Multiple Choice Questions, Fill in the blanks, Matching Questions, Short Answer Questions, Long Answer Questions, Quizzes, Assignments and solutions, Discussion forum topics and setting up the FAQs, Clarifications on general misconceptions.

The developed course material is duly approved by the Board of Management, the Academic Council and the Internal Quality Assurance Cell (IQAC.)

After developing the courses unit wise, the e-content is uploaded onto the unique world-class Learning Management System (LMS) platform.Each unit has, pre-recorded video lectures, e-text material, article/notes, case studies, open resources, virtual class to clear doubts, FAQs, quizzes, and self-assessments.

Learners will be engaged continuously through the LMS features such as discussion forums, chatting, class walls, messages, e-mails, RSS feed, etc. Learnerswill have a combination of synchronous and asynchronous learning experience.

Online MBA programs will be delivered through the LMS, where mentors will administer the course material for enrolled students. The framework of the LMS integrates tools and cloud-based services, such as lecture capture, text chat windows, streaming video, audio discussion forums, web conferencing, and interactive videos. Students will often have access to textbooks in the electronic form through the LMS, with the option to listen to voice recordings of the textbook material. Mentors and Course-Coordinators will handle the assignments through the LMS, and students will have

tosubmit their completed work within the platform,to minimizethe reliance on emails. This will also involve submitting recorded presentations or delivering them live through a webcam. Course-coordinators will be able to enable class conversations and allow comments within a specific assignment so that relevant discussions can be easily located for reference.

While students may view thepre-recorded (asynchronous) lectures anytime, interactive classroom sessions — also known as collaborate sessions — will require real-time attendance and interaction among students and mentors. Synchronous meeting participants will receive a URL and would be connect through a blackboard to join the meeting. Studentswould also be able to raise a virtual hand to ask a question anytime.

Programme Structure for Online MBA

Credit System:

Online MBA will follow the Credit System as suggested in the UGC regulation for online programmes.

'Credit' means the Unit award, gained as a learning outcome, by a learner by study efforts required to acquire the prescribed level of learning in respect of that Unit. Study effort for one credit means time required by a learner to understand the contents equivalent to 15 hours classroom teachings.

Online MBA program has 24 courses and project work. Semester I & II has 27 credits each, semester III has 28 credits and semester IV has 20 credits. The program in all has 102 credits spread over four semesters, which has to be completed in 2 academic years.

Duration of the Online MBA: 2 years (Four Semester)

For detailed information on the curriculum, semester wise course objective, outcome and outline; refer to: DPU Centre for Online Learning, Online MBA Curriculum 2022-23.

Faculty and Support Staff Requirement: As mentioned in UGC regulation 2018 for Online Programmes/Courses.

Validity

The validity of the program is double the duration, i.e., a student can complete the 2 years Online MBA program in 4 years.

Evaluation and Assessment Pattern for Online MBA Programme

All examinations of Dr. D. Y. Patil Vidyapeeth's COL shall be conducted twice in a year (June and December), through proctored online mode. Conduct of Examinations, Passing Criteria and Students Disciplinary Control in the Examinations will be as per Regulations as amended from time to time by Dr. D Y Patil Vidyapeeth.

The overall assessment for a course will consist of the following three components:

1. Self Assessment (Continuous Assessment)
2. Formative Assessment
3. Summative Assessment OR Term End Examination

1. Self-Assessment Questions (SAQ) :

This continuous formative assessment facilitates a comprehensive study of the entire syllabus. Each unit shall have 10 Multiple Choice Questions (MCQs). These are non graded and is to be treated as practice questions. The questions shall be designed to assess the remembering and understanding skills of learners.

Evaluation/assessment for 4 credit course:

2. Formative Assessment of Domain Core Courses, Specialization Courses and Generic Elective Courses

Formative Assessment shall have Formative assignment I and Formative assignment II.

Formative assignment I Shall have 20 MCQs Multiple Choice Single Response (MCSR) , TF, FIB) with unit proportionality. Each question shall carry 1 mark so that formative assignment I shall have 20 marks. The questions shall be designed to assess the remembering and understanding skills of learners.

Formative assignment II shall have 5 Multple Choice Multiple Response (MCMR) type questions based on one situation exercise. Each question shall carry 2 marks so that formative assignment II shall have 10 marks. The questions shall be designed to assess the applying acquired knowledge skills of the learners.

Combined performance of formative assignment I and II will be evaluated for total 30 marks. Passing percentage is 40%

3. Summative Assessment / Term End Examination (Proctored Examination)

Summative assessment shall have 2 sections with a total marks of 70.

Section I (A) : This sections shall have 40 MCQs Multiple Choice Single Response (MCSR), TF, FIB) of one mark each with unit proportionality. The questions shall be designed to assess the remembering, understanding and applying acquired knowledge skills of learners.

Section I (B) : This sections shall have 05 Multiple Choice Multiple Response (MCMR) type questions based on situation exercise of 10 marks each questions shall carry 2 marks . The questions shall be designed to assess the analyzing and evaluating skills of the learners. This section carries 10 marks.

Section II: This sections shall have 3 subjective/descriptive type questions of 10 marks each out of which learners will have to attempt any 2 questions. The questions shall be designed to assess the analyzing and evaluating skills of the learners. This section carries 20 marks.

Combined performance of summative assessments sections I and II will be evaluated for total 70 marks. Passing percentage is 40%.

The combined performance of formative assignments and summative assessment shall be evaluated for 100 marks. Separate passing is necessary for formative assignments and summative assessment.

Evaluation of Generic Core (3 Credits):

This shall have Formative assignment I and Formative assignment II.

Formative assignment I Shall have 30 MCQs (Multiple Choice Single Response (MCSR) , TF, FIB) with unit proportionality. Each question shall carry 1 mark so that formative assignment shall have 30 marks. The questions to be designed to assess the remembering and understanding skills of learners.

Formative assignment II shall have 10 Multiple Choice Multiple Response (MCMR) type questions based on situation exercise. Each question shall carry 2 marks so that formative assignment II shall have 20 marks. The questions to be designed to assess the applying acquired knowledge skills of the learners.

Combined performance of formative assignment I and II will be evaluated for total 50 marks. Passing percentage is 40%

Generic core (3 Credits) shall have no summative assessment.

Grading and Award of Class for Online MBA Programme

Based on the total obtained marks in each subject, a letter grade is converted in a scale of 10 as mentioned in below table:

Marks	Letter Grade	Grade Point
90 to 100	O : Outstanding	10
80 to 89	A+ : Excellent	9
70 to 79	A : Very Good	8
60 to 69	B+ : Good	7
50 to 59	B : Above Average	6
45 to 49	C : Average	5
40 to 44	P : Pass	4
00 to 39	F : Fail	0
-	AB : Absent	0

Grace Marks

Grace Marks up to a maximum 1% of the total marks could be used in different courses, subject to a maximum of 5 marks in one course. There will be no re-evaluation for any course assessment. Students will have to appear for the course exam within the valid period, if she/he fails to secure minimum passing criteria.

(g) Requirement of the Laboratory Support and Library Resources:

Online MBA programme does not have any practical laboratory support asa curricular requirement. Library resources or digital library facility will be provided to bonafide students.

(h) Cost Estimate of the Programme and Provisions:

The DPU Centre for Online Learning has made the budgetary provisions to take care of necessary expenses towards the cost of Programme/course content development, delivery, and evaluation inclusive of the Learning Management System, an online learning platform.

Cost estimated isRs.30.00 Lacs. (Rs. Thirty Lacs only.)

(i) Quality Assurance Mechanism and Expected Programme Outcomes:

1. The DPU Centre for Online Learning has establishedan Internal Quality Assurance Cell (IQAC) online of the Centre for Internal Quality Assurance (CIQA) as specified in the University Grants Commission (Open and Distance Learning) Regulations, 2018 as amended from time to time;
2. The IQAC will take adequate measures for training and capacity building of its teaching, and administrative staff at regular intervals;
3. The IQAC will ensure that the quality of the course or Programmeoffered through online mode is maintained andat par with the standards laid down by the Commission or the other appropriate statutory authority from time to time;
4. The IQACwillensure that the technical and instructional facilities with information resources for online delivery of the course or Programme are in compliance to the guidelines laid by the Commission from time to time, and are commensurate with the number of Course or Programme and enrolments thereto.

The Online MBA Programmeis designed by academic and industry expertsto make it relevant to enhance employability and to enhance career prospects for the aspirant.On completion of the programme, aspirants would have enhanced their managerial competency to take on corporate challenges in various sectors of the Indian economic environment. Effective decision making by improving strategic integrated thinking, efficiently managing resources such as human,finance, infrastructure, systems etc., improving operational efficiency of various business processes, quantitative and qualitative techniqueswill besome of the few managerial competency focused as the programme's outcome.

The DPU Centre for Online Learning will ensure to monitor the effectiveness of the programme through the Board of Studies, the Academic Council and the IQAC statutory bodies.

The Components of the Program

i. Compulsory domain core courses and compulsory generic core courses for 1st year (Semesters I &II).
ii. Specialization courses and generic elective courses for 2nd year (Semesters III & IVSemesters);
iii. Assignments, formative, and summative assessmenttest.
iv. Project work, report submission, evaluation, and viva in semesterIV.

Note: A student has to continue with the same specialization that she/he opts in Semester III till the final Semester IV.

Summary

Semester	Total Credits	Total Courses	Total Marks
I	27	7	650
II	27	7	650
III	28	7	700
IV	20	3	500
Total	102	24 courses + Project work	2500

Online MBA Programme Course Types & Evaluation Pattern:

Sr. No.	Course Type	Credits	Nature	Formative Continuous Assessment	Summative Proctored Assessment	Total Marks
BASIC COURSE TYPES						
1	Domain Core	4	Compulsory	30	70	100
2	Generic Core	3	Compulsory	50	0	50
3	Specialization Courses	4	Specialization specific	30	70	100
4	Generic Elective	4	Elective	30	70	100

Domain Core Courses: 12 courses of 4 credits each Semester I

Course code	Course Title
OMBC 101	Principles And Practices of Management
OMBC 102	Organizational Behaviors
OMBC 103	Management Accounting
OMBC 104	Managerial Economics
OMBC 105	Business Communication
OMBC 106	Research Methodology

Semester II

Course code	Course Title
OMBC 201	Human Resource Management
OMBC 202	Marketing Management
OMBC 203	Financial Management
OMBC 204	Operations Management
OMBC 205	Management Information System
OMBC 206	Strategic Management & Business Policy

Generic Core Courses: 2 courses of 3 Credits Semester I

Course code	Course Title
OMBC 107	Environmental Awareness and Disaster Management

Semester II

Course code	Course Title
OMBC 207	Entrepreneurship Development

Generic Elective Courses: 2 courses of 4 Credits each Semester III

Course code	Course Title
OMBE 307	Digital Marketing
OMBE 308	Business English

Generic Elective Courses: 2 courses 4 Credit each Semester IV

Course code	Course Title
OMBE 403	Soft Skill
OMBE 404	Business Ethics and Corporate Governance

Specialization Courses: -112 courses 4 Credits each.

Semester III& IV: Marketing Management (MM) Specialization Courses

Course code	Course Title
OMBM 301	Consumer Behavior
OMBM 302	Marketing Research
OMBM 303	Sales & Distribution Management
OMBM 304	Product and Brand Management
OMBM 305	Retail Management
OMBM 306	Marketing of services
OMBM 401	International Marketing
OMBM 402	Integrated Marketing Communication

Semester III & IV: Human Resource Management (HRM) Specialization Courses

Course code	Course Title
OMBH 301	Manpower Planning
OMBH 302	Compensation Management
OMBH 303	Performance & potential Management
OMBH 304	Labour Laws
OMBH 305	Training & Development
OMBH 306	Organisational Design, Development & Change
OMBH 401	Strategic HR
OMBH 402	HR Audit

Semester III & IV: Finance Management (FM) Specialization Courses

Course code	Course Title
OMBF 301	Capital & Financial Markets
OMBF 302	Financial Institutions & Banking
OMBF 303	Taxation
OMBF 304	International Financial Management
OMBF 305	Advanced Financial Management
OMBF 306	Security Analysis & Portfolio Management
OMBF 401	Project Finance & Budgetary Control
OMBF 402	Insurance & Risk Management

Semester III & IV: IT Management (ITM) Specialization Courses

Course code	Course Title
OMBI 301	Fundamentals of Information Technology
OMBI 302	C Programming
OMBI 303	DBMS & Oracle
OMBI 304	Web Designing and Content Management
OMBI 305	Software Engineering
OMBI 306	Enterprise Resource Planning
OMBI 401	Software Project Management
OMBI 402	Emerging Trends in Information Technology

Semester III & IV: Project Management (PM) Specialization Courses

Course code	Course Title
OMBP 301	Fundamentals of Project management
OMBP 302	Project Planning and Scheduling
OMBP 303	Business laws and Regulations
OMBP 304	Project Finance & Budgetary Control
OMBP 305	Project Performance Measurement & Control
OMBP 306	IT in Projects
OMBP 401	Quantitative Methods in Project Management
OMBP 402	Project Quality Management

Semester III & IV: Operations Management (OM) Specialization Courses

Course code	Course Title
OMBO 301	Production Planning & Control
OMBO 302	Fundamentals of Project Management
OMBO 303	Logistics & Supply Chain Management
OMBO 304	World class manufacturing
OMBO 305	Operations in Service Industry
OMBO 306	Statistics & Quantitative Techniques
OMBO 401	Work System Design
OMBO 402	Technology Management

Semester III & IV: Hospital Administration and Health Care Management (HAHM) Specialization Courses

Course code	Course Title
OMBHA 301	Indoor and Outdoor Hospital Services
OMBHA 302	Ancillary Hospital Services
OMBHA 303	Legal Aspects of Hospital and Health Management
OMBHA 304	Marketing of Health Care Services
OMBHA 305	Community Health & Hospital Safety & Risk Management
OMBHA 306	Quality Management in HealthCare Services
OMBHA 401	Hospital Administration and Bio medical waste Management
OMBHA 402	Operations Management in Hospitals

Semester III & IV: International Business Management (IBM) Specialization Courses

Course code	Course Title
OMBIB 301	International trade, WTO & Trade Policy issues
OMBIB 302	Business Laws and Regulations
OMBIB 303	Financial institutions and Banking
OMBIB 304	International Marketing
OMBIB 305	International Finance Management
OMBIB 306	Security Analysis and Portfolio Management
OMBIB 401	Foreign Exchange Management
OMBIB 402	Insurance and Risk Management

Semester III & IV: Artificial Intelligence & Machine Learning Specialization Courses

Course code	Course Title
OMBAIML 301	Basics of Artificial Intelligence & Machine Learning
OMBAIML 302	Machine Learning
OMBAIML 303	Performing Analytics with Python
OMBAIML 304	Statistics & Quantitative Techniques
OMBAIML 305	Business Intelligence
OMBAIML 306	R-Programming for Data Analysis and Visualization
OMBAIML 401	Application of AI in Business
OMBAIML 402	Introduction to Deep Learning

Semester III & IV: Blockchain Technology Management Specialization Courses

Course code	Course Title
OMBBTM 301	Basics of Blockchain Technology
OMBBTM 302	Blockchain Technology and Management
OMBBTM 303	Cryptography and Information Security
OMBBTM 304	Cloud Infrastructure and Services
OMBBTM 305	Statistics & Quantitative Techniques
OMBBTM 306	Blockchain and FinTech
OMBBTM 401	Enterprise Blockchain Applications & Hyperledger
OMBBTM 402	Design and Development of Blockchain Applications

Semester III & IV: Business Analytics Management Specialization Courses

Course code	Course Title
OMBBA301	Business Analytics-I
OMBBA302	Business Analytics-II
OMBBA303	DBMS
OMBBA304	Business Statistics and Econometrics
OMBBA305	Performing Analytics with Python.
OMBBA306	R programming for Data analysis and Visualization
OMBBA 401	Business Mathematics & Optimization Techniques
OMBBA 402	Python Programming for data visualization

Semester III & IV: Digital Marketing Management Specialization Courses

Course code	Course Title
OMBDM 301	Introduction to Digital Marketing
OMBDM 302	Search Engine Optimization
OMBDM 303	Integrated Marketing Communication
OMBDM 304	Social Media Marketing
OMBDM 305	Emerging Trends in Information Technology
OMBDM 306	Web Designing and Content Management (MM)
OMBDM 401	Product and Brand Management
OMBDM 402	International Marketing

Semester III & IV: FinTech Management Specialization Courses

Course code	Course Title
OMBFT 301	FinTech Management
OMBFT 302	Financial Institutions and Banking
OMBFT 303	Quantitative Methods in Project Management
OMBFT 304	E-Commerce & Global Financial Trends
OMBFT 305	Security Analysis and Portfolio Management
OMBFT 306	Capital & Financial Markets
OMBFT 401	Project Finance & Budgetary Control
OMBFT 402	Cyber Laws & Hacking

Semester III & IV: Logistics, Materials and Supply Chain Management Specialization Courses

Course code	Course Title
OMBLSCM 301	Logistics & Supply Chain Management
OMBLSCM 302	Production Planning & Control
OMBLSCM 303	Inventory Management & MRP Systems
OMBLSCM 304	Packaging and Distribution Management
OMBLSCM 305	World Class Manufacturing
OMBLSCM 306	Statistics & Quantitative Techniques
OMBLSCM 401	Supply Chain Analytics
OMBLSCM 402	Just in time & Lean

Programme Structure

Programme Title: Online Master of Business Administration (Online MBA)

Semester I

Course Code	Course Title	Credits	Marks		Total Marks	Online course delivery: Learner's engagement in hours
			Formative Continuous Assessment	Summative Proctored Assessment		
OMBC 101	Principles And Practices of Management	4	30	70	100	60
OMBC 102	Organizational Behaviour	4	30	70	100	60
OMBC 103	Management Accounting	4	30	70	100	60
OMBC 104	Managerial Economics	4	30	70	100	60
OMBC 105	Business Communication	4	30	70	100	60
OMBC 106	Research Methodology	4	30	70	100	60
OMBC 107	Environmental Awareness and Disaster Management	3	50	-	50	45
	Total	27			650	

Semester II

Course Code	Course Title	Credits	Marks		Total Marks	Online course delivery: Learner's engagement in hours
			Formative Continuous Assessment	Summative Proctored Assessment		
OMBC 201	Human Resource Management	4	30	70	100	60
OMBC 202	Marketing Management	4	30	70	100	60
OMBC 203	Financial Management	4	30	70	100	60
OMBC 204	Operations Management	4	30	70	100	60
OMBC 205	Management Information System	4	30	70	100	60
OMBC 206	Strategic Management & Business Policy	4	30	70	100	60
OMBC 207	Entrepreneurship Development	3	50	-	50	45
	Total	27			650	

The List of Specialization for Semester III and IV

Sr. No.	Specializations
I	Marketing Management (MM)
II	Human Resource Management (HRM)
III	Finance Management (FM)
IV	IT Management (ITM)
V	Project Management (PM)
VI	Operations Management (OM)
VII	Hospital Administration and Health Care Management (HAHM)
VIII	International Business Management (IBM)
IX	Artificial Intelligence & Machine Learning
X	Blockchain Technology Management
XI	Business Analytics
XII	Digital Marketing
XIII	FinTech
XIV	Logistics, Materials and Supply Chain Management

Semester III: MM Specialization

Course Code	Course Title	Credits	Marks		Total Marks	Online course delivery: Learner's engagement in hours
			Formative Continuous Assessment	Summative Proctored Assessment		
OMBM 301	Consumer Behavior	4	30	70	100	60
OMBM 302	Marketing Research	4	30	70	100	60
OMBM 303	Sales & Distribution Management	4	30	70	100	60
OMBM 304	Product and Brand Management	4	30	70	100	60
OMBM 305	Retail Management	4	30	70	100	60
OMBM 306	Marketing of services	4	30	70	100	60
OMBE 307/308	Generic Elective-I	4	30	70	100	60
	Total	28			700	

Note: For Generic Elective-I course (Course code- (OMBE 307/308)); students can select any one of the following courses.

Course Code	Course Title
OMBE 307	Digital Marketing
OMBE 308	Business English

Semester IV: MM Specialization

Course Code	Course Title	Credits	Marks		Total Marks	Online course delivery: Learner's engagement in hours
			Formative Continuous Assessment	Summative Proctored Assessment		
OMBM 401	International Marketing	4	30	70	100	60
OMBM 402	Integrated Marketing Communication	4	30	70	100	60
OMBE 403/404	Generic Elective-II	4	30	70	100	60
OMBP 405	Project Work Report	8	-	-	200	-
	Total	20			500	

Note: For Generic Elective-II course (Course code- (OMBE 403/404)); students can select any one of the following courses.

Course Code	Course Title
OMBE 403	Soft Skill
OMBE 404	Business Ethics and Corporate Governance

Semester III: HRM Specialization

Course Code	Course Title	Credits	Marks		Total Marks	Online course delivery: Learner's engagement in hours
			Formative Continuous Assessment	Summative Proctored Assessment		
OMBH 301	Manpower Planning	4	30	70	100	60
OMBH 302	Compensation Management	4	30	70	100	60
OMBH 303	Performance & potential Management	4	30	70	100	60
OMBH 304	Labour Laws	4	30	70	100	60
OMBH 305	Training &Development	4	30	70	100	60
OMBH 306	Organisational Design, Development & Change	4	30	70	100	60
OMBE 307/308	Generic Elective-I	4	30	70	100	60
	Total	28			700	

Note: For Generic Elective-I course (Course code- (OMBE 307/308)); students can select any one of the following courses.

Course Code	Course Title
OMBE 307	Digital Marketing
OMBE 308	Business English

Semester IV: HRM Specialization

Course Code	Course Title	Credits	Marks		Total Marks	Online course delivery: Learner's engagement in hours
			Formative Continuous Assessment	Summative Proctored Assessment		
OMBH 401	Strategic HR	4	30	70	100	60
OMBH 402	HR Audit	4	30	70	100	60
OMBE 403/404	Generic Elective-II	4	30	70	100	60
OMBP 405	Project Work Report	8	-	-	200	-
	Total	20			500	

Note: For Generic Elective-II course (Course code- (OMBE 403/404)); students can select any one of the following courses.

Course Code	Course Title
OMBE 403	Soft Skill
OMBE 404	Business Ethics and Corporate Governance

Semester III: FM Specialization

Course Code	Course Title	Credits	Marks		Total Marks	Online course delivery: Learner's engagement in hours
			Formative Continuous Assessment	Summative Proctored Assessment		
OMBF 301	Capital & Financial Markets	4	30	70	100	60
OMBF 302	Financial Institutions & Banking	4	30	70	100	60
OMBF 303	Taxation	4	30	70	100	60
OMBF 304	International Financial Management	4	30	70	100	60
OMBF 305	Advanced Financial Management	4	30	70	100	60
OMBF 306	Security Analysis & Portfolio Management	4	30	70	100	60
OMBE 307/308	Generic Elective-I	4	30	70	100	60
	Total	28			700	

Note: For Generic Elective-I course (Course code- (OMBE 307/308)); students can select any one of the following courses.

Course Code	Course Title
OMBE 307	Digital Marketing
OMBE 308	Business English

Semester IV: FM Specialization

Course Code	Course Title	Credits	Marks		Total Marks	Online course delivery: Learner's engagement in hours
			Formative Continuous Assessment	Summative Proctored Assessment		
OMBF 401	Project Finance & BudgetaryControl	4	30	70	100	60
OMBF 402	Insurance & Risk Mgmt	4	30	70	100	60
OMBE 403/404	Generic Elective-II	4	30	70	100	60
OMBP 405	Project Work Report	8	-	-	200	-
	Total	20			500	

Note: For Generic Elective-II course (Course code- (OMBE 403/404)); students can select any one of the following courses.

Course Code	Course Title
OMBE 403	Soft Skill
OMBE 404	Business Ethics and Corporate Governance

Semester III: ITM Specialization

Course Code	Course Title	Credits	Marks		Total Marks	Online course delivery: Learner's engagement in hours
			Formative Continuous Assessment	Summative Proctored Assessment		
OMBI 301	Fundamentals of InformationTechnology	4	30	70	100	60
OMBI 302	C Programming	4	30	70	100	60
OMBI 303	DBMS & Oracle	4	30	70	100	60
OMBI 304	Web Designing and Content Management	4	30	70	100	60
OMBI 305	Software Engineering	4	30	70	100	60
OMBI 306	Enterprise Resource Planning	4	30	70	100	60
OMBE 307/308	Generic Elective-I	4	30	70	100	60
	Total	28			700	

Note: For Generic Elective-I course (Course code- (OMBE 307/308)); students can select any one of the following courses.

Course Code	Course Title
OMBE 307	Digital Marketing
OMBE 308	Business English

Semester IV: ITM Specialization

Course Code	Course Title	Credits	Marks		Total Marks	Online course delivery: Learner's engagement in hours
			Formative Continuous Assessment	Summative Proctored Assessment		
OMBI 401	Software Project Mgmt	4	30	70	100	60
OMBI 402	Emerging Trends in IT	4	30	70	100	60
OMBE 403/404	Generic Elective-II	4	30	70	100	60
OMBP 405	Project Work Report	8	-	-	200	-
	Total	20			500	

Note: For Generic Elective-II course (Course code- (OMBE 403/404)); students can select any one of the following courses.

Course Code	Course Title
OMBE 403	Soft Skill
OMBE 404	Business Ethics and Corporate Governance

Semester III: PM Specialization

Course Code	Course Title	Credits	Marks		Total Marks	Online course delivery: Learner's engagement in hours
			Formative Continuous Assessment	Summative Proctored Assessment		
OMBP 301	Fundamentals of Project management	4	30	70	100	60
OMBP 302	Project Planning and Scheduling	4	30	70	100	60
OMBP 303	Business laws and Regulations	4	30	70	100	60
OMBP 304	Project Finance & Budgetary Control	4	30	70	100	60
OMBP 305	Project Performance Measurement & Control	4	30	70	100	60
OMBP 306	IT in Projects	4	30	70	100	60
OMBE 307/308	Generic Elective-I	4	30	70	100	60
	Total	28			700	

Note: For Generic Elective-I course (Course code- (OMBE 307/308)); students can select any one of the following courses.

Course Code	Course Title
OMBE 307	Digital Marketing
OMBE 308	Business English

Semester IV: PM Specialization

Course Code	Course Title	Credits	Marks		Total Marks	Online course delivery: Learner's engagement in hours
			Formative Continuous Assessment	Summative Proctored Assessment		
OMBP 401	Quantitative Methods in Project Management	4	30	70	100	60
OMBP 402	Project Quality Management	4	30	70	100	60
OMBE 403/404	Generic Elective-II	4	30	70	100	60
OMBP 405	Project Work Report	8	-	-	200	-
	Total	20			500	

Note: For Generic Elective-II course (Course code- (OMBE 403/404)); students can select any one of the following courses.

Course Code	Course Title
OMBE 403	Soft Skill
OMBE 404	Business Ethics and Corporate Governance

Semester III: OM Specialization

Course Code	Course Title	Credits	Marks		Total Marks	Online course delivery: Learner's engagement in hours
			Formative Continuous Assessment	Summative Proctored Assessment		
OMBO 301	Production Planning & Control	4	30	70	100	60
OMBO 302	Fundamentals of Project Management	4	30	70	100	60
OMBO 303	Logistics & Supply Chain Management	4	30	70	100	60
OMBO 304	World class manufacturing	4	30	70	100	60
OMBO 305	Operations in Service Industry	4	30	70	100	60
OMBO 306	Statistics & Quantitative Techniques	4	30	70	100	60
OMBE 307/308	Generic Elective-I	4	30	70	100	60
	Total	28			700	

Note: For Generic Elective-I course (Course code- (OMBE 307/308)); students can select any one of the following courses.

Course Code	Course Title
OMBE 307	Digital Marketing
OMBE 308	Business English

Semester IV: OM Specialization

Course Code	Course Title	Credits	Marks		Total Marks	Online course delivery: Learner's engagement in hours
			Formative Continuous Assessment	Summative Proctored Assessment		
OMBO 401	Work System Design	4	30	70	100	60
OMBO 402	Technology Management	4	30	70	100	60
OMBE 403/404	Generic Elective-II	4	30	70	100	60
OMBP 405	Project Work Report	8	-	-	200	-
	Total	20			500	

Note: For Generic Elective-II course (Course code- (OMBE 403/404)); students can select any one of the following courses.

Course Code	Course Title
OMBE 403	Soft Skill
OMBE 404	Business Ethics and Corporate Governance

Semester III: HAHM Specialization

Course Code	Course Title	Credits	Marks		Total Marks	Online course delivery: Learner's engagement in hours
			Formative Continuous Assessment	Summative Proctored Assessment		
OMBHA 301	Indoor and Outdoor Hospital Services	4	30	70	100	60
OMBHA 302	Ancillary Hospital Services	4	30	70	100	60
OMBHA 303	Legal Aspects of Hospital and Health Management	4	30	70	100	60
OMBHA 304	Marketing of Health Care Services	4	30	70	100	60
OMBHA 305	Community Health & Hospital Safety & Risk Management	4	30	70	100	60
OMBHA 306	Quality Management in HealthCare Services	4	30	70	100	60
OMBE 307/308	Generic Elective-I	4	30	70	100	60
	Total	28			700	

Note: For Generic Elective-I course (Course code- (OMBE 307/308)); students can select any one of the following courses.

Course Code	Course Title
OMBE 307	Digital Marketing
OMBE 308	Business English

Semester IV: HAHM Specialization

Course Code	Course Title	Credits	Marks		Total Marks	Online course delivery: Learner's engagement in hours
			Formative Continuous Assessment	Summative Proctored Assessment		
OMBHA 401	Hospital Administration & Bio medical waste Management	4	30	70	100	60
OMBHA 402	Operations Management in Hospitals	4	30	70	100	60
OMBE 403/404	Generic Elective-II	4	30	70	100	60
OMBP 405	Project Work Report	8	-	-	200	-
	Total	20			500	

Note: For Generic Elective-II course (Course code- (OMBE 403/404)); students can select any one of the following courses.

Course Code	Course Title
OMBE 403	Soft Skill
OMBE 404	Business Ethics and Corporate Governance

Semester III: IBM Specialization

Course Code	Course Title	Credits	Marks		Total Marks	Online course delivery: Learner's engagement in hours
			Formative Continuous Assessment	Summative Proctored Assessment		
OMBIB 301	International trade, WTO & Trade Policy issues	4	30	70	100	60
OMBIB 302	Business Laws and Regulations	4	30	70	100	60
OMBIB 303	Financial institutions and Banking	4	30	70	100	60
OMBIB 304	International Marketing	4	30	70	100	60
OMBIB 305	International Finance Management	4	30	70	100	60
OMBIB 306	Security Analysis and Portfolio Management	4	30	70	100	60
OMBE 307/308	Generic Elective-I	4	30	70	100	60
	Total	28			700	

Note: For Generic Elective-I course (Course code- (OMBE 307/308)); students can select any one of the following courses.

Course Code	Course Title
OMBE 307	Digital Marketing
OMBE 308	Business English

Semester IV: IBM Specialization

Course Code	Course Title	Credits	Marks		Total Marks	Online course delivery: Learner's engagement in hours
			Formative Continuous Assessment	Summative Proctored Assessment		
OMBIB 401	Foreign Exchange Management	4	30	70	100	60
OMBIB 402	Insurance and Risk Management	4	30	70	100	60
OMBE 403/404	Generic Elective-II	4	30	70	100	60
OMBP 405	Project Work Report	8	-	-	200	-
	Total	20			500	

Note: For Generic Elective-II course (Course code- (OMBE 403/404)); students can select any one of the following courses.

Course Code	Course Title
OMBE 403	Soft Skill
OMBE 404	Business Ethics and Corporate Governance

Semester III: Artificial Intelligence & Machine Learning Specialization

Course Code	Course Title	Credits	Marks		Total Marks	Online course delivery: Learner's engagement in hours
			Formative Continuous Assessment	Summative Proctored Assessment		
OMBAIML 301	Basics of Artificial Intelligence & Machine Learning	4	30	70	100	60
OMBAIML 302	Machine Learning	4	30	70	100	60
OMBAIML 303	Performing Analytics with Python	4	30	70	100	60
OMBAIML 304	Statistics & Quantitative Techniques	4	30	70	100	60
OMBAIML 305	Business Intelligence	4	30	70	100	60
OMBAIML 306	R-Programming for Data Analysis and Visualization	4	30	70	100	60
OMBE 307/308	Generic Elective-I	4	30	70	100	60
	Total	28			700	

Note: For Generic Elective-I course (Course code- (OMBE 307/308)); students can select any one of the following courses.

Course Code	Course Title
OMBE 307	Digital Marketing
OMBE 308	Business English

Semester IV: Artificial Intelligence & Machine Learning Specialization

Course Code	Course Title	Credits	Marks		Total Marks	Online course delivery: Learner's engagement in hours
			Formative Continuous Assessment	Summative Proctored Assessment		
OMBAIML 401	Application of AI in Business	4	30	70	100	60
OMBAIML 402	Introduction to Deep Learning	4	30	70	100	60
OMBE 403/404	Generic Elective-II	4	30	70	100	60
OMBP 405	Project Report	8	-	-	200	-
	Total	20			500	

Note: For Generic Elective-II course (Course code- (OMBE 403/404)); students can select any one of the following courses.

Course Code	Course Title
OMBE 403	Soft Skill
OMBE 404	Business Ethics and Corporate Governance

Semester III: Blockchain Technology Management Specialization

Course Code	Course Title	Credits	Marks		Total Marks	Online course delivery: Learner's engagement in hours
			Formative Continuous Assessment	Summative Proctored Assessment		
OMBBTM 301	Basics of Blockchain Technology	4	30	70	100	60
OMBBTM 302	Blockchain Technology and Management	4	30	70	100	60
OMBBTM 303	Cryptography and Information Security	4	30	70	100	60
OMBBTM 304	Cloud Infrastructure and Services	4	30	70	100	60
OMBBTM 305	Statistics & Quantitative Techniques	4	30	70	100	60
OMBBTM 306	Blockchain and FinTech	4	30	70	100	60
OMBE 307/308	Generic Elective-I	4	30	70	100	60
	Total	28			700	

Note: For Generic Elective-I course (Course code- (OMBE 307/308)); students can select any one of the following courses

Course Code	Course Title
OMBE 307	Digital Marketing
OMBE 308	Business English

Semester IV: Blockchain Technology Management Specialization

Course Code	Course Title	Credits	Marks		Total Marks	Online course delivery: Learner's engagement in hours
			Formative Continuous Assessment	Summative Proctored Assessment		
OMBBTM 401	Enterprise Blockchain Applications & Hyperledger	4	30	70	100	60
OMBBTM 402	Design and Development of Blockchain Applications	4	30	70	100	60
OMBE 403/404	Generic Elective-II	4	30	70	100	60
OMBP 405	Project Work Report	8	-	-	200	-
	Total	20			500	

Note: For Generic Elective-II course (Course code-()); students can select any one of the following courses.

Course Code	Course Title
OMBE 403	Soft Skill
OMBE 404	Business Ethics and Corporate Governance

Semester III: Business Analytics Specialization

Course Code	Course Title	Credits	Marks		Total Marks	Online course delivery: Learner's engagement in hours
			Formative Continuous Assessment	Summative Proctored Assessment		
OMBBA301	Business Analytics-I	4	30	70	100	60
OMBBA302	Business Analytics-II	4	30	70	100	60
OMBBA303	DBMS	4	30	70	100	60
OMBBA304	Business Statistics and Econometrics	4	30	70	100	60
OMBBA305	Performing Analytics with Python.	4	30	70	100	60
OMBBA306	R programming for Data analysis and Visualization	4	30	70	100	60
OMBE 307/308	Generic Elective-I	4	30	70	100	60
	Total	28			700	

Note: For Generic Elective-I course (Course code- (OMBE 307/308)); students can select any one of the following courses

Course Code	Course Title
OMBE 307	Digital Marketing
OMBE 308	Business English

Semester IV: Business Analytics Specialization

Course Code	Course Title	Credits	Marks		Total Marks	Online course delivery: Learner's engagement in hours
			Formative Continuous Assessment	Summative Proctored Assessment		
OMBBA 401	Business Mathematics & Optimization Techniques	4	30	70	100	60
OMBBA 402	Python Programming for data visualization	4	30	70	100	60
OMBE 403/404	Generic Elective-II	4	30	70	100	60
OMBP 405	Project Work Report	8	-	-	200	-
	Total	20			500	

Note: For Generic Elective-II course (Course code-()); students can select any one of the following courses.

Course Code	Course Title
OMBE 403	Soft Skill
OMBE 404	Business Ethics and Corporate Governance

Semester III: Digital Marketing Management Specialization

Course Code	Course Title	Credits	Marks		Total Marks	Online course delivery: Learner's engagement in hours
			Formative Continuous Assessment	Summative Proctored Assessment		
OMBDM 301	Introduction to Digital Marketing	4	30	70	100	60
OMBDM 302	Search Engine Optimization	4	30	70	100	60
OMBDM 303	Integrated Marketing Communication	4	30	70	100	60
OMBDM 304	Social Media Marketing	4	30	70	100	60
OMBDM 305	Emerging Trends in Information Technology	4	30	70	100	60
OMBDM 306	Web Designing and Content Management (MM)	4	30	70	100	60
OMBE 307/308	Generic Elective-I	4	30	70	100	60
	Total	28			700	

Note: For Generic Elective-I course (Course code- (OMBE 307/308)); students can select any one of the following courses.

Course Code	Course Title
OMBE 307	Digital Marketing
OMBE 308	Business English

Semester IV: Digital Marketing Management Specialization

Course Code	Course Title	Credits	Marks		Total Marks	Online course delivery: Learner's engagement in hours
			Formative Continuous Assessment	Summative Proctored Assessment		
OMBDM 401	Product and Brand Management	4	30	70	100	60
OMBDM 402	International Marketing	4	30	70	100	60
OMBE 403/404	Generic Elective-II	4	30	70	100	60
OMBP 405	Project Work Report	8	-	-	200	-
	Total	20			500	

Note: For Generic Elective-II course (Course code- (OMBE 403/404)); students can select any one of the following courses.

Course Code	Course Title
OMBE 403	Soft Skill
OMBE 404	Business Ethics and Corporate Governance

Semester III: FinTech Specialization

Course Code	Course Title	Credits	Marks		Total Marks	Online course delivery: Learner's engagement in hours
			Formative Continuous Assessment	Summative Proctored Assessment		
OMBFT 301	FinTech Management	4	30	70	100	60
OMBFT 302	Financial Institutions and Banking	4	30	70	100	60
OMBFT 303	Quantitative Methods in Project Management	4	30	70	100	60
OMBFT 304	E-Commerce & Global Financial Trends	4	30	70	100	60
OMBFT 305	Security Analysis and Portfolio Management	4	30	70	100	60
OMBFT 306	Capital & Financial Markets	4	30	70	100	60
OMBE 307/308	Generic Elective-I	4	30	70	100	60
	Total	28			700	

Note: For Generic Elective-I course (Course code- (OMBE 307/308)); students can select any one of the following courses.

Course Code	Course Title
OMBE 307	Digital Marketing
OMBE 308	Business English

Semester IV: FinTech Specialization

Course Code	Course Title	Credits	Marks		Total Marks	Online course delivery: Learner's engagement in hours
			Formative Continuous Assessment	Summative Proctored Assessment		
OMBFT 401	Project Finance & Budgetary Control	4	30	70	100	60
OMBFT 402	Cyber Laws & Hacking	4	30	70	100	60
OMBE 403/404	Generic Elective-II	4	30	70	100	60
OMBP 405	Project Work Report	8	-	-	200	-
	Total	20			500	

Note: For Generic Elective-II course (Course code- (OMBE 403/404)); students can select any one of the following courses.

Course Code	Course Title
OMBE 403	Soft Skill
OMBE 404	Business Ethics and Corporate Governance

Semester III: Logistics, Materials and Supply Chain Management Specialization

Course Code	Course Title	Credits	Marks		Total Marks	Online course delivery: Learner's engagement in hours
			Formative Continuous Assessment	Summative Proctored Assessment		
OMBLSCM 301	Logistics & Supply Chain Management	4	30	70	100	60
OMBLSCM 302	Production Planning & Control	4	30	70	100	60
OMBLSCM 303	Inventory Management & MRP Systems	4	30	70	100	60
OMBLSCM 304	Packaging and Distribution Management	4	30	70	100	60
OMBLSCM 305	World Class Manufacturing	4	30	70	100	60
OMBLSCM 306	Statistics & Quantitative Techniques	4	30	70	100	60
OMBE 307/308	Generic Elective-I	4	30	70	100	60
	Total	28			700	

Note: For Generic Elective-I course (Course code- (OMBE 307/308)); students can select any one of the following courses.

Course Code	Course Title
OMBE 307	Digital Marketing
OMBE 308	Business English

Semester IV: Logistics, Materials and Supply Chain Management Specialization

Course Code	Course Title	Credits	Marks		Total Marks	Online course delivery: Learner's engagement in hours
			Formative Continuous Assessment	Summative Proctored Assessment		
OMBLSCM 401	Supply Chain Analytics	4	30	70	100	60
OMBLSCM 402	Just in time & Lean	4	30	70	100	60
OMBE 403/404	Generic Elective-II	4	30	70	100	60
OMBP 405	Project Work Report	8	-	-	200	-
	Total	20			500	

Note: For Generic Elective-II course (Course code- (OMBE 403/404)); students can select any one of the following courses.

Course Code	Course Title
OMBE 403	Soft Skill
OMBE 404	Business Ethics and Corporate Governance

Semester-wise Curriculum

Programme Title: Online Master of Business Administration (Online MBA)

Semester I – Curriculum

Semester	1	**Course Credits**	4	**Specialization**	NA
Course Code	OMBC-101			**Type**	Domain Core
Course Title	Principles and Practices of Management (PPM)				

Course Description:

This course presents a thorough and systematic coverage of management theory and practice. It focuses on the basic roles, skills, and functions of management, with special attention to managerial responsibility for effective and efficient achievement of goals. The objective is to help students understand the fundamental concepts and principles of management; and the basic roles, skills, and functions of management. It is also intended to give an overview of the historical development, theoretical aspects, and practice application of managerialprocess.

Course Objectives:

1. To expose the students to basic concepts ofmanagement;
2. To enable them to gain appreciation for emerging ideas, techniques, procedures, and practices in the field of management;and
3. To highlight professional challenges that a manager will face in variousorganizations;

Course Outline:

Unit 1: Basics of Management: Definitions of Management**,** Business Organization and Management, Nature of Business**,** Functions of Business Organization**,** Business Industries**,** Factors Affecting the Establishment of Business Organization**,** Objectives of Management**,** Principles of Management**,** Nature of Management**,** and Levels of Management.

Unit 2: Managing Organization: Management as a Process, Management as an Activity, Management as a Discipline, Managerial Skills, Managerial Roles, Categories of Managerial Roles, Social Responsibility, Managing Change, Factors Affecting Change, Process to Overcome the Loopholes for the Change, and Tools Used to Cope up with theChange.

Unit 3: Organizational Structure and Design: Organizational Chart, Elements of Organizational Structure, Line Structure of Organization, Line and Staff Structure, Functional Structure, Matrix Structure, Departmentalization, Departmentalization for Individual Development, and Centralized system.

Unit 4: Resource Management: Management of Resources, Information as a Resource, Characteristics of Information, Information in a Business Industry, Human Being as a Resource, Finance as a Resource, Managing Financial Resources in the Organization, Time as a Resource, Managing Time for Productive Business, Material as a Resource, and Inventory Management.

Unit 5: Organizational Behavior: Definition of Organizational Behavior, Historical Review, The Hawthorne Studies, Personality, Attitude, Power and Political Behaviour within the Organization, Organizational Culture, Team Works and Groups, Job Design, and Interdisciplinary Application to Organizational Behavior.

Unit 6: Planning: Definitions, Objectives of Planning, planning a Management Activity, Importance of Planning, Levels of Planning, Types of Planning, Elements of Planning, Planning Process, and Tools Used in Planning.

Unit 7: Staffing: Definition, Importance of Staffing, Main Components of Human Resources, Staffing Process, Manpower Planning, Selection, Placement and Orientation, Training and Development, Performance Appraisal, Promotion, and Corrective Actions.

Unit 8: Leading: Definition, Principles of Leadership, Process of Leadership, Functions of Leadership, Management With Leadership, Leadership Style– Autocratic, Democratic, Leadership style, Delegalive Leadership Style, Leadership Theory– Trait Theory, Behavioral Theory, Contingency Theory.

Unit 9: Direction: Definitions, Importance of Direction, Characteristics of Direction, Supervision, Motivation, Features of Motivation, Motivational Factors, Motivational Theories, Communication, Elements of Communication, Leadership.

Unit 10: Controlling: Definition, Purpose of Controlling Function, Importance of Controlling, Planning and Controlling, Features of Controlling, Control process, Advantages of Controlling Process, Types of Control, Marketing Control, Financial Control, Human Resource Control, Budgetary Control, Inventory Control, and Information Control.

Unit 11: Co-Ordination in Management: Definition, Characteristics of Co-Ordination, Importance of Coordination, Symptoms of Poor Coordination, Tools for Coordinating the Activities, Co-operation for Coordination, Delegation of Work, Principles of Delegation, Division of Labor, and Advantages and Disadvantages of Division of Labor.

Unit 12: Decision Making: Definitions, Characteristics of Decision Making, Simple and Complex Decision, Factors Affecting Decision Making Process, Decision Making Process, Types of Business Decisions, Decision Making Models, and Tools and Techniques Used for Decision-Making.

Unit 13: Evolutions of Management Thoughts: Management Thoughts of Henry Fayol, Management Thoughts of Fredrick W. Taylor, Comparing Contributions of Fayol and Taylor, Management Thoughts of Joseph M. Juran, Management Thoughts of Abraham H. Maslow, Management Thoughts of William E. Deming, Management Thoughts of Chester I. Bernald, Management Thoughts of Peter F. Drucker.

Unit 14: Recent Trends in Management: Importance of Balance Score Card, Balance Scorecard Perspective, Seven Elements of Scorecard Program, Advantages of Balance Scorecard, Six Sigma, Steps to Implement Six Sigma, Six Sigma Strategy, Six Sigma Tools, TQM, Principle of TQM, Elements of TQM, ImplementingTQM.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO101.1	**Remember**	Compute various managerial abilities and methods to management.
CO101.2	**Understand**	Describe the role and the need of planning, organizing, decision–making, and controlling.
CO101.3	**Apply**	Differentiate professional challenges and management decisions.
CO101.4	**Analyse**	Analyse contemporary management practices.
CO101.5	**Evaluate**	Exhibit emerging ideas and practices in the field of management.

Suggested Reading:

1. Weihrich Heinz and Koontz Harold- Management: A Global and Entrepreneurial Perspective (Mc Graw Hill, 12th Edition2008)
2. Stoner, Freeman and Gilbert Jr- Management (Prentice Hall of India, LatestEdition)
3. Bateman, Management (SIE), Tata McGraw-Hill Publishing Company, NewDelhi.
4. Fraidoon Mazda- " Engineering Management", AddisonWesley-2000.
5. Hillier Frederick S. and Hillier Mark S.- Introduction to Management Science: A Modeling and Case Studies Approach with Spreadsheets (Tata Mc Graw Hill, 2nd Edition2008)
6. Massie, Joseph L., Essentials of Management, PearsonEducation.
7. Tripathy PC and Reddy PN, "Principles of Management", Tata McGraw-Hill,1999.

Semester	1	**Course Credits**	**4**	**Specialization**	NA
Course Code	OMBC-102			**Type**	Domain Core
Course Title	Organizational Behaviour (OB)				

Course Description:

Several activities have to be performed in a cohesive way. In the absence of systematic and cohesive performance of the activities to achieve the objectives, it is no wonder that the resources of organizations would be underutilized. As such, it is the function of the management to facilitate the performance of activities such that the accomplishment of the objectives becomespossible.

Course Objectives:

1) Helps students to understand how the 'people' side of the organizations affects effectiveness throughconcepts;
2) Helps students to develop the basic skills to deal with the ongoing behavioral dynamics and contribute to the organizationaleffectiveness;
3) To gain a solid understanding of the human behavior in the workplace from an individual, group, and organizationalperspective;
4) To obtain frameworks and tools to effectively analyze and approach various organizational situations;and
5) To reflect upon the students' own beliefs, assumptions, and behaviors with respect to how individuals, groups, and organizations act in order to expand their options of approaches and increase their owneffectiveness.

Course Outline:

Unit 1: Introduction to Organizational Behavior: Evolution of Organizational Behavior, Scientific Management, Principles of Scientific Management, Some Results of the Scientific Management Movement, The Human Relations Movement, The Western Electric (Hawthorne Works) Studies (1923-1933) Cicero, ILL., Hawthorne Studies and the related research, Hawthorne Experiments: From 1924 to1933, Illumination Experiments: 1924 to 1927, Relay Room Experiments: 1927 to 1932, Second Relay Room and Mica Splitting test room experiments, Mass Interviewing Program: 1928-1930, Bank wiring room study: November 1931 to May 1932, Implications of Hawthorne Studies, Douglas McGregor's Theory X And Theory Y, XY Theory Management Application- Business Implications for, Workforce Motivation, Landmarks In Management Thought.

Unit 2: Understanding Organizational Behavior: Basic Assumptions in OB, Concept of OB, Key Forces Affecting OB, Fundamental Concepts of OB, Fundamental Concepts of OB, The Nature of Organization, Organization Models.

Unit 3: Perception: Definition of Perception, Sub Processes in Perception, Principles of Perceptual Selection, Perceptual Organization, A Quick Guide to Perception Management.

Unit 4: Personality: Definition Of Personality, Determinants of Personality, Personality Structure, Personality Theories, Personality and Organization, Personality and Behavior, Organizational Implications.

Unit 5: Attitude: How is attitude formed, Attitude Formation, Attitude and values, Attitude and opinion, Attitude and behavior, Attitude, Belief and ideology, Characteristics of attitude, Measurement of attitudes, Changing the attitudes, Sources of job satisfaction, Organizational commitment.

Unit 6: Introduction to Motivation: Motives, The power motive, The achievement motive, The affiliation motive.

Unit 7: Theories of Motivation: Approaches to Motivation, Theory X and Theory Y, Abraham Maslow Theory of Needs Hierarchy, Herzberg's Two Factor Theory of Motivation, Alderfer's Erg Theory, Understanding Motives -- So, What Does All This Mean?, Vroom's Expectancy Theory of Motivation, The Porter-Lawler Model, Equity Theory of Work Motivation, Attribution.

Unit 8: Conflict Management: Causes of Conflicts in Organizations, Forms of Conflict in Organizations, Types of Conflict, Conflict Handling Styles, Attitude Towards the Conflicts, Negotiations in Conflict Management.

Unit 9: Group Dynamics: Types of Groups, Formal groups, Teams, Team Empowerment, Types of Teams, Stages of Team Formation, Influences on Team Effectiveness, Team Diversity, Group Think, GroupMaturity.

Unit 10: Interpersonal Communication: Importance of communication, Functions of communication, The process of communication, The Process of Communication, Communication Media and Its Impact, Types of Communication, Lateral Communication, Diagonal Communication, Interpersonal Challenges in Communication, Cultural Context in Communication.

Unit 11: Stress Management: Stress Definitions, Causes of Stress, Personal Stressors, Stress and Performance, Management of Stress, Organizational Strategies.

Unit 12: Leadership: Definition and Characteristics of Leadership, Classic Studies on Leadership, Theories of Leadership, The Leadership Skills, Leadership Styles, Rensis Likert's Four System Management, Hersey and Blanchard's Situational Approach, Leadership Behavior Continuum.

Unit 13: Organizational Change: Forces for Change, Resistance to Change, Individual Resistance to Change, Organizational Resistance to Change, Introducing Change, Plan the Change, Implementing the Change, Selection of Strategy for Dealing With Resistance, Change Management Model, Follow-up on the Change, Leading Change.

Unit 14: Organizational Culture: Defining Organizational Culture, Levels of Organizational Culture, Types of Corporate Cultures, Developing Organizational Culture, Maintaining Organizational Culture, Changing Organizational Culture, Performance and Organizational Culture, Managing Cultural Diversity.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO102.1	**Remember**	Learning of the basic aspects of organization behaviour
CO102.2	**Understand**	Develop the organizational understanding
CO102.3	**Apply**	Convert human behaviour from an individual to organizational perspective
CO102.4	**Analyse**	Analyse causes of conflict and outline conflict management strategies that managers can use to resolve organizational conflict effectively.
CO102.5	**Evaluate**	Explain group and teams dynamics leading to organizational effectiveness.

Suggested Reading:

1. Harold Koontz and Heinz Weihrich, Essentials of Management, Tata McGraw-Hill, 6th Edition
2. Stephen P. Robbins, Organizational Behavior, Prentice Hall of India,9thEdition,

Semester	1	**Course Credits**	**4**	**Specialization**	NA
Course Code	OMBC-103			**Type**	Domain Core
Course Title	Management Accounting (MA)				

Course Description:

The objective of this course is to acquaint the students with the language of Accounting and to develop in them the ability to evaluate and use accounting data as an aid for decision making. The main purpose is to assist the students to develop skills in problem solving and decision making in the financial area. Emphasis is laid on analysis and utilization of financial and accounting data for planning andcontrol.

Course Objectives:

3. To understand the basic concepts of Financial Accounting, Cost Accounting and ManagementAccounting;
4. To know various tools from accounting and cost accounting, which would facilitate the decision making;and
5. To develop analytical abilities to face the businesssituations.

Course Outline:

Unit 1: Introduction to Management Accounting: Scope of Management Accounting, Significance of Management Accounting, Financial Accounting vs. Management Accounting, Cost Accounting vs. Management Accounting, Financial Management vs. Management Accounting.

Unit 2: Basics of Financial Accounting: Basic Accounting Terms, Forms of Business Organization, Meaning and Significance of Accounting, Users of Accounting Information, Accounting Principles, Accounting Standards (A.S.), Accounting Policies, Generally Accepted Accounting Principles [G. A. A. P.], Methods of Accounting.

Unit 3: Mechanics of Accounting: Accounting Equation, Journal and Subsidiary Books, Ledger Accounts and Trial Balance, Final Accounts.

Unit 4: Statutory Framework: General Requirements of the Companies Act, Changes in the Schedule VI of Companies Act.

Unit 5: Basic Concepts & Terms of Cost Accounting: Important Aspects of Cost, Decision Centers, Cost Components, Cost Classification, Cost Sheet, Financial Accounting vs. Cost Accounting.

Unit 6: Accounting of Material Cost: Material Purchase, Material Receipt, Material Issue, Methods of

Pricing of Issues, Material Stock Control, Different Inventory Levels, Economic Order Quantity, ABC Analysis.

Unit 7: Overheads: Introduction, Meaning of Overheads, Classification of Overheads, Allocation and Apportionment of Overheads, Distribution of Overheads, Absorption of Overheads.

Unit 8: Managerial Costing: Meaning and Significance of Marginal Costing, Break Even Analysis, Margin of Safety [M.O.S. or M/S], P/V Ratio (Profit- Volume Ratio), C.V.P. Analysis (Cost- Volume– Profit.)

Unit 9: Standard Costing: Meaning and Significance, Variance Analysis.

Unit 10: Budget & Budgetary control: Meaning and Significance of Budget, Meaning and Significance of Budgetary Control, Process of Budgeting and Budgetary Control, Types of Budget.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO103.1	**Remember**	Learning of the basic aspects of Accounting
CO103.2	**Understand**	Explain in detail all the theoretical concepts taught through the syllabus.
CO103.3	**Apply**	By using accounting tools one can easily facilitate decision making.
CO103.4	**Analyse**	Develop analytical abilities
CO103.5	**Evaluate**	Evaluate the financial impact of the decision.

Suggested Reading:

1. Paresh Shah: Basic Financial Accounting for Management, Oxford UniversityPress.
2. Ramachandran, N. &Kakani, R.K. Financial Accounting for Mgt., TataMcGraw-Hill.
3. Bhattacharya, S.K, Accounting: Text and Cases, Vikas PublishingHouse,

Semester	1	**Course Credits**	**4**	**Specialization**	NA
Course Code	OMBC-104			**Type**	Domain Core
Course Title	Managerial Economics (ME)				

Course Description:

This course is designed to impart knowledge of the concepts and principles of Economics, which govern the functioning of a firm/organization under different market conditions. It further aims at enhancing the understanding capabilities of students about macro–economic principles and decision making by business and government.

Course Objectives:

1) To equip the students of management with time tested tools and techniques of managerial economics to enable them to appreciate its relevance in decisionmaking.
2) To gain knowledge of all economic terms andconcepts;
3) To explore the economics of information and network industries and to equip students with an understanding of how economics affect the business strategy of companies in these industries;and
4) To develop economic way of thinking in dealing with practical business problems and challenges.

Course Outline:

Unit 1: Introduction to Managerial Economics: Definition of Economics & Managerial Economics, Managerial Economics, Its nature and scope, Application of managerial economics in business decision making, Application of Managerial Economics in business.

Unit 2: Demand Analysis: Concept of utility, Types of demand, Determinants of demand.

Unit 3: Elasticity of Demand and Forecasting of Demand: Concept of elasticity of Demand, Classification of Elasticity of Demand, Measurement of Elasticity of Demand, Application of Elasticity of demand, Factors Determining Elasticity of Demand, Meaning of Forecasting of Demand.

Unit 4: Production Analysis: Factors determining production in short-term and long-term, Law of Return, Return to Scale.

Unit 5: Cost Analysis: Cost concepts, Short-run and long-run output relation, Economies of Scale, Concept of Break-Even Analysis.

Unit 6: Supply Analysis: Stock and Supply, Determinant of Supply, Law of Supply & exception to the law of supply, Shift in the Supply Curve, Elasticity of Supply.

Unit 7: Pricing Practices: Factors involved in pricing policy, Concept of marginal cost prices, Cost plus pricing, Price leadership, Price skimming, administrative prices.

Unit 8: Firm Industry Analysis: What do you mean by plant, firm and industry? Price determination in the free market, Types of Market.

Unit 9: Profit Management: Meaning of Profit, Measurement of Profit, Profit Policy, Reasonable Profit target, Standard of reasonable profit

Unit 10: Government Policies: Government policies, Monetary Policy Main Purpose, Fiscal Policy

Unit 11: Business Cycles (Meaning and Phases): Business cycles, Inflation, Recession and Depression.

Unit 12: Cost Benefit Analysis: Steps involved in Cost Benefit Analysis, Cost Benefit Analysis Private and Social, Advantages of Cost Benefit Analysis, Limitation of cost benefit Analysis.

Unit 13: Capital Budgeting: Idea of capital budgeting, Classification of physical assets, Capital budgeting process, Methods of appraising an overview, Measurement Method, Requirement of a good method, Principles of cash flows estimation, Time value of money calculation.

Unit 14: National Income and Its Measurement GDP; Gnp; Pi; Di: Definition of National Income, Measurement of National Income– Method, Difficulties in the measurement of National Income, Different concepts of National Income, Importance of National Income estimates.

Unit 15: Need of Government Intervention: Failure of market mechanism, Need for Government Intervention, Meaning of price control, Methods of price control

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO104.1	**Remember**	Define the key terms in economics.
CO104.2	**Understand**	Describe the reasons for the presence of firms and their decision-making goals.
CO104.3	**Apply**	Decision making by the way of learning economics
CO104.4	**Analyse**	Examine the effect of non-price factors on products and services of monopolistic and oligopoly firms.
CO104.5	**Evaluate**	Develop practical business problems and challenges.

Suggested Reading:

1. Mote, Paul and Gupta, Managerial Economics, Tata McGraw-Hill, FirstEdition.
2. Warren E. Buffett, Fundamentals of ManagerialEconomics,
3. Dr. D.M.Mithani ManagerialEconomics
4. Dr. H.L.Ahuja ManagerialEconomics
5. Prof. Joel Dean ManagerialEconomics
6. Dr. MukundMahajan ManagerialEconomics
7. E.H.Chamberlain Monopolistic competition
8. Dr. PL Mehta ManagerialEconomics

Semester	1	**Course Credits**	**4**	**Specialization**	NA
Course Code	OMBC-105			**Type**	Domain Core
Course Title	Business Communication (BC)				

Course Description:

This practical course offers you critical knowledge about the complexities of modern communication in organizations. Students will have the opportunity to develop and practice their verbal, non-verbal, written, and digital communication techniques in a range of simulated workplace situations as well as through liaison with organizations. These skills will be particularly relevant for you as they transition to the world of work and advance in their careers.

Course Objectives:

1) To acquaint the students with the fundamentals of communication and help them to transform their communicationabilities.
2) To help the students to acquire some of the necessary skills to handle the day-to-day managerialresponsibilities.
3) To build the students' confidence and to enhance competitiveness by projecting a positive image of themselves and of their future;and
4) To facilitate discussion of all relevant communicational theories so that studentscan apply this knowledge to a myriad of different communicational tasks andgenres.

Course Outline:

Unit 1: Business–Network of Communication: The concept of Business network, Variety of Media in Communication, Variety of communication tools, Objectives of Communication, 'Knowledge' in Communication, Skills needed in Communication, Values in supporting communication, Features of Business Communication.

Unit 2: Preparing for Communication: Developing language, Developing Human Relations, Technical Know-How, Presentation Skills, 'Values' in Communication.

Unit 3: Towards Effective Communication Cycle: The components of Communication Cycle, The Sender, The Message, Choosing Media, Encoding Message, Transmission, Disturbances and Barriers, Decoding at Receiver's end, Receiver, Evaluation and Feedback Message, Again with the Sender, Communication Cycles.

Unit 4: Typical Business Communication Areas: Marketing Oriented Communication, Supplier Oriented Communication, Reception, Office Communication, Meetings, Public Relations, Industrial Relations, Communication Arising Out of Events, Communication with Service Providers, Communications Need of Shareholders, Communication with Public Agencies, Need for Understanding Business Communication.

Unit 5: The Media Jungle: The Words, The Voice Communication- Eye to Eye, Voice Communication– with Distance, Written communication- One to One, Written communication– One to Many, Communicating Through Pictures– One to One and One to Many, Silent Communication, Multimedia Communication.

Unit 6: Understanding Media Tools: Voice Media Tools, Reading and Writing Media Tools, Communication Through Pictures, Multimedia Tools, Silent Communication– Communication by Impression.

Unit 7: Learning Language for Communication: Why a Foreign Language? Developing Reading Habit, Developing Speaking Abilities, Art of Listening, Increasing Writing Skills, Bettering Your Language Communication Skills.

Unit 8: Making communication successful in Meetings: Perspectives in Organizing Meeting, Pre-considerations in Organizing Meetings, Procedural Lacunae, Preparation by Participants, Precautions in Discussions, Alternatives to Meeting Technique, The Success Factors in Meeting Technique.

Unit 9: Interactive Communicating in Interviews: Types of Interviews, Pre-process at Employer's End, Process at Would Be Employees' End, Acceptance or Non-Acceptance of Job, joining a Job, Leaving a Job.

Unit10: Communicating Through Events: Variety of Events, Objectives in Planning Events, Knowledge Forming the Basis of Events, Some Popular Communicating Media in Events Organization, Building Communicative Product.

Unit 11: Communication through Print Media: Correspondence, Towards Modern Communication Concepts, Multimedia or Mass Media Communication, and Specialized Use of Print Media.

Unit 12: Using Voice Communication: One to One conversation, Distance Voice Communication- One to One.

Unit 13: Using Picture Communication: Era of Multimedia Mix, Sales Literature, Branding, Sales Advertising, Photography, Power Point Presentation, WWW- World Wide Web, Video display, Communicating Through Gestures.

Unit 14: Report Writing: The Investigative Report, The Special Survey Report, Secretarial

Report/Background Report, Writing Reports, Formatting Reports, Fixed Periodical Reports, Review Mechanism, Project Report, Reporting to Government, Reporting to Public.

Unit 15: Organizational Internal Communication: Communicating through Positions and Contingent Situations, Vertical Communication– Communication with higher levels, Vertical Communication- Downward, Horizontal Communication- Communication with Colleagues, Diagonal Relations, Contribute to Team Spirit, Towards Standardizing Organizational Communication, Home Bulletin or House Journal, Organizing Events.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO105.1	**Remember**	Recognize the various elements of communication, channels of communication and barriers to effective communication.
CO105.2	**Apply**	Demonstrate appropriate use of body language.
CO105.3	**Analyse**	Take part in professional meetings, group discussions, telephonic calls, elementary interviews, and public speaking activities.
CO105.4	**Evaluate**	Appraise the pros and cons of sample recorded verbal communications in a business context.
CO105.5	**Create**	Create and Deliver effective business presentations, using appropriate technological tools for common business situations.

Suggested Reading:

1. Rao P. Subba, Kumar B. Anita and Bindu C. Hima, Business Communication,Cengage Learning,2012.
2. Rajendra Paul and Korlahalli, Essential of Business Communication, Sultan Chand,10th Edition, 2004
3. Lesikar, R.V. and Flatley, M.E. (2005), Basic Business Communication Skills for Empowering the Internet Generation, Tata McGraw-Hill Company Ltd.,NewDelhi

Semester	1	**Course Credits**	**4**	**Specialization**	NA
Course Code	OMBC-106			**Type**	Domain Core
Course Title	Research Methodology (RM)				

Course Description:

To familiarize students with the type of business problems often faced by corporate entities and to help them develop insights about the basic concepts of research designs and methodology aimed at solving businessproblems.

Course Objectives:

1) To understand the concept and process of business research in businessenvironment.
2) To know the use of tools and techniques for exploratory, conclusive, and causalresearch.
3) To understand the concept of measurement in empirical system;and
4) To use statistical techniques to analyze the researchdata.

Course Outline:

Unit 1: Introduction to Research: What is Research? Types of Research, Process of Research, Research Applications in Social and Business Sciences, Features of a Good Research Study.

Unit 2: Research Problem and Formulation of the Research Hypotheses: Defining the Research Problem, Management Problem vs. Research Problem, Problem Identification Process, Components of the Research Problem, Formulating the Research Hypotheses, Writing a ResearchProposal.

Unit 3: Research Designs: Nature and Classification of Research Designs, Exploratory Research Designs, Descriptive Research Designs, Experimental Designs, Errors Affecting ResearchDesign.

Unit 4: Primary and Secondary Data: Classification of Data, Secondary Data, Primary Data Collection: Observation Method, Primary Data Collection: Focus Group Discussions, Primary Data Collection: Personal Interview Method.

Unit 5: Attitude Measurement and Scaling: Types of Measurement Scales, Classification of Scales, Measurement Error.

Unit 6: Questionnaire Design: Types of Questionnaires, Process of Questionnaire Designing, Advantages and Disadvantages of the Questionnaire Method.

Unit 7: Sampling: Sampling Concepts, Sampling Design, Determination of Sample Size

Unit 8: Data Processing: Data Editing, Coding, Classification and Tabulation of Data.

Unit 9: Univariate and Bivariate: Descriptive vs. Inferential Analysis, Descriptive Analysis of Univariate Data, and Descriptive Analysis of Bivariate Data.

Unit 10: Testing of Hypotheses: Concepts in Testing of Hypothesis, Tests Concerning Means— Case of Single Population, Tests for Difference between Two Population Means, Tests Concerning Population Proportion— Case of Single Population, Tests for Difference between Two PopulationProportions.

Unit 11: Chi-square analysis: A Chi-Square Test for the Independence of Variables, A Chi- Square Test for the Equality of More than Two Population Proportions.

Unit 12: Analysis of Variance: Completely Randomized Design in a One-Way ANOVA, Randomized Block Design in Two-Way ANOVA, Factorial Design.

Unit 13: Correlation and Regression Analysis: Quantitative Estimate of a Linear Correlation, Regression Analysis, Uses of Regression Analysis in Prediction.

Unit 14: Multivariate Analysis of Data: Factor Analysis, Discriminant Analysis, and Cluster Analysis

Unit 15: Research Report Writing: Types of Research Reports, Report Writing: Structure of the Research Report, Report Writing: Formulation Rules for Writing the Report.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO106.1	**Remember**	Develop the concept of research in the business environment.
CO106.2	**Understand**	Explain the process characteristics and their linkages with process-product matrix in a real world context.
CO106.3	**Apply**	Use the tools and techniques for the research activities.
CO106.4	**Analyze**	Exhibit the concept of measurement in empirical study.
CO106.5	**Evaluate**	Convert ability of research into its usage for the analysis.

Suggested Reading:

1. Chawla, D. and N. Sondhi. Research Methodology: Concepts andCases.
2. New Delhi: Vikas Publications,2011.
3. Easterby-Smith, M, R Thorpe and A Lowe. Management Research:An

4. Introduction, 2nd Edition. London: Sage,2002.
5. Grinnell, Richard Jr (ed.). Social Work, Research and Evaluation. 4thEdition.
6. Itasca, Illinois: F.E. PeacockPublishers,1993.
7. Kerlinger, Fred N. Foundations of Behavioural Research, 3rd Edition. NewYork:
8. Holt, Rinehart and Winston,1986.

Semester	1	**Course Credits**	**3**	**Specialization**	NA
Course Code	OMBC-107			**Type**	Generic Core
Course Title	Environmental Awareness & Disaster Management (EADM)				

Course Description:

This course is designed to enhance environmental awareness and Disaster Management aspects among the Learners. Learners will understand ongoing environmental issues. They shall learn measures to be taken for sustainable development. Learners shall understand the relationship between vulnerability, disasters, disaster prevention, and risk reduction

Course Objectives:

1. To provide Learner with an exposure to natural resources and their significance.
2. To gain a preliminary understanding of approaches to Disaster Risk Reduction (DRR).
3. To develop rudimentary ability to respond to their surroundings with potential disaster response in areas where they live, with due sensitivity.
4. To help the Learner acquire knowledge of pollution and environmental degradation.
5. To help the Learner acquire knowledge about the Disaster Management and Relief

Course Outline:

Unit-1: Natural Resources and Associated Problems: Land, water, food, forest, mineral andenergyresources,theiruse,over-exploitation,andconservation.

Unit-2: Pollution Control: Definition, Causes, Effects and Control Measures of Air, Water, Soil, Noise, thermal and Marine Pollution .Nuclear hazards and Solid waste management. Role of an Individual in Prevention of Pollution andPollution CaseStudies

Unit-3:Urban Problems Related to Energy:Waterconservation,Rainwater harvesting, watershed management, Resettlement, and rehabilitation of people. Climate change,global warming, acidrain, ozone layer depletion, nuclear accidents and holocaust,Wasteland reclamation.

Unit-4:Environmental Legislation, Environment Protection Acts: Air (Prevention and control of Pollution) Act, Water (Prevention and Control of Pollution) Act. Wildlife ProtectionAct,Forest Conservation Act,Environmental Ethics.

Unit-5: Introduction to Disasters, Concepts and Definitions: (Disaster, Hazard, Vulnerability,Resilience

and Risks), Natural and Manmade Disasters, Disasters: Clarification Causes, Impacts (Includingsocial, economic, political, environmental, health, psychosocial, etc.)

Unit-6: Hazard and Vulnerability Profileof India Components of Disaster Relief: Water, Food, Sanitation, Shelter, Health, and Waste Management, Institutional Arrangements (Mitigation, Response and Preparedness, DMAct and Policy, Other related policies, plans, programmes, and legislation)

Unit-7: Disaster Management in India: India and Disaster Management, Hazards and Vulnerability Profile of India, India's Approach to Disaster Management, Components of Disaster Relief, Waste Management, Meaning and Objectives of Waste Management, Importance of Waste Management

Unit-8 Institutional Arrangements in Disaster Management: Institutional Arrangements, Mitigation, Response and Preparedness, Disaster Management Act and Policies, Other Related Legislations

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO107.1	**Remember**	Recognizethevariouselementsofnaturalresources
CO107.2	**Apply**	Demonstrateappropriateuseofnaturalresourcestoovercometheproblems
CO107.3	**Analyze**	Analyzeenvironmentallegislationtoprotecttheenvironment.
CO107.4	**Create**	Createawarenessaboutprotectingourenvironmentbyusingpublicservice advertisementcampaign.

Suggested Reading:

1. Agarwal, K. 2001 Environmental Biology, Nidi Publ. Ltd.Bikaner.
2. BharuchaErach, The Biodiverstiy of India, Mapin Publishing Pvt. Ltd. Ahmedabad- 380013, India, Email: mapin@icenet.net(R)
3. Brunner R.C., 1989, Hazardous Waste Incineration, McGraw HillInc.480p
4. Alexander David, Introduction in Confronting Catastrophe, Oxford UniversityPress, 2000.
5. Andharia J. Vulnerability in Disaster Discourse, JTCDM, Tata Institute of SocialScience working Paper no. 8,2008
6. Blaikie, P, Cannon T, Davis I, Wisner B 1997, At Risk Natural Hazards, Peoples, Vulnerability and Disasters,Rutledge.
7. Coppola P Damon, 2007, Introduction to International DisasterManagement,
8. Carter, Nick 1991, Disaster Management: A Disaster Manager's Handbook, Asian Development Bank, ManilaPhilippines.

Semester II – Curriculum

Semester	2	**Course Credits**	**4**	**Specialization**	NA
Course Code	OMBC-201			**Type**	Domain Core
Course Title	Human Resource Management (HRM)				

Course Description:

This is the first introductory course of the functions of HRM. The course is useful to acquaint students with different subsystems of Human Resource Management and their importance. The students would also be able to appreciate the importance and applications of industrial relations and different legislations related to the same.

Course Objectives:

1) To understand the role of HRM in anorganization;
2) To learn to gain competitive advantage through people;and
3) To learn to study and design the HRMsystem.

Course Outline:

Unit 1: Human Resource Management– An Introduction: Nature of HRM, Definition, Need for HRM, Scope of HRM, Distinction Between Personnel Management and HRM, Distinction between Human Resource Management and Human Resource Development.

Unit 2: Human Resource Development: Human Resource Development-An Introduction, Meaning & Definition of HRD, Functions of HRD Department, Model of HRD Functions, Role of HRD Professional in Organization, Role of Learning Specialist, Role as an Administrator, Role as a Consultant, Emerging issues facing the HRD Professional, ChangingEnvironment.

Unit 3: Manpower Planning/ Human Resource Planning: Importance of Manpower Planning, Definition, Need for Manpower Planning, Process of Manpower Planning, Responsibility for Manpower Planning, Job Analysis, Job Description, Job Specification, Manpower Audit.

Unit 4: Recruitment: Factors Affecting Recruitment, Steps in Recruitment Process, Recruitment Policy, Recruitment Organization, Sources of Recruitment, Methods of Recruitment.

Unit 5: Selection: Introduction, Essentials of selection procedure, Steps in Selection procedure, Interview, Types of Interview, and Induction Procedure.

Unit 6: Training: Importance, Need for Training, Steps in Training Programs, Training Methods, Methods of Evaluation of Training.

Unit 7: Performance Appraisal: Importance and Purpose, Methods, Techniques and Tools, MBO, Objectives, Process& Benefits, Feedback Seeking.

Unit 8: Compensation Management: Concept of Compensation, Definitions, Objectives of Compensation Management, Principles of Compensation Management, Importance of Compensation Management, Process of Compensation Management, Classifications of Compensation Management, Case study.

Unit 9: Rewards Patterns: Features of Reward Management, Aims of Reward Management, Determinants of Rewards, Non-Monetary Rewards, Reward Management Process, Issues & Trends in Reward Management.

Unit 10: Career Planning: Career Planning and Growth Opportunities, Meaning of Career Planning, Need of Career Planning, Process of Career planning and Development, Steps in Career Planning, Career Planning-Individuals Perspective, Career Planning– Organization Perspective, Career Management, CaseStudy.

Unit 11: Succession Planning: Objectives of Succession Planning, Features of Succession planning, Difference between Career Planning and succession planning, Classification of Succession planning, Advantages of succession planning, Measures for effectiveness of succession planning., Factors in Succession planning, Steps followed in Succession Planning.

Unit 12: Industrial Relations-Conceptual Analysis: Definition, Objectives of Industrial Relations, Scope and Aspects of Industrial Relations, Importance of Industrial Relations, Functions of Industrial Relations, Approaches to Industrial Relations, Industrial Relations in India, Industrial Disputes, Causes of Industrial Disputes, Consequences of Industrial Disputes, Case Study.

Unit 13: Grievance Procedures-Disciplinary Procedure: Characteristics of Grievances, Need for Grievances, Nature of Grievances, Causes of Grievances, Grievances Procedures, Essentials of Sound Grievances Procedures, Grievance Management in Indian Industry, Disciplinary Procedures-Need for Disciplinary Measures, Meaning and Definition, Objectives of Discipline, Types of Discipline, Causes of Discipline, Principles and Procedures of Disciplinary Action.

Unit 14: Retirement/Separation: Methods of Separation, Dismissal or Discharge, Suspension, Lay-off, Retirement, VRS.

Unit 15: HR in BPO & Emerging Trends: HR and BPO, current scenario of recruitment in BPO, New

HR roles and competencies, HR and Six Sigma Practice, Steps for Six Sigma, Relating Six Sigma to HR strategy, HR & Innovation and Creativity.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO201.1	**Remember**	Describe the role of Human Resource Function in an Organization.
CO201.2	**Understand**	Illustrate the different methods of HR Acquisition and Retention.
CO201.3	**Apply**	Demonstrate the use of different appraisal and training methods in an Organization.
CO201.4	**Analyse**	Outline the compensation strategies of an organization
CO201.5	**Evaluate**	Interpret the sample job descriptions and job specifications for contemporary entry level roles in real-world organizations.

Suggested Reading:

1. Aswathappa, K. Human Resource to Personnel Management, TataMcGraw-Hill
2. Mamoria C.B and Mamoria S., Personnel Management, Himalaya Publishing Company Seema Sanghi, HRM, VikasPublishing
3. Human Resource Management in Organizations, Izabela Robinson, JaicoPublishing House.
4. Armstrong's Essential Human Resource Management Practice - A Guide to People Management, Michael Armstrong,Koganpage.
5. Applied Psychology in Human Resource Management, Cascio &Aguins,PHI.
6. Ashok Kumar, Human Resource Development: An Interdisplinary Approach Annual Publications, New Delhi, Vol I,1991.
7. Dave Ulrich (1987), A new Mandate for Human Resources, HBR, Vol76,Jan-Feb
8. Herbst, PG. The Product of Work is people, National Labor Institute Bulletein,Vol-I
9. Miller, V A, The History of Training in RL Cruig, Training & Development Handbook, McGraw-Hill, NewYork.

Semester	2	**Course Credits**	**4**	**Specialization**	NA
Course Code	OMBC-202			**Type**	Domain Core
Course Title	Marketing Management (MM)				

Course Description:

The objective of this course is to familiarize the students with the marketing concepts and practices and also develop their analytical skills, conceptual abilities and substantive knowledge. It seeks to achieve the objective by helping the participants to undergo meaningful exercises in decision making in a variety of real-life situations. This course is intended to be the foundation course for those who plan to do further work in marketing in the second year. It is also designed to serve as a terminal course for those not intending to specialize in marketing.

Course Objectives:

1) To introduce marketing as a business function and aphilosophy.
2) To emphasize the importance of understanding external environment in marketing decision making;and
3) To expose students to a systematic framework of marketing and implementations and to highlight the need for different marketing approaches for services, goods, and for household consumers, organizationalbuyers.

Course Outline:

Unit 1: Introduction to Marketing & Marketing Concepts: Nature & Scope of Marketing, Core Marketing Concepts, Comparison of Selling Concept with Traditional Marketing Concept with Modern Marketing Concept, Marketing Myopia, Functions of Marketing, Importance of Marketing, Role of a Marketing Manager.

Unit 2: Marketing Organizations: Marketing Organization, designing its Structures, Various Marketing Organization, Recent Trends in Marketing Organizations, Suggest Marketing Organization for a Consumer Product Company Operating in National and International Market, Harvest Gold the ETF Way, The Choice of Mutual Funds.

Unit 3: Customer Values, Customer Satisfaction & Consumer Delight: Customer Value and Satisfaction, Measuring Customer Satisfaction, Business Components, Customer Value and Value Chain,

Attracting and Retaining Customers, Relationship between India's Best Managed Companies and Value.

Unit 4: Marketing Environment: Trends, Macro Environment, Legal Environment, Oil Refining is Viable By Pre-Empt Tariff Jumping. ICICI Bank and HDFC and Floating Loans, Govt. Banks Still Top Consumer Preference, Four Megatrends for Asia in '07.

Unit 5: Consumer Behavior: Factors Influencing Buyer Behavior, Buying Decision Process, Consumer Psychology, Figure, Organizational Buying, Consumer Behavior driving the boom of 21st century, Business Marketing In India

Unit 6: Marketing Planning, Marketing Process, Contents of Marketing Plan: Marketing Planning, The Marketing Process Contents of Marketing Plan, Illustration of Marketing Plan– WIPRO, Desi Delights.

Unit 7: Marketing Research, Marketing Information System, Sales Forecasting: Nature of Marketing Research, Objectives of Marketing Research, Importance of Marketing Research, Scope of Marketing Research, Obstacles in Acceptance of Marketing Research, Setting up & Implementation of Market Research Projects, Marketing Information System, Sales Forecasting.

Unit 8: Dealing With Competition, Identification & Analysis of Competition: Identifying Competitors, Industry Concept of Competition, Analyzing Competition, Porter's Five Forces Model, Porter's Generic Competitive Strategies, Marketing Strategy, BPL Sanyo– Assessing consumer insights about brand perceptions and competition.

Unit 9: Market Segmentation: Concept of Market Segmentation, Bases used to Segment Consumer Markets, Illustration, Major Segmentation Variables for Industrial Markets, Effective Market Segmentation & Benefits of Market Segmentation, Market Targeting, Market Positioning, HDFC Bank- Segmenting organizational markets on the basis of companysize.

Unit 10: Marketing Evaluation & Controls: Evaluation and Control, Annual Plan Control, Control of Profitability, Control of Efficiency, Strategic Control, A Marketing Audit, Marketing Ethics.

Unit 11: Introduction to Marketing & Marketing Concepts: Concept of Marketing Mix, Marketing Mix for Services, Concept of Product Life Cycle and Brand Life Cycle: Big B– Amitabh Bacchan, Brand Life Cycle Sachin Tendulkar, PLC for TV Game shows: KBC/SDCK/JCPK.

Unit 12: Marketing Mix, Services Marketing Mix & Product Life Cycle Social Marketing: Challenges in New Product Development or why many new products fail?, Managing the Product Development Process, Product Adoption by Consumers &Innovation, Product Dimensions/Product-Mix, Product Management, Branding Decision, Brand– TheConcept.

Unit 13: Advance Concepts in Marketing – Online Marketing: Society and Marketing, Social Regulations in Marketing, Business Regulations in Marketing, Principles of Public Policy towards Marketing, Levi's Social Responsibility.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO202.1	**Remember**	Compute various managerial marketing abilities
CO202.2	**Understand**	Learn basic philosophies of marketing as management function
CO202.3	**Apply**	Enhance skill of communication by implementing it into practice
CO202.4	**Analyse**	Link external environment with the internal organizational activities.
CO202.5	**Evaluate**	Implement the practice of marketing approaches for services.

Suggested Reading:

1. Marketing Management A South Asian Perspective, Kotler, Keller, Koshy andJha, PrenticeHall/Pearson
2. Marketing Management, RajanSaxena,TMH
3. Marketing Management, Arun Kumar, N Meenakshi, VikasPublishing
4. Fundamentals of Marketing, Bruce Walker and Stanton,McGraw-Hill
5. W.D. Perraut and E.J. Mc Carthy, Basic Marketing,TMH
6. Russel S. Winner, Marketing Management,Pearson
7. Marketing Management, Ramaswami and Namakumari,
8. Integrated Marketing Communications - Kenneth ClownandDonald

Semester	2	**Course Credits**	**4**	**Specialization**	NA
Course Code	OMBC-203			**Type**	Domain Core
Course Title	Financial Management (FM)				

Course Description:

The objective of this course is to equip the students with conceptual understanding of finance and its practical application. It is expected that students should possess a sound base in accounting principles and practices including financial analysis. Therefore, it would begin with the framework of financial management linking various functional subjects. Important decisions that come under corporate finance, namely, setting up of projects covering investment in fixed and current assets, raising funds, and allocation of profits are taken within a framework of risk and return. Students are expected to learn these decision-making skills with the help of a few cases.

Course Objectives:

1) To understand various concepts related to financial management.
2) To study in detail the various tools and techniques in the area offinance;and
3) To develop the analytical skills this would facilitate in the decision making inbusiness situations.

Course Outline:

Unit 1: Overview of Finance Function: Nature and Scope of Finance Function, Goal of Finance Function, Significance of Finance Function, Agency Cost Theory, Role of Modern FinanceManager.

Unit 2: Financial System: Meaning and Significance of Financial System, Meaning and Significance of Financial Assets, Meaning and Significance of Financial Market, S.E.B.I. (Securities Exchange Board of India), Stock Exchange.

Unit 3: Financial Analysis: Common Size Statements Analysis, Trend Analysis, Ratio Analysis, and Cash FlowAnalysis.

Unit 4: Valuation: Time Value of Money, Future Value Concept, Present Value Concept, Annuity Concept, Business Applications of Time Value of Money (T.M.V.), Valuation of Financial Assets.

Unit 5: Long-Term Sources of Finance: Equity Share Capital, Preference ShareCapital, Debentures, Term Loans, Lease Finance, Hire Purchase, Venture Capital.

Unit 6: Cost of Capital: Meaning of Cost of Capital, Significance of Cost of Capital, Cost of Equity

Shares, Cost of Preference Shares, Cost of Debenture, Cost of Long-Term Loans (K), Weighted Average Cost of Capital (W.A.C.C.).

Unit 7: Capital Structure: Meaning of Capital Structure, Significance of Capital Structure, Optimum Capital Structure, Various Aspects of Capital Structure.

Unit 8: Leverage Analysis: Meaning of Leverage, Types of Leverage, Effect of Leverage.

Unit 9: Working Capital Management: Meaning of Working Capital, Significance of Working Capital, Determinants of Working Capital, Working Capital Cycle [Operating Cycle], Estimation of Working Capital, Controlling Working Capital, Sources of Working Capital (Short-term Sources of Finance).

Unit 10: Capital Budgeting: Meaning of Capital Budgeting, Significance of Capital Budgeting, Steps in Capital Budgeting Process, Cash Flows in Capital Budgeting, Evaluation of Capital Expenditure Proposals.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO203.1	**Remember**	Learn the concept of financial management.
CO203.2	**Understand**	Explain in detail all the theoretical concepts throughout the syllabus.
CO203.3	**Apply**	Perform all the required calculations through relevant numerical problems.
CO203.4	**Analyse**	Implement the tools and techniques by learning financial practices.
CO203.5	**Evaluate**	Evaluate the impact of business decisions on Financial Statements, Working Capital, Capital Structure and Capital Budgeting of the firm.

Suggested Reading:

1. I. M. Pandey, Financial Management, Vikas Publishing, NinthEdition
2. Sixth Edition MY Khan and PK Jain, Financial Management, TataMcGraw-Hill,
3. A.P Rao, Financial Management, Everest Publishing,Pune
4. Sheeba Kapil, Financial Management,Pearson

Semester	2	**Course Credits**	**4**	**Specialization**	NA
Course Code	OMBC-204			**Type**	Domain Core
Course Title	Operation Management (OM)				

Course Description:

Operations Management (OM) is concerned with the management of resources and activities that produce and deliver goods and services for customers. The course focuses on the basic concepts, issues, and techniques for efficient and effective operations. This course is an introduction to Facility Layout, Design and Location, all about the manufacturing. Facility, Capacity planning and Forecasting.

Course Objectives:

1. To understand the basic of operation and production facility
2. To understand roles and responsibility of Production manager
3. To understand the importance of production facility design and development
4. To understand inventory, Production planning

Course Outline:

Unit 1: Production Operations Basics: Production Relationship, Economic growth and productivity, Main processes of a company, Operations Management, Efficiency & Effectiveness.

Unit 2: Facility Location & Layout: Facilities Location, Location Analysis, Facility Location Factors, Location Analysis Techniques, Facility Location Methods, Urban and Rural Location. Facilities Layout Concept, Principles of Good Plant Layout, Types of Plant Layout, Factors Influencing Layout, Layout Procedure.

Unit 3: Work Study & Work Measurement: Understanding the Work Study, Method Study Concept, Sredim, Tools for Method Study. Time Study, Work Sampling, Synthetic Data, Predetermined Motion Time System, Maynard Operations Sequence Technique, Analytical Estimating.

Unit 4: Incentive Schemes: Incentive Schemes Concept, Incentive Schemes For Individuals, Fixed Bonus Scheme, Straight Piece Rate Methods, Differential Piece Rate Methods, Time Based Incentive Scheme, Group IncentiveScheme.

Unit 5: Production Planning & Control: Incentive Schemes Concept, Concept of Planning, Demand Forecasting, Capacity Planning, Aggregate Planning, Master Production Schedule, Production Planning and Control, Manufacturing Planning and Control System, Operations Scheduling, Sequencing, Production

Activity Control, Dispatching, Progressing.

Unit 6: Material Management: Materials Management Concept, Importance of Materials Management, Classification of materials, Materials planning, Purchasing, Stores Management, Inventory management, Economic Lot Size.

Unit 7: Quality Management: Concept of Quality, Stages in Quality, Inspection and Quality Control, Quality assurance, TQM, Six Sigma.

Unit 8: Maintenance Management: Maintenance Management Concept, Plant Breakdown, Planned Maintenance, Unplanned Maintenance.

Unit 9: Project Overview: Project Introduction, Types of projects, Characteristics of projects, Project Management, Phases and Steps in Project Management, Project Management Life Cycle, Project Management Methodology.

Unit 10: Modern Operations Concept: Lean Manufacturing, Agile Manufacturing, Flexible Manufacturing System, Poka Yoke, Total Productive Maintenance, Just In Time, Five S.

Unit 11: Operation Management in Service Sector: Operations Management in Service Industry, Service Concept of Operations, Operations Management in Banking, Operations Management in Retail, Operations Management in BPO, Operations Management in IT, Operations Management in Hospitals.

Course Outcome:

On successful completion of the course the learner will be able to

CO#	Cognitive Abilities	Outcomes
CO204.1	**Remember**	Define the basic terms and concepts related to production and operations.
CO204.2	**Understand**	Enhance the skill of competitive advantage.
CO204.3	**Apply**	Apply relationship between Operation and Supply Chain Management.
CO204.4	**Analyze**	Illustrate the linkages with Customer Issues, Logistic and Business Issues in a real-world context.
CO204.5	**Evaluate**	Develop the techniques of operational activities as current practice.

Suggested Reading:

1. Operations Management -Krajewski
2. Operations Management –Mahadevan
3. Production & OperationsManagement–Chase
4. Production & OperationsManagement–Chary
5. Manufacturing& OperationsManagement-L.C.Jhamb

Semester	2	**Course Credits**	**4**	**Specialization**	NA
Course Code	OMBC-205			**Type**	Domain Core
Course Title	Management Information System (MIS)				

Course Description:

The management information system consists of people, process, and equipment together to sort, analyze, and evaluate the needed information accurately and timely. The need of MIS resulted into the objectives attained; the main objective of learning this course is to get the knowledge of information system related with the business.

Course Objectives:

1) Understand the role of the information system (IS) function in anorganization.
2) Develop an insight as to how information system influences business strategy;and
3) Develop the ability to contribute meaningfully towards information systemselection.

Course Outline:

Unit 1: Introduction to Information Technology: Difference between Data and Information, Knowledge, Characteristics of valuable information, Components of Information Systems, Value of Information in Decision-making, Value of Information in Sensitivity Analysis, Value of Information other than in Decision Making, Types Of Information, Classification of Information in terms of its applications, Breakup of Information Needs according to Decisions and User, Relation between information needs and Types of Decisions, Management Information System.

Unit 2: Introduction to Computers: Definition of Computer, Input–Output Devices, Memory, Data Files, Hardware and Computer Peripherals, Software and Its Types, Operating Systems, Secondary Storage Devices, Types of Computers.

Unit 3: Computer Networks: Networking Fundamentals, Networking and Its types, Networking Media, Networking Devices,Protocols.

Unit 4: Introduction to Internet: Internet Technology Background, Differences between Internet, Intranet and Extranets, Groupware and Inter-Groupware.

Unit 5: Fundamentals of Operating Systems: Operating Systems Concepts, Computer Systems Components, Types of Systems, History of Operating Systems, Windows NT Operating

SystemOverview,UnixOperatingSystemOverview,LinuxOperatingSystemOverview, Introduction to Open Source Software.

Unit 6: Database Management Systems: Uses of Data in Computing Database, Database Management System, Need of Database Management System, Advantages of Database Management System, Database Applications, Data Models, Relationships.

Unit 7: Introduction to E-Commerce: E-Business, E-Commerce vs. E-Business, Drivers of E-Commerce, Changes in Organizational Makeup due to E-Commerce, Advantages through E- Commerce, Issues and Constraints of E-commerce, Benefits and Limitations of Internet, Role of E-Strategy, E-Commerce Applications, E-Commerce Business Models, Benefits of E- Commerce, Technology Infrastructure for E-Commerce, E-Commerce Security Environment, Electronic Data Interchange.

Unit 8: Introduction to Microsoft Office: Microsoft Word, Microsoft Excel, Microsoft PowerPoint.

Unit 9: Enterprise Management System: Enterprise Resource Planning, Customer Relationship Management, Supply ChainManagement.

Unit 10: Information Technology Enabled Services: Introduction to IT Enabled Services, Business Process Outsourcing, Knowledge Process Outsourcing.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO205.1	**Remember**	Learn the role of information system function
CO205.2	**Understand**	Understand the basic functions of computer to use in business practice
CO205.3	**Apply**	Develop the ideas of implementing business strategy through Information System
CO205.4	**Analyse**	Select proper system for implementation in business
CO205.5	**Create**	Create own blog through computer applications

Suggested Reading:

1. Management Information Systems – by W.S.Jawadekar
2. Management Information Systems – by MilindOke
3. Management Information Systems – by JayantOke

4. Computer Networks – NiraliPublication
5. Network Theory – byBakshi
6. Computer Networks – Protocols, Standards and Interfaces- by UylessBlack
7. Operating System Concepts – by Silberschatz,Galvin
8. Computer Fundamentals –byRajaraman
9. Database System Concepts – byKorth
10. An Introduction to Database Systems – by C.J.Date
11. Fundamentals of Database Systems – byNavathe

Semester	2	**Course Credits**	**4**	**Specialization**	NA
Course Code	OMBC-206			**Type**	Domain Core
Course Title	Strategic Management and Business Policy (SMBP)				

Course Description:

The content of this course is designed to provide an integrated view of the functional areas and to acquaint them with the strategic management process. The subject would thus offer students the opportunity to exercise qualities of judgment and help them to develop a holistic perspective of the management oforganizations.

Course Objectives:

1) To familiarize the learners with the concept of strategic management and understand the significance of managing the business strategically in the current businessenvironment;
2) To familiarize the learners with the strategies at corporate, business, andfunctional levels;
3) To understand and analyze the firm's external environment, the resources, and thus carrying out SWOT analysis for strategyformulation;
4) To understand the process of strategy implementation and the challenges of managing a change;
5) To understand strategic control system to monitor the strategy implementationprocess; and
6) To get acquainted with various strategies adopted by firms to successfully compete with theirrivals.

Course Outline:

Unit 1: Concept and Process of Strategy: Components of Strategic Statement, Features of Strategy, Strategy vs. Policies and Tactics, Levels of Strategy, Importance of Strategy, Process of Strategy, Strategic Intent, Environmental and Organizational Analysis, Identification of Strategic Alternatives, Choice of Strategy, Implementation of Strategy, Evaluation andControl.

Unit 2: Strategic Framework and Formulation: Strategic Vision, Core Values and Core Purpose, Mission, Business Definition, Objectives and Goals, Strategy Formulation.

Unit 3: Environmental Analysis: Broad Dimensions of External Environment, SWOT and PESTEL Framework, McKinsey's 7s Framework, General Environment and Organizations Strategy, Environmental Scanning.

Unit 4: Internal Analysis, Competencies and Competitive Advantage: The Roots of Competitive

Advantage, Strategy in Action, The Building Blocks of Competitive Advantage, Business Models, The Value Chain, and Generic Distinctive Competencies, Analysing Competitive Advantage and Profitability, The Durability of Competitive Advantage, Avoiding Failure and Sustaining.

Unit 5: Competitive Forces: Competitive Environment, Porter's Five Forces Framework, Process for Analyzing External Environment, Scenario Planning

Unit 6: Cost: Cost Levels in India, Changing Role of Cost in Different Market Conditions, The Experience Curve, Additional Considerations for Using Experience Curve Effect, Experience Curve and Competitive Strategy, Experience Curve and Its Applicability, Limitations of Experience Curve, Role of Cost in Business Growth, Cost Leadership.

Unit 7: Growth Strategies: Levels in India, Nature of Stability Strategy, Expansion Strategies, International Expansion.

Unit 8: Strategic Alliances: Strategic Alliance Trends, Factors Promoting the Rise of Strategic Alliances, Types of Strategic Alliances, Benefits of Strategic Alliances, Costs and Risks of Strategic Alliances, Factors Contributing to Successful Alliances

Unit 9: Turnaround Strategies: Retrenchment Strategies, Turnaround Strategy, Survival Strategy, and Liquidation Strategy.

Unit 10: Structural Dimensions: Strategic Change, Matching Organization Structure to Strategy, Determinants of Organization Structure, Strategy and Structure Proposition, The Stages Model of Structure, Forms of Organization: Strategy Related Benefits and Limitations, Structuring Multinational (Transnational) Organizations, Structure for Development Programs, Perspectives on Strategy andStructure.

Unit 11: Behavioral Dimensions: Role of Leadership, Concept of Leadership, Functions of Leadership, Leadership Styles, Corporate Culture, Ethics and Values, and Functional Strategies.

Unit 12: Implementing Strategies: Implementing Strategy through Organizational Design, Building Blocks of Organizational Structure, Strategic Control Systems, Implementing Strategy in a Single Industry.

Unit 13: Strategic Functions & Control: Strategic Control Process, Methods of Control, Performance Standards, Analysis and Follow-up Action for Control, Problems of Control Systems, and Various Functions of Strategic Management.

Unit 14: Evaluation of Strategy: Process of Evaluation, Business Portfolio Analyses, Qualitative Factors, Balanced Score Card (BSC), Structure of Evaluation, Evaluation System in a Multi-business Company,

Characteristics of an Effective EvaluationStrategy

Unit 15: Strategy and Business Policy: Business Policy as a Discipline, Corporate Strategy, Strategic management, Strategic Decision Making, Strategic Management Model, Vision, Mission and Objectives, Objectives and Goals

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO305.1	**Remember**	Learn the current business environment trends.
CO305.2	**Understand**	Understand the environmental analysis and use it for making new strategies.
CO305.3	**Apply**	Apply strategic tools for decision making.
CO305.4	**Analyse**	Compare the internal and external environment through SWOT.
CO305.5	**Evaluate**	Process strategy formulation and implementation.

Suggested Reading:

1. Ghosh, P.K. (1996). "Business Policy Strategic Planning and Management", Sultan Chand & Sons, NewDelhi.
2. Glueck, W.F. and Iavch L.R. (1984). "Business Policy and Strategic Management" McGraw-Hill, NewYork.
3. Kazmi, Azhar (2002). "Business Policy and Strategic Management", Tata McGraw-Hill Publishing Co, Ltd., NewDelhi.
4. Miller A. and Den G. G. (1996). "Strategic Management" McGraw-Hill, New York. Prasad, L.M. (2002). "Business Policy: Strategic Management", Sultan Chand&Sons,
5. Shrivastava, R.M. (1995). "Corporate Strategic Management", Pragati Prakashan,Meerut.
6. Tompson, J.L. (1997). "Strategic Management: Awareness andChange",

Semester	2	**Course Credits**	**3**	**Specialization**	NA
Course Code	OMBC-207			**Type**	Generic Core
Course Title	Entrepreneurship Development (ED)				

Course Description:

Entrepreneurship education plays a very vital role in creating awareness of enterprise and self- employment as a career option for students. Using this framework, students will have experiences that will enable them to develop the insight needed to discover and create entrepreneurial opportunities; and the expertise to successfully start and manage their own businesses to take advantage of theseopportunities.

Course Objectives:

1) To create awareness of enterprise and self-employment as a career option forstudents;
2) To develop positive attitudes towards innovation, enterprise, and self-employment;and
3) To instill a spirit of entrepreneurship among the studentparticipants.

Course Outline:

Unit 1: Entrepreneur: The Entrepreneur: Definitions and Concept Entrepreneurial Traits, Characteristics and Skills, Entrepreneur vs. Professional Managers, Successful Entrepreneurs, Women Entrepreneurs.

Unit 2: Entrepreneurship: Meaning, Definition, Examples of successful entrepreneurs.

Unit 3: Entrepreneurship Development: Entrepreneurship Environment, Entrepreneurship Development Program and Training, Problems of Entrepreneurship, Growth of Entrepreneurs, Entrepreneurial Failures.

Unit 4: Role of Government: DIC-District Industries Centre, SISI-Small Industries Service Institute, EDII-Entrepreneurship Development Institute of India.

Unit 5: Role of Financial Institutions: NIESBUD-National Institute for Entrepreneurship and Small Business Development, NEBD- National entrepreneurship Board of Development.

Unit 6: Doing Business in India: Introduction, Major Issues and Challenges, Ethical Approach, Types of Organization, Legal Compliances.

Unit 7: Project Management: Project: Concept and Classification. Search for a Business Idea. Making a Business Plan, Marketing Plan, and Successful Projects of Social Entrepreneurs.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO207.1	**Remember**	Learn the basic fundamentals of entrepreneurship.
CO207.2	**Understand**	Differentiate between entrepreneurship and its use in project development.
CO207.3	**Apply**	Apply new ideas for development of any project.
CO207.4	**Analyse**	Analyse the role of the government and financial institution to implement basic terminology.
CO207.5	**Create**	Create business ideas and business plan.

Suggested Reading:

1. P. Saravanavel, Entrepreneurship Development, HimalayaPublishing.
2. Vasant Desai, Problems and Prospects of Small-Scale Industries in India, Himalaya Publishing.
3. Peter F. Drucker, Innovation and Entrepreneurship,East-Westpress
4. Hisrich, Entrepreneurship, Tata McGraw-Hill, 6thEdition
5. P.C.Jain (ed.), Handbook for New Entrepreneurs, EDII, Oxford University Press,New Delhi

Semester-III : Generic Elective

Semester	3	**Course Credits**	**4**	**Specialization**	NA
Course Code	OMBE-307			**Type**	Generic Elective
Course Title	Digital Marketing (DM)				

Course Description:

This course presents a systematic coverage Digital Marketing Concepts and practice. It covers all the types of digital marketing and its advantages. The objective is to help students understand the fundamental concepts of digital marketing; and tools and techniques of it. It is also intended to give an overview of the historical development, theoretical aspects, and practice application of digital marketing.

Course Objectives:

1) To expose the students to basic concepts ofDigital Marketing.
2) To enable them to gain knowledge of different types of Digital Marketing.;and
3) To highlight professional challenges that a Digital marketer will face for different businesses.

Course Outline:

UNIT-1: Understanding the concepts of digital marketing, Internet WWW, Traditional marketing vs digital marketing, History and Evolution of Digital Marketing

UNIT-2: Introduction to CRM, CRM models, IDIC CRM model, Buttle's CRM Value Chain Model, Payne & Frow's Five-step Process Model, Use of CRM Tools. Introduction to e- commerce Type of commerce Advantages of e-commerce.

UNIT-3: Introduction of E-Commerce, Models of E-Commerce: Business – to – Business, Business – to – Consumer, Consumer – to – Consumer, Consumer – to – Business, Business – to – Government, Government – to – Business, Government – to – Citizen, Consumer to Government, Scope of E-Commerce, Advantages and Disadvantages of E-commerce, Ethics and E-commerce

UNIT-4: Concept of Web design and planning, Characteristics & content of Web planning, Behavioral Targeting, Behavioral Targeting Advertising, Types of websites

UNIT-5: Introduction to e- mail marketing, Challenges faced in bulk emails, Types of mail.

UNIT-6: Introduction of Social media marketing, Tools techniques of social media marketing, Various platforms of Social Media Marketing., Understanding online PR, The rules of engagement

UNIT-7: Introduction to mobile marketing, History of Mobile, Types of Mobile Marketing,Creating mobile marketing strategy, Benefits of Mobile Marketing

UNIT-8: Introduction to face book marketing, Advantages of Facebook Marketing, Creating Facebook page, Formats of Facebook Marketing, Creating visual identity.

UNIT-9: Introduction to Search Engine Optimization, Search Engine working, Search Engine, Marketing, Types of SEO, SEO Tools.

UNIT-10: Emerging Trends in Information Technology: M-Commerce: Overview of mobile-Commerce, Attributes of m-Commerce, Drivers of m-Commerce, m-Commerce Security issues, M-commerce Applications, e- Banking, Introduction to E-Banking, Advantages of E-Banking, Services Provided in E- Banking, e- Logistics: Introduction to Logistics, e-logistic, Warehousing Management, Transportation/Distribution Management e – Learning, Introduction to e-learning Definition, Features of e-Learning (Advantages), e- Learning Models, e-Learning Tools and Technologies

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO307.1	**Remember**	The concept of e-commerce to retail activities.
CO307.2	**Understand**	Understand types of website and planning of website activities.
CO307.3	**Apply**	Apply various types of email marketing activities to measure good result.
CO307.4	**Analyse**	Analyse Various platforms of social media marketing as a promotional activity.

Suggested Reading:

1. Blanchard O. (2014) Social Media ROI: Managing and Measuring Social Media Efforts in Your Organization Pulizzi, J. (2013) Epic ContentMarketing
2. Marketing on Facebook– Best Practice Guide (2015) Facebook MarketingPress
3. Chaffey, D., & Ellis-Chadwick, F. (2012) Digital Marketing: Strategy, Implementation and Practice, 5/E,Pearson
4. Tapp, A., &Whitten, I., &Housden, M. (2014) Principles of Direct, Database andDigital Marketing, 5/E,Pearson

Semester	3	**Course Credits**	**4**	**Specialization**	NA
Course Code	OMBE-308			**Type**	Generic Elective
Course Title	Business English (BE)				

Course Description:

This course is designed to make students aware of the construction of sentences and grammar which will help them to communicate well in English.

Course Objectives:

1) To make the students aware of the English languageskills;
2) To enhance the communication skills of the students; and
3) To make the students aware of the mannerism andetiquettes.

Course Outline:

Unit 1 Introduction to Business English: General English Verses Plain English Verses Business English, Concept, Objectives, Identification of the Language of Business English, Learners of Business English, Importance of Business English.

Unit 2: English Grammar (Intermediate Level): Overview of the Basics English Grammar, Adjectives – gradable and non-gradable, Phrasal Verb, Perfect and continuous Tenses, Narrative tenses, Quantifiers, Intensifiers, Clauses: Participle and Relative, Cause and effect, Modals of deductions and speculations.

Unit 3: Reading Skills: Concept of Reading Skills, Understanding Comprehension, Interpretation, Summarizing, Techniques of Reading, Skimming, Scanning, Intensive Reading, Extensive Reading, Vocabulary Building.

Unit 4: Business Correspondence: Business Correspondence, Importance of Business Correspondence, Business Letters, Important Attributes of a Good Business Letter, Parts of a Business Letter, Layout of a Letter, Types of Formal Letters, Business Enquiry Letter, Quotation Letter, Order Letter, Complaint Letter, Recovery Letter, Covering Letter, Importance of a Covering Letter, Purpose of a Covering Letter, Guidelines of Writing a Covering Letter, Important Attributes of Writing a Covering Letter, Types of Covering Letters, Informal Letters

Unit 5 Report Writing : Report Writing, Importance of Report Writing, Essential Attributes of Report Writing, Principles of Report Writing, Format of Report Writing, Types of Report Writing, Informational

Report, Analytical Report, Press Report.

Unit 6 Meeting : Business Meeting, Ways of Providing Information Regarding Meetings, E-mail, Drafting an E-mail, What Etiquettes does a Company Need to Have? Writing a Notice, Essentials while Conducting Meetings, Agenda, and Meetings.

Unit 7 Speaking Skills: Interactive Communication, Face-to-Face Introduction, Introducing Self, Meeting People, Exchanging Conversation and Saying Goodbye, Introducing People with Others, Telephonic Introduction, Picking and Answering a Telephone Call, Dealing with a Wrong Number, Asking for Someone, Taking and Leaving Messages, Enquiring for Someone on the Telephone, Making an Emergency Call for Help

Unit 8 Pronunciation and Voice Modulations : Pronunciation, Different Sounds of English, Vowels, Diphthongs, Consonants, Phonemic Transcriptions, Stress, Syllable Division and Word Stress, Sentence Rhythm and Weak Forms, Contrastive Stress in Sentences, Intonation, Falling Tunes, Rising Tunes, Falling-Rising Tunes, Voice Modulation, Elements of Voice Modulation.

Unit 9 Effective Speech: Effective Speech Attributes of a Good Speech, Clarity, Conciseness, Informative, Informal, Interesting, Delivering an Effective Speech, Extempore.

Unit 10 Business Etiquettes: Concept of Business Etiquettes, Business Meeting Etiquettes, Business Attire Mannerism, Telephone Etiquettes, Business Dining Etiquettes.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO308.1	**Apply**	Demonstrate appropriate use of language through various skills.
CO308.2	**Analyse**	Analyse business trend with current performance criteria.
CO308.3	**Evaluate**	Perform better through using various etiquettes.
CO308.4	**Create**	Create and deliver effective business presentations, using language skills.

Suggested Reading:

1. Leo Jones, Richard Alexander: New International Business English(Communication Skills in English for Business Purposes), Cambridge UniversityPress.
2. NCERT, Knowing About English – A Book of Grammar &Phonology

3. NCERT, Working with English – AWorkbook
4. A.E. Augustine & K.V. Joseph: Macmillan Grammar – A Handbook,Macmillan
5. Krishna Mohan & N.P. Singh: Speaking English Effectively,Macmillan

Semester-III Marketing Management Specialization

Semester	3	**Course Credits**	**4**	**Specialization**	Marketing Management
Course Code	OMBM-301			**Type**	Specialization Course
Course Title	Consumer Behaviour (CB)				

Course Description:

The primary objective of this course is to develop an attitude to learn about the perception, behavior, and various consumption patterns of the consumer. The learning will not be limited to consumer only it will also include the analysis of the changing pattern of organizations' strategy towards consumer.

Course Objectives:

1) To equip the students with behavioral aspect of marketingmanagement;
2) It explains how the markets and consumers behave under circumstances and how the cultural, social, personal, and psychological factors influence theirbehavior;
3) The course enables students to develop marketing strategies that are consumer based and create and enhance customervalue;
4) Critically evaluate the effectiveness of various advertisement and promotions andtheir attempts to influence the behaviourof individuals;and
5) Analyze the trends in consumer behaviour and apply them to the marketing of an actual product orservice.

Course Outline:

Unit 1: Introduction to Consumer Behaviour: Structure of the Study, Customers and Consumers, Consumer Behaviour as an Academic Field of Study, Types of Consumers, Why Study Consumer Behaviour, Applications of Consumer Behaviour Knowledge, Perspective of Consumer Behaviour, Marketing Strategy and Consumer Behaviour.

Unit 2: Market Segmentation, Positioning and Targeting: Structure of the Study, Market Segmentation Defined, Market Criteria for Effective Segmentation, Process/Stages of Market Segmentation, Bases for Segmentation, Information Search and Decision-making, Positioning Concept, Concept of Target Market, Market Targeting Process, Practical Examples.

Unit 3: Motivation and Involvement: Structure of the Study, Concept of Motivation and Motives, Theory

of Motivation, Motivation Process, Concept of Consumer Needs, Classifications of Motives, Role of Motives, Motives Arousal, Definition of Involvement, Consumer Involvement in same product &different products, Managerial Implications on Consumer Involvement, Dimensions of Involvement, Consumer Involvement Theory.

Unit 4: Personality and Self Concept: Structure of the Study, Personality Defined, Significance of Personality, Nature of Personality, Stages in the Development of Personality, Concept of Consumer Goals, Theories of Personality, Personality &Understanding Consumer Diversity, Measurement of Personality, Self-Concept Defined, Brand Personality and Marketing Application.

Unit 5: Perception: Structure of the Study, Definition of Perception, Features of Perception, Components of Perception, Elements of Perception, Perception Process, Brand Perception, Consumer Perception Theory, Principles of Perception and Interpersonal Relationships, Effect of color on Perception, Factors Influencing Perception, Perceptual Organization, Concept of Perceptual Interpretation and Perceptual Distortion, Perception and Consumer Information Processing, Judgment of Perception and Marketing Strategy, and Influence of Perception on Consumer Buying Behavior.

Unit 6: Learning and Memory: Structure of the Study, Learning Defined, Elements of Learning, Types of Learning Behavior, Theories of Learning, General Characteristics of Learning, Memory Defined, Advertising/Marketing Application, Application of Information Processing Theory and Memory.

Unit 7: Attitude Formation and Change: Definition of Attitude, Components of Consumer Attitude, Attitude Function, Characteristics of Attitude, Understanding Consumer Attitude- Marketography, Sources of Attitude Development, Structural Models of Attitudes, Functional Theory of Attitude, Formation of Attitude, Theories of Attitude Development, Multi-attribute Attitude Models, Concept of Attitude-Behavior Consistency, Attitude Change Strategies, Concept of Elaboration Likelihood Model (ELM) and Celebrity Endorsements, Strategies for changing attitude and Intentions, and Consumer AttitudeResearch.

Unit 8: Family and Household: Structure of the Study, Family and Household Defined, Variables Affecting Family Purchase, Role of Family in Consumer Behavior, External Influence of Family on Consumer Behavior, Concept of Group in Family and Household, Traditional Family Life Cycle, Modern Family Life Cycle, Nature of Family Decision-Making and Purchase Roles, Marketing Strategy and Family Decision-Making.

Unit 9: Group Influence and Program Dynamics: Structure of the Study, Concept of Group, Classification of Group, Group Properties, Concept and Types of Reference Groups, Reasons for Accepting References- Group Influence, Nature of Reference Group Influence, Reference Group Marketing

Strategies, Reference Group Influence on the Consumption Process, Group Influence on Consumer Behavior.

Unit 10: Consumer Social Class and Its Influence: Structure of the Study, Social Class Defined, Nature of Social Class, Role of Social Class in Segmenting Market, Variables of Social Class Research, Determinants of Social Class, Consumer Behavior and Social Class Categorization, Properties of Social Class, Social Class Measurement, Problems of Social Class Measurement, Categorization of Different Classes of Marketing Strategy, Shopping Behavior of Group of Urban Woman, Working Class World, Socio-Economic and Social Psychological Reasons.

Unit 11: Cultural Influence: Structure of the Study, Concept and Nature of Culture, Basic Characteristics of Culture, Concept and Types of Cultural Values, Dimensions of Cultural Values, Cultural Change and Implications for Strategic, Consumer Rituals and Dimensions, Buying behavior of Rural Consumers, Culture Influences Consumer Behavior, Culture Influences on Buying Decisions, Cultural Differences in Decision-Making, Cultural Relevance to Marketing Decisions (practical application), Concept of Cultural Guide, Cross Cultural Understanding of ConsumerBehavior.

Unit 12: Adoption and Diffusion of Innovation: Structure of the Study, Concept of Innovation, The Innovation- Decision Process, Consumer Adoption Process, Definition of Diffusion of Innovation, Categories of Adopters, Process of Diffusion, The New Learning About Innovation, Factors Affecting the Spread of Innovation, Concept of Diffusion of Innovation through Product Life Cycle (PLC.)

Unit 13: Consumer Information Processing: Structure of the Study, Information Processing Defined, Stages of Information Processing, Methods of Gathering Consumer Information, Types of Consumer Search Activities, Stimulus determinants of Attention, Stimulus Categorization, Types of Information Sought, Sources of Information, Determinants of Benefits and Cost of Information Search, Measuring Consumer Characteristics Through Information Search, Information Evaluation Process, Information Search and Changing Environmental Circumstances, Marketing Strategies Based on Information Search Pattern Summary.

Unit 14: Consumer Decision-Making: Structure of the Study, Decision Defined, Level of Consumer Decision-Making, Models of Consumers' Decision-Making, Buyer Behavior- The Decision-Making Process, Concept of Decision-Making Over-Simplified, Seven Decision- Making Strategies, Two Marketing Theories, Stages of Consumer Decision-Making, Consumer Decision-Making and Relationship Marketing, Consumer Decision-Making: Thinking or Feeling?- Practical Application.

Unit 15: Organizational Buyer Behavior: Structure of the Study, Organizational Buying Defined,

Characteristics of Organizational Buyer, Patterns of Organizational Buying, Influences on Organizational Buyer Behavior, Organizational Buyer vs. Household Buyers, Influence ofSocial Sciences on Buyer Behavior, Organizations Factors Contributing to Political Behavior, Organizational Buyer's Motivation, Forms of Decision Solutions, Organizational Buyer's Decision Process, Organizational Buying vs. Consumer Buying, Industrial/Organizational Markets, Differences in Organizational Markets, Differences in Organizational transactions, Types of in/out Purchases, and Concept of Buying Center.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO301.1	**Remember**	Learn various factors influencing consumer behaviour.
CO301.2	**Apply**	Develop marketing strategies to enhance consumer value.
CO301.3	**Analyse**	Clear understanding of advertisement and promotional tools.
CO301.4	**Create**	Exhibit strategies for product and services.

Suggested Reading:

1. David L. and Albert J.D. (2002), Consumer Behavior, New Delhi: TataMcGraw-Hill.
2. Del I.H. Roger J.B. and Kenneth A.C. (2001), ConsumerBehavior.
3. Building Marketing Strategy, New York: McGraw-HillIrwin.
4. Edward, J. and William J. (1963): Fundamentals of Marketing, NewYork,
5. John A.H. and Jagdish N. S. (1969), Theory of Buyer Behavior, New York:Wiley.
6. Kotler, P. (2000); Marketing Management; New Delhi: Prentice-HallInc.

Semester	3	**Course Credits**	**4**	**Specialization**	Marketing Management
Course Code	OMBM-302			**Type**	Specialization Course
Course Title	Marketing Research (MR)				

Course Description:

Marketing Research is concerned primarily with the systematic gathering and analysis of primary and secondary information to significantly reduce uncertainty in major marketing problem areas. Exposure to problem definition, sampling, collecting, and interpreting data is experienced through discussion and case studies.

Course Objectives:

1) To acquaint students with management decision problem and marketingresearch problems and discuss the differences betweenthem;
2) To articulate the value in conducting exploratory research to define theresearch problem;
3) To show how to collect secondary data to refine a marketing researchproblem;
4) To plan, conduct, and interpret a focus group;and
5) To well equip students to write a marketing research report in differentstyles.

Course Outline:

Unit 1: Fundamentals of Market Research: The Marketing Environment**,** Market Research**,** The Need for Market Research**,** Applications of Market Research**,** Threats to Market Research**,** Market Information System (MIS)**,** Market Decision Support System (MDSS.)

Unit 2: Applications and Limitations of Market Research: Research Management**,** Research Activities in Large Companies**,** The Client/Researcher Interface**,** Researcher Obligations to a Client**, and** Limitations of Market Research.

Unit 3: Sampling: What is Sampling?**,**Reasons for Sampling**,** Estimating and Testing of Hypothesis**,** Definition and Managerial Objective of Sampling**,** Problems Associated with Sampling**,** Non-response Issues in Sampling**,** Factors Determining the Sample Size**,** Advantages of Sampling**,** The Sampling Process**,** Case Study.

Unit 4: Questionnaires and Design: Functions and Classification of a Questionnaire**,** Flow Chart for Questionnaire Design**,** Types of Questions**,** Choice of Survey Methods**,** Close Ended and Open-Ended

Questions, Sample Questionnaire.

Unit 5: Scaling Methodology: Types of Scales, The Concept of Attitude, Criteria for a Good Test, Forms of a Rating Scale, Selecting the Appropriate Scale to Use.

Unit 6: Primary and Secondary Data Collection: Quality of Data and Data Types, Data Types, Sources of Data, Communication Media, Formulating a Data Acquisition Plan, Basic Methods of Gathering Primary Data, Advantages and Disadvantages of Primary Data, Types of Secondary Data Collection and its Advantages and Disadvantages, Respondents and their Descriptors.

Unit7: Data Preparation and Processing: Traditional Approach of Data Processing, Principles of Coding, Editing, Tabulation

Unit 8: Data Analysis and Interpretation: Nature of Interpretation, Overview of Data Analysis Process, Statistics Associated with Frequency Distribution, Measures of Shape, Measures of Dispersion

Unit 9: Multivariate Analysis: Conjoint Analysis, Applications and Problems of Conjoint Analysis, Factor Analysis, Model, Application and Limitations of Factor Analysis, Cluster Analysis, Multi-Dimensional Scaling (MDS.)

Unit 10: Research Process and Design: Research Design, Formulating the Research Problem, Features of a Good Research Design, Classification of Research Design, Case Study.

Unit 11: New Techniques in Market Research: Types of Specialized Techniques, Research in Advertising Decisions, Motivation Research, Techniques of Motivational Research, Limitations of Motivational Research, Research for Pharmaceutical Products, The Source of Information for Pharma Products, Research for Industrial Products, Sources of Information for Industrial Products.

Unit 12: Market and Sales Analysis: Types of Scale Analysis, Areas of Sales Analysis, Methods for Measuring Market Potential, Sales Forecasting, Methods of Sales Forecasting.

Unit 13: New Product Developments and Test Marketing: New Product Development, New Product Development Process, Test Marketing, Uses of Test Marketing, Guidelines for Test Marketing, Advertising Research, Importance of Advertising, Need for Advertising Research, Media Research, Copy Testing, Examples of Advertising Research Studies in India, Evaluation of AdvertisingResearch.

Unit 14: Presentation of Research Findings: Types of Reports, Report Content, Principles of Report Writing, Various Graphic Representations and Ethical Issues, Managing Market Research.

Unit 15: Research in Service Segments: Research through Internet Era, Methods of Online

Research/Surveys, Disadvantages of Online Surveys, Ethical Issues in Marketing Research, and Responsibility towards a Client.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO302.1	**Understand**	Learn marketing problems through marketing research.
CO302.2	**Apply**	Plan marketing activities through research on focus group.
CO302.3	**Analyse**	Develop marketing problem and rectify it.
CO302.4	**Create**	Exhibit research report in different styles.

Suggested Reading:

1. Market Research made easy by DonDoman
2. Marketing Research by AreleneFink
3. Marketing Research Tool Boxby Edward FMcQuarrie
4. Marketing Research by Naresh KMalhotra
5. Marketing Research Tool Boxby Edward F MQuarrie
6. Survey Sampling by LeslieKish
7. Qualitative Marketing Research by David JCarson
8. Market Research by Paul NHague

Semester	3	**Course Credits**	**4**	**Specialization**	Marketing Management
Course Code	OMBM-303			**Type**	Specialization Course
Course Title	Sales and Distribution Management (SDM)				

Course Description:

The course encompasses familiarization of various concepts, models, scopes and details of sales and distribution channel management with organizational perspective and development of sales force in appreciation with the various channels of distribution.

Course Objectives:

1) To understand the different aspects of sales and distributionchannels;
2) To enrich and equip students with requisite knowledge of various concepts and modelsof sales and sales force;
3) To keep understanding of using technology to use and improve sales force and technology;
4) To focus on the different aspect of the distribution channels and itsimportance.

Course Outline:

Unit 1: Introduction to Sales Management: Evolution of Sales Management**,** Challenges to Sales Management**,** Definition and Objectives of Sales Management**,** Sales Management Process**,** Sales–AChallenging

Unit 2: Sales Planning and Budgeting: Definitions and Meaning of Sales Planning**,** Characteristics of Sales Planning**,** Merits of Sales Planning**,** Sales Planning Process**,** Management by Objectives (MBO)**,** SalesBudget.

Unit 3: Sales Forecasting: Sales Forecast**,** Factors in Sales Forecasting**,** Basic Concepts in Sales Forecasting**,** Approaches to Sales Forecasting**,** Techniques of Sales Forecasting**,** Evaluating Quantitative and Qualitative Techniques.

Unit 4: Sales Organization: Definitions of Sales Organization**,** Characteristics of Sales Organization**,** Need for Sales Organization**,** Structure of Sales Organization**,** Principles of Organizational Design**,** Evolution of Sales Department**,** Types of Sales Organizations.

Unit 5: Personal Selling Process and Approaches: Meaning of Personal Selling**,** Nature of Personal

Selling, Objectives of Personal Selling, Qualities of a Successful Salesperson, Personal selling and Relationship Management, Personal Selling Process, Sales Aids– Use of Technology in Sale, Trends in Personal Selling.

Unit 6: Recruiting & Selection of Sales Force: Definitions of Recruitment, Importance of Recruitment, The Recruitment Process, Selection Process, Salesmanship, Characteristics of a Good Salesman.

Unit 7: Training & Motivating Of The Sales Force: The Need of Sales Training, Merits of Sales Training, Effects of Absence of Training, Company Specific Knowledge, Product Knowledge, Industry and Market Trend Knowledge, Customers and Technology, Relationship Selling Process and Customer Education, Value Added Selling, Motivation Programs– Sales Meetings, Sales Contests, Sales Compensation.

Unit 8: Evaluation and Control of Sales Force: Role of Job Description in Objective Settings: Role of Sales Manager in Monitoring and Performance Evaluation, Building Better Team Working Skills, The 80:20 Principle, The Iceberg Principle.

Unit 9: Distribution Management: Understanding Distribution Channels, Scope of Distribution Channels, Functions of Distribution Channels, Physical DistributionManagement.

Unit 10: Marketing Channels: Definition of Marketing Channels: Importance of Marketing Channels, Various Forms of Marketing Channels, Channel Behaviour, and Functions of Marketing Channels.

Unit 11: Wholesaling: What is Wholesaling?, Benefits of Wholesaling, Functions of Wholesalers, Types of Wholesalers, Marketing Decisions– Trends in Wholesaling

Unit 12: Retailing: What is retailing?, A Retailer's Position in the Society, Retail Industry– Structure and Trends, Adoption of New Technology, Functions of Retailers, Types of Retailers, Indian vs. Global Scenario in Retailing.

Unit 13: Channel Management: Channel Selection Process and Criteria, Performance Appraisal of Channel Members, Channel Conflicts, Techniques to Resolve Channel Conflicts.

Unit 14: Supply Chain Management: Concept and Significance of Supply Chain Management, Components of Supply Chain Management, Order Processing, Material Handling, Transportation, Warehousing, Inventory Management, and Reverse Logistics.

Unit 15: Technology in Distribution: Bar coding, RFID, RFID Components, Future of RFID, Electronic Payment Systems.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO303.1	**Remember**	Learn basic aspects of sales and distribution channel.
CO303.2	**Understand**	Understand models of sales and sales force.
CO303.3	**Apply**	Implement technology to use and improve sales force technology.
CO303.4	**Analyse**	Exhibit importance of distribution channel.

Suggested Reading:

1. Jung H., Chen F.F., Jeong B., "Trends in Supply Chain Design and Management: Technologies and Methodologies", Springer,2007.
2. Kumar Sameer, "Connective Technologies in the Supply Chain", CRC Press,2007.
3. C. L. Tyagi, Arun Kumar (2004), "Sales Management", Atlantic Publishers &Dist., New Delhi,India.
4. Mukesh Trehan, RanjuTrehan (2006), "Advertising and sales management", V.K. Enterprises, New Delhi,India.
5. Matthew Schwartz (2006), "Fundamental of Sales Management for the Newly Appointed Sales Manager", Amacom, New York,USA.
6. Spiro, Stanton, Rich (2003), "*Management of a Sales Force",* Tata McGraw-Hill, New Delhi,India.
7. John T. Mentzer, Mark A. Moon (2005), "*Sales Forecasting Management: Ademand Management Approach*", Sage Publications, California,USA.
8. Ralph W. Jackson, Robert D. Hisrich (1996), "*Sales and Sales Management*", Prentice Hall, New Jersey,USA.

Semester	3	**Course Credits**	**4**	**Specialization**	Marketing Management
Course Code	OMBM-304			**Type**	Specialization Course
Course Title	Production and Brand Management (PBM)				

Course Description:

The objective of this course is to learn fundamentals of Product and Brand Management. The aim of Product Management Part is to make participants understand competition at product level as well as brand level.

Course Objectives:

1) To explain various concepts of product and brandmanagement;
2) To understand principles of branding, brand equity, and itscomponents;
3) To understand implications of planning, implementing and evaluating brandingstrategies.
4) To highlights various problems and challenges faced by organization regarding planning and implementation of product andbrands.

Course Outline:

Unit 1: Product Management - Basic Concepts: What is Product? Product Development, Marketing Organization, Factors Affecting Product Design, Product Mix & Line Decisions.

Unit 2: Developing Product Strategy: Linkage between Product Strategies with Strategic Management, Environmental Appraisal, Corporate Level Product Strategies, Business Level Product Strategies, Portfolio Analysis: BCG Matrix and GE-9Cell, Product Line Decisions and Extensions.

Unit 3: Product Life Cycle & Marketing Strategies: Introduction Phase, Growth Phase, Maturity Phase, Decline Phase, Types of Customers at Different Stages of PLC, Strategies at Different Stages of PLC, Product Life Cycle (PLC) Extension Strategies.

Unit 4: New Product Development: Market Potential & Sales Forecasting, New Product Development Process, Idea Generation & Screening, Concept Development, Test Marketing.

Unit 5: Test Marketing: Testing New Products, Concept Testing, Market Tests, Quasi Market Tests.

Unit 6: Product and Marketing Mix: Product and Pricing, Product and Channel Management, Product and Promotion.

Unit 7: Product Launch: Preparation for Launch, The Final Decisions, The Launch Process, New

Technologies for Product Launches.

Unit 8: Brands – Concepts: What is Brand? Commodities vs. Brands, The Role of Brands: Brand Image, Brand Equity, Aaker Model, Brands as Competitive Advantage.

Unit 9: Brand Positioning: Brand Knowledge, Identifying & Establishing Brand Position, Positioning Strategies, Process of Brand Positioning, Types of Branding, Brand Audit.

Unit 10: Brand Marketing: Criteria for choosing Brand Elements, Options &Tactics for Brand elements, Integrated Marketing Communication, Brand Associations.

Unit 11: Branding Strategies: Criteria for Choosing Brand Elements, Product Strategy, Pricing Strategy, Channel Strategy, Global Brand Strategy, Umbrella Brand Strategy, Line Brand Strategy, Private Labels.

Unit 12: Brand Equity: Measuring Brand Equity, Measuring Sources of Brand Equity, Growing & Sustaining BrandEquity.

Unit 13: Co-branding, Brand Extension and Multi-brand: What is Co-Branding?,The Logic of Co-branding, Brand Extension, Multi brand Policy, Managing Brands Over Time, Managing Brands Over Geographic Boundaries and Segments.

Unit 14: Winning Brands and Customer Satisfaction: Top Management Commitment to Establish Brands, Customer Satisfaction and Customer Delight, Internal Brand Building, Brand Awareness and Brand Recall, Customer Loyalty.

Unit 15: Brands and Product Innovation: Changing customer preferences, Lasting Impact of Brands, Product Innovation is Must to Sustain the Competition.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO304.1	**Remember**	Learn the basic concept of Product and Brand Management.
CO304.2	**Understand**	Understand the components of Branding and Brand Equity.
CO304.3	**Apply**	Implications of evaluating branding strategies.
CO304.4	**Analyse**	Develop the result by understanding problems and challenges.

Suggested Reading:

1. Kahn, Kenneth B. (2001). New Product Planning. New Delhi, India:Response Books Page 1-6,17-20
2. Mukherjee, Kaushik (2009) Product Management, New Delhi, India: PHI LearningPvt. Ltd
3. Lehmann, Donald R and Winer, Russell S, (1997) Product Management, Singapore, Irwin/McGraw-Hill
4. Majumdar, R, (1998), Product Management in India, New Delhi, India, Prentice Hall of India, Page 29-39,66-71
5. Kotler, Philip, (1999), Marketing Management, New Delhi, India, Prentice Hall of India, page 399-404.

Semester	3	**Course Credits**	**4**	**Specialization**	Marketing Management
Course Code	OMBM-305			**Type**	Specialization Course
Course Title	Retail Management (RM)				

Course Description:

To familiarize students with the decisions involved in running a retail firm and the concepts and principles for making those decisions. While the course focuses on the retail industry including retailers of consumer services, the content of this course is useful for students interested in working for companies that interface with retailers such as manufacturers of consumer products or for students with a general management or entrepreneurial interest.

Course Objectives:

1) Understand the impact of retailing on theeconomy,
2) Comprehend retailing's role in the society and conversely the society's impact onretailing;
3) See how retailing fits within the broader disciplines of business andmarketing;
4) Recognize and understand the operations-oriented policies, methods, and procedures used by successful retailers in today's global economy;and
5) Know the responsibilities of retail personnel in the numerous career positions available in the retail field.

Course Outline:

Unit 1: Introduction to the World of Retailing: Significance and Importance of Retailing**,** Scope of Retailing Management**,** Functions of the Retailer**,** Wheel of Retailing**,** Retailing in Indian Context.

Unit 2: Retail Formats and Theories: Theories of Retail Developments**,** The Retail Life Cycle**,** Classification of Retail Outlets**,** Franchising.

Unit 3: Understanding Retail Consumer and Retailing Research: Factors Influencing Retail Consumer**,** Retail Consumer Decision Making Process**,** Scope of Research in Retail Marketing Management.

Unit 4: Retailing Store Locations: Types of Locations**,** Factors Affecting Store Location**,** Steps Involved in Choosing a Retail Location**,** Prospective Retail Locations in India.

Unit 5: Introduction to the Retailing Mix: Products Selection and Mix**,** Pricing**,** Promotion and Communication Mix**,** Services Marketing Mix– Physical Evidence, People and Processes.

Unit 6: Retail Merchandising: Evolution of Merchandising, Factors Affecting Merchandising, Merchandise Planning, Merchandise Buying, Category Management, Merchandise Pricing, and Assessing Merchandise Performance.

Unit 7: Retail Management Strategies: Retail Marketing Strategy, Retail Branding Strategy, Retail Financial Strategy, National and International Expansion Strategies.

Unit 8: Retail Operations Management: Basics of Retail Store Operations, Store Administration & Premises Management, Managing Inventory and Display, Loss Prevention and Store Efficiency Management, Customer Relationship Management.

Unit 9: Retail Marketing Communication: Customer Relationship Management, Segmentation, Targeting and Positioning, Retail Image Creation, Retail Communication Mix, Using Integrated Marketing Communication for Retailing

Unit 10 Supply Chain Management: Importance of Supply Chain Management in retail, SCM as a process, Inventory and Warehousing management, Material handling and transportation, Innovations in SCM, Retail logistics

Unit 11: Retailing in Services Marketing: Nature And Characteristics Of Services Marketing, Retailing Of Major Services, Problems In Retailing Of Services

Unit 12: Retail management Information Systems: Universal Product Code Usage In Retailing, Role Of Information Technology In Retail, Limitations In Usage Of It In Retail, Applications of It, E-Commerce In Retailing, Payment Gateways And Systems

Unit 13: Issues in Retail Management: Legal Aspects In Retailing Management, Ethics In Retailing Management, Foreign Direct Investment In Retailing In India, Global Retailing Scenario

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO305.1	**Remember**	Learn the impact of retailing in economy.
CO305.2	**Understand**	Understand the impact of retailing through its impact on society.
CO305.3	**Apply**	Manage retailing discipline of business and marketing.
CO305.4	**Analyse**	Develop career position available in retail field.

Suggested Reading:

1. Mukherjee A., Patel N. (2005), "Foreign Direct Investment in Retail Sector, India", Academic Foundation,India.
2. Krafft M., Mantrala M.K. (2010), "Retailing in the 21st Century: Current and Future Trends",Springer.
3. Bhatia S.C. (2008), "Retail Management", Atlantic Publishers & Dist.
4. Swapna Pradhan, Retailing Management– Text and Cases, TataMcGraw-Hill
5. Kishore Biyani, It Happens Only in India- Story of BigBazar
6. Journal of Management and MarketingResearch

Semester	3	**Course Credits**	**4**	**Specialization**	Marketing Management
Course Code	OMBM-306			**Type**	Specialization Course
Course Title	Marketing of Services (MoS)				

Course Description:

Services' marketing introduces students to state-of-the-art research and practice in services marketing. This course emphasizes discussion of the field's most current services marketing concepts, principles, and theories. Application of services marketing concepts to actual business situations is through case analysis and outside projects.

Course Objectives:

1) To provide an in-depth appreciation and understanding of the unique challenges inherent in managing and delivering quality services. Participants will be introduced to and have the opportunity to work with tools and strategies that address thesechallenges;
2) To develop an understanding of the "state of the art" service managementthinking;
3) To promote a customer service-orientedmindset;
4) To highlight the problems and their solutions persisted in serviceindustry;
5) To analyze existence and gaps within various serviceindustries;

Course Outline:

Unit 1: Growth of Service Sector: Categories of Services, Classification of Services, Growth of Service Sector in Economy, Service Sector: The Moving Force of Indian Economy, Role of the Service Economy in Development, Service Sector Growth and Development Sustainability.

Unit 2: Issues in Marketing of Services: Marketing Mix, Extended Marketing Mix, People, Physical Evidence, Process.

Unit 3: Services Market Segmentation: Steps in Market Segmentation & Targeting for Services, Differentiation, Service Differentiation, Positioning, Positioning and Differentiation Strategy, Segmentation, Targeting, Differentiation and Positioning.

Unit 4: Demand Management and Productivity: Managing Capacity, Patterns and Determinants of Demand, Using Market Mix to Shape Demand Patterns, Demand & Capacity Imbalance, Strategies for Shifting Demand to Match Capacity, What is the Constraint on Capacity? Waiting Lines, Productivity,

Yield Management.

Unit 5: Customer Satisfaction & Service Quality: Service Quality, Determinants of Customer- Perceived Service Quality, Five Critical Aspects of Service Quality, The Distinction between Customer Satisfaction and Service Quality, Approaches to the Improvement of Service Quality, SERVQUAL, Service Quality Model (or) GAP model, Service Encounter, Three-Stage Model of Service Consumption, Touch Points, Moments of Truth, Role of HR & Internal Marketing, Service Failure– Recovery.

Unit 6: Tourism & Travel Services: Tourism Marketing, Types of Tourists, Different Forms of Tourism, Hotel Marketing, Reasons Behind Growth of Hotel Industry, Air Line Services Marketing, Travel Services Marketing, Railway Services Marketing, Growth in Tourism, Emerging Trends, Indian Travel and Tourism Industry.

Unit 7: Transportation and Logistics Services Marketing: Improving Effectiveness of Logistics Management, Transportation, Sound Inventory Management, Warehousing, Materials Handling & Packaging, Logistics Automation, Logistics Outsourcing, Multimode Freight Transportation Services Marketing, Courier Services Marketing, Marketing Logistic Services.

Unit 8: Marketing of Financial Services: Marketing of Insurance Services, Banking Services Marketing, Portfolio Management Services, Factoring Services, Mutual Funds Marketing.

Unit 9: IT and Communication Services: Information Technology Services Marketing, Telecom Services Marketing, Computer Networking Services.

Unit 10: Media Services: Entertainment Services, Newspaper Marketing, Broadcasting Services Marketing.

Unit 11: Health Care Services: Hospital Service Marketing, Hospital Marketing Mix, Medical Transcription Services.

Unit 12: Professional Services: Consultancy Service Marketing, Advertising Services Marketing, Marketing Research Services Marketing, Retail Services Marketing.

Unit 13: Education and Extension Services: Education Services Marketing, Training Services Marketing, Agriculture Services Marketing.

Unit 14: Public Services: Social Marketing, Religious Services Marketing.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO306.1	**Remember**	Learn opportunities to address challenges.
CO306.2	**Understand**	Understand the role of service industry in market growth.
CO306.3	**Apply**	Manage service management thinking by learning service aspects.
CO306.4	**Analyse**	Exhibit gaps within various service industries.
CO306.5	**Evaluate**	Implement service-oriented mind set.

Suggested Reading:

1. Services Marketing - Zeithaml, Bitner, Gremler and Pandit, TMGH, 4thEdition.
2. Service Marketing: Concepts, Applications and Cases– Rampal and Gupta, Galgotia, 2000
3. Saxena Rajan MM, (1997),Services Marketing, Tata McGraw-Hill, NewDelhi
4. Edward Hasted; Software That Sells: A Practical Guide to Developing and Marketing Your Software Project; John Wiley and Sons (2005); ISBN 10: 0764597833 ISBN 13:9780764597831
5. Influence of Social Media on Social Services: A Study of Youngistan, Piyush Kant Pyasi, Nitin Kr. Saxena, PranayKarnik

Semester-III Human Resource Management Specialization

Semester	3	**Course Credits**	**4**	**Specialization**	Human Resource Management
Course Code	OMBH-301			**Type**	Specialization Course
Course Title	Manpower Planning (MP)				

Course Description:

This course contains the systematic and through knowledge of manpower planning in organizations. The objective of this course is to help students understand the fundamental concepts of manpower planning. This course will enable students to make the systematic availability of manpower in the organization.

Course Objectives:

1) To understand the manpower requirement of anorganization;
2) To forecast the manpower requirement of theorganization;
3) To understand the impact of technology on manpower planning;and
4) To understand the benefits of planned manpowerplanning.

Course Outline:

Unit 1: Introduction of Manpower Planning & Resourcing: Definitions of Manpower Planning & Resourcing, Features of Human resources planning, Limitations of Human Resources Planning, Short-term and Long-term ManpowerPlanning.

Unit 2: Forecasting of Manpower Planning: Steps for the HR Forecasting Process, Challenges with Human Resource Planning, Sales Forecasting Techniques, Importance of Environmental, Political & Social and Technological.

Unit 3: HR/ Manpower Planning Scope: Scope of the Manpower Planning, Plans for all Functions of HR.

Unit 4: Key Influences of Manpower Planning: Key Influences of Manpower Planning, Levels of HRP, Implementing Human Resource Programme to Address Anticipated Problems, Impact of Technology on HRP.

Unit 5: Planning & Resourcing: Strategic Human Resource Management, Development of Action Plan, Needs for Systematic Manpower Planning, Recruitment, Process of Recruitment, Selection, Process of Selection, Evaluation of Training.

Unit 6: Developing a Talent Pool: Objectives of Career Planning, Career Stages, Career Development, Career Development Cycle, Model for Planned Self-Development, Succession Planning, Elements of Succession Planning, An Excellent Succession Plan.

Unit 7: Strategic Human Resource Planning: Making the HR Strategy Integral to an Organization, A Strategic Human Resource Planning Model, Setting the Strategic Direction, Designing the Human Resource Management System, Planning the Total Workforce, Generating the Required Human Resources, Investing in Human Resource Development and Performance, Assessing and Sustaining Organizational Competence and Performance.

Unit 8: Work Environment: Leadership, Difference between a Leader and a Manager, Characteristics of Leadership, Functions of Leader, Communication, Types of Communication, Industrial Health, Importance of Industrial Health, Statutory Provisions for Health, Employment Safety, Significance of Industrial Safety.

Unit 9: Organizational Structure and Effectiveness: Concept of Organization Structure, Components of Organization Structure, Types of Organization Structure, Dimensions of Organization Structure, Organizational Design, and Organizational Effectiveness.

Unit 10: Additional Resources: Managing Talent, Influencing Factor, Developing Talent Pool, Attracting External Talent, Entry Interviews, Exit Interviews, Attraction Strategies, Need for New Strategies, Recruitment Strategies, Retention Strategies, Component of Retention Strategies.

Unit 11: Demand and Supply Forecasting: Methods and Techniques: Manpower Forecasts, Issues and Objectives, Conceptual Issues, Objectives of Manpower Forecasts, Types of Manpower Forecasts; Micro and Macro Forecasting, Macro Forecasting, Micro Forecasting, Manpower Forecasting Techniques, Manpower Supply Forecasting, Supply Forecasting Technique, Database for Manpower Forecasting.

Unit 12: Emerging Trends and Issues in HR: New HR Roles and Competencies, HR's Role as a Strategic Partner, The HR Scorecard Approach, HR and Six Sigma Practices, Steps for Six Sigma, HR and Innovation and Creativity, HR and BPO and HRO.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO301.1	**Remember**	Understand manpower requirement.
CO301.2	**Understand**	Understand requirement of manpower planning.

CO301.3	**Analyse**	Implement manpower requirement.
CO301.4	**Create**	Train on skills development through planning and execution.

Suggested Reading:

1. Udai Pareek, and TV Rao, Designing and Managing Human Resource System, Oxford and IBH Publishing Co. NewDelhi.
2. Verma P., Personal Management in Indian Organization, Oxford and IBHPublishing Co., NewDelhi.
3. Singh, P.N.,Developing and Managing Human Resources, Suchandra Publications, Bombay1992.
4. Sikula, A.F., and Mckenna, J.F., The Management of Human Resources, JohnWiley, New York, 1984.
5. ArgyrisC.Personality and Organization, Harper & Row, New York,1957
6. Basu M.K, Managerial Performance Appraisal in India, Vision Books, New Delhi,1998.
7. Bhattacharyya.K., Human Resource Development, IIMS1997
8. Fombrum, C., Noel, MT, and Marry,A.D., Strategic Human Resource Management,John Wiley, New York,1984.

Semester	3	**Course Credits**	**4**	**Specialization**	Human Resource Management
Course Code	OMBH-302			**Type**	Specialization Course
Course Title	Compensation Management (CM)				

Course Description:

This course is designed to promote the understanding of issues related to the compensation or rewarding human resources in the corporate sector, public services, and other forms of organizations and to impart skills in designing analyzing and restructuring reward management systems, policies, and strategies.

Course Objectives:

1) To understand the fundamental concept ofcompensation;
2) To understand the different types of incentive system in an organization;and
3) To impart the skills in designing the payroll for employees of anorganization.

Course Outline:

Unit 1: Compensation – Concepts and Context: Evolution of Compensation, Components of Compensation System, Types of Compensation Plans, Need of Compensation Management, Essentials of an Equitable and Ideal Compensation System, Terminology, Importance of Compensation Management.

Unit 2: Compensation Designing and Evaluation: Compensation Tools, Designing a Compensation System, Evaluation of Compensation, The Legal Environment and Pay System Governance.

Unit 3: Job Analysis: Uses of Job Analysis, History of Job Analysis, Approaches to Analyzing Jobs, Job Analysis Methods, Job Descriptions.

Unit 4: Job Evaluation: Objectives of Job Evaluation, Background of Job Evaluation, Prevalence of Job Evaluation, Job Evaluation Process, Types of Job Evaluation Plan, Job Evaluation Methods, Administration of Job Evaluation.

Unit 5: Payroll Management: Forms for Maintaining Database of Employees, Components of Payroll, Payroll Management Processes, Payroll Outsourcing, Significance/Benefits of Payroll Outsourcing, Why Payroll Outsourcing?

Unit 6: Performance Management: Objectives of Performance Management, Evolution of Performance Management, Effective Performance Management System, Need of Performance Management System, Performance Appraisal & Performance Management, Benefits of Performance Management System, Pre-

requisites of Performance Management System, Factors Affecting Performance Management System, Performance Management & Rewards Practices.

Unit 7: Performance Appraisal: Techniques of Performance Appraisal, Purpose of Performance Appraisal, Challenges of Performance Appraisal, Pre-requisites of Effective & Successful Performance, Process of Performance Appraisal, Approaches to Performance Appraisal, Performance Review, Evaluation of Performance Appraisal: Scorecard, Self- Appraisal, How to Write a Performance Appraisal, Linking Compensation toPerformance.

Unit 8: Reward Systems: Features of Reward, Criteria for Rewarding the Performance, Designing a Reward System and Recognition Solution, Types of Rewards, Reward Management Process, Reward Strategy, Reward Structure.

Unit 9: Incentives & Performance Linked Pay System: Classification of Incentives, Pre- requisites of Effective Incentive Scheme, Types of Incentive Schemes, Employee Incentive Program, Group Incentive Plans, Incentive Plans for In-direct Workers, Incentive Plans for Blue- Collar Workers, Incentive Plans for White-Collar Workers, Incentives for Management, Performance Linked Pay (PLP), Types of PLP, How to Start Employee Incentive Program, Steps in Designing Incentive Schemes.

Unit 10: Wages, Allowances & Benefits: Types of Wages, Allowances, Types of Allowances, Fringe Benefits, Objectives of Fringe Benefits, Types of Fringe Benefits, Flexible Benefits, 401k Compensation System.

Unit 11: Bonus, Profit-Sharing &Esop: The Payment of Bonus Act, 1965, Profit-Sharing, Gain-sharing, Difference Between Profit-Sharing & Gain-Sharing, Employee Stock OptionPlan.

Unit 12: Employee Retention & Attrition: Why do Employees Leave?,Need & Importance of Employee Retention, Employee Retention Strategies, Role of Motivation in Employee Retention, Role of HR in Employee Retention, Role of Team Leaders and Supervisors in Employee Retention, Employee Engagement and Employee Retention, Challenges in Employee Retention, Howto Retainthe Best Employee, Qualitiesinan Organization for a Better Employee Retention, After Effects of a Poor Employee Retention, Attrition, Employee Attrition in India, Signs of Employee Attrition.

Unit 13: Compensation & IT Sector: Innovative Compensation Packages, ESOP's, Compensation Packages in BPO & KPO, Compensation Packages in Software & Hardware Services, Entry Level Compensation Packages, Management Level Compensation Packages, Low compensation and Attrition, Compensation as a HygieneFactor.

Unit 14: Recent Trends in Compensation: Principles of New Trends in Compensation, New Trends in

Compensation**,** Future of Compensation Management.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO302.1	**Remember**	Learn the incentive system in an organization.
CO302.2	**Understand**	Understand and learn basic fundamentals of compensation.
CO302.3	**Apply**	Apply recent trends of compensation.
CO302.4	**Create**	Impart skills to design the payroll of employees.

Suggested Reading:

1. Compensation & Reward Management-B.D.Singh, 1stEdition
2. Strategic Compensation Management-Markocchio-Pearson Education-3rdEdition
3. Compensation Management in Knowledge Based World-Richard Hendersen, Pearson Education,10thedition
4. Compensation Management-TapomayDev- 1st Edition-ExcelPublications
5. Personnel Management : C.B.Mamoria
6. Cost Accounting Methods and Problems :B.K.Bhar
7. K. Ashwathappa , Human Resource Management, Tata McGraw-Hill, 4thEdition

Semester	3	**Course Credits**	**4**	**Specialization**	Human Resource Management
Course Code	OMBH-303			**Type**	Specialization Course
Course Title	Performance & Potential Management (PPM)				

Course Description:

This course contains the detail understanding of the concept of performance appraisal. This course will create understanding among students about how to evaluate the performance of the employees in an organization.

Course Objectives:

1) To provide students with an understanding about the concept of performance appraisal; and
2) To facilitate the learning related to performance appraisal, planning, and goal setting.

Course Outline:

Unit 1: Performance Management System: Performance Management and Performance Appraisals, Differentiating Performance and Potential, Performance Planning, Performance Coaching, Career Planning, Traditional Performance Management, Modern Performance Management Systems, Five Components of Performance Management, Pre-requisites for PM System Implementation, Key benefits of Performance Management, Performance Management Process Overview, Succession and Separation Planning, Compensation Management, Separation Planning.

Unit 2: Performance Planning and Goal Setting: Essentials/Pre-Requisites of Performance Planning, Performance Planning Cycle, Performance Management Cycle, How to Set Goals/Goal Setting Procedure, Important Steps to Goal Setting, Management by Objectives (MBO), Cultural Issues, Leadership and Organizational Culture, Performance and Communication, Performance Management Plan, Individual and Team Goals Setting, Linkage of Individual and Team Goals to Organizational Goals, Advantages of Goal Setting, Pitfalls to Avoid in GoalSetting.

Unit 3: Performance Appraisals: Understanding the Importance of Appraisals, Objectives of Appraisals, Performance Appraisal System, Performance Appraisal Process and Model, Performance Appraisal Methods, Successful Performance Assessments, Purpose of Performance Appraisal, Role and Benefits of Performance Appraisal, Frequency of Appraisals, Performance Appraisal Model, Approaches and Ethics of Performance Appraisal, Design of Appraisal System, Performance Appraisal and Total Quality

Management (TQM), Documentation of Appraisal System, Good practices of Appraisal System.

Unit 4: Performance and Training: Performance Appraisal and Creation of Training Needs, Evaluating Training Results Through Continuous Feedback, Improving Performance through Feedback, 360 Degree Evaluation Method, Improving Training Impact Through Effective Presentations.

Unit 5: Performance Feedback, Coaching and Counselling: Understanding the Importance of Appraisals, Performance Appraisal- A Training need Assessment Tool, Developmental Objectives of Performance Appraisals, Dealing with Poor Performance, Three-Step process of Addressing and Resolving Poor Performance, Counselling for Better Performance, Formula for Maximizing Performance, The Role of the Supervisor, Supervisory Tools: Feedback, Coaching and Counselling, The Counselling Process, Feedback Mechanism in an Organization.

Unit 6: Performance Parameters and Key Principles in Human Performance Improvement: Performance Parameters, Key Principles in Human Performance Improvement, Meta-Talk, Attitudes/Habits, Skills/Ideas, Passion/Speed, Management of Performance Through Appraisal, Process of Performance Appraisal, Performance Appraisal and Creation of Training Needs, Importance of Training, Future Oriented Appraisals, PerformanceInterview.

Unit 7: Current Trends in Performance Management System: Compensation for Performance, Promotions, Assessment– Self and Organization, Reducing Staff Turnover Through Exit– Interviews, Need for Improving Organizational Charts, Performance Analysis in Changing Business Scenario, 360 Degree Assessment Concept, FAQ about 360 Degree Feedback and Its Answers, Myers– Briggs Type Indicator, Assessment Center, System of Pay for Performance, Team Compensation, Pay Based Training and ProblemSolving.

Unit 8: Performance Competencies: Overview of Performance Management Framework, Performance Planning and Goal Setting, Performance Review Cycle, Feedback, Coaching and Development Planning, Competencies, Assessment and Final Rating, Making the Performance Review Effective, Performance Culture, Applicability of PMS, Formats.

Unit 9: Self-Motivation for Managing Super Self Performance: Self Awareness, Managing to Motivate, Managing the Self-Performance, Global Markets, My Strength, Self or Organization, Five Types of Competency Characteristics, Causal Relationships, Criterion Reference, Competency Models, Competency Mapping, Tips for Conducting Competency Assessment.

Unit 10: Performance Appraisal Format and 360 Degree Sample Report: KRAs.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO303.1	**Remember**	Learn performance appraisal, planning, and goal setting.
CO303.2	**Understand**	Understand basic concepts of performance appraisal.
CO303.3	**Analyse**	Enhance job opportunities through understanding performance management.

Suggested Reading:

1. K. Ashwathappa, Human Resource Management, TataMacGraw-Hill,4th Edition
2. T. V. Rao, Performance Management, Response Books,1st Edition
3. Personnel Management byEdwinFlipp
4. Personnel Management byC.B.Mamoria

Semester	3	**Course Credits**	**4**	**Specialization**	Human Resource Management
Course Code	OMBH-304			**Type**	Specialization Course
Course Title	Labour Laws (LL)				

Course Description:

This course contains the detail knowledge about different labor laws included in the labor legislation. This course is designed to give through learning and deep understanding of labour laws and implementation of this act in the industry.

Course Objectives:

1) To make the students understand the rationale behind labourlaws;
2) To equip students with the important provisions of various labour laws;and
3) To give students an insight into the implementation of labourlaws.

Course Outline:

Unit 1: The Industrial Disputes Act, 1947 (Part 1): Authorities under the Act, Notice of Change, Grievance Settlement Authority, Reference of Disputes to Board, Court or Tribunals, Procedures, Powers and Duties of the Board, Court, Tribunals, Strikes and Lock-Outs Schedules.

Unit 2: The Industrial Disputes Act, 1947 (Part 2): Lay-off and Retrenchment, Special Provisions Relating to Lay-Off, Retrenchment and Closure in Certain Establishment, Unfair Labour Practices and The Fifth Schedule, Penalties, and Miscellaneous.

Unit 3: The Industrial Employment (Standing Orders) Act, 1946: Certification of standing orders, Subsistence allowance, Miscellaneous, Schedule, Model Standing Orders

Unit 4: The Contract Labor (Regulation & Abolition) Act, 1970: The Advisory Board, Registration of establishments employing contract labour, Licensing of contractors, Welfare and Health of contract labour, Penalties and Procedure, Miscellaneous

Unit 5: The Factories Act, 1948: Definitions, Licensing, Occupier, Inspecting staff, Health, Safety, Welfare, Working Hours for Adults and Employment of Young Persons, Annual Leave with Wages, Special Provisions, Penalties and Procedure, and Supplemental.

Unit 6: The Mines Act, 1952: Inspecting Staff, Committees and Management of Mines, Health and Safety, Working Hours, Leave with Wages, Special Provisions, Penalties and Procedure, and

Miscellaneous.

Unit 7: Plantations Labor Act, 1951: Registration of Plantations, Inspecting Staff, Provisions as to Health and Welfare, Hours and Limitation of Employment, Leave with Wages, Accidents, Penalties and Procedure, andMiscellaneous.

Unit 8: The Motor Transport Workers Act, 1961: Definitions and Registration, Inspecting Staff, Welfare and Health, Hours and Limitations of Employment, Employment of Young Persons, Wages and leave, Penalties and Procedure, and Miscellaneous.

Unit 9: The Child Labor (Prohibition and Regulation) Act, 1986 and The Children (Pledging Of Labor) Act, 1933: Prohibition of Employment and Regulation of Conditions of Work, Miscellaneous, and Pledging of Child Labor.

Unit 10: The Payment of Wages Act, 1936: About Payment of Wages, Wage Period, How Wages are Paid, Authorized Deductions, Records, Inspector, Settlement of Claims, Appeal, Penalty, and Other Provisions.

Unit 11: The Minimum Wages Act 1948: Fixing and Revising Minimum Wages, The Advisory Boards, Calculation of Wages, Registers and Records, Inspectors, Claims, Penalties, and Other Provisions.

Unit 12: The Payment of Bonus Act, 1965: Computations, Eligibility and Disqualification for Bonus, Payment of Minimum and Maximum Bonus, Set-On and Set-Off, Deductions and Time Limit for Payment of Bonus, Other Provisions, and Penalties.

Unit 13: The Payment of Gratuity Act, 1972: Continuous Service and Controlling Authority, Calculation of Gratuity, Inspectors and Penalties.

Unit 14: The Employees' Provident Funds and Miscellaneous Provisions Act, 1952: EPF Scheme, EFP Scheme, EDLI Scheme, EPF Appellate Tribunal, Inspectors and Penalties, Special Provisions, and Schedules.

Unit 15: The Employees' State Insurance Act, 1948: Corporation, Standing Committee and Medical Benefit Council, Finance and Audit, Contributions, Benefits, General, Transitory Provisions, Adjudication of Disputes and Claims, Penalties, and Miscellaneous.

Unit 16: The Employees' Compensation Act, 1923: Compensation, Accidents, Other Provisions, Penalties and Procedure.

Unit 17: The Maternity Benefit Act, 1961: Prohibitions, Benefits and Leave, Inspectors, Other

Provisions, and Penalties.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO304.1	**Remember**	Learn various provisions of labour laws.
CO304.2	**Understand**	Understand the rationale behind labour laws.
CO304.3	**Analyse**	Analyse the benefits of laws in an organization.
CO304.4	**Apply**	Develop and implement activities of labour laws by learning modules.

Suggested Reading:

1. The Maternity Benefit Act, 1961, BareAct
2. Current LaborReports
3. The Employee's Compensation Act, 1923, BareAct
4. The Payment of Wages Act, 1936 BareAct

Semester	3	**Course Credits**	**4**	**Specialization**	Human Resource Management
Course Code	OMBH-305			**Type**	Specialization Course
Course Title	Training & Development (T&D)				

Course Description:

This course contains the detailed knowledge of the different training methods and training program. This course will enable the learner to know how to plan and implement the training program into an industry.

Course Objectives:

1) To make students understand training needanalysis;
2) To help students design training programmes;and
3) To make students understand and design the trainingmethods.

Course Outline:

Unit 1: Introduction to Training and Development: Objectives of Training, Need for Industrial Training, Need for Training at the Individual, Operational or Organizational Levels, Importance of Training, Meaning and Distinction: Education, Training and Development, Challenges to HRD, Training Requires Professionalism.

Unit 2: Training Need Assessments: What is Need Assessments? Why is Need Assessment Necessary?,The Training Needs Assessment Process, Methods of Training Need Assessments, Four steps of Conducting a Need Assessment.

Unit 3: Training and Learning: Definitions of Learning, Principles of Learning, Difference Between Training and Learning, Learning Theories and Training, Learning Process, Learning Cycle.

Unit 4: Training Design and Development: Principles of Training Design, Design Process, Determine the Structure, Models of Training Design, Determining the Training Content.

Unit 5: Implementation: Implementation of In-House Program, Mobilizing the Resources, Infrastructure and Logistic Management, Selection and Training of Trainers, Executing the Program.

Unit 6: Training Delivery Methods: Training Delivery Media, Uses of Media, Selecting a Training Method, Overview of Training Methods/Techniques, Training Methods and Learning Situations, Classifications of Training Methods and Learning Situations.

Unit 7: Effectiveness and Evaluation of Training: Types of Evaluation, Process of Evaluation, How to apply the Model, Considerations.

Unit 8: Career Planning and Employee Development: Career Planning, Career Development Process, Methods for Career Development, Approaches to Employee Development.

Unit 9: New Areas in Training and Development: Innovation in Training, Computer Based Training, Modular Program, Action Learning, Competency Based Training, Neuro Linguistic Program.

Unit 10: Organization of Training: Facilitation Skills, ILO on Training in New Skills.

Unit 11: E-Learning: Types of e-Learning, Significance of e-Learning, Advantages and Disadvantages, Teacher student Interaction, Train the e-Trainer, Classroom Learning and e- Learning Differences, Criticism of e-Learning.

Unit 12: Employee Counselling: Objectives and Goals, Counselling Process, Approaches to Counselling, Types of Counselling, Mentoring, Process of Mentoring, Classification of Mentoring Programmes, Ethical Issues in Mentoring, Possible Pitfalls.

Unit 13: Train the Trainer: Trainer Competencies, Technical Competencies, Attitudes, Skill that Empower, Important Areas of Knowledge, Recruitment and Selection of Trainers, Training the Trainers.

Unit 14: Concept of Management Development: Need & Importance of Management Development Program, Components of Management Development Programme.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO305.1	**Remember**	Remember the objectives of training.
CO305.2	**Understand**	Understand the purpose of training for better growth in an organization.
CO305.3	**Analyse**	Exhibit training program by learning modules.
CO305.4	**Apply**	Implement methods of training by understanding.
CO305.5	**Evaluate**	Develop skills through training.

Suggested Reading:

1. Rao T.V. (1985). Developing Human Resources. In Leonard D Goodstein and J.William

Pfeiffer(eds) The 1985 Annual UniversityAssociates

2. KalekarB.D.(1993) Human Resource Development. Northern book Centre, New Delhi, p.29
3. Glossary of Training Terms,1981. London:HMSO
4. R.J.Campbell," HR development Strategies," in developing Human Resources, ed.K.N.Wexley, Washington, DC:BNA Books, 1991:5-1-5-34; J.K. Berry, " Linking Management Development to Business Strategy," Training and Development Journal, August20-22
5. Kolb D.A, Learning Style Inventory: Technical Marvel,Mc BesEistain.
6. PareekUdai. Understanding Organization Behavior, Oxford University Press, New Delhi(2004)
7. Jinks Michael, Training, Bltandford Press,Dorset(1979)
8. Morgan Clifford T, Richard A King, Nancy M Robinson, Introduction to Psychology, Tata McGraw-Hill, New Delhi(1979) p.149

Semester	3	**Course Credits**	**4**	**Specialization**	Human Resource Management
Course Code	OMBH-306			**Type**	Specialization Course
Course Title	Organizational Design, Development and Change (ODDC)				

Course Description:

This course contains the detailed understanding about an organization and its structure. This course will enable the learner to know the different structure of an organization. This course also contains the detail understanding about the organizational developmental theories, and the different intervention module for organizational development.

Course Objectives:

1) To develop an understanding of the nature, functioning, and design oforganization;
2) To be able to understand the theories and practice relating to the processesof organization development and change;and
3) To develop an insight and competence in diagnostic and intervention processes and skills for initiating and facilitating organizational processes and changes in anorganization.

Course Outline:

Unit 1: Understanding Organizations: What is an Organization?, Importance of Organization, Approaches to Understand Organizations, Open Systems Approach, Organizational Configuration Approach, How Does an Organization Create Value?, Fundamentals of Organizational Theory, Design and Change, Organizational Theory, Organizational Structure, Organizational Culture, Organizational Design and Change.

Unit 2: Organizational Stakeholders and Managers: Organizational Stakeholders, Inside Stakeholders, Outside Stakeholders, Organizational Effectiveness: Satisfying Stakeholders' Goals and Interests, Competing Goals, Allocating Rewards, Top Managers and Organizational Authority, The Chief Executive Officer, The Top Management Team, OtherManagers.

Unit 3: Ethics in Organizations: An Agency Theory Perspective**,** The Moral Hazard Problem**,** Solving the Agency Problem**,** Top Managers and Organizational Ethics**,** Sources of Organizational Ethics**,** Why do Ethical Rules Develop? Why Does Unethical Behavior Occur?**,**Creating an Ethical Organizational.

Unit 4: Organizing in a Changing Environment: Understanding Organizational Environment**,** The

Specific Environment, The General Environment, Sources of Uncertainty in the Organizational Environment, Environmental Complexity, Environmental Dynamism, Environmental Richness, Resource Dependency Theory, Inter-organizational Strategies for Managing Resource Dependencies, Strategies for Managing Symbiotic Resource Interdependencies, Developing a Good Reputation, Cooperation, Strategic Alliances, Merger and Takeover, Strategies for Managing Competitive Resource Interdependencies, Collusion and Cartels, Third-Party Linkage Mechanisms, Strategic Alliances, Merger and Takeover, Transaction Cost Theory, Sources of Transaction Costs, Transaction Costs and Linkage Mechanisms, Bureaucratic Costs, Using Transaction Cost Theory to Choose an Inter OrganizationalStrategy.

Unit 5: Understanding Organizational Designs: Organizational Roles, Sub-Units: Functions and Divisions, Vertical and Horizontal Differentiation, Organizational Design Challenges, Balancing Differentiation and Integration, Integration and Integrating Mechanisms, Differentiation vs. Integration, Balancing Centralization and Decentralization, Centralization vs. Decentralization of Authority, Balancing Standardization and Mutual Adjustment; Formalization: Written Rules, Socialization: Understood Norms, Standardization vs. Mutual Adjustment, Mechanist and Organic Organizational Structures, Mechanist Structures, Organic Structures, The Contingency Approach to OrganizationalDesign.

Unit 6: Understanding Organizational Structure: Authority: How and Why Vertical Differentiation Occurs, Emergency of the Hierarchy, Size and Height Limitations, Problems with Tall Hierarchies; Ideal Numbers of Hierarchical Levels: The Minimum Chain of Command, Span of Control, Control: Factors Affecting the Shape of the Hierarchy, Horizontal Differentiation, Centralization, Standardization, Functional Structure, Advantages of a Functional Structure, Control Problems in a Functional Structure, Solving Control Problems in a Functional Structure; Divisional Structure 1: Three Kinds of Product Structure, Product Division Structure, Multi-division Structure, Product Team Structure; Divisional Structure 2: Geographic Structure; Divisional Structure 3: Market Structure, Matrix Structure, Other Forms of Organizational Structure, Bureaucracy, Hybrid Structure, Network Structure, Boundary Less Organization.

Unit 7: Concept of Change: Meaning of Organizational Change, Targets of Organizational Change, Nature of Organizational Change, Factors Affecting the Change, Planned Change Types of Planned Change, Levels of Change, Change Cycle, Creating Change.

Unit 8: Organizational Resistance to Change: Reactions to Change, Factors Leading to Resistance to Change, Consequences of Resistance to Change, Strategies for Introducing Planned Change, Techniques to Manage Resistance DuringChange.

Unit 9: Organizational Change and Change Agents: Change Agent: Definition and Meaning, Types of

Change Agents, Key Roles in Organizational Change, Difference between Internal and External Change Agent, Characteristics of Good Change Agent, Timing the Entry of the Consultant/Agent in the Organization, What can a Change Agent Change?

Unit 10: Strategic Management of Change: Strategic Management of Change, Sequential Process of Planned Change, Change Process as a Problem Solving and Problem Finding Approach, Approaches to Managing Organizational Change, Change Management: Skill and Abilities Requirements, Change Management: Four Basic Strategies, Factors in Selecting Change Strategy, Change Strategy Formulation and Implementation, Evaluation in the Strategic Change Process, Guidelines to Management of EffectiveChange.

Unit 11: Understanding Organizational Diagnosis: Meaning of Diagnosis, Concept of Organizational Diagnosis, Phases in Diagnosis, Methodological Planning, Collection of Data

Unit 12: Organizational Development: Overview of the Field of Organizational Development, Organizational Development as a Distinctive Consulting Method, Values, Beliefs and Assumptions in Organizational Development, Managing the OD Process, The Action Component: OD Interventions, Program Management Component, How to Avoid Pitfalls in Organizational Change Programs.

Unit 13: Organizational Development Interventions Techniques – 1: Understanding OD Interventions, Guidelines for Choosing and Sequencing Interventions, Types of Interventions Based on Causal Mechanisms, Outcomes of OD Interventions, Classifying OD Interventions.

Unit 14: Organizational Development Interventions Techniques– 2: Sensitivity Training, Role Analysis Technique, Role Negotiation Technique, Force Field Analysis, Process Consultation, Organization Mirror Interventions, Survey Feedback, Grid OD

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO306.1	**Remember**	Learn the basic aspects of Organizational design and change.
CO306.2	**Understand**	Differentiate theory and practice related to development and change.
CO306.3	**Apply**	Implement skills for organizational processes and change.

Suggested Reading:

1. Pathak Harsh (2011) Organizational Change, Pearson,India
2. Jones Gareth R. and Matthew Mary (2011) Organizational Theory, Design, and Change, Pearson,India
3. Robbins Stephen P. and Sangh Seema, OrganizationalBehavior
4. French Wendell L. and Bell Cecil H. Jr, Organizational Development,PHI

Semester-III Financial Management Specialization

Semester	3	**Course Credits**	**4**	**Specialization**	Financial Management
Course Code	OMBF-301			**Type**	Specialization Course
Course Title	Capital & Financial Markets (CFM)				

Course Description:

This course will be useful for students to know about the concept of financial market and its use in an organization. A financial market brings buyers and sellers together to trade in financial assets. Money markets are used by the government and corporate entities to borrow and lend in the short-term. Capital markets are used for long-term assets, which have maturities of greater than oneyear.

Course Objectives:

1) To make students familiar with the analytical tools used for financialanalysis;
2) To understand the accountingaspects;
3) To get acquainted with the concept of theIFRS;
4) To have knowledge of convergence of Indian Accounting Standards with the IFRS;and
5) To know the comparative analysis of Indian GAAP and theIFRS.

Course Outline:

Unit 1: Financial Institutions: Different Groups of Institutions, Reserve Bank of India, Commercial Banks, Development Financial Institutions, Insurance Institutions, and Other Financial Institutions.

Unit 2: Securities and Exchange Board of India: Overview of the Securities and Exchange Board of India Act, 1992, Powers and Functions of SEBI, Investigations by SEBI, Registration Certificate by SEBI, Penalties and Adjudication, Securities Appellate Tribunals, and Private Placement to Qualified Institutional Buyers.

Unit 3: Non-Banking Financial Companies: Functions of Non-Banking Financial Companies, Role of Different Non-Banking Financial Companies, Regulations Regarding Non-Banking Financial Companies, Causes for Failure of NBFCs.

Unit 4: Venture Capital: Functions of Venture Capital, Modes of Finance by Venture Capital, of SEBI in Venture Capital, and Venture Capital Scenario in India.

Unit 5: Stock Exchanges in India: Functions of Stock Exchange, Bombay Stock Exchange, National Stock Exchange, Trading in Stock Exchange, and Depositories Services.

Unit 6: Stock Markets Indicators and Interest Rates: Objectives of Indices, Types of Indices, Sensex, Nifty, Interest Rates.

Unit 7: Capital Markets: Functions of Capital Market, Players in Capital Market, Role of SEBI in Capital Market, Investment Instruments in Capital Market, Modes of Raising Finance in Capital Market.

Unit 8: Money Markets: Functions of Money Market, Role of RBI in Money Market, Players in Money Market, and Instruments Used in MoneyMarket.

Unit 9: Merchant Banking: Evolution of Merchant Banking, Role of Merchant Banker in Capital Market, SEBI Guidelines Regarding Merchant Banker.

Unit 10: Mutual Funds: The Evolution of Mutual Funds, The Concept of Mutual Fund, Types of Mutual Fund Schemes, Net Asset Value, Mutual Funds Functioning inIndia.

Unit 11: Trading In Derivatives: Intra-day Trading, Trading in Futures**,** Trading in Options, Risk in Derivatives Trading.

Unit 12: Credit Rating: Need for Credit Rating, Parameters of Credit Rating, Credit Rating Agencies**,** Credit Rating Symbols, Country Risk Rating.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO301.1	**Remember**	Learn the tools for financial analysis.
CO301.2	**Understand**	Enhance comparative analysis of Indian GAAP and the IFRS
CO301.3	**Analyse**	Compare accounting aspects with financial markets.
CO301.4	**Apply**	Learn Indian Accounting Standards to implement them in corporate life.

Suggested Reading:

1. Derivatives Market: Robert LMcDonald.
2. How to Save Income Tax Through Tax Planning by R N Lakhotia and SubhasLakhotia

Semester	3	**Course Credits**	**4**	**Specialization**	Financial Management
Course Code	OMBF-302			**Type**	Specialization Course
Course Title	Financial Institutions and Banking (FIB)				

Course Description:

This course is structured to help students master the established management principles and to confront the perplexing issues of risk, regulation, technology, and competition, that bankers and other financial-service managers see as their greatest challenges for the present and future. Students will be exposed to key trends and changes in the financial services sector. In addition, student will learn about various career opportunities in the banking and financial institution field. With this relevant information, students will be able to grasp the rapid changes that are happening in this course area and the real world. Content and discussion will cover both domestic and international bankingactivities.

Course Objectives:

1) To be able to familiarize the students with the concepts of banking and financial institutions;
2) To be able to understand functions of financialinstitutions;
3) To be able to describe components of the financial system;and
4) To be able to understand the concept, features, importance and problems faced by co-operativebanks.

Course Outline:

Unit 1: Introduction to Indian Financial System: Financial system: Significance and Definition**,** Functions of the Financial System**,** Structure of the Financial System**,** Indian Financial System**,** Major Issues in the Indian Financial System: Narsimham Committee Report (1991)

Unit 2: Introduction to Banking Sector in India: Meaning and Definition of Banking**,** Functions of Bank**,** History of Banking**,** Classifications of Banks**,** Reforms in Banking Sector**,** E- Banking.

Unit 3: Reserve Bank of India: History of RBI**,** Role and Functions of Reserve Bank in India**,** Structure of RBI**,** RBI weapons of Control**,** Departments of RBI.

Unit 4: Co-Operative Banking in India: Meaning and Definition of Co-Operative Banks**,** Structure and Features of Co-Operative Banks, History of Co-operative Banks in India, Types of Co-Operative Banks**,** Problems of Co-Operative Banks.

Unit 5: Commercial Banking: Meaning and Evolution of Commercial Banks, Functions and Role of Commercial Bank, Types of Commercial Banks, Commercial Banking System, Agency and General Utility Services Provided by Modern Commercial Banks.

Unit 6: Banking Systems: Unit Banking and Branch Banking, Deposit Banking, Mixed Banking and Industrial Banking, Group, Chain and Correspondent BankingSystems.

Unit 7: Banking Regulation Act 1949: Need for Banking Act in India, History of Banking Legislation in India, Objectives of the Banking Regulation Act, 1949, Major Provisions of the Act, Defects in the Indian Banking Legislation.

Unit 8: Central Banking: Meaning and Definition, Evolution of Central Banks, Functions of Central Banks, Role of Central bank in a Developing Economy, Instruments of Monetary Control.

Unit 9: Retail Banking: Meaning and Definition of Retail Banking, Factors affecting Growth of Retail Banking, Advantages and Disadvantages of Retail Banking, Challenges to Retail Banking in India, Strategies for Increasing Retail Banking Business, Emerging Issues in Retail Banking.

Unit 10: Banker and Customer Relationship: Meaning and Definition of Banker and Customer, General Relationship between Banker and Customer, Banker as Agent and Banker as Trustee, Types of Customers, Services to Different Customer Groups.

Unit 11:Non-Banking Financial Companies: Meaning and Definition of Non-Banking Financial Companies, Classification of Non-Banking Financial Companies, Functions of Non- Banking Financial Companies, Salient Features of Non-Banking Financial Companies, Regulations of Non-Banking Financial Companies.

Unit 12:Specialized Financial Institutions: Need and Importance of Specialized Financial Institutions (SFI), Types of Specialized Financial Institutions, Industrial Finance Corporations of India (I.F.C.I.), State Financial Corporations (SFCs), Industrial Development Bank of India (IDBI), Unit Trust of India (U.T.I), Industrial Credit and Investment Corporation of India (ICICI)

Unit 13: Investment Institutions and Financial Services: Financial Service, Merchant Banking, Lease Financing, Merchant Banking, Housing Finance, Venture Capital, Insurance, Mutual Funds, Factoring.

Unit 14: Financial Markets and Instruments in Money Market: Financial Markets, Capital Markets, Money Market, Distinction Between Capital and Money Market, Stock Exchanges.

Unit 15: International Financial Institutions: History of International Financial Institution, Types of International Financial Institution, World Bank, International Monetary Fund (IMF.)

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO302.1	**Remember**	Learn various functions of financial institutions.
CO302.2	**Understand**	Understand the basic concepts of banking and financial institutions.
CO302.3	**Analyse**	Exhibit the components of financial system.
CO302.4	**Apply**	Differentiate problems faced by co-operative banks and financial institutions.

Suggested Reading:

1. RuddarDatt& K.P. M.Sundharam, Indian Economy, 40thRevised Edition, S. Chand & Co. Ltd.
2. H.R. Machiraju, Merchant banking, 3rd Edition, New Age InternationalPublishers
3. Textbook of Banking and Finance by N.K.Sharma
4. Commercial Banking in India: A Beginners Module developed by Mr. AbhijeetRoy, International Management Institute, NewDelhi
5. H.R. Machiraju, Merchant banking, 3rd Edition, New Age International Publishers
6. M.Y. Khan, Indian Financial System, 4th Edition, TataMcGraw-Hill

Semester	3	**Course Credits**	**4**	**Specialization**	Financial Management
Course Code	OMBF-303			**Type**	Specialization Course
Course Title	Taxation (Tax)				

Course Description:

This course introduces students to the accounting of income taxes with a particular focus on analyzing the differences between accounting and tax treatments, computing tax provisions, and disclosing tax information in corporate financial statements. The course also provides exposure to both internal and external uses of tax accounting disclosures. In doing so, the course builds a solid grounding in the preparation of accounting information and helps students gain an appreciation for the role of financial accounting in tax planning and compliancedecisions.

Course Objectives:

1) To understand the basic concepts of the Income Tax Act,1961.
2) To calculate gross total income and tax liability of anindividual.
3) To be acquainted with the online filling of various forms andreturns.
4) To understand the basic concepts in various Indirect TaxActs.
5) To understand procedural part of indirecttaxes.

Course Outline:

Unit 1: Introduction to Taxation Structure in India: Taxation Structure in India**,** Powers of Various Governments in Relation to Collection of Taxes**,** Introduction to Income Tax Act,1961.

Unit 2: Income from Salary: Meaning of Salary**,** Different Forms of Salary and Their Taxability**,** Allowance and Their Taxability**,** Exemptions for Various Allowances under Section 10, Perquisites and Their Valuation**,** Deductions from Gross Salary u/s.16**,** NumericalProblems.

Unit 3: Income from House Property: Basis of Chargeability**,** Computation of Annual Value**,** Deductions u/s.23, Deductions u/s.24**,** Numerical Problems.

Unit 4: Profits and Gains from Business and Profession: Computation of Profits and Gains**,** Expenses Expressly Allowed**,** Expenses Expressly Disallowed**,** Profits Chargeable under Profits and Gains**,** Numerical Problems on Business and Profession**,** Numerical Problems on Depreciation.

Unit 5: Income from Capital Gains: Chargeability of Capital Gains**,** Short-Term and Long- Term Capital

Gains, Deductions Available for Long-Term Capital Gains.

Unit 6: Income from Other Sources: Chargeability of Income Under Other Sources, Receipts Without Consideration (Gifts.)

Unit 7: Computation of Total Taxable Income of an Individual: Deduction from Gross Total Income, Relief under Section 89, Rebate of Income Tax under Section 87A, Computation of Total Income, Numerical Problems on Computation of Total Income.

Unit 8: Income Tax Payment and Assessment: Tax Calculation and Modes of Tax Payment, Filing of Income Tax Return, Refund of Tax, Interest Payable and Interest Receivable.

Unit 9: Central Excise: Levy of Excise Duty, Principles of classification, Valuation of Goods, Registration Under Central Excise, Procedure Relating to clearance of Good, Provisions Relating to Small Scale Industries, Provisions relating to Payment of Duty, Penalties, Special Audit, Prosecution.

Unit 10: Service Tax: Rates of Service Tax, General exemptions, Classification of Taxable Services, Valuation of Taxable Services, Valuation Rules, Issue of Bill for Service Tax, Time Limit for Payment of Service Tax, Exemption Limit, Registration Under Service Tax, Payment of Service Tax, Filing of Service Tax Returns, Interest and Penalties, Refunds, Exemption from Service Tax, Procedure for Claiming Refund, Exemption to Exporters, Procedure for Claiming Exemption, and Export ofServices.

Unit 11: Maharashtra Value Added Tax Act, 2002: Important Definitions, Registration Procedure under MVAT Act, Levy of VAT, Input Tax Credit, Invoicing, Tax Liability on Works Contracts, Filing of Returns, Tax Liability, Refund, Interest, and Penalty, and Maintenance of Records.

Unit 12: Central Sales Tax Act, 1956: Applicability of CST Act, Rates of Taxes, Registration and Other Provisions.

Unit 13: Customs Act, 1962: Levy of Customs Duty, Types of Customs Duties, Procedure for Import and Export, Valuation of Goods, Assessment of Customs Duty, Demand, Recovery and Refund of duty, Customs Duty Drawback, and Penalties.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO303.1	**Remember**	Learn the basic concepts in income tax.

CO303.2	**Understand**	Understand the basic aspects of filling a form and returns.
CO303.3	**Analyse**	Analyse the income and liability of an individual to calculate.
CO303.4	**Evaluate**	Differentiate between Direct and Indirect Tax

Suggested Reading:

1. K. Lasser's 1001 Deductions And Tax Breaks: Your Complete Guide to Everything Deductible by BarbaraWeltman
2. Fundamentals of Corporate Taxation (University Casebook Series) By Stephen Schwartz & DanielLathrope
3. Essentials of Federal Income Taxation for Individuals and Business By Linda M.Johnson

Semester	3	**Course Credits**	**4**	**Specialization**	Financial Management
Course Code	OMBF-304			**Type**	Specialization Course
Course Title	International Finance Management (IFM)				

Course Description:

The goal of this course is to provide students with a deep understanding of financial management issues in a global setting. The course aims to help students develop analytical tools that incorporate key international considerations into fundamental financial decisions. The cases provide opportunities to build the skills needed to create and capture value across borders.

Course Objectives:

1) To develop capabilities, skills, and knowledge for making sound financialdecisions;
2) To develop students on "how to run their own MNC and write a feasibility report";and
3) To be able to solve simplecases.

Course Outline:

Unit 1: International Financial Management: An Introduction: Introduction, Multinational Corporation (MNC), Steps in Internationalization**,** International Financial Management.

Unit 2: International Economics: Introduction, International Financial Architecture, Origin of Developing Countries Debt Crisis, The East Asian Crisis (1997), Financial Flows to Developing Countries, International Trade Theories, Economic integration, Tariff and Non-Tariff Barriers to Trade.

Unit 3: International Monetory System: Introduction, Exchange Rate Arrangement**,** IMF and International Liquidity.

Unit 4: International Financial Flow: Introduction, Forms of International Financial Flows, Structure of Balance of Payments, Equilibrium, Disequilibrium and Adjustment, India's Balance of Payments During the Period of Economic Reform.

Unit 5: Foreign Exchange Market: Introduction, Spot Exchange Market, Participants in the Spot Market, Exchange Rate Quotations, Arbitrage, Forward Rate and Forward Market.

Unit 6: Parity Conditions in International Finance and Currency Forecasting: Introduction, Purchasing Power Parity Relationship, Interest Rate Parity Relationship, Exchange Rate and Foreign

Exchange Reserves, Exchange Rate and Balance of Payments (BOP), Exchange Rate and Technical Analysis.

Unit 7: Currency Futures, Options and Swaps: Introduction, Currency Futures, Currency Options, Important Terms relating to Options, Dealing in Currency Options, Put-Call Parity Relationship, and Currency Swaps.

Unit 8 – Management of Accounting and Exchange Exposure: Introduction, Different Types of Exchange Rate Exposures, Transaction Exposure, Translation Exposure, Economic Exposure, Exchange Risk Management, Management of Transaction Exposure, Management of Translation Exposure, Management of Economic Exposure.

Unit 9: Foreign Exchange Regulations and Taxation Issues: Introduction, Types of Taxes, Tax Heavens, International Tax Management Strategy, The Modes of Double Taxation Relief, Indian Taxation Scenario, FEMA: An Introduction, Broad Scheme of FEMA, Important Features of FEMA.

Unit 10: Raising Funds From International Market: Introduction, Euro Issue, Depository Receipts (DRs), Global Depository Receipts (GDRs), American Depository Receipts (ADRs), Foreign Currency Convertible Bonds (FCCBs),Foreign Currency Option, Other International Instruments, Global Depository Receipts (GDRs), American Depository Receipts (ADRs), External Commercial Borrowings (ECBs), Advantages and Disadvantages of Overseas Financial Markets.

Unit 11: Financing Foreign Trade: Introduction, Types of Export Credit, Pre-shipment Export Credit, Post-shipment Export Credit, Types of Letters of Credit, Export Credit in Foreign Currencies, Refinance from Reserve Bank of India, Role of Export Import Bank of India, Role of Export Credit GuaranteeCorporation.

Unit 12: Cost of Capital for MNCs: Introduction, Cost of Capital for MNCs vis-a-vis Domestic Firms, Cost of Capital Across Countries, Determining Cut-Off rate for Foreign Projects Appraisal.

Unit 13: Capital Budgeting for MNC's: Introduction, Fundamentals of Evaluating Foreign Projects, Issues in Foreign Investment Analysis, Risk Analysis in International Investment Decision.

Unit 14: Working Capital Management for Domestics: Introduction, Working Capital Management in Domestic and Multinational Enterprises, Intra Corporate Transfer of Funds, Transfer Pricing, Management of Blocked Funds, Multinational Cash Management, Multinational Receivables Management, Multinational InventoryManagement.

Unit 15: Foreign Direct Investment: Introduction, Global Trends in FDI, Factors Motivating FDI, FDl

and Some Subsequent Decisions, FDl and Host Government View**,** FOI and Taxation Issues.

Unit 16: International Portfolio Investments: Introduction**,** Benefits of International Investing, International Diversification, Barriers to International Diversification, Vehicles for Overcoming Capital Flow Barriers, Asset Allocation Policy and Management Style, Portfolio Hedging Strategies

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO304.1	**Remember**	Demonstrate the understanding of international financial theory and applications.
CO304.2	**Analyse**	Develop a frame of reference through which learners can identify, evaluate, and solve problems pertaining to international financial with or without complete information.
CO304.3	**Apply**	Demonstrate communication and written skills.
CO304.4	**Evaluate**	Develop critical and analytical skills and the ability to work independently.

Suggested Reading:

1. Financial ACCT with coursemate-Godwin/Aderman/Sanyal-CengageLearning
2. Financial Management by Jonathan Berk, Peter DeMarzo and Ashok Thampy (Pearson Publication)
3. Financial Management by Khan and Jain (TATAMcGraw-Hill)
4. Financial Management by I.M.Pandey (Vikas Publication)
5. Financial Management Principle and Practices by S. Sudarsana Reddy (Himalaya Publication)
6. Financial Management by Prasanna Chandra, TMH, 7thEdition

Semester	3	**Course Credits**	**4**	**Specialization**	Financial Management
Course Code	OMBF-305			**Type**	Specialization Course
Course Title	Advanced Financial Management (AFM)				

Course Description:

This course provides an in-depth analysis of financial management in corporations with emphasis on decision making. Working capital management, short-term and long-term financing, mergers, business failures, and reorganizations are considered in-depth with an extension of the valuation concepts presented in the basic financial management course.

Course Objectives:

1) To provide expert knowledge on setting financial objectives and goals, managing financial resources, and financial risk management thorough the understanding of investment portfolios and financialinstruments.
2) Evaluate the role of agents and instruments in financialmarkets.
3) Interpret the relevance of financialinstitutions.
4) Analyse the degree of risk for its effective management; and
5) Advise on Investmentopportunities.

Course Outline:

Unit 1: Financial Environment: Introduction to Financial Environment, Financial Institutions, Financial Markets, Regulatory Environment, Global Financial Environment.

Unit 2: Asset Liability Management: Introduction to Asset Liability Management, Meaning and Scope of Asset liability Management, Management of Liabilities, Management of Assets.

Unit 3: Analytical tools for Advanced Financial Management: Introduction to Analytical tools, Types of Financial Decisions, Comparative Statement Analysis, Trends Analysis, Common size statements, Simulation analysis, Sensitivity analysis, ABC analysis, GAP analysis, Variance Analysis, DuPont analysis, Economic Value Added (EVA), Market Value Added (MVA).

Unit 4: Preparation of projected financial Statements: Introduction**,** Basics about Preparation of projected financial Statements, Preparation of projected Profit and Loss statements, Preparation of projected Balance Sheets, Preparation of projected Cash Flow statements, Preparation of projected Funds Flow statements, Assessing viability of the business.

Unit 5: Stock Market Relationship Management: Introduction**,** Stock Market, Trading in Stocks, Trading in Derivatives, Monitoring Market deals in shares.

Unit 6: Capital Issue Management: Introduction to Capital Issue Management, Raising of Equity Capital, Types of Issues, Issue Management.

Unit 7: Surplus Funds Management: Introduction to Management of Surplus funds, Investment criteria, Investment avenues, Taxation planning in investments.

Unit 8: Enterprise Valuations: Introduction to Concept of Enterprise Valuation, Definition and Meaning of Enterprise Value, Different Concepts of Value, Major approaches to valuation of business, Methods of Enterprise Valuation, Valuation of Goodwill.

Unit 9: Corporate Restructuring: Explain the meaning of Corporate Restructuring, State the Reasons for restructuring, Explain the meaning of Stability Strategies, Explain the meaning of Growth Strategies, Explain the meaning of Diversification Strategies, Explain the meaning of Concentration strategies, Explain the meaning of Retrenchment Strategies, Explain the meaning of Mergers and Acquisition Strategies, Explain the meaning of Takeover Strategies, Explain the meaning of Benefits of mergers and Acquisition, Explain the meaning of Joint Ventures, Explain the meaning of Collocation, Explain the meaning of Co-opetition, Explain the meaning of Licensing Arrangement, Explain the meaning of Value-Chain Partnership, Explain the meaning of Mutual Service Consortia, Explain the meaning of Combination Strategies.

Unit 10: Capital Structure: Explain the Theories of Capitalisation**,** Explain the meaning, causes and remedies of over Capitalisation, Explain the meaning, causes and remedies of under Capitalisation, Explain the meaning of Capital Structure, State the important principles of Capital Structure, State the objects of the Capital Structure Planning, State the different Theories of Capital Structure, Explain the meaning of the Cost of Capital, Describe the meaning of Cost of Equity, Explain the meaning of Cost of Debt, Explain the meaning of Cost of Preference Shares, Explain the meaning of the Weighted Average Cost of Capital.

Unit 11: Capital Restructuring: Explain the meaning of Capital Restructuring, Explain the reasons for Capital Restructuring, Explain the factors affecting Capital Restructuring, State the advantages of Capital Restructuring, State the methods of capital restructuring, Explain the meaning of Share Splitting, Explain the meaning of Buy Back of Shares, Explain the process of Issue of Bonus Shares, Explain the meaning of Forfeiture of Shares, Explain the meaning of Revaluation of Assets, State the causes of default in repayment of debt, Classification of debt as Non-performing Assets, State the Rights of the Lenders, Explain the mechanism of Corporate Debt Restructuring (CDR), Explain the need for Compromise

Proposals, State the provisions of One Time Settlement Scheme (OTS).

Unit 12: Corporate Social Responsibility: To study the Government Guidelines regarding Social, Environmental and Economic Responsibilities of Business, To study the Social Responsibility of Business, To study the Social Responsibility of Business, To study the Need For CSR, To understand the CSR Mechanism, To list the Arguments for and against CSR, To know the Barriers to CSR, To track the Key Developments in CSR, To analyses the Corporate Accountability, To know the Common Characteristics of Socially Responsible Firms, To know the Factors affecting social Responsiveness, To know the Benefits of CSR, To study the CSR initiatives in India, To study the Companies Act and CSR, To understand the concept of Triple Bottom Line, To understand the Global perspective of CSR, To list the Sustainable Development Goals, To study the Social Audit.

Unit 13: Value based management and Corporate Governance: Explain the meaning and scope of Corporate Governance, Explain the Objectives of Corporate Governance, State the Determinants of Corporate Governance, Describe the role of World Business Council for Sustainable Development, State the Principles of Corporate Governance, Describe Corporate Governance in India, Understand the Corporate Governance at ITC Ltd.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO305.1	**Remember**	Learn and interpret the relevance of financial institutions.
CO305.2	**Understand**	Grab investment opportunities.
CO305.3	**Analyse**	Manage financial resources for investment portfolio and instruments.
CO305.4	**Apply**	Exhibit role of agents and instrument in financial markets.

Suggested Reading:

1. Financial ACCT with coursemate-Godwin/Aderman/Sanyal-CengageLearning
2. Financial Management by Jonathan Berk, Peter DeMarzo and AshokThampy (Pearson Publication)
3. Financial Management by Khan and Jain (TATAMcGraw-Hill)
4. Financial Management by I.M.Pandey (Vikas Publication)
5. Financial Management Principle and Practices by S. Sudarsana Reddy(Himalaya Publication)
6. Financial Management by Prasanna Chandra, TMGH, 7thEdition

Semester	3	**Course Credits**	**4**	**Specialization**	Financial Management
Course Code	OMBF-306			**Type**	Specialization Course
Course Title	Security Analysis and Portfolio Management (SAPM)				

Course Description:

Security analysis and portfolio management course helps students to understand the investment field for sound investment decisions making. This course is designed to emphasize both theoretical and analytical aspects of investment decisions and deals with modern investment theoretical concepts and instruments. Security Analysis is the subject to study the composition and performance of stocks in capital market. The stocks are analysed using tools of fundamental analysis and technical analysis. Portfolio management refers to the management or administration of a portfolio of securities to protect and enhance the value of the underlying investment. It is the management of various securities (shares, bonds etc.) and other assets (e.g. real estate), to meet specified investment goals for the benefit of the investors. It helps to reduce risk without sacrificingreturns.

Course Objectives:

1) To familiarize with the fundamentals of security analysis and portfolio management concept;
2) To provide a conceptual insight to the valuation ofsecurities;
3) To provide an insight about the relationship of risk and return;and
4) To be able to measure the return according to the expectations of the investors and portfolio management practices inIndia.

Course Outline:

Unit 1: Nature and Scope of Investments: Introduction: Investment- Meaning and Concept**,** Types of Investment**,** Securities, Financial System and Financial Market**,** Security Market.

Unit 2: Risk and Return: Measures of Return**,** Risk**,** Measuring the Risk of Expected rate of Returns, Measuring Systematic Risk

Unit 3: Security Market in India-I: Security Markets– Introduction**,** New Issue Market (Primary Market)**,** Stock Exchanges (Secondary market)**,** Derivative Market**,** Functioning of Security Market**,** Market Index**,** Regulation of Security Market in India.

Unit 4: Security Market in India-II: Listing, Trading, Clearing and Settlement.

Unit 5: Fundamental Analysis: Fundamental Analysis, Equity Valuation Process, Advantages of Fundamental Analysis, Disadvantages of Fundamental Analysis.

Unit 6: Technical Analysis: Technical Analysis, Technical Analysis vs. Fundamental Analysis, Types of Charts, Basic Technical Tools, Market Indicators, Dow Theory, Strengths and Weaknesses of Technical Analysis.

Unit 7: Equity Stock Valuation Models: Equity Valuation- Introduction, Approaches to Valuation of Equity Stock, Methods of Equity Stock Valuation.

Unit 8: Bond Valuation Models: Bond– Introduction, Valuation of Bond, Components of Bond Valuation.

Unit 9: Portfolio Management: Management of Investments, Portfolio Management– Basics, Portfolio Management Strategies, Portfolio Management Services.

Unit 10: Portfolio Theories and Portfolio Construction: Portfolio Theories– Introduction, Markowitz Portfolio Optimization Model, Sharpe Single Index Model, Capital Asset Pricing Model, Arbitrage Pricing Theory, Asset Allocation Strategies.

Unit 11: Portfolio Evaluation and Revision: Portfolio Evaluation, Portfolio Revision.

Unit 12: Investment Avenues: Investment Avenues, Classification of Various Financial Instruments, Real Estate, Commodities, and Self-Assessment Questions.

Unit 13: Personal Financial Management: Personal Financial Management, Financial Planning Process, Personal Budget, Parameters to Choose Your Financial Planner, Types of Other Financial Advisors, AssetAllocation.

Unit 14: Tax Planning: Tax Planning- Introduction, Tax Avoidance vs. Tax Evasion, Tax Planning Basics, Consequences of Avoidance, Ways to do Tax Planning, Income Tax, Tax Planning Benefits, Penalties under Income Tax Act for Tax Evasion, Self-Assessment Questions.

Unit 15: Wealth Management: Wealth Management, Private Wealth Management, Discipline of Wealth, Wealth Management Customers, Market Models, Features/ Characteristics of Good Wealth Management, Importance of Wealth Management.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO306.1	**Remember**	Learn the basic terms of security market in India.
CO306.2	**Understand**	Learn conceptual insights of portfolio management.
CO306.3	**Apply**	Apply the fundamental and technical analysis terminology for valuation of securities.
CO306.4	**Evaluate**	Match the expectation of the investors and portfolio management practices.
CO306.5	**Analyse**	Analyse self-financial management for choosing financial planner.
CO306.6	**Create**	Design self-financial planner.

Suggested Reading:

1. Avadhani, V.A., Security Analysis & Portfolio Management, Himalaya Publishing House, NewDelhi.
2. Bhalla, V.K., Security Analysis & Portfolio Management S.Chand& Co., NewDelhi.
3. M. Ranganathan and R. Madhumathi: Investment Analysis and PortfolioManagement, Pearson Education, NewDelhi.
4. Prasanna Chandra: Investment Analysis and Portfolio Management, Tata McGraw- Hill, New Delhi.
5. Bharti V. Phathak: Indian Financial System, Pearson Education, NewDelhi.

Semester-III Information and Technology Management Specialization

Semester	3	**Course Credits**	**4**	**Specialization**	Information and Technology Management
Course Code	OMBI-301			**Type**	Specialization Course
Course Title	Fundamentals of Information Technology (FIT)				

Course Description:

This course provides a basic grounding and fluency in the basic information technology (IT) skills necessary for information professionals. It introduces students to and provides practical exercises on several areas of information technology including the personal computer (PC) and PC applications (PC hardware & software), networking, web page design, and website development/maintenance including JavaScript, databases, spreadsheets, and information security.

Course Objectives:

1) To have a basic understanding of the basic concepts and terminology of information technology and be able to definethem;
2) To have a basic understanding of personal computers and theiroperations;
3) To have acquired the basic skills and be able to use the main personal computer applications;
4) To have acquired the basic web design and developmentskills;
5) To have an increased ability to learn and explore new information technologieswith confidence;and
6) To be able to identify issues related to informationsecurity.

Course Outline:

Unit 1: Introduction to Computer Systems: Computer definition, Characteristics of Computers, Computer Generations, First Generation Computers**,** Second Generation Computer,Third Generation Computers**,** Fourth Generation Computers**,** Fifth Generation Computers**,** Types of Computers, Classification Based on Size**,** Classification Based on Technology**,** Digital Block Diagram, Function of Each Unit of BlockDiagram.

Unit 2: Input & Output Devices: Introduction to Input Devices**,** Keyboard, Pointing Devices, Mouse, Joystick**,** Source Data Entry Devices (Scanning Devices)**,** Optical Scanners**,** Bar Code readers**,** MICR**,** Digital Camera**,** OMR**,** Magnetic Strip Reader. Output devices, Monitors– Cathode Ray Tube, LCD, TFT LCD, LED**,** Printers: Impact Printer/Non-Impact Printer Character, Line, Page, Ink Jet Printer, Laser

Printer, Plotters, Audio Output Device– Speakers, Headphones.

Unit 3: Primary & Secondary Storage Devices: Primary Storages (Types of Main Memory.) Storage Devices, Punch Card, Magnetic Tape, Magnetic Disk, Hard Disk, Floppy Disc, Optical Memories, CD, WORM, DVD, Pen Drive.

Unit 4: Electronic Data and Coding System: Conversion of One Number System to Another, Coding Systems: BCD, EBCDIC, and ASCII.

Unit 5: Types of Software: Software Evolution, Evolution of Software Design Paradigm, Types of Software, System Software, Programming Software, Application Software, Utility Software, Open Source Software.

Unit 6: Computer Language: High Level Language, Low Level Language, Editor, Assembler, Compiler & Interpreter.

Unit 7: Introductions to Operating System: Operating System Services, History.

Unit 8: Operating Systems Services Part I: Process Scheduling, CPU Scheduling Algorithms.

Unit 9: Operating Systems Services Part II: File Management.

Unit 10: Computer Networking: Types of Networks, Data Communication System, Network Topologies.

Unit 11: Computer Networking Models: Networking Devices, Introduction to Network Models, OSI Model, TCPIP Model.

Unit 12: Internet Basics: Internet & Its Software Components.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO301.1	**Remember**	Familiarize with the basic concepts of Information Technology.
CO301.2	**Understand**	Learn the basic operations of using a personal computer.
CO301.3	**Analyse**	Skills to use computer applications.
CO301.4	**Apply**	Acquire web designing and development skills.

Suggested Reading:

1. P. K. Sinha, Computer Fundamental (BPBPublication)

2. V. Rajaraman, Computer Fundamental (PHI Publication)
3. D. P. Sharma, Fundamentals of Computer, IT & Programming with "C"(CBC Publication)
4. Alexix Leon, Mathews Leon, Introduction to Computers, LeonPress
5. E Balagurusamy, Fundamentals of Computers, TataMcGraw-Hill

Semester	3	**Course Credits**	**4**	**Specialization**	Information and Technology Management
Course Code	OMBI-302			**Type**	Specialization Course
Course Title	C Programming (C. Pro)				

Course Description:

C is a general purpose, procedural, imperative computer programming language developed in 1972 by Dennis M. Ritchie at the Bell Telephone Laboratories to develop the UNIX operating system. C is the most widely used computer language. It keeps fluctuating at number one scale of popularity along with Java programming language, which is also equally popular and most widely used among modern softwareprogrammers.

Course Objectives:

1) To familiarize the trainee with the basic concepts of computer programming and developertools;
2) To present the syntax and semantics of the "C" language as well as data types offered by the language;and
3) To allow the trainee to write their own programs using standard languageinfrastructure regardless of the hardware or softwareplatform.

Course Outline:

Unit 1: Introduction to C: Design Methods, Top-Down Design, Bottom-Up Approach, Modular Approach, Programming Languages, Low-Level Languages, Machine Level Language, Assembly Language, High-Level Languages, Brief History of C, Importance of C, Features and Characteristics of C, Structure of a C Program, Executing CProgram.

Unit 2: Building Blocks Of C: C Character Set, Alphabets, Digits, Special Characters, C Tokens, Keywords and Identifiers, Constants, Numeric, Integer, Floating Point, Character Constants, String Constants, Symbolic Constants, Enumeration, Backslash Characters/Escape Sequences, Data Types, Variables, Declaration of Variables, Initialization of Variables, Operators, Arithmetic, Relational, Logical, Bitwise, Assignment, Conditional, Comma Operator, Size of Operator, Type of Conversion, Implicit Type of Conversions, Explicit Type of Conversions, Precedence and Associability of Operators.

Unit 3: Input Output Operations: Types of I/O, Formatted functions, Formatted Input, Formatted Output, Unformatted Functions.

Unit 4: Control Statements: Selection Statements, if….else statement, Nested if ….else statement, Iterative Statements, while loop, do…..while loop, for loop, Nesting of loops, Infinite loops, Jump Statements, go to and label, break, continue, switch…case statement, Some Additional Problems.

Unit 5: Functions: Why functions?,Library Functions, User Defined Functions, Function Declaration, Function Definition, Function Call, Return Statement, Function Arguments, Types of Functions, Functions With No Arguments and No Return Value, Function With No Arguments and A Return Value, Function With Arguments and No Return Value, Function With Arguments and Return Value, Local Variables, Global Variables, Static Variables, Recursion, Advantages and Disadvantages ofFunctions.

Unit 6: Arrays: One Dimensional Array (1-D Array), Declaration, Initializations, Accessing the Elements, Processing of Elements, Two Dimensional Array, Declaration, Initializations, Accessing and Processing the Elements, 1-D Array and Functions, Passing Individual Elements of 1-D Array to a Function, Passing Entire Array to A Function, Passing 2-D Array to Functions.

Unit 7: Pointers: Basics of Pointer, Address Operator, Declaration of Pointer Variable, Initializing Pointer Variable, Dereferencing Pointer Variable, Pointer Arithmetic, Pointers and 1- D Array, Pointers and Multidimensional Array, Pointers and Functions, Dynamic Memory Allocation.

Unit 8: Strings: Initializing String, String Manipulation Functions, Passing Strings to Functions, Array of Strings (Two-Dimensional Array of Characters), Accessing or Array of String: Initialization of Array of String.

Unit 9: Storage Classes and Scope: Block Scope, File Scope, Storage Classes, Automatic Storage, External Storage, Static Storage, Register Storage.

Unit 10: Structure and Union: Defining a Structure, Creating Structure Variable, Accessing Member of Structure, Initialization of Structure, Array of Structure, Initializing Array of Structure, Structure Within Structure (Nested Structure), Processing a Structure, Structures and Pointers, Passing Structure to Functions, Union and Its Importance, Difference Between Structure&Union.

Unit 11: The C Pre-Processor: Macros- Definition, Macros With Arguments, Nesting Of Macros, #undef, File Inclusion Directives, Conditional Compilation, #if and #endif, #else and #elif, #ifdef and #ifndef.

Unit 12: File Handling: Opening and Closing a Data File, Library Functions for reading/writing from/to a file, Unformatted I/O functions, Character I/O functions, Integer I/O functions, Record I/O functions,

String I/O functions, Formatted I/O functions, fprintf( ):, fscanf( ), Creating Data Files, End of File (EOF), Random Access to File, fseek( ), rewind( ), ftell( ), Difference Between Text and Binary Mode, Command Line Arguments.

Unit 13: Graphics in C: Text Mode Graphics Functions, Graphics Mode, Initialization, Closing Graphics Mode, Some Graphics Mode Graphic Functions.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO302.1	**Remember**	Familiarize with the basic concepts of computer programming.
CO302.2	**Understand**	Understand data types offered by the language.
CO302.3	**Analyse**	Differentiate hardware and software through programming.

Suggested Reading:

1. Programming with C Author: E.Balagurusamy
2. Let us C Author: YashwantKanetkar
3. C in Depth, Srivastawa and Srivastawa,BPB.
4. The C Programming Language, Kernighan and Ritchie,PHI.

Semester	3	**Course Credits**	**4**	**Specialization**	Information and Technology Management
Course Code	OMBI-303			**Type**	Specialization Course
Course Title	DBMS & Oracle (DBMS)				

Course Description:

This course engages students to analyse complex business scenarios and create a data model- a conceptual representation of an organization's information. Participants implement their database design by creating a physical database using SQL. Basic SQL syntax and the rules for constructing valid SQL statements are reviewed. This course culminates with a project that challenges students to design, implement, and demonstrate a database solution for a business or organization.

Course Objectives:

1) Distinguish between data and information andknowledge;
2) Distinguish between file processing system andDBMS;
3) Describe DBMS and its advantages anddisadvantages;
4) Describe database users including data baseadministrator;
5) Describe data models, schemas and instances and data languages;and
6) Describe DBMS Architecture & DataIndependence.

Course Outline:

Unit 1: Basic Concepts: Database and Need for DBMS**,** Characteristics of DBMS**,** Database Users**,** 3-tier Architecture of DBMS (Its Advantages over 2-tier)**,** Views of Data-Schemas and Instances**,** Data Independence.

Unit 2: Modeling Techniques: Different Types of Models**,** Introduction to ERD, Entities, Relationships**,** Representation of Entities, Attributes, Relationship Attributes, Relationship Set**,** Generalization, Aggregation**,** Structure of Relational Database and Types of Keys**,** Expressing M:N Relation.

Unit 3: Relational Model & Relational Database Design: Codd's Rules**,** Relational Data Model &Relational Algebra**,** Relational Model Concept**,** Relational Model Constraints**,** Relational Algebra.

Unit 4: Normalization: Database Design– ER to Relational**,** Functional Dependencies**,** Normalization**,** Normal Forms Based on Primary Keys**,** Loss Less Joins and Dependency Preserving Decomposition.

Unit 5: Transaction: Concept of Transaction, ACID properties, States of Transaction, Implementation of Atomicity & Durability.

Unit 6: Concurrency Control: Concurrency Control, Locking Techniques**,** Time Stamp Based Protocols**,** Granularity of Data Items**,** Deadlock.

ORACLE

Unit 7: Introduction To Oracle Architecture: Memory Structures and Processes**,** User and Server Processes, Database Structures.

Unit 8: Queries: Select with all Options, Operators, Arithmetic, Comparison**,** Logical (in, between, like, all, %, _, any, exists, is null, and, or, not, Distinct)**,** Clauses.

Unit 9: SQL Functions: Date: Sys_date, next_day, Add_months, last_day, months_between; Numeric : Round, trunc, abs, ceil, cos, exp, floor; Character: Initcap, lower, upper, ltrim, rtrim, translate, length, lpad, rpad, replace**;** Conversion: to_char, to_date, to_number**;** Miscellaneous : Uid, User, nvl, vsize, decode, rownum**;** Group Function: avg, max, min, sum, count, with Group by and Having Clause.

Unit 10: Joins: Simple Join, Equi Join, Non Equi Join, Self Join, Outer Join.

Unit 11: Set Operators: Operators (Union, Union All, Intersect, Minus.)

Unit 12: Sub-Queries: Sub Queries and Correlated Query.

Unit 13: Statements: DML Statements (Insert, Update, Delete with where clause)**,** TCL (Commit, Rollback, Savepoint)**,** Locks in Oracle**,** DDL Statements.

Unit 14: Table: Create, Alter, Drop, Truncate, Rename**,** Constraints (Primary key, Foreign Key, Unique Key, Check, Default, Not Null, On Delete, Cascade)**,** Column Level and Table Level Constraints**,** Oracle Objects**,** Views, Sequences, Synonyms, Index (Define, Alter and Drop)

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO303.1	**Remember**	Learn data languages through data model, schemas, and instances.
CO303.2	**Understand**	Grab the knowledge of data and information.
CO303.3	**Analyse**	Differentiate file processing system and DBMS.

CO303.4	**Apply**	Impart knowledge of data base administrator.

Suggested Reading:

1. Database Systems Concepts – byKorth
2. An introduction to Database systems-by C.J.Date
3. Fundamentals of Database Systems-by Navathe
4. Oracle Core: Essential Internals for DBAs and Developers by JonathanLewis.
5. Oracle Database 11g Release 2 Performance Tuning Tips & Techniques (Oracle Press)by RichardNiemiec.
6. Understanding ORACLE Perry J. & Later J., BPBPub.

Semester	3	**Course Credits**	**4**	**Specialization**	Information and Technology Management
Course Code	OMBI-304			**Type**	Specialization Course
Course Title	Web Designing and Content Management (WDCM)				

Course Description:

This course will introduce students to a variety of methods for creating websites. They will learn the basic HTML, and basic CSS or Cascading Style sheets. In addition, this course provides information on how to work with graphics and dynamic web content and upload their sites to the web. The primary application used will be Adobe Muse.

Course Objectives:

1) Express knowledge of a variety of ways that web sites may bedeveloped;
2) Continue to demonstrate a progressive knowledge of Adobe Photoshop in regard to image development. Demonstrate an ability to perform several functions of this application. Have knowledge of what it takes to create an art suitable for web publication;
3) Understand how to use HTML and CSS for basic web development. Know how to work the HTML and CSS within Dreamweaver and create pages with the use ofNotepad;
4) Understand a variety of web sites that are available and what makes each of them unique; and
5) Understand Adobe MUSE for webdevelopment.

Course Outline:

Unit 1: Internet and Web Technology: Computer Network Basics, Packet Switching and TCP/IP, The Web, Basic Internet Tools, The Domain Name System, Cloud Computing**,** Web Apps.

Unit 2: Web &Hyper Text Markup Language (HTML): Web Architecture, Web Server, Types of Web Sites, Web Development Life Cycle, What is a Web Browser?, HTML Introduction, Document Structure, Basic Tags of HTML, Creating First Web Page, Meta tags, Validating your HTML, Accessibility.

Unit 3: HTML: Formatting of Text, Links, Lists, HTML Images, and Tables.

Unit 4: HTML: Frames, Image Map, Forms.

Unit 5: Cascading Style Sheets: Three Ways to Insert CSS, About DOCTYPEs, Creating a CSS File, A Word about Fonts, Classes, A Better CSS Editor, ID-Based Styles, Styling Backgrounds, Styling Text, Styling Links, Styling Tables.

Unit 6: JavaScript: JavaScript Output, JavaScript Statements, JavaScript Variables, JavaScript Data Types, JavaScript Objects, JavaScript Operators, Conditional Statements, Loop Statements, Functions.

Unit 7: Introduction to PHP: Installing PHP, Testing PHP, Creating Your First Script, Embedding PHP within HTML, Comments, Variables, Data Types, Operators and Expressions, Constants.

Unit 8: PHP: Conditional Statements, Ternary Operator, Loop Statements, Activity, Strings, Arrays, Functions.

Unit 9: MySQL: Relational Databases, Setting Up MySQL, Connecting to MySQL from PHP, Handling Errors.

Unit 10: Introduction to Content Management System: Essentials of A CMS, CMS Features and Functions, Types of CMS, Open Source CMS, Commercial CMS, CMS and Usability.

Unit 11: Building Websites Using Joomla: Installation, Working with Joomla!, How to Create Joomla Articles, How to Link Articles in the Joomla Menu, How to Manage Article Categories, Joomla Component Page.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO304.1	**Remember**	Learn the ways to develop websites.
CO304.2	**Understand**	Understand the usage of creating pages with notepad.
CO304.3	**Analyse**	Grab knowledge to create art suitable for web publication.
CO304.4	**Create**	Develop unique website through understanding subject.

Suggested Reading:

1. Database Systems Concepts – byKorth
2. Programming with C Author: E.Balagurusamy
3. D. P. Sharma, Fundamentals of Computer, IT & Programming with "C"(CBC Publication).
4. V. Rajaraman, Fundamentals of Computers, PHI Publication.
5. Alexix Leon, Mathews Leon, Introduction to Computers, LeonPress.
6. E Balagurusamy, Fundamentals of Computers, TataMcGraw-Hill

Semester	3	**Course Credits**	**4**	**Specialization**	Information and Technology Management
Course Code	OMBI-305			**Type**	Specialization Course
Course Title	Software Engineering (SE)				

Course Description:

There are several areas to focus on within software engineering, such as design, development, testing, maintenance, and management. The course is designed to present software engineering concepts and principles in parallel with the software development life cycle.

Course Objectives:

1) Be successful professionals in the field with solid fundamental knowledge of software engineering;
2) Utilize and exhibit strong communication and interpersonal skills, as well as professional and ethical principles when functioning as members and leaders of multi-disciplinary teams;and
3) Apply their foundations in software engineering to adapt to readily changing environments using the appropriate theory, principles, andprocesses.

Course Outline:

Unit 1: Introduction to Software Engineering: System Definition, What is Software? Software Applications, Software Standards, Software Engineering, Software Process and Software Product, Software Development Life Cycle**,** Software Process Models.

Unit 2: Software Requirement Specification (SRS): Requirement Analysis, Feasibility Study, Requirements Elicitation and Analysis, Fact Fining Techniques, Requirement Process, Software Requirement Specification, Characteristics of SRS**,** SRS Intended Users.

Unit 3: System Analysis and Design Approach: System Analysis Need**,** Role of System Analyst**,** Analysis Tools and Techniques**,** Design Approach.

Unit 4: Software Design Engineering: Design Model**,** Software Architecture**,** and Component Level Design.

Unit 5: User Interface Design: The elements of good design interface, The Golden Rules, Interface Design Activities, Design Issues, Design Evolution, Human Computer Interface (HCI), Norman's Research.

Unit 6: Software Quality Assurance: Quality Concept**,** The Quality Movement**,** SQA Activities**,** Software Reviews**,** Formal Technical Reviews**,** Software Reliability**,** The ISO 9000 Quality Standards**,** The SQAPlan.

Unit 7: Software Testing: Testing Objectives, Testing Principles, Testing and Quality, V Model, V Model vs. Traditional Model, Verification & Validation, Static Testing & Dynamic Testing**,** Software Inspection.

Unit 8: Documentation: Process and Product Documentation, Document Quality, Document Preparation.

Unit 9: Software Maintenance: Software Evolution, Software Maintenance, Maintenance Cost, Legacy System, Software Re-engineering, Reverse Engineering, Forward Engineering.

Unit: 10 Object Oriented Analysis & Design: What is SAD?, What is OOAD?, Object- Oriented Programming Concepts: A Primer, What is Notation?**,** UML Diagrams.

Unit 11: CASE Tools: What are CASE Tools?**,**Categories of CASE Tools**,** Need of CASE Tools**,** CASE Benefits**,** Types of CASE Tools.

Unit 12: Current Trends in Software Engineering: Web Engineering**,** Quality Attributes**,** Web Process**,** AgileProcesses.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO305.1	**Remember**	Learn the fundamental knowledge of software engineering.
CO305.2	**Analyse**	Utilize interpersonal skills
CO305.3	**Evaluate**	Adopt appropriate theory, principles, and processes for changing technologies.

Suggested Reading:

1. Software Engineering, 5th Edition, Roger S. Pressman,Ph.D.
2. Software Engineering, 9th Edition, IanSommerville
3. Software Engineering, 6th Edition, 2001, Ian Sommerville; PearsonEducation.

Semester	3	**Course Credits**	**4**	**Specialization**	Information and Technology Management
Course Code	OMBI-306			**Type**	Specialization Course
Course Title	Enterprise Resource Planning (ERP)				

Course Description:

This course will explore the concepts, principles, and the state-of-the-art methods in successfully integrating Enterprise Resource Planning (ERP) systems into extant enterprise architectures. It will help both functional area and IT managers understand the respective role of users, enterprise architects, developers, and managers in the selection, preparation, implementation, and management of large and complex enterprise applications.

Course Objectives:

1) Understand and gain an insight into the process views of organizations and tools and techniques used to model both as is and to bemodels;
2) Apply the process modeling techniques in one or more modeling environments;and
3) Know and be able to apply key technical terminology in enterprise information systems as they apply in different ERP products and developmentmethods.

Course Outline:

Unit 1: Enterprise Resource Planning: ERP Systems, Evolution of ERP Systems, Need & Benefits of ERP Systems, Basic ERP Concepts, Challenges of ERP, Drawbacks of ERP Systems, ERP Scenario in Indian Market, ERP Architecture and TechnicalAspects.

Unit 2: ERP and Technology: ERP and Related Technology, Business Intelligence, E- Commerce and E-Business, Business Process Reengineering, Data Warehousing and Data Mining, On-line Analytical Processing (OLAP), Product Life Cycle Management, Supply Chain Management (SCM), Customer Relationship Management.

Unit 3 ERP Need Analysis: Justifying ERP Investments (ROI), Need for Business Case for ERP, Feasibility Study, Strategic Plan and Analysis.

Unit 4: Pre-Implementation – Getting Ready: Requirements Definition, Engagement with Consultants, Vendors and Employees, Dealing with Employee Resistance, Alternatives for ERP Acquisition, and Importance of Vendor Selection.

Unit 5: ERP Implementation: Implementation Methodologies, Implementation Challenges, ERP Life Cycle Management, Training and Education.

Unit 6: ERP Project Management: ERP Project Scope Management, ERP Project Management, ERP Project Organization & Team, Critical Success and Failure Factors of an ERP Implementation.

Unit 7: Post ERP Implementation: Concept of Post Implementation Review, Post-Installation Review Process, Post-Implementation Review Process, Organizational Change Management, Change Management Activities During ERP Life Cycle, Impact of ERP Systems on the Organization, Post Implementation Support, Maintenance of ERP Systems, Security of ERP Systems.

Unit 8: ERP Business Module: Finance, Manufacturing (Production), Human Resources, Plant Maintenance, Materials Management, Quality Management, Marketing, Sales, Distribution and Services.

Unit 9: Some Popular ERP Packages: SAP AG, Oracle, PeopleSoft, JD Edwards, SSA Global, Lawson Software.

Unit 10: Emerging Trends and Future of ERP: Emerging Trends and Technology, Models of ERP Deployment, Future of ERP.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO306.1	**Remember**	Learn the tools and techniques for ERP models.
CO306.2	**Understand**	Learn and understand the technical terminology.
CO306.3	**Apply**	Apply the different ERP products and development methods.
CO306.4	**Analyse**	Analyse modelling techniques to implement in environment.

Suggested Reading:

1. Make the Choice Between Bolt On and Middleware Solutions – Glazer.J
2. Enterprise Resource Planning- Monk Ellen F. and WagnerBret
3. Enterprise Systems for Management-Motiwalla, Luvai F., ThompsonJeff.

Semester-III Project Management Specialization

Semester	3	**Course Credits**	**4**	**Specialization**	Project Management
Course Code	OMBP-301			**Type**	Specialization Course
Course Title	Fundamentals of Project Management (FPM)				

Course Description:

This course trains scientists and managers in the practical application and modern tools and techniques of planning, scheduling, monitoring, and control of multiple projects.

Course Objectives:

1) To provide the students with a holistic, integrative view of projectmanagement;
2) To highlight the role of projects in modern day business organizations;and
3) To sensitize the students to complexities of projectmanagement.

Course Outline:

Unit 1: Understanding the Project: Introduction to Project, Projects in different fields, Classification of Projects, Project Classification Based on nature of Project, Characteristics of Project.

Unit 2: Project Management: Need for Project Management, Project Management Objectives, The Value of Project Management, Characteristics of Project Management, Phases in Project Management, Approaches to Project Management, Project Processes

Unit 3: Project Management Content: Introduction to Project Management Contents, Project Management Life Cycle, Business Case, Project Management Resources.

Unit 4: Project Finance and Evaluation: Projects Finance, Estimation of Time & Costs in Project, Project Evaluation Using Cost Benefit Analysis, Feasibility Study, PESTEL Analysis.

Unit 5: Project Planning: Projects planning Cycle, Project Planning Tools.

Unit 6: Project Organizing: Creating Organization Structures, Types of Organization Structures, Specialized Organization Structures, Projects Organizing Process, Project Management Office.

Unit 7: Project Scheduling and Control: Project Scheduling Inputs, Project Scheduling Process, Concurrent Project Management, Multi-tasking, Project Crashing, Project Controlling, Earned Value Management, Project Accounting, Project Resource Management, Resource Leveling.

Unit 8: Project Quality: Understanding Quality, Cost of Quality, Project Quality Costs, Dimensions of Project Quality, Project Quality Plan, Components of a Project Quality Plan, Planning for Project Quality, Quality Control in Projects, Implementing Quality Control, Total Quality Management, ISO Standard on Project Management.

Unit 9: Project Contract: Understanding Contract, Elements of Contract, Contract Management, Types of Contract, Contract Process, Defining SOW for Project, Project Contracts from Financial Perspective, Sub-Contracting in Projects, Employer's Involvement in Sub- Contracts.

Unit 10: Project Procurement: Procurement Process, Procurement System, Acquisition Process, Procurement Performance, Procurement Methods, Purchasing, Turnkey projects, Planning for Procurement, Selecting Supplier for Project, RobinsonModel.

Unit 11: Project Closing: Purpose of Project Closing, Elements of Project Closing, Turnover of Projects, Lessons Learned, Project Close-Out Report, Post Implementation Review, Analyzing Project Results, Responsibilities of Project Leader, Project Closure Activities as Given By PMP.

Unit 12: Project Risk Management: Risk management Concept, Principles of Risk Management, Risk Identification, Risk Assessment, Hierarchy of Risk, Risk Options, Risk Management Plan, Areas of Risk Management, Project Risk Management Process, Positive Risk Management, Risk Communication.

Unit 13: Special Cases in Project Management: Event Chain Methodology, Agile Project Management, Extreme Project Management, Software Project Management, Software Prototyping, V–Model, Spiral Model, Rapid Application Development, Dynamic Systems Development Method, Rational Unified Process, Test-Driven Development, Feature-Driven Development, Benefits Realization Management, Critical Chain Project Management.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO301.1	**Remember**	Learn the various stages of project life cycle.
CO301.2	**Understand**	Understand the resources needed in each stage of project life cycle.
CO301.3	**Analyse**	Easily analyse the cost analyses for project to be done.
CO301.4	**Evaluate**	Acquire the skill of completing project depending on the task length.

Suggested Reading:

1. Project Management Body of Knowledge, Book by Project ManagementInstitute
2. Originally published: 1996, Author: Project Management Institute, ISBN: 978-1-62825- 184-5
3. The Art of Project Management, Book by ScottBerkun
4. Project Management: A Systems Approach to Planning, Scheduling, and Controlling by Harold Kerzner(Author)
5. Project Management for the Unofficial Project Manager: A Franklin Covey Title, Book by James Wood, Kory Kogon, and SuzetteBlakemore

Semester	3	**Course Credits**	**4**	**Specialization**	Project Management
Course Code	OMBP-302			**Type**	Specialization Course
Course Title	Project Planning and Scheduling (PPS)				

Course Description:

No matter how large or small construction project, an efficient, well-thought-out schedule is crucial to achieve success. The schedule manages all aspects of a job, such as adjusting staff requirements at various stages, overseeing materials deliveries and equipment needs, organizing, inspecting, and estimating time needed for curing and settling- all of which requires a deep understanding on the part of the scheduler.

Course Objectives:

1) Steps needed to devise a technologically advanced schedule geared toward streamlining the constructionprocess;
2) Calculations needed by project schedulers, particularly related to timemanagement;
3) Precedence networks as a viable solution to scheduling, the main part of projectcontrol;
4) The concepts of Dynamic Minimal Lag, a new CPM technique;and
5) Risk management techniques in the areas of project scheduling andcontrol.

Course Outline:

Unit 1: Project Planning & Scheduling: Concept of Project**,** Characteristics of Projects**,** Project Planning, Importance of Project Planning**,** Difference Between Project Plan and Schedule**,** Types of Project**,** Project Management Life Cycle**,** Work Breakdown Structure.

Unit 2: Project Planning/Scheduling Techniques: Scheduling Techniques, Calendar Scheduling**,** Milestone Chart**,** BAR Chart, Gantt Chart**,** Line of Balance.

Unit 3: Network Techniques– CPM/PERT- I: Concept**,** The Framework for PERT and CPM, CPM Scheduling, PERT Scheduling.

Unit 4: Networking Techniques– CPM/PERT- II: Forward Pass**,** Backward Pass**,** Finding The Critical Path**,** Float**,** Limitations of PERT/CPM**,** Application of PERT/CPM**,** Advantages of PERT/CPM.

Unit 5: Network Technique for Probabilistic Time: Projects of Uncertain Activity Time**,** Framework of PERT**,** Computation of likely project duration and Variance.

Unit 6: Precedence Diagramming Method: Development of PDM, Types of Dependency**,** Concept of

PDM, Constructing Precedence Diagram, Features of PDM, Benefits of PDM, Steps in PDM, Tools Used to Create a Precedence Diagram.

Unit 7: Resource Scheduling: Project Constraints, Resource Constraints, Resource Allocation, Resource Aggregation, Resource Leveling, Resource Leveling Techniques, Resource Allocation and Resource Leveling, Resource Smoothing, Benefits of Resource Scheduling, Multitasking, Resource Allocation in Multi Project Scheduling.

Unit 8: Project Crashing: Concept of Crashing, Objectives, Need for Crashing, Approach, Steps for Crashing, Fast tracking, Criteria for Crashing, Risks of ProjectCrashing.

Unit 9: Critical Chain Scheduling: Concept, Parkinson's Law, Safety in Activity Duration, Multitasking, Buffer, Theory of Constraint, Multi Project Environment, Steps in Critical Chain Scheduling, Implementation Aspects.

Unit 10: Project Performance Measurement and Control: Project Performance Management Process, Designs and Monitoring Framework, Project Process Control, Earned Value Management, Performance Targets and Indicators, Project Risks, Project Quality, Project Performance Management with Six Sigma.

Unit 11: Projects Planning and Scheduling in Service Organizations: Characteristics of Service Business, Project Planning in Service Industry, Effect of Poor Project Planning in Service Industry, Operation Planning in Entertainment Business, Project Planning and Scheduling in IT Industry, Project Planning in Social Service, Project Planning in Health Care, Project Planning inSports.

Unit 12: IT for Project Planning: Project Management Software, Software Selection, Benefits of Use of Software, Project Planning Software Programs, Project Scheduling Software, Gantt Chart in Excel, Software for Small Business, MS Project, Features of MS Project, Primavera.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO302.1	**Remember**	Learn the steps towards streamlining the construction process.
CO302.2	**Understand**	Understand the aspect of time management.
CO302.3	**Analyse**	Analyse critical path method techniques to remove time conflict.
CO302.4	**Apply**	Apply project scheduling and control in work design.

Suggested Reading:

1) Microsoft Project 2013 Plain & Simple by BenHoward
2) Planning and Scheduling using MS Project 2010 by PaulHarris
3) Oracle Primavera P6 Version 8: Project and Portfolio Management by Daniel Williams and Elaine BrittKrazer
4) Computer-aided Project Management by GeorgeSuhanic

Semester	3	**Course Credits**	**4**	**Specialization**	Project Management
Course Code	OMBP-303			**Type**	Specialization Course
Course Title	Business Laws and Regulations (BLR)				

Course Description:

The objective of this course is to enable students understand the legal framework of business.

Course Objectives:

1) Law of Contract -1872 (Part-I): Nature of contract and essential elements of valid contract, offer and acceptance, consideration, capacity to contract, free consent, and legality ofobject;
2) Law of Contract–1872 (Part-II): Unlawful and illegal agreements, contingent contracts, performance and discharge of contracts, remedies for breach ofcontract;
3) Special Contracts: Indemnity and guarantee, contract of agency, Sale of Goods Act - 1930: General Principles, Conditions & Warranties, Performance of Contract ofSale;
4) Indian Partnership Act–1932: Constitution of partnership- Rights, duties and liabilities of partners, dissolution ofpartnership;
5) Negotiable Instruments Act - 1881: Negotiable Instruments- Promissory note, bills of exchange &cheque and their definitions and characteristics, types of endorsements, Holder- holder in due course, discharge ofparties;
6) Companies Act, 1956: Steps and procedure for incorporation of the company, Company Management–appointment of directors, powers, duties, & liabilities of directors, company meetings, resolutions, winding-up of acompany.
7) Income Tax Act -1961 - Important provisions of Income Tax Act: assessment year– assesee, gross total income, procedure for advance payment of tax and tax deducted at source, and assessmentprocedure.
8) Central Excise Act -1944: Basic concepts related to excisable goods, classification of goods, and basic concept ofVAT.

Course Outline:

Unit 1: Introduction: Business Law**,** Constituents of Business**,** Meaning and Nature of Law**,** Sources of Indian Law, Concept of Artificial Legal Entity**,** Concept of Legal Rights**,** Concept of Property**,** Kinds of Property**,** Concept of Ownership and Possession**,** Essentials of Law.

Unit 2: Contract Law- 1: Contracts, Essentials of Valid Contract, Void, Voidable and Valid Agreements.

Unit 3: Performance of Contract, Remedies and Special Contracts: Performance of Contract, Contingent Contract, Quasi Contract, Remedies and Breach of Contract, Contracts of Agency, Contracts of Guarantee, Contracts of Indemnity, Letter of Credit Contracts, Employment Contracts, Indemnification.

Unit 4: Law on Special Contracts under Allied Laws: Partnership and Sale of Goods Act.

Unit 5: Company Law 1: Kinds of Company and Registration of Company, Memorandum of Association, Articles of Association, Prospectus, Share, Debenture, and Capital.

Unit 6: Company Law – II: Membership, Directors, Shareholders Meeting, Ordinary and Special Resolutions, Compromise, Arrangement and Reconstruction, Winding Up.

Unit 7: Law on Alternate Dispute Resolution: Law on Arbitration and Conciliation in India, Lok-Adalats.

Unit 8: Law on Consumer Protection: Consumerism, Object, Definition, Consumer Dispute Redressal Mechanism.

Unit 9: Right to Information: Object and Evolution, Historical Background, Basic Features of the Act.

Unit 10: Information Technology Law: Introduction and Offences.

Unit 11: Intellectual Property Law: Evolution of the Patent System, Introduction to Copyright Law, Moral Rights or Droit Moral, Introduction to Trademark Law, What is a Trademark, Other Types of Intellectual Property.

Unit 12: Competition Laws: Monopolies and Restrictive Trade Practices Act- 1969, Competition Act-2002, Anti-Competitive Agreements, Acquisition, Merger and Amalgamation, Competition Commission of India.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO303.1	**Remember**	Easily learn the various acts pertaining to laws of business
CO303.2	**Understand**	Understand the laws related to business activities
CO303.3	**Analyse**	Analyse the business with government policies.
CO303.4	**Create**	Generate documentation to start new project.

Suggested Reading:

1) The Indian Patent Act as Amended In2005.
2) The Indian Patent Act 1770 (AsAmended).
3) UK Copy RightAct.
4) The Copy Right Act1957.
5) The Trade Marks Act1999.
6) Jon Holyoakand Paul Torremans : Intellectual PropertyLaw
7) Stobbs, Gregory A, Software PatentWorldwide
8) Coppinger, Copyright (All Volumes) 15th Edition, Landon: Tottel Publishing2006
9) Anson's Law ofContract.
10) Prof. G C V Subba Rao, Law of Contract I andII.

Semester	3	**Course Credits**	**4**	**Specialization**	Project Management
Course Code	OMBP-304			**Type**	Specialization Course
Course Title	Project Finance & Budgetary Control (PFBC)				

Course Description:

This course will help students understand the "macro" big picture and "micro" line item context and trends of finance, as well as the mechanics of developing budgets. It will give the students the necessary tools to make sound financial decisions for their business Unit. Whether the goal is to stay on budget, increase overall cost savings or meet specific profitability targets, real-world exercises will help them become familiar with the standard financial documents, and use the budget and estimating methods and tools more effectively. Specifically, they will review and discuss commonly used financial metrics to not only understand the numbers, but also to explore the not-so-obvious financial impacts of typical operating decisions and actions from a project to organizationallevel.

Course Objectives:

1) To be able to describe the concept, components of project finance, and the linkage between planning, analysis, and selection ofproject;
2) To know the key parties to a project financing and the documentation process involved in it;
3) To gain knowledge of sources of finance available forprojects;
4) To describe the strategies employed in managing risk;and
5) To be able to solve simplecases.

Course Outline:

Unit 1: Introduction to Project Finance: Characteristics of a Project, What is Project Finance?, Essentials of Project Financing, Importance of Project Financing, Project Financing Structures, Project Financing in India, Key Parties to a Project Financing, Key Documents in a Project Financing, Risks in ProjectFinancing.

Unit 2: Projects- Financial Structuring: Common Objectives of the Project, The Promoters Role, Capital Investment Decision, Investment Criteria.

Unit 3: Projects – Sources of Finance: Sources of Capital.

Unit 4: Project Financing- Cost of Capital: Introduction, Investors in a Project, Financing Decision,

Definition of Cost Capital, Measurement of Cost of Capital, Cost of Debt, Cost of Equity, Cost of Retained Earnings, Weighted Average Cost of Capital (WACC), Financing Structure.

Unit 5: Projects- Market, Technical & Financial Feasibility: Market Feasibility, Technical Feasibility, and Financial Feasibility.

Unit 6: Financial Estimates and Projections: Objectives of Financial Statements, Users of Financial Statements, Profit & Loss Statement/Operating Statement, Balance Sheet, Funds Flow Statement, Cash Flow Statement, Ratio Analysis, Significance of Ratio Analysis, Limitations of Ratio Analysis.

Unit 7: Projects- Lenders' Appraisal: Financial Feasibility Analysis, Technical Feasibility Analysis, Economic Feasibility Analysis, Management Competency Appraisal, Risk Analysis by Lenders, Restrictive Covenants, Non-Recourse and Recourse Financing, Why do Projects Fail?

Unit 8: Project Risk Analysis: Sources of Risk, Project Risk Identification, Operating Risk, Risk Management.

Unit 9: Financing Infrastructure Projects: Characteristics of Infrastructure Finance, Infrastructure Project Finance vs. Traditional Finance, New Approach for Infrastructure Projects, Infrastructure Project Finance– Advantages, Infrastructure Project Finance– Participants, Financing Mechanism, Steps in Infrastructure Project Finance, Risks and Its Mitigation.

Unit 10: Budgetary Control: Definition of Budgetary Control, Advantages and Limitations of Budgetary Control, Types of Budget, Master Budget, On the Basis of Capacity, Preliminaries in the Installation of Budget System.

Unit 11: Standard Costing: Meaning of Standard Costing, Relation Between Budgetary Control and Standard Costing, Advantages of Standard Costing, Disadvantages of Standard Costing, Suitability of Standard Costing as a Management Tool, Relationship of Standard Costing and BudgetaryControl.

Unit 12: Variance Analysis: Material Variances, Labour Variances, Overhead Variances, and Sales Variances.

Unit 13: Zero-Base Budgeting, Performance Budgeting: Basic Steps in the Implementation of Zero Base Budgeting, Advantages of Zero-Base Budgeting, Disadvantages of Zero Base Budgeting, Performance Budgeting, Steps in Performance Budgeting.

Unit 14: Capital Budgeting Methodologies: Meaning of Capital Budgeting, Capital Budgeting Methodologies.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO304.1	**Remember**	Learn the basic concepts of project finance.
CO304.2	**Understand**	Understand documentation process pertaining to project finance.
CO304.3	**Apply**	Able to select a project by understanding the basic concept.
CO304.4	**Evaluate**	Differentiate risk and returns with strategic analyses.
CO304.5	**Analyse**	Grab the opportunities with available project.

Suggested Reading:

1. Projects- Planning, Analysis, Selection, Financing, Implementation and Review byPrasanna Chandra; Tata McGraw-Hill Publishing Co. Ltd. 7thEdition.
2. Project Management by Bhavesh Patel; Vikas Publishing House Pvt. Ltd. 2ndEdition.
3. Financial Management by Ravi M. Kishore; Taxman Allied Services(P) Ltd. 6thEdition.
4. Banking Strategy, Credit Appraisal and Lending Decisions by Hrishikesh Bhattacharya; Oxford UniversityPress.

Semester	3	**Course Credits**	**4**	**Specialization**	Project Management
Course Code	OMBP-305			**Type**	Specialization Course
Course Title	Project Performance Measurement & Control (PPMC)				

Course Description:

This course provides students with an overview of project management, focusing on project initiation and control. A discussion of the different types of projects, the project life cycle as well as the intricacies of defining and monitoring project resources, cost, scope, and schedule – through work breakdown structures, the precedence diagramming method, and earned value analysis among other tools – is included. Popular project management software will also be introduced.

Course Objectives:

1) Understand what a project is, the project life cycle, stakeholders and roles, challenges and importance of projectmanagement;
2) Learn and apply the tools and techniques in initiating and planning a project such as estimating the project budget and cost, developing a project plan, developing a project schedule, management of risks, preparing project proposals, mobilizing the project resources, and evaluating which project toselect;
3) Learn and apply different project management processes, tools and techniques from executing, monitoring and controlling up to project closure;and
4) Put together a proposal for a project and present a businesscase.

Course Outline:

Unit 1: Project Management Basic Processes: Project Management Five Basic Process Groups, Critical Characters of Control Systems, Characters of Management Control, Concept of Management Control from Historical Perspective in Management Literature, Concept of Management Control, Important Attributes of Management Controls, Project Monitoring & Controlling Processes, Project Controlling and Project Control Systems, Principles of Management Control System 26, The Significance of Control, Steps in Setting up Control Systems-Process Flow.

Unit 2: Project Controls: What is it and Why is it Important?: Importance of Project Controls, What Is Project Control?, Why is Project Control Important?, Factors That Cause Project Change, Project Control Critical Function for Project Success.

Unit 3: Introduction: Project Performance Management Systems: The Objectives of Performance Management System, Journey from Capacity to Excellence, The Main Attributes of PMCS, The Additional Activities for Setting up the Proposed System, Performance Management (Measurement & Control) Cycle.

Unit 4: Project Failures a Challenge for Project Management Professionals: Introduction to Causes of Project, Causes of Project Failures (PMI Survey Results), Issues that Need Attention to Avoid Project Failures, Organizational Issues that Need to be Addressed to Avoid Failures of Projects, How to Prevent ProjectFailure-Actions.

Unit 5: Project Teams & Impact of Teams on Project Performance: The Differences Between Teams & Groups, Why do We Need Teams Especially for Project Organizations?, The Basic Issues in Team BuildingAre?

Unit 6: Project Management and Earned Value: What is Earned Value?,The Secrets to Earned Value Management Success, Earned Value Management (EVM), How Do We Use Earned Value?

Unit 7: Project Audit: Scope of Audit, Principles of the Project Audit, Objectives of the Project Audit Guide, Benefit of the Audit for Project Organization/Users.

Unit 8: Project Management Introduction: Need for Effective Project MIS: Role of the Management Information System, Impact of Management Information System, what is MIS for Project Organizations? Why do We Need MIS for Projects? Background Notes on Information Systems, Business Perspective on Information Systems.

Unit 9: Project Management Office (PMO): Need a PMO: Need of PMO – Many issues involved in this activity, What a PMO Can Do? It's Hard to Measure Success, The Lines of Authority for PMO, Questions for Preparation.

Unit 10: Introduction to TOC (Theory of Constraints): History of TOC, Key Assumption & TOC Basic Principles, Theory of Constraints (TOC) as New Management Philosophy, The Five Focusing Steps, TOC Thinking Process.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO305.1	**Remember**	Learn the basic concepts of project management.
CO305.2	**Understand**	Understand the tools & techniques of project performance and control.

CO305.3	**Apply**	Apply project management process by clearly understanding the subject.
CO305.4	**Evaluate**	Be trained to present a proposal and business case.

Suggested Reading:

1. PMBOK Guide 4th Edition along with various publications of PMI USA
2. Wikipedia and Notes on Web BasedSearch
3. Notes prepared by the authors based on his personal study about ProjectManagement during his study for Fellowship Program atNITIE
4. Deploying Productivity Tools…A Killer Silver Bullet by MikeO'Dell
5. Strategic Planning Centre for NonprofitDevelopment
6. Applied Software Project Management: Andrew Stellman& Jennifer Greene

Semester	3	**Course Credits**	**4**	**Specialization**	Project Management
Course Code	OMBP-306			**Type**	Specialization Course
Course Title	IT in Projects (ITP)				

Course Description:

This course is mainly designed to prepare IT project managers, novice or experienced, with project management skills needed to better manage IT projects. Built along the IT project management lifecycle, this course covers detailed topics of the basic concepts of IT project management, including initiating, planning, controlling, executing, and closing projects. The course also shows how IT projects should be managed, from inception to post implementation review.

Course Objectives:

1. To understand basic concept of IT Project Management, planning and execution of Project.
2. To Understand the job roles of an IT project manager.
3. Recognize the key issues during the IT project management procedures.
4. Describe the best practices in IT project management processes.
5. Build a performing organization and project team.

Course Outline:

Unit 1: Project Management: Its Role & Scope, Need of Project Management, Some Major Project Management Concept, Success Factors in Project Management, Project Development Life Cycle.

Unit 2: Overview of Types of Software's for Project Management: Basics of Project Management Software, Requirements of Project Management Software, Project Management Software Categories, Approaches to Project Management Software, Top 10 Web-Based Project Management Software, Criticisms of Project Management Software.

Unit 3: Microsoft Project in Detail: Starting a New Project File, Tasks and Milestones, Action Plan Organizing, Linking and Predecessors, Assign Resources to a Task, Assigning Costs Tasks, Reports, Views, and Tables.

Unit 4: Software Selection Criteria: Project Management Software Categories, Choosing the Right Tool, Criteria to Consider, Six Criteria for Choosing Software for Project Management Tools, General Requirement, The Recommended Procurement Process.

Unit 5: Barriers for Using Information Technology in Project Management: Information Technology for Project Management**,** Barriers to Technology Adoption and Collaboration**,** Reasons for Non-Adoption of IT Tools.

Unit 6: Aligning IT Tool with the Project: Process Definitions, Step 1: Create, Step 2: Select, Step 3: Plan, Step 4: Manage, Building a Road Map to Success, The Microsoft EPM Solution.

Unit 7: IT Management: IT Infrastructure, List of IT Management Disciplines, IT Configuration Management,IT Managers, Project Management Training, International Standards.

UNIT 8: Project Planning & Task management: Project Planning and Scheduling Techniques, Developing the Project Network Using CPM/PERT, Constructing Network Diagram, AON Basics, Forward Pass and Backward Pass, Limitations of CPM/PERT, PERT/CPM Simulation, Reducing Project Duration. Task Life Cycle, Activity Supported by Task, Task Management Software, Time Tracking Software, and Comparison of Time Tracking Software.

Unit 9: Project Management Information System: Objective of PMIS, Planning by Network Analysis, Cost Control Systems, Integrated PMIS, System Automation & Computerization, Project Monitoring & Reporting.

Unit 10: IT for Documents and Collaboration: Groupware**,**Groupware and Levels ofCollaboration**,** Collaborative Software and Human Interaction**,** Collaborative ProjectManagement Tools**,** Collaboration Software and Voting Methods**,** Document Collaboration.

Unit 11: Organization Structures in Projects: Types of Organization Structure**,** Hierarchical Organization Structure**,** Integrating Projects in Functional Organization**,** Matrix Organization**,** Complexities of Matrix Organization Structure**,** Advantage of Matrix Organization Structure**,** Fitting Matrix Organization into an Organization**,** Types of Matrix Organization Structure**,** Organization Structure in 21st Century.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO306.1	**Remember**	Learn the roles of the IT project managers.
CO306.2	**Understand**	Understand the whole process of project management.
CO306.3	**Analyse**	Be able to develop a work breakdown structure.
CO306.4	**Create**	Implement skills related to manage the overall change control.

Suggested Reading:

1. IT Service Catalog Planning Stage Tips Christina Torode, August2010
2. IT Financial Management – Now Is The Time Reginald Lo, October2008
3. IT SLA and KPI ManagementMcNurlin, Barbara, et al. (2009). "Information Systems Management in Practice (8th Edition.)". PrenticeHall.
4. O'Brien, J (1999). Management Information Systems– Managing Information Technology in the Internetworked Enterprise. Boston: Irwin McGraw-Hill. ISBN 0-07- 112373-3.
5. Talbot, Chris, "HP Adds to Converged Infrastructure Lineup," Channel Insider, June 7, 2011.
6. Gardner, Dana, "Converged Infrastructure Approach Paves Way for Improved Data Center Productivity, Private Clouds," February 9, 2010, IT BusinessEdge
7. Huff, Lisa, "The Battle for the Converged Data Center Network," Data Center Knowledge, August 18,2011.
8. Harris, Derrick, "Can Open Converged Infrastructure Compete?" GigaOM, October 10, 2010.
9. McKeen, James D., and Smith, Heather A., Making IT Happen: Critical Issues in IT Management, Wiley Series in Information Systems,2003.

Semester-III Operations Management Specialization

Semester	3	**Course Credits**	**4**	**Specialization**	Operations Management
Course Code	OMBO-301			**Type**	Specialization Course
Course Title	Production Planning & Control (PPC)				

Course Description:

To develop a broad conceptual framework based on the research, which has been done in the recent past and to bridge the gap between the theoretical solutions on one hand and the real- world problems on the other in production planning and control.

Course Objectives:

1) To understand the various components and functions of production planning and control such as work study, product planning, process planning, production scheduling, inventory control;and
2) To know the recent trends like Manufacturing Requirement Planning (MRP II) and Enterprise Resource Planning(ERP).

Course Outline:

Unit 1: Understanding the Project: Introduction to Project**,** Projects in Different Fields**,** Classification of Projects**,** Project Classification Based on Nature of Project**,** Characteristics of Project.

Unit 1: Production Planning and Control: Production Control**,** Role of Production Planning and Control, Objectives of Production Planning and Control, Significance, Functions**,** Factors Affecting Production Planning and Control, Symptoms of Poor Production Planning and Control, Organisation for PPC Function**,** Manufacturing Planning and Control**,** Measurement of Effectiveness, Production Planning and Control inServices.

Unit 2: Demand Management: Functions**,** Demand Planning**,** Demand Forecasting**,** Forecasting Techniques**,** Bullwhip Effect**,** Strategies for Demand Fluctuations**,** Demand Management in Services.

Unit 3: Sales & Operations Planning (SOP): Features**,** Objectives and Functions, Benefits**,** Process of SOP, Requirements for implementation**,** Implementation of SOP**,** Key Indicators of a Successful SOP

Unit 4: Capacity Planning: Meaning of Capacity**,** Types of Capacity**,** Capacity Management**,** Capacity Shortage**,** Factors Affecting Capacity**,** Capacity Planning**,** Capacity Planning and Product Life Cycle, Capacity Expansion Strategies.

Unit 5: Aggregate Planning: Capacity and Demand Balance, Aggregate Planning Strategies, Steps in Aggregate Planning, Use of QT in Aggregate Planning, Aggregate Planning in Services, Trends in Aggregate Planning.

Unit 6: Master Production Schedule: Objectives of the MPS, MPS and Production Plan, Key Terms in MPS, Output of MPS, Steps in MPS, Time Fences and Time Zones, Changing MPS, Evaluation of MPS.

Unit 7: Material Requirement Planning Schedule: MRP System, MRP Process, Lot Sizing Rules, MRP Computations, Regeneration and Net Change, Assumptions in MRP, Benefits of MRP, MRP Implementation, Software for MRP.

Unit 8: Production Activity Control: Concept of Production Activity Control, Functions of Production Activity Control, Role of Shop Planner, Information and Documents, Operations Scheduling, Loading, Sequencing, Dispatching, Input/Output Control.

Unit 9:High Volume Production Activity Control: Types of Production, Flow Production, Characteristics of Flow Production, Requirements of Flow Production, Planning and Control In Flow Production, Line Balancing, Terminology in Line Balancing, Line Balancing Methods, Line Balancing Procedure, Kilbridge and WesterMethod.

Unit 10: Job Shop Production Activity Control: Job Production, Characteristics of Job Shop Production, Complexity of Job Shop, Production Activity Control in Job Shop, Terminology in Job Shop Planning, Job Shop Scheduling, Sequencing Rules, Gantt Chart, Approaches to Job Shop Scheduling.

Unit 11: Sequencing Models: Meaning of Sequencing, Taxonomy of Sequencing Models, General Assumptions in Sequencing, Priority Rules for Job Sequencing, Factors Affecting Sequencing, Sequencing in Flow Shop, Johnson's Method, N Jobs- Three Machines Sequencing, Sequencing in Job Shop.

Unit 12: JIT and Kanban: Concept of JIT, Philosophy of JIT, Elements of JIT, JIT Purchasing, Application of JIT, Benefits, Limitations of JIT, Concept of Kanban, Objectives and Functions of Kanban, Dual Card Kanban, Pull System, Principles ofImplementation.

Unit 13: Project Scheduling: Characteristics of Project, Project Scheduling, Gantt Chart, Network Scheduling, PERT/CPM, Probabilistic Activity Time, Precedence Diagramming Method (PDM), Critical Chain Scheduling.

Unit 14:PPC in Service Industry: Characteristics of Service Business, Differences Between Service and Manufacturing, OPC in Service Industry, Effect of Poor Planning in Service Industry, OPC in Logistics Operations, Operation Planning in Entertainment Business, Operations Control at Air France, OPC in IT

Industry**,** OPC in Health Care.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO301.1	**Remember**	Learn basic the concepts of production planning & control.
CO301.2	**Analyse**	Exhibit recent trends of manufacturing requirement planning.
CO301.3	**Evaluate**	Easily implement 5 M concept into practice.
CO301.4	**Apply**	Implement various components and functions into practice.

Suggested Reading:

1. Thomas E Vollman, William L Berry, D Cay Whybark and F Roberts Jacob MANUFACTURING PLANNING AND CONTROL FOR SUPPLY CHAIN MANAGEMENT, Tata McGraw–Hill Publishing Company Ltd(2005)
2. Daniel Sipper, Robert L, Bulfin, Jr. PRODUCTION PLANNING, CONTROL AND INTEGRATION McGraw-Hill CompaniesInc.
3. Seetharama L Narsimhan, Dennis W McLeavy, Peter J Billington PRODUCTION PLANNING AND INVENTORY CONTROL Prentice Hall Of India Pvt Ltd, New Delhi (2003)
4. Landvater Darryl V WORLD CLASS PRODUCTION AND INVENTORY MANAGEMENTJohn Wiley and Sons, New York1997
5. H J Zimmermann, M G Sovereign QUANTITATIVE MODELS FOR PRODUCTION MANAGEMENT Englewood Cliffs N J: Prentice Hall 1974

Semester	3	**Course Credits**	**4**	**Specialization**	Operations Management
Course Code	OMBO-302			**Type**	Specialization Course
Course Title	Fundamentals of Project Management (FPM)				

Course Description:

To train scientists and managers in the practical application and modern tools and techniques of planning, scheduling, monitoring, and control of multiple projects.

Course Objectives:

1) To provide the students with a holistic and integrative view of projectmanagement;
2) To highlight the role of projects in modern day business organizations;and
3) To sensitize the students to the complexities of projectmanagement.

Course Outline:

Unit 1: Understanding the Project: Introduction to Project, Projects in Different Fields, Classification of Projects, Project Classification Based on Nature of Project, Characteristics of Project.

Unit 2: Project Management: Need for Project Management, Project Management Objectives, The Value of Project Management, Characteristics of Project Management, Phases in Project Management, Approaches to Project Management, Project Processes.

Unit 3: Project Management Content: Introduction to Project Management Contents, Project Management Life Cycle, Business Case, Project Management Resources.

Unit 4: Project Finance and Evaluation: Projects Finance, Estimation of Time and Costs in Project, Project Evaluation Using Cost Benefit Analysis, Feasibility Study, PESTEL Analysis.

Unit 5: Project Planning: Projects Planning Cycle, Project Planning Tools.

Unit 6: Project Organizing: Creating Organization Structures, Types of Organization Structures, Specialized Organization Structures, Projects Organizing Process, Project Management Office.

Unit 7: Project Scheduling and Control: Project Scheduling Inputs, Project Scheduling Process, Concurrent Project Management, Multi-Tasking, Project Crashing, Project Controlling, Earned Value Management, Project Accounting, Project Resource Management, Resource Leveling.

Unit 8: Project Quality: Understanding Quality Cost of Quality, Project Quality Costs, Dimensions of

Project Quality, Project Quality Plan, Components of a Project Quality Plan, Planning for Project Quality, Quality Control in Projects, Implementing Quality Control, Total Quality Management, ISO Standard on Project Management.

Unit 9: Project Contract: Understanding Contract, Elements of Contract, Contract Management, Types of Contract, Contract Process, Defining SOW for Project, Project Contracts from Financial Perspective, Subcontracting in Projects, Employer's Involvement in Subcontracts.

Unit 10: Project Procurement: Procurement Process, Procurement System, Acquisition Process, Procurement Performance, Procurement Methods, Purchasing, Turnkey Projects, Planning for Procurement, Selecting Supplier for Project, RobinsonModel.

Unit 11: Project Closing: Purpose of Project Closing, Elements of Project Closing, Turnover of Projects, Lessons Learned, Project Close Out Report, Post Implementation Review, Analyzing Project Results, Responsibilities of Project Leader, Project Closure Activities as Given by PMP.

Unit 12: Project Risk Management: Risk Management Concept, Principles of Risk Management, Risk Identification, Risk Assessment, Hierarchy of Risk, Risk Options, Risk Management Plan, Areas of Risk Management, Project Risk Management Process, Positive Risk Management, Risk Communication.

Unit 13: Special Cases in Project Management: Event Chain Methodology, Agile Project Management, Extreme Project Management, Software Project Management, Software Prototyping, V–Model, Spiral Model, Rapid Application Development, Dynamic Systems Development Method, Rational Unified Process, Test-Driven Development, Feature-Driven Development, Benefits Realization Management, Critical Chain Project Management.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO302.1	**Remember**	Learn various stages of project life cycle.
CO302.2	**Understand**	Understand resources needed in each stage of project life cycle.
CO302.3	**Analyse**	Easily analyse the cost analyses for project to be done.
CO302.4	**Evaluate**	Implement the skill of completing project depending on the task length.

Suggested Reading:

1. Project Management Body of Knowledge, Book by Project ManagementInstitute
2. Originally published: 1996, Author: Project Management Institute, ISBN: 978-1-62825- 184-5
3. The Art of Project Management, Book by ScottBerkun
4. Project Management: A Systems Approach to Planning, Scheduling, and Controlling by Harold Kerzner(Author)
5. Project Management for the Unofficial Project Manager: A Franklin Covey Title Book by James Wood, Kory Kogon, and SuzetteBlakemore

Semester	3	**Course Credits**	**4**	**Specialization**	Operations Management
Course Code	OMBO-303			**Type**	Specialization Course
Course Title	Logistics & Supply Chain Management (LSCM)				

Course Description:

This Course is designed to explain the basic theory and techniques of Supply Chain Management (SCM) to examine the issues and problems associated with SCM in changing the business environment and to show how SCM can improve an enterprises effectiveness and competitiveness.

Course Objectives:

1) To understand the importance ofSCM;
2) To know the various aspects of SCM;and
3) To study the current trends inSCM.

Course Outline:

Unit 1: Introduction to Supply Chain Management: The Management Concept and Evolution of SCM, What is SCM? The Basic SCM Model, Relationships in SCM, Significance of SCM, Case Studies, Fundamentals of Logistics Management.

Unit 2: Fundamentals of Supply Chain Management: Decision Phases in Supply Chain, The macro processes of Supply Chain, Push-Pull based SCMs, Morkov Chain,Different types of Logistics, SCM in Indian Industry, Reverse SCM and Logistics, and Other Related Topics.

Unit 3: Inventory Control Management and Supply Chain Management: Need for Holding Inventory, Types of Inventories, Inventory Under Conditions of Uncertainty, Symptoms of Poor Inventory Management, Significance of Inventory Control Management, Inventory Control Organization, Duties of Inventory Control Department, Conducting Inventory– Methods of Inventory Control, Selective Inventory Control, Inventory Management in India, Inventory Ratios, Service Level, Understocking and Overstocking Costs.

Unit 4: Economic Order Quantity: The Economic Order Quantity [EOQ], The Derivation of EOQ, Standard Deviation, Practical Inventory Systems, Methods of Computation of EOQ, Cost Sensitivity Analysis, Integrated EOQ-ABC Analysis, Economic Purchase Quantity, Practical Considerations of EOQ in terms of Rate of Receipt and Rate of Usage, Additional Problems on EOQ.

Unit 5: Stores Management and Supply Chain Management: Duties of the Store Officer, Interdepartmental Relations, Corporate Policy and Stores Management, Types of Stores, Warehouses, Store Organization, Store Layouts, Features of Good Store Keeping, Safety Measures, Training.

Unit 6: Stores in Supply Chain: Care of Materials, Features of Ideal Storage Equipment's, The Storage Equipment's, The Store Records, The Store Reports, The Store Ratios, The Store Audit, Disposal, Replacement Analysis.

Unit 7: IT Enabled Supply Chain: Types of SCM Software, Macro-Processes CRM, ISCM and SRM, Transaction Management with EDI, Supply Chain IT in Practice, E-Business and Supply Chain, E-Sourcing, Data Requirements from SCM, LegacySystems.

Unit 8: Material Handling and Transportation: Significance of MHT, Functions of MHT Management, Factors Influencing Transport Decisions, Various Modes of Transport, Design Options, Transportation During Trade-Offs, Routing and Scheduling, Material Handling, Material Handling Ratio, Principle of Unit Load and Concept of Containerization and Palletization, Containerization, Transportation Techniques, Material Handling Equipment's, Traffic Management, Total Cost of Transport, InsuranceManagement.

Unit 9: Strategic Fit: Implied Demand Uncertainty, Understanding the Capabilities of Supply Chain, Other Issues Affecting Strategic Fit, Drivers and Obstacles, Decision Making in Supply Chain, Designing Supply Chain Distribution Network, Design Patterns of Distribution Network.

Unit 10: Network Design in Supply Chain: Factors Affecting Network Design, A Framework for Network Design Decisions, Taking Supply Chain Decisions Under Uncertain Conditions, Forecasting Demand, Methods of Forecasting, Role Played by Aggregate Planning, Action Plan, Strategy, Aggregate Planning Implementation, Managing the Supply, Implementing Solutions.

Unit 11: Manufacturing and Supply Chain Management: Product Life Cycle, Item Management, Kanban Systems, Assembly Line, Basic MRP Logic.

Unit 12: Channels of Distribution: Functions Performed by Distribution Channel, Services to the Customer, Vertical Marketing Systems [VMS], Horizontal Marketing Systems [HMS], Multi-Channel Marketing Systems [MMS], The Internet, Distribution Channel Design, Factors Affecting Choice of Distribution Channel.

Unit 13: International Logistics: International Shipping, Multimodal Transport, Air Transport.

Unit 14: Advanced Topics in Supply Chain Management: Customer Relationship Management (CRM), Electronic Data Interchange (EDI), Business Telecommunication, Electronic Supply Chain Management (eSCM),

Supply Chain Software, Digital Content Management, Business Process Re-engineering (BPR), Decision Support Systems and SCM.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO303.1	**Remember**	Learn the importance of supply chain management.
CO303.2	**Understand**	Understand the basic concepts of supply chain management.
CO303.3	**Analyse**	Exhibit current trends in supply chain management.
CO303.4	**Apply**	Apply skills to implement various aspects of supply chain management.

Suggested Reading:

1. Oracle e-Business Suite, Manufacturing and Supply Chain Management OraclePress
2. Manufacturing Planning and Control for Supply Chain Management, F. Robert Jacobs, William Berry , D. Clay Whybark , Thomas Vollmann, McGraw-Hill Professional Publishing
3. Manufacturing, Planning and Control Systems for Supply Chain Management, William Berry , D. Clay Whybark , Thomas Vollmann McGraw-HillPublishing
4. Manufacturing Operations and Supply Chain Management – ALean Approach, David H. Taylor, David Brunt Cengage LearningPublishing
5. Supply Chain Design and Management: Strategic and Tactical Perspectives, Manish Govil, Jean-Marie Proth Academic Press

Semester	3	**Course Credits**	**4**	**Specialization**	Operations Management
Course Code	OMBO-304			**Type**	Specialization Course
Course Title	World Class Manufacturing (WCM)				

Course Description:

Consistent with the Shingo Principles of continuous improvement, the World Class Manufacturing (WCM) training program is designed to train individuals to improve employee morale, individual and company performance, and company profits at all levels of the organization by highlighting the value and non-value added activities.

Course Objectives:

1) To help students understand the global competitive environment being faced bymanufacturers;
2) To help students to know the impact of IT revolution on manufacturingcompetitiveness;
3) To help students understand the different international practices & models adopted by various organizations;
4) Understand various practices being taken up by Indian Industries;and
5) To help students know about the maintenance managementpractices.

Course Outline:

Unit 1: Overview of "World Class Manufacturing": Common characteristics of WCM**,** World Class Organization of Future**,** What it Takes to Stay World Class?**,**Emergence of "World Class" Concept**,** Case Studies.

Unit 2: Vision, Mission, Values, Business & Manufacturing Strategies: Mission Statement, Vision Statement, Values, Interrelationship Between Values, Mission, and Vision, Strategy, Vision, Mission, Competitive Advantage, Business Strategy, Manufacturing Strategy**,** Current Issues.

Unit 3: Organization Design, Human Resources, Technology, and Performance Measurement: Organization Design, Human Resource, Technology, and Performance Measurement

Unit 4: Information Systems, Management Direction, and OperationsCapabilities: Information Systems, Management Direction, Operating Model, OperatingCapabilities.

Unit 5: Quality: 'Quality', Total Quality Control, Quality Planning, Quality Control, Quality Improvements**,** Total Quality Management (TQM).

Unit 6: Customer Service: What is Customer Service?, Essentials of Customer Service, A Few Basic Rules About Customer Service, Tips for Better Customer Service, Finer Points of Excellent Customer Service, Secrets of Customer Service, Five Customer Service Trends You Can't Ignore, Customer Service Skills, Customer Relations Management (CRM), CRM for Small Business, Companies Known for Their Extraordinary CustomerService.

Unit 7: World Class Manufacturing: History of World Class Manufacturing, World Class Manufacturing Philosophy, World-Class Manufacturing Defined, Changing Scenario in Manufacturing, Framework for Continuous Improvement, Imperatives for Increased Productivity, Opportunities for Improvement, Actual Company Performance Improvements, Examples of World Class ManufacturingFirms.

Unit 8: Product and Process Design: Product, Product Design, R&D Strategies, Modern Approaches to Design & Development, Process, Process Analysis, Process Capability.

Unit 9: Waste Elimination: What is "Waste", Seven Wastes, Definition of 'Waste', Five 'S', Flexible Workforce, Equipment Maintenance, Total Productive Maintenance (TPM), Statistical Process Control (SPC), Poka Yoke, Reduced Set up Time, Just-In-time (JIT), Three 'Ms' (Muda, Mura, Muri).

Unit 10: Lean Six Sigma: Lean Manufacturing, Six Sigma, Execution Infrastructure for Lean Six Sigma Applications, Software used for Six Sigma, Tools for Lean Six Sigma.

Unit 11: Toyota Production System (TPS): History, Underlying Principles of TPS, The 14 Principles, Essential Features of TPS, Techniques used in TPS.

Unit 12: Contributions of Experts To WCM: Dr. Edward Deming, Seven Deadly Diseases, Quotations and Concepts of Deming, Philip Crosby, Shigeo Shingo, Kaoru Ishikawa, Michael Porter, Case Study:- The Silicon Valley Case, Value Chain, Four Corners Model, C. K. Prahlad, Stephen Covey, Peter Senge.

Unit 13: Modern Techniques: Theory of Constraints (TOC), Synchronous Manufacturing, Business Process Reengineering (BPR), Benchmarking, Knowledge Management, Game Theory, Flexible Machining System.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO304.1	**Remember**	Learn the global competitive environment.

CO304.2	**Understand**	Differentiate the role of IT and Manufacturing competitiveness.
CO304.3	**Analyse**	Exhibit international projects and techniques.
CO304.4	**Apply**	Apply the skills to implement maintenance management practices.

Suggested Reading:

1. World Class Manufacturing: The Lessons of Simplicity Applied by RichardJ. Schonberger,
2. Japanese Management Techniques: Nine Hidden Lessons in Simplicity. by RichardJ. Schonberger,
3. Operations Strategy: Focusing Competitive Excellence (Quantitative Methodsand Applied Statistics Series)by Peter W. Stonebraker and G. KeongLeong
4. Toyota Production System: Beyond Large-Scale Production by TaiichiOhno
5. Manufacturing Strategy: Text and Cases- TerryHill

Semester	3	**Course Credits**	**4**	**Specialization**	Operations Management
Course Code	OMBO-305			**Type**	Specialization Course
Course Title	Operations in Service Industry (OSM)				

Course Description:

Services are a predominant force in our society. The rapid and continuing growth in the service sector is providing marked opportunities for managers. Understanding the concepts of successfully managing, the service will provide a significant advantage to new graduates, who find themselves employed by a service-oriented firm.

Good service does not happen as a result of one extraordinary employee who goes out of the way to please a customer; good service should be properly planned and managed. Service operations management concerns the design, planning, direction, and control of all the facilities, processes and required activities to transform labour, capital, materials, energy, and skills into performance and delivery of service. Good service organization performs the operations functions of planning, scheduling, equipment operation, quality control, record keeping, and human resource management for maintaining efficient usefulness. This takes place while ensuring that the quality of the service is both high andconsistent.

Course Objectives:

1) To train students to manage and lead in all aspects of business. The Courses specifically emphasize each of these areas and others essential for developing managerial leadership like organizationalbehavior;
2) To develop students so that they make business decisions; including learning to apply quantitative approaches and to use computer programs and systems in bringing speed to business decision making;and
3) To enlighten students on what adds value to a process from a customer's perspective and what degrades the value of a product or a service which in turn helps the student take effectivedecisions.

Course Outline:

Unit 1: Operations Management in Service Sector: Service Specification, Service Delivery, List of Economic Services, Operations Management in Services, Difference Between Service Operation and Manufacturing Operations, Operations Concept, Managing Service Operations, Planning/Forecasting to Meet Service Demand**,** Service Quality.

Unit 2: Retail Store Operations: Retails, Store Operations, Types of Retail Outlets, Retail Store Layouts, Store Floor Plan, Responsibilities of the StoreManager.

Unit 3: Retail Support Services: Hurdles to Retail Store Operation, Retail Pricing, Retail Merchandising, Cross Merchandising, Visual Merchandising, Collaborative Planning, Forecasting and Replenishment, Inventory Management in Retail, Bar-coding and RFID, Vendor Managed Inventory in Retail.

Unit 4: Banking Operations: Importance of Banking, Types of Banks, Channels, Types of Bank Accounts, Card Facilities in Banks, Opening of Accounts, Customer Identification Procedure, Introduction of Customer Accounts, Maintenance of Accounts & Operational Procedures, Managing Cheques in the Banks, Cash Transactions, Miscellaneous Banking Operations.

Unit 5: Aviation Operations Management: Aviation Development, Civil Aviation, General aviation, Military Aviation, Cargo Management, Aerodrome Management, Air Traffic Control, Air Traffic Flow Management, Passenger Management in Air Transport, Aircraft Boarding Operations, Aviation Vehicle Management, Airline Crew Operations.

Unit 6: Shipping Operations: Bulk Cargo Shipping, Break Bulk Shipping, Containerization, Mid-stream Operation, Ship-To-Ship (STS) Transfer, Underway replenishment, Stevedore, Transshipment, Lashing & Choking, Freight Forwarding, Sea Port Operations, Pilotage.

Unit 7: Railway Operations: Railway Station, Railway Signaling, Rail Systems, Trains, Types of Railway Operations, Railway Track, Railway Crew

Unit 8: Logistics Operation: Scope of Logistics, Business Logistics, Logistics Goals, Warehouse Operations, Warehouse Location, Cool Warehouses and Cold Storage, Warehouse Management System, Inventory Management, Third-party Logistics and Fourth Party Logistics, Reverse Logistics, Total Logistics Costs, Distribution Operations.

Unit 9: IT Operations: IT as a Service Operation, IT Operations Management Tasks, Software Development, Software Design, Enterprise Resource Planning, Role of Software Developer, Role of Software Engineer, Role of ComputerProgrammer.

Unit 10: Outsourcing Operations: Scope of Outsourcing, Business Process Outsourcing, BPO Activities, Service Management in BPO, Off-Shoring, KPO, Legal Outsourcing.

Unit 11: Healthcare Operations: Health Care System, Hospital Operations, Hospital Building Attributes, Materials Management in Hospitals, Information Management in Healthcare Operations, Operational Focus in Healthcare, ERP Implementation in Healthcare Industry.

Unit 12: Insurance Operations: Concept of Insurance, Legal requirements of Insurance, Indemnification,

Underwriting and Investment, Insurance Claims, Types of Insurance, Insurance Companies Operation, Reinsurance & Captive Companies, Miscellaneous Insurance Operations, Insurance Productivity.

Unit 13: Hospitality Service Operations: Restaurant Operations, Lodging Operations, Amusement Parks and Theme Parks, Catering Operations, Club Operations, Event Management Operations.

Unit 14: Miscellaneous Service Operations: Entertainment Operations, Filmmaking, Broadcasting Operations, Television Operations, Radio Operations, Trade Fair Operations, Travel and Tourism Operations, Exim Operations, Postal Operations, Courier Operations.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO305.1	**Understand**	Exhibit leadership skill.
CO305.2	**Analyse**	Add values by taking the correct decision.
CO305.3	**Apply**	Impart the decision-making approach by learning service industry.
CO305.4	**Apply**	Implement various skills for smooth running of an organization.

Suggested Reading:

1. The Filmmaker's Handbook: A Comprehensive Guide for the Digital Age Publisher: Plume Books, Publication date: 07/01/2007, Authors: Edward Pincus, StevenAscher
2. Independent Feature Film Production: A Complete Guide from Concept Through Distribution. Publisher: St. Martin's Griffin Publication date: 05/15/1998 Return Policy, Author: GregoryGoodell
3. Postal operations manual, United States Postal Service, United States Postal Service; for sale by the Supt. of Docs., U.S. Govt. Print. Off., 1998 - PoliticalScience

Semester	3	**Course Credits**	**4**	**Specialization**	Operations Management
Course Code	OMBO-306			**Type**	Specialization Course
Course Title	Statistics and Quantitative Techniques (SQT)				

Course Description:

Resources are always critical in any organization. They are unavailable in unlimited manner and there are always constraints. Operation research is helpful in the situation of such constraint of resources. Managers have to manage limited available resources in such a way that neither production nor other activities get disturbed in the business. Facility design is a fascinating area for OR. The excitement of operation research lays in the application of quantitative techniques to real-world problems.

Course Objectives:

1) To impart knowledge in concepts and tools of OR and QT;and
2) To help students apply these tools in managerial decisionmaking.

Course Outline:

Unit 1: Arranging Data to Convey Meaning: Presenting Data in Tables & Charts: Application Areas for Statistics, Statistical Methods, Understand Data, Organize and Classify Data, Graphical Representation of Data, Good & Bad Data Presentation.

Unit 2: Measures of Central Tendency – Mean, Median, Mode: Numerical Data Properties, Frequency and Frequency Table, Summary Measures– Central Tendency.

Unit 3: Measures of Dispersion: Summary Measures– Variation.

Unit 4: Correlation Analysis: Correlation Analysis– Scatter Plots, Some Misconceptions About Correlation, Correlation Terminologies.

Unit 5: Simple and Multiple Regressions: Regression Analysis, Simple Regression, Multiple Regressions.

Unit 6: Association of Attributes: Notations, Classes and Class Frequencies, Relationship Between the Class Frequencies, Consistency of the Data, Independence of Attributes, Association of Attributes, Yules' Co-efficient ofAssociation.

Unit 7: Probability & Probability Distribution: Notation and Terminology from Set Theory, Addition Theory of Probability, Conditional Probability, Multiplication Theory of Probability, Applications of

Bayes' Theorem, Binomial Distribution, Poisson Distribution, Normal Distribution.

Unit 8: Linear Programming – Formulation & Graphical Solutions to LPP: Variables, Constraints, Objective, Phases of an Operations Research Project, Linear Programming– Formulation Graphical Solutions to LPP.

Unit 9: Transportation: Mathematical Formulation of Transportation Problem, North-West Corner Rule, Lowest Cost Entry Method, Vogel's Approximation Method, Test for Optimization.

Unit 10: Assignment Problems: Mathematical Statement of Assignment Problem, Solution Method for Assignment Problem, Travelling Salesman Problem.

Unit 11: Queuing Theory – Single Server & Multi Server: Analysing Queuing Process, Constituents of Queuing System, Service Facility, Queuing Discipline, Kendall Notations, Single Server Models, Multi-Server Models

Unit 12: Markov Chain: Monte Carle Simulation: Simulation Procedure, Application of Simulation.

Unit 13: Games Theory: Zero Sum Games, Fundamental Principles of Game Theory, Reducing by Dominance, Saddle Point, Strictly Determined Game, Mixing Strategies, Flow of Solution, Assumptions for Games Theory.

Unit 14: Decision Theory - Criteria for Decision Making: Decision Tables, Decision Making Process, Decision Criteria for Certainty, Decision Criteria for Uncertainty [5 Criteria], Decision Criteria for Risk.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO306.1	**Remember**	Learn the basic concepts of operational research.
CO306.2	**Apply**	Easily apply the tools in managerial decision making.
CO306.3	**Analyse**	Grab the opportunities in operation as a career.
CO306.4	**Creating**	Easily do operational research for better growth.

Suggested Reading:

1. Taylor III. Bernard W., Introduction to Management Science, Dorling Kindersley (India) Pvt. Ltd., licenses of Pearson Education in South Asia, 9th Edition,2008.
2. Vohra N. D., Quantitative Techniques in Management, Tata McGraw-Hill Publishing Co. Ltd., New Delhi, 3rd Edition,2007.

Semester-III Hospital Administration and Healthcare ManagementSpecialization

Semester	3	**Course Credits**	**4**	**Specialization**	HAHM
Course Code	OMBHA-301			**Type**	Specialization Course
Course Title	Indoor and Outdoor Hospital Services (IOHS)				

Course Description:

This course will develop the detail understanding about the structure and process of different indoor and outdoor hospital services. This course will also be utilized as effective tool for quality hospital services to the patient.

Course Objectives:

1) To understand the different departments structure and process of a hospital;and
2) To implement managerial approach in managing the indoor and outdoor hospital services.

Course Outline:

Unit 1: Out Patient Department: Historical Aspect, Types of OPD, Functions of OPD, Planning, Designs of Buildings, Equipment, Staffing, Work Flow Process_OPD, Administrative Issues, Monitoring and Evaluation, Management Structure.

Unit 2: Accident and Emergency Services: Definitions, Development and Scope, Functions, Type of Emergency Services, Planning Considerations, Equipment, Staff, Ambulance Services, Policies and Procedural Guidelines, Evaluation and Monitoring, The Work Flow Process, Review (Audit) Committee.

Unit 3: Operation Theatre: Planning Consideration, Engineering Services, Equipment, Staffing, Maintenance, Needle Stick Injury, Waste Disposal Procedure in OT, Hazards in OT & Safety Measures, Policies in OT, Quality Monitoring for Operation Theatre.

Unit 4: Intensive Care Unit: Definition, Admission Criteria in ICU, Types and Levels, Planning Considerations, Equipment, Staffing, Policy and Procedures, Principles of Intensive Care, Monitoring and Quality Assessment, Aspects of Care, Step Down ICU or High Dependency Units.

Unit 5: Nursing Services – Organization and Administration: Evolution of Nursing Education in India, Role of Nursing Services, Organization of Nursing Services, Duties and Responsibilities, Staffing Pattern, Norms Recommended for Nursing Staff.

Unit 6: Ward Management and Nursing Care: Role of Nurse, Nursing Care Methods, Functions of Nurse, Equipment in Ward, Monitoring and Evaluation.

Unit 7: Radio Diagnosis and Imaging Services: Modalities of Radiology, Planning, Equipment Management, Staffing, Policies and Procedures, Radiation Safety Policy, Monitoring and Evaluation.

Unit 8: Laboratory Services: Functions, Components, Physical Facilities and Layout, Staff Requirement, Equipment, Workflow, Policies and Procedures, Quality Control, Monitoring, Hazards in Laboratory, Animal House.

Unit 9: Mortuary Services: Functions, Planning Considerations, Policies and Procedures, Embalming, Equipment's, Safety Measures.

Unit 10: Bloods Transfusion Services: History, Categories and Functions, Planning, Equipment, Staffing, Policies/Procedures, Infections Associated with Blood/Product Transfusions, Blood Components, Autologous Transfusion, Monitoring and Evaluation of Blood Bank.

Unit 11: Physical Medicine and Rehabilitation (PMR): Brief History of PMR Services, Disability, Various Approaches to Prevent Disability, Rehabilitation, Physical Facilities and Designing, Staffing and Human Resource, Functions of the Department, Equipment Planning.

Unit 12: Pharmacy Services: Important Definitions, Functions, Physical Facilities, Pharmacy and Therapeutic Committee, Hospital Formulary, Drug Distribution Service, Drug Information Service, Pharmacy Policy/Procedure Manual, Labelling, Human Resource Management, Logistics Management in Pharmacy, Medication Incident and Discrepancy Reporting, Security, Narcotics and Controlled drugs, Steps to Prevent Pilferage and Thefts, Quality Management.

Unit 13: Ambulatory Care Services (ACS): Ambulatory CARE Sensitive Conditions (ACSC), Ambulatory Care Design Principles, HPMG's Care Model of Ambulatory Care, Ambulatory Care Surgery, Requirements for Ambulatory Care Surgery, Physical Facility, Developing the Future Ambulatory CareModel.

Unit 14: Obstetrics Care and Neonatal Care Services: Physical Facilities (Obstetrical Facilities), Types, Physical Facilities, Infant Resuscitation/Stabilization Areas, NICU, Ambient, Lighting in Infant Care Areas, Acoustic Environment.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO301.1	**Remember**	Learn the structure and process of a hospital.
CO301.2	**Understand**	Understand time management in context of care of patient.
CO301.3	**Analyse**	Easily manage indoor and outdoor hospital services.
CO301.4	**Apply**	Enhance skills for indoor and outdoor hospital services.

Suggested Reading:

1. Medical InstituteGuidelines
2. Hospital and Nursing Home planning and Organization by SA Tabish
3. Hospital Administration By C. M.Fracis
4. Hospital planning byKunders
5. BARC Guidelines on radiation safety in hospitals.

Semester	3	**Course Credits**	**4**	**Specialization**	HAHM
Course Code	OMBHA-302			**Type**	Specialization Course
Course Title	Ancillary Hospital Services (AHS)				

Course Description:

This course will bring the understanding about the different non-clinical support system in an organization. The standard structure and process about the different support services in a hospital will be learnt through this course.

Course Objectives:

1) To learn about the different support services working in hospitals.
2) To develop understanding about the standard operating process in hospitals;and
3) To implement knowledge about different support services and providing sterile care through theseservices.

Course Outline:

Unit 1: Sterile Supply Services in Hospitals: Workflow in CSSD, Physical Facilities, Equipment's, Storage, Organizations, and Work Process in CSSD.

Unit 2: Medical Record Department: History, Definition, Characteristics, Functions, Components, Importance.

Unit 3: Hospital Information Systems (HIS): Definition of HIS, Aim of HIS, Purpose of HIS, Objectives of HIS, Medical Data, Drawbacks of Manual HIS, Benefits of Computerized HIS, Organizational Structure, Architecture, Modules of HIS, Echelons in HIS, Security of HIS, Critical Success Factors, Selecting a Hospital Information System.

Unit 4: Linen and Laundry Services: Categories at Linen in Hospital, Norms of Linen, Color Coding, Linen Storage and Distribution System, Linen Control, Condemnation and Disposal, Types of Laundry Service, Space Requirement, Equipment, Human Resource, Training the Personnel, Washing Process.

Unit 5: Dietary Services in Hospital: Importance, Functions, Determination of the Need, Planning Considerations, Equipment and Facilities, Manpower, Workflow, Quality Assurance, Records, Therapeutic Nutrition, Types of Menus, Administrative Considerations.

Unit 6: Medical Gas: What Are Medical Gases?Gases and Our Atmosphere, Common Medical Gases Used Around the Hospital, Categories of Medical Gases and Their Associated Hazards, Hazard: Temperature, Hazard: Asphyxiation, Supply and Storage of Medical Gases, Piped Gases, Administration of Oxygen, Oxygen Therapy DeliveryDevices.

Unit 7: House Keeping Services: Historical Review, Definition, Functions of House Keeping, Equipment's and Materials, following criterion can be useful, Cleaning Agents in Common Use, Cleaning Techniques, Evaluation and TQM, Questions.

Unit 8: Hospital Security Services: Need for Safety, Analysis of Need, Threats in Hospitals, Aims and Objectives of Security Management, Planning, Organizational Structure, Employment & Security Training, Security Technology, Security of Patients And Their Belongings, Laws and Security, Job Description of Security Personnel.

Unit 9: Hospital Acquired Infections (HAI): Frequency of Infection, Impact of Nosocomial Infections, Definition, Factors Influencing The Development Of Nosocomial Infections, Nosocomial Infection Surveillance, Epidemiology, Dealing with Outbreaks.

Unit 10: Prevention And Control Of Hospital Acquired Infections(HAI): Risk Stratification, Reducing Person-To-Person Transmission, Safe Injection Practices, Preventing Transmission from the Environment, Infection Control Precautions in Patient Care, Precautions for Common Hospital Practices, Antimicrobial Use And antimicrobial Resistance, Prevention of Common Endemic Nosocomial Infections, Infection Control Programme.

Unit 11: Hospital Waste Management: Definition, Importance Linkage of Bio-Medical Waste Management, Legal Aspects and Environmental Concern, Hazards of Biomedical Waste, Health Care Waste Generation, Principles of Waste Management, Classification, Waste Identification and Waste Control Program for the Health Care Establishments, Segregation of Hospital Waste, Waste Storage, Transportation, Final Disposal, Occupational Hazards and Safety Measures.

Unit 12: Standard Operating Procedure for Biomedical Waste Management: BMW Management Committee, Functions of BMWM Committee, Waste Inventory, Waste Segregation & Collection, DO'S AND DON'TS, Training &Motivation, BIO-MEDICAL WASTE (MANAGEMENT AND HANDLING)RULES,1998.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO302.1	**Remember**	Learn about the different support services.
CO302.2	**Understand**	Understand the operating process in a hospital.
CO302.3	**Analyse**	Implement the knowledge through services.
CO302.4	**Apply**	Enhance job opportunities by learning hospital services.

Suggested Reading:

1. Hospital Administration byMcGibbony
2. Principles of Hospital Administration by BMSakharkar
3. Healthcare and Distributed Systems Technology: FrancescoFEDELE
4. HIS-Navayuginfotech
5. Hospital Administration byMcGibbony
6. Health Technical Memorandum 02-01: Medical Gas Pipeline SystemsBasic
7. Medical Gas SafetyG11102604 Design Services, Salford Royal NHS, FoundationTrust

Semester	3	**Course Credits**	**4**	**Specialization**	HAHM
Course Code	OMBHA-303			**Type**	Specialization Course
Course Title	Legal Aspects of Hospital and Health Management (LAHAHM)				

Course Description:

This course will be about learning the various laws related to hospital and its services. This course facilitates the learner to run the hospital in an ethical way as per the Indian Laws related to health careservices.

Course Objectives:

1) To understand the statutory provisions to provide hospitalservices;
2) To understand the importance of medical ethics;and
3) To avoid professional negligence while providing health careservices.

Course Outline:

Unit 1: Introduction to Legal Aspects in Hospital and Health Care Management: Changes in Health Care, Basic Terminologies, Legislation in Health Care, Medical Council ofIndia.

Unit 2: Codes of Medical Practice: Hippocratic Oath, The Declaration of Helsinki, The Nuremberg Code (1947), Ethical Principles for Medical Research Involving Human Subjects- WMA.

Unit 3: Indian Council of Medical Research-- Ethical Guidelines for Biomedical Research on Human Participants-2006: Statement of General Principles in Biomedical Research Involving Human Participants, Ethical Review Procedures, Monitoring, Record Keeping, Administration and Management, Special Considerations, General Ethical Issues, Selection of Special Groups as Research Participants, Drug Trials: Specific Principles, Statement of Specific Principles for Human Genetics and Genomics, Research, Statement of Specific Principles for Research in Transplantation, Stem Cell Research and Therapy, Statement of Specific Principles for Assisted Reproductive Technologies.

Unit 4: Medical Ethics: History, Principles of Medical Ethics, Criticisms of Orthodox Medical Ethics, Ethics Committees, Issues in Medical Ethics, Futility of Medical Care, Golden Rules, Indian Medical Council (professional conduct, etiquette, and ethics) regulations, 2002.

Unit 5: Doctor Patient Relationship: History, Definition, Importance, Boundary Violations (BVS), Some Concepts in Boundary Issues, Suggestions to Prevent BVS, Duties of R.M.P (Registered Medical

Practitioner), Rights of a Patient, Issues, Professional Misconduct (Infamous Conduct, Action Taken By SMC for Professional Misconduct, Professional Secrecy and PrivilegedCommunication.

Unit 6: Consent: History, Nuremberg Code, Legal Basis of Consent, Consent and Indian Law, Types of Consent, Case Study, How Informed Consent Should Be Obtained?,Emergency Situation and Consent, Euthanasia.

Unit 7: Tort Law in India: Categories of Tort, Defamation, Economic Torts, Land Torts, Trespass to Land, Nuisance, Rule in Ryland's V Fletcher, Constitutional Torts, Damages, Punitive Damages, Tortuous Litigation, Professional Negligence.

Unit 8: The Transplantation of Human Organs Act, 1994 (TOHA): Need, Salient Features, Amendments-2011, Types of Donor, Punishment for Violation, Registration Process, Inspection Process, Renewal Process, Documentation, The Transplantation of Human Organs Act, 1994.

Unit 9: Medical Termination of Pregnancy Act, (MTP) 1971: Definitions, When Pregnancies Can Be Terminated, Place Where Pregnancy Cab Be Terminated, Power to Make Rules, Power to Make Regulations, Protection of Action Taken in Good Faith, Amendment 2002, Indications for MTP, Requirement for Routine MTP, Doctor and CriminalAbortion.

Unit 10: Medical Records and Law: Contents of the Medical Records, Medico-Legal Work, Medico-Legal Records, Property Rights, Medical Records in Court, Disposal Of Medical Records, Death Certificate, Dying Declaration, Diagnosis Of Death, The Registration Of Births And Deaths (Amendment) Bill, 2012

Unit 11: The Consumer Protection Act: The Consumer Rights, The Consumer Protection Act 1986.

Unit 12: Conception & Pre-natal Diagnostics Techniques (Prohibition of Sex Selection) Act, 1994 (PCPNDT Act): Regulation of Genetic Counselling Centers, Genetic Laboratories & Genetic Clinics, Regulation of Pre-Natal Diagnostic Techniques, Central Supervisory Board, Appropriate Authority and Advisory Committee, Registration of Genetic Counselling Centers Genetic Lab & Genetic Clinics, Offences and Penalties, Miscellaneous, Towards Stronger Implementation of the PCPNDT Act, Amendments.

Unit 13: Drugs and Cosmetics Act: Drugs Technical Advisory Board, Drug Consultative Committee, Prohibition of Import of Certain Drugs or Cosmetics, Powers of Central Government to Make Rules, Offences, Manufacture, Sale and Distribution of Drugs, Penalties, Ayurvedic & Unani Drug Technical Advisory Board, Miscellaneous,Schedules.

Unit 14: Industrial Dispute Act: Strikes and Lockout**,** General Prohibition of Strikes and Lockouts**,** Illegal Strikes and Lockouts**,** Layoff and Retrenchment**,** Special Provisions Relating to Lay-Off, Retrenchment and Closure in Certain Establishments**,** Penalties.

Unit 15: Workmen Compensation Act: History**,** Scope and Coverage**,** Definitions**,** Doctrine of Notional Extension**,** Amount of Compensation**,** Appeals**,** Schedules**,** ESMA 1984.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO303.1	**Remember**	Learn the statutory provisions to provide hospital services.
CO303.2	**Understand**	Understand the legal terms related to hospital services.
CO303.3	**Analyse**	Differentiate professional negligence in providing health care services.
CO303.4	**Apply**	Apply ethics in medical sector.

Suggested Reading:

1. Legal Aspects in Healthcare Management: A Compilation of Relevant Acts and Legislations.
2. Code Of Ethics-WMA
3. ICMR Code ofEthics
4. American Fertility Society. Guidelines for Human Embryology Laboratories.
5. FertilSteril 1992
6. Bhardwaj KR, Purohit DC, Dhawan BN editors. Laboratory Animal Ethics and Technology. Lucknow: Central Drug Research Institute,1991
7. Boer GJ: Ethical Guidelines for the Use of Human Embryonic or FoetalTissuefor Experimental and Clinical Neuro Transplantation andResearch
8. European CNS Transplantation and Restoration(NECTAR).
9. Coats M.E. The Germ Free Animals in Research. New York: AcademicPress.1968
10. Indian Medical Council:- (Professional Conduct, Etiquette and Ethics) Regulations, 2002 Code of Ethics
11. Medical Ethics: A Practical Guide to Patient Care Related Ethics, Conventions And Laws, By Dr. Mansoor Elahi

Semester	3	**Course Credits**	**4**	**Specialization**	HAHM
Course Code	OMBHA-304			**Type**	Specialization Course
Course Title	Marketing of Health Care Services (MHCS)				

Course Description:

This course will bring efficiency to the hospital administration professional to promote hospital and health care services with the help of knowledge of Marketing Management. This course will inculcate the knowledge about how to promote health care services in the market.

Course Objectives:

1) To understand the concept of marketingmanagement;
2) To promote the health care services and develop the health care business;and
3) To develop business plans for the health careservices.

Course Outline:

Unit 1: Services Marketing: Definition, The History of Marketing, Marketing of Services, Major Stakeholders in the Health Care Service, Dynamic Relations Among Health Care Stakeholders, The Changing Health Care Environment.

Unit 2: Health Care Marketing: Importance of Health Care Marketing, Marketing in Health Care Industry, Healthcare Developments, Emerging Trends in Health Care Industry, Need for Health Care Marketing, Evolution of Health Care Marketing, Reasons for Barriers to Health Care Marketing, Why Healthcare Marketing is Different?, Developments Encouraging Health Care Marketing, Definitions, Reasons to Do Health Care Marketing, Future of Health Care Marketing, How to Provide Great Quality of Service- Gap Model, SERVQUAL Model, Best Practices in Service Quality Management, Easy Tips For Improving Service Quality in Hospitals, Basics of Health Care Marketing, Elements of Health Care Marketing Orientation, Relationship of Marketing with Other Functional Areas, Market Mix Health Care Industry, How to Develop a Comprehensive Marketing Plan for Hospital and Health Care Industry, How to Develop Brand Strategies for Services, How to Build Customer Satisfaction and Loyalty– Customer, Relationship Management(CRM).

Unit 3: Basic Marketing Concepts: Marketing, Needs/Wants/Demands, Health Care Marketing, Market, Community Outreach, Communication, Health Care Products, TheMarket Mix- The Four Ps of Marketing, Marketing Management, Marketing Environment.

Unit 4: Determinants of the Utilization of Health Care Services: Personal Factors Affecting Utilization of Health Care, Other Factors, Demand-Provider Factors.

Unit 5: How Health Care Buyers Make Choices: Overview: Key Psychological Processes, Stages in Change Theory, Perception, Health Belief Model, Learning, Memory, Encoding, Retrieval, Healthcare Consumers and Consumer Behaviour, The Buying Decision Process-Five Stage Model, Organizational Buying and Decision Making, Stages in Buying Process, Business Relationships: Risks and Opportunities.

Unit 6: Market Planning and Strategy in Health Care Setting: Overview: Defining the Organization's Purpose and Mission, Basics of Marketing Planning Process, Strategic Planning- Health Care Marketing, Goal Setting, Strategy, Five Forces Analysis, Internal Rivalry, Threats of New entrants, Threats of Substitutes and Complements, Supplier Power, Approaches to Marketing Strategies, Strategic Alliances, The Composition and Content of a Marketing Plan, Evaluation of Marketing Plan.

Unit 7: Market Segmentation, Targeting, Positioning, and Competition: Overview of Market Segmentation, Patterns of Market Segmentation, Segmentation of Consumer Markets, Geographic Segmentation, Demographic Segmentation, Psychographic Segmentation, Behavioral Segmentation, Segments of Business Market, Sequential Segmentation, Market Targeting, Evaluating and Selecting the Market Segments, Market Positioning, Differentiation Strategies, Personnel Differentiation, Channel Differentiation, Image Differentiation, Competing Forces and Competition, Balancing Customer and Competitor Orientation.

Unit 8: Designing and Managing Health Care Marketing Channels: Overview–Marketing Channels and Value Networks, Importance of Channels, Value Network, Role of Marketing Channels, Identification of Major Channel Alternatives, Evaluation of Major Alternatives, Channel Management Decisions, Conflict, Cooperation, Legal and Ethical Issues in Channel Relations.

Unit 9: Emerging Marketing Techniques: Emerging Marketing Techniques, Main Skills of Marketers, How Marketing is Organized in Health Care, Relationship Marketing, How Business and Marketing is Changing, Functions of Marketing Manager, Direct to Consumer Marketing, Business To Business Marketing, Internal Marketing, Concierge Services, Database Marketing, Customer Relationship Marketing, Internet Marketing, Limitations of Contemporary Marketing Techniques, Marketing Audit.

Unit 10: Price Setting in Health Care Practice: Pricing Objectives, Setting the Price, Price- Setting Methods, Selecting the Final Price, Price Discounts and Allowances, Initiating And Responding to Price Changes, Value Based Pricing, Pricing Strategies Implementing, The Pricing Policy: Strategic Consideration.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO304.1	**Remember**	Learn the basic concepts of health care services in context of marketing.
CO304.2	**Understand**	Understand the concept of marketing management with health care.
CO304.3	**Evaluate**	Easily grab the opportunity to promote health care services.
CO304.4	**Create**	Develop business plan for health care services.

Suggested Reading:

1. Marketing Health Services By Richard KThomas
2. Strategic Marketing For Health Care Organizations: Building A Customer-Driven Health System By Philip Kotler, Joel Shalowitz, And Robert J.Stevens
3. Bennett, P. D. (ed.) 1995. Dictionary of Marketing Terms, 2nd Edition. Chicago: American Marketing Association
4. Berkowitz, E. N. 1996. Essentials of Health Care Marketing. Gaithersburg, MD:Aspen.

Semester	3	**Course Credits**	**4**	**Specialization**	HAHM
Course Code	OMBHA-305			**Type**	Specialization Course
Course Title	Community Health & Hospital Safety & Risk Management (CHSRM)				

Course Description:

This course will bring effectiveness in the primary health care services. It also will help to control the spread of communicable disease.

Course Objectives:

1) To understand the different concept of communicablediseases;
2) To improve the condition of occupational health; and
3) To learn the government health care system inIndia.

Course Outline:

Unit 1: Introduction to Basics of Community Health: Concepts in Community Health, Indicators of Health, Community Health in India, Natural History of Disease, Epidemiological Triad, Levels of Prevention and Control, Disease Prevention, Control, Elimination, and Eradication, Transmission of Communicable Diseases, Monitoring and Surveillance, Disease Surveillance at National Level, Disease Surveillance at Global Level: International Health Regulations2005.

Unit 2: Principles of Primary Health Care: Approaches to Health Care, Primary Health Care– Definition, Major Attributes of Primary Health Care, Elements of Primary Health Care, Principles of Primary Health Care, Community Health Worker's Scheme, Delivery Structure of Primary Health Care in RuralAreas.

Unit 3: Health Care Delivery System in India: Health Services in Independent India, Salient Features of Various Committees, National Health Programmes, National Health Policies, National Population Policy, Five Year Plan.

Unit 4: National Health Planning Process: Planning Process, Constraints in Health Planning Process, Planning Commission, Central Health Administration in India, State Health Administration, District Level Medical Service, Urban Area Medical Service, Nongovernmental Sector.

Unit 5: National Rural Health Mission: Goals, Strategies, Plan of Action, Institutional Mechanisms, Technical Support, Role of NGOs, Mainstreaming AYUSH, Outcomes, Monitoring and Evaluation, Three-

Tier System of Health Care inIndia.

Unit 6: National Health Program: Types, Classification, RNTCP, National Programme for Control of Blindness (NPCB).

Unit 7: Reproductive and Child Health Programme: Evolution, Principles of RCH II, Goals, Components, Indicators, ICDS.

Unit 8: Occupational Safety and Health Epidemiology and Bio Statistics: Reasons for Occupational Health Measures, Common Workplace Hazard, Work Environment, Aetiology of Industrial Accidents, Prevention of Industrial Accidents, Safety Audit, Employees State Insurance Act, 1948, Epidemiology, Biostatistics.

Unit 9: Introduction to Hospital Safety and Risk Management: Components of Safe Health Care, History of Patient safety, Alarming Statistics on Patient Safety, Common Causes of Safety Hazard, Magnitude of the problem, WHO and Patient Safety, Stakeholders in Patient Safety, Important Factors to Ensure Patient Safety, Important Definitions.

Unit 10: Management of Errors in Hospital: Some Important Issues, Definition of Errors, Classification of Errors, Systems Approach to Error Management, Swiss Cheese Model of System Errors, Predisposing Factors for Errors, Flaws in the System, Patient Safety Indicators, Trigger Tools, Patient Safety Goals, Safety Audit.

Unit 11: Adverse Events and Analysis: Definitions, Causes of Adverse Events/Errors, Sentinel Events, Event Chain Analysis, Incident Reporting, Types of Reporting of Adverse Events, Systems Analysis of Incident, Characteristics of a Successful Reporting System, SBAR Technique, Benefits of Incident Reporting, Hazard Analysis.

Unit 12: Hospital Patient Safety Programme: Definitions, Approaches Towards Safety: A Comparison with Aviation Industry, Hospital Safety Strategy, Risk Reduction at a Glance, Principles of Hospital Safety Policy, Safety Management Committee, Patient Safety Management Program (PSMP), Implementation of Patient Safety Management Program (PSMP), Human Factors Engineering and Patient Safety, ABCS of PatientSafety.

Unit 13: Medication Errors: Causes, Risk Analysis, Predisposing Factors, Medication Errors- Measures for Prevention, LASA (Look Alike and Sound Alike) Drugs & Medication Errors.

Unit 14: Surgical Procedure Errors: Predisposing Factors, Common Surgical Errors, Facts About Surgical Safety, and Objectives for Safe Surgery, Approaches to Surgical Safety, Methodology to Prevent

Errors, Patient Safety and Anesthesia, Root Cause Analysis.

Unit 15: Safety in Critical Care Areas: Importance**,** Prevention of Adverse Events in ICU**,** Hand Hygiene**,** Safe Critical Care: Quality Control Interventions–Tips**,** Fire Safety.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO305.1	**Remember**	Learn the basic concepts of health care service.
CO305.2	**Understand**	Understand the concept of communicable diseases.
CO305.3	**Evaluate**	Implement skills to improve the condition of occupational health.
CO305.4	**Analyse**	Analyse the government health care system in India.

Suggested Reading:

1. Suryakantha A H. Community Medicine with recent advances. 2nd Edition, Jaypee, Bengaluru,2010
2. Indian Institute of Population Sciences National Family Health Survey – 3 (2005- 2006):Mumbai, India. Also available fromhttp://www.nfhsindia.org/nfhs3.html
3. American Public Health Association. Control of Communicable Diseases Manual 19th Edition. Heymann D L (editor), Washington DC2008
4. WHO website:www.who.int/csr/outbreaknetwork/en/>
5. Fire Safety in Health Care Facilities by M.E. Newman Principles of Hospital Administration Mc Gibony

Semester	3	**Course Credits**	**4**	**Specialization**	HAHM
Course Code	OMBHA-306			**Type**	Specialization Course
Course Title	Quality Management in Healthcare Services (QMHS)				

Course Description:

This course will bring the effectiveness into the hospital services. It will provide an opportunity to learn the various quality standards in a hospital.

Course Objectives:

1) To learn specification and standard to be provided into the hospitalservices;
2) To learn the different hospital accreditation like NABH, JCI etc.; and
3) To bring orderliness into the health careservices.

Course Outline:

Unit 1: Introduction to Quality: What is Quality?,Definition of Quality, Why Quality?, Aspects of Quality of Care, Dimensions of Quality, Differences Between Manufacturing and Service Organizations, Some Important Concepts on Quality, Benefits of Quality, Cost of Quality, Quality System.

Unit 2: Evolution of Quality Management: Evolution of TQM, Quality Gurus, Total Quality Management-TQM, Quality Tools, Quality Function Deployment-QFD, Methodology: Implementing Quality, Quality Awards, Quality Management and Operations Management (OM), Keys to Success, The Future of Quality Management.

Unit 3: Modern Quality Management Techniques: Central to the Approach Are Such Techniques, Kansei Engineering, Taguchi Methods, SIX SIGMA, Continuous Quality Improvement, Lean, NADCAP.

Unit 4: Introduction to Kaizen: Definition, Philosophy of Kaizen, Important Terms, The Five Golden Rules of the Kaizen Management, The Framework for Kaizen Management, The Kaizan Constituents, Tools and Techniques of Kaizen, Benefits of Kaizen, Kaizen-The Three Pillars, Housekeeping:- 5S Methodology, Seven Deadly Wastes, Standardization, Kaizen And Innovation, Kaizen and "Humanware" Parameters, Kaizen and Total Quality Management (TQM), Kaizen and Suggestion Systems, Proposal (Teian) System Versus Traditional SuggestionSystems.

Unit 5: Quality Concepts in Healthcare: What is Quality in Healthcare?, Subjective and Objective Aspects of Quality, Elements: Quality of Health Care, Evolution of Health Care Quality, Sigma Gap,

Challenges That Quality Poses to Health System, Why Quality in Health Care?, Elements of Healthcare Delivery, Goals of Quality Improvement, Benefits of Quality Improvement, Quality Perspective-Aspects of Quality, Five Stars of Service Quality, Customer in Health Care Service, Quality Dimensions in Health Care, Service Gaps in Health Care Delivery, Frame Work of Quality in Hospital, Assessment of Service Quality in Hospitals, Quality–Pdca Cycle and Health Care, Quality- Indicators - In Health Care Organizations, Patient Satisfaction And Quality Of Care, Quality and PatientSafety.

Unit 6: Process for Building a Strategy for Quality in Health Care Organizations: Improving Quality and Whole System Reform, Dimensions of Quality in Health Care, Roles and Responsibilities in Quality Improvement, A Process for Building a Strategy for Quality, Analysis: For Building A Strategy for Quality, Mapping the Domains, Deciding on Interventions.

Unit 7: A Model for Quality Management in Hospitals: Health Care Delivery System- A Functional Description of Quality, The Relationship of Quality to Cost, A System for Continuous Quality Improvement and Cost Control, Specifications and Standards, A Model for Quality in Health Care, A Model for Content Quality in Health Care.

Unit 8: Quality Evaluation through Statistical Approach in Hospitals: The Hospital as A System, Hospital Processes, Quality Monitoring Framework, Validation of Statistical Analysis, Prerequisites for Evaluation, What Is Hospital Performance?Methods of Performance Measurement, Criteria and Standards of Evaluation.

Unit 9: Accreditation- The Joint Commission (JCI)- Part I: Benefits of Accreditation, JCI and Accreditation, Goal of JCI Accreditation Initiatives, General Eligibility Requirements for Survey, Standards, International Patient Safety Goals (IPSG), Access to Care and Continuity of Care (ACC), Patient and Family Rights (PFR).

Unit 10: Accreditation- The Joint Commission (JCI) - Part II: 10.1 Assessments of Patients (AOP), Care of Patients (COP), Anesthesia and Surgical Care (ASC).

Unit 11: Accreditation- The Joint Commission (JCI) –Part III: Medication Management and Use (MMU), Prevention and Control of Infections (PCI), Quality Improvement and Patient Safety (QPS), Facility Management and Safety (FMS), Staff Qualifications and Education (SQE), Management of Communication and Information (MCI), Governance, Leadership, and Direction (GLD.)

Unit 12: National Accreditation Board for Hospitals & Healthcare Providers (NABH): What Is NABH?Organizational Structure of NABH, NABH Standards, Assessment Criteria, Preparing for NABH Accreditation-Steps, NABH AccreditationProcedure.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO306.1	**Remember**	Learn specification and standard to be provided in the hospital services.
CO306.2	**Understand**	Learn various accreditations.
CO306.3	**Apply**	Implement orderliness in the health care services.

Suggested Reading:

1. Quality Management in Hospitals Paperback–by S. K. Joshi (Author)

Semester-III International Business Management Specialization

Semester	3	**Course Credits**	**4**	**Specialization**	International Business Management
Course Code	OMBIB-301			**Type**	Specialization Course
Course Title	International Trade, WTO & Trade Policy Issues (ATPC)				

Course Description:

The purpose of the ATPC is to develop participants' autonomy in conducting WTO-related work by: (i) encouraging critical thinking to explore the linkages between WTO rules and disciplines and countries' trade policies and interests in the multilateral trading system; and (ii) enhancing analytical and negotiating skills.

Course Objectives:

1) To sensitize the students about the importance of WTO and intellectual property in the global economy;and
2) To familiarize students with the policy, procedures, and documentation relating to foreign tradeoperations.

Course Outline:

Unit 1: Introduction to international business: Introduction**,** Evolution of International Business**,** Need for International Trade**,** Difference Between Domestic Trade and Foreign Trade**,** Nature of International Business**,** Challenges to International Trade.

Unit 2: International Trade Theories: Introduction**,** International Trade Theories**,** Adam Smith Theory of Absolute Advantage**,** Ricardo Theory Comparative Advantage**,** Heckscher-Ohlin Theory, The Samuelson and Jones Model, Porter's Diamond Model, Product Life Cycle Theory.

Unit 3: International Business Environment: Introduction**,** External (Micro) Environment**,** External (Macro) Environment**,** International Economic Environment**,** International Political Environment**,** International Legal Environment**,** International Cultural Environment**,** International Demographic Environment.

Unit 4: Globalization of International Business: Introduction, Protection policy, Free Trade policy, Barriers to International Trade, Risks in International Business, Global Competitiveness, Linearization, Privatization, Globalization, Modes of Entering into International Markets, Approaches in International

Business.

Unit 5: International Trade Blocks: Introduction, Importance of International Trade Agreements, Regional Trade Blocks, SAARC, ASEAN, European Union, NAFTA, Other Trade Blocks, Generalized System of Preferences (GSP), Global System of Trade Preferences (GSTP).

Unit 6: Foreign Trade Policy: Introduction, Objectives of FT Policy, Highlights of FT Policy, Merchandise Exports from India Scheme (MEIS), Served from India Scheme (SFIS), Export Promotion Measures, Export Promotion Councils, Assistance to States for Developing Export Infrastructure, Market Access Initiative, Special Economic Zones (SEZs), Duty Drawback Scheme, Export Promotion of Capital Goods [EPCG].

Unit 7: Overview of India's Foreign Trade: Introduction, Overview of India's Foreign Trade, Export and Import performance of India, Direction of India's Foreign Trade, Composition of India's Foreign Trade, Important Trade partners of India, India's position in World Trade, Industry wise export performance

Unit 8: Balance of Payment: Introduction, Meaning of Balance of Payment, Contents of Balance of Payment, Balance of Trade and Current Account Deficit, Capital Account, Data on Balance of Payment, Foreign Exchange Reserves.

Unit 9: International Trade Organizations: Introduction, GATT, Structure of WTO, GATT and WTO, Functions of WTO, Dispute Settlement Mechanism of WTO, Intellectual Property Rights and WTO, UNCTAD, UNIDO, International Chamber of Commerce (ICC.)

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO301.1	**Remember**	Learn the importance of WTO.
CO301.2	**Understand**	Understand the aspects of global economy.
CO301.3	**Create**	Prepare documents for foreign trade operations.

Suggested Reading:

1. International Business (Texts and Cases): P. Subba Rao, Himalaya Publishing House, 2014
2. Indian Economy: V.K. Puri and S.K.Mishra, Himalaya Publishing House,2014
3. International Business: K.Aswathappa, McGraw-Hill Publications,2014
4. International Business Environment: Francis Cherunilam, Himalaya PublishingHouse, 2014
5. Journal of International Trade & EconomicDevelopment

6. Global Marketing Management- Warren Keegan
7. International Business & Economics ResearchJournal
8. Krugman, Paul "The Narrow and Broad Arguments for Free Trade," American Economic Review, 83(2), pp. 362-366, may1993
9. Export Import Procedure and Documentation- Khuspat S. Jain Himalaya Pub.2010
10. Min. of Commerce, Government of India, A Handbook of Procedures2015-20
11. Min. of Commerce, Government of India, Foreign Trade Policy2015-20
12. Export- Policy, Procedures, and Documentation by M.I. Mahajan, Show White,2010
13. Indian Economy: V.K. Puri and S.K.Mishra, Himalaya Publishing House,2014
14. Export Markets and Foreign Trade Management by Pervin Wadia, Kanishka Publications, NewDelhi
15. International Business, 12/E, John Daniels, Lee Radebaugh, Daniel Sullivanand PrashantSalwan

Semester	3	**Course Credits**	**4**	**Specialization**	International Business Management
Course Code	OMBIB-302			**Type**	Specialization Course
Course Title	Business Laws and Regulations (BLR)				

Course Description:

The objective of the course is to enable students understand the legal framework of business.

Course Objectives:

1) Law of Contract-1872 (Part-I): Nature of Contract and Essential Elements of Valid Contract, Offer and Acceptance, Consideration, Capacity to Contract and Free Consent, Legality ofObject.
2) Law of Contract–1872 (Part-II): Unlawful and Illegal Agreements, Contingent Contracts, Performance and Discharge of Contracts, Remedies for Breach ofContract.
3) Special Contracts: Indemnity and Guarantee, Contract of Agency, Sale of goods Act - 1930: General Principles, Conditions & Warranties, Performance of Contract ofSale.
4) Indian Partnership Act–1932: Constitution of partnership- Rights, Duties and Liabilities of Partners, Dissolution ofPartnership.
5) Negotiable Instruments Act- 1881: Negotiable Instruments- Promissory Note, Bills of Exchange, &Cheque, and their definitions and characteristics, Types of Endorsements, Holder- Holder in due course, Discharge of Parties.
6) Companies Act, 1956: Steps and Procedure for Incorporation of the Company, Company Management–Appointment of Directors, Powers, Duties, &Liabilities of Directors, Company Meetings, Resolutions, Winding-up of aCompany.
7) Income Tax Act -1961 - Important Provisions of Income Tax Act: Assessment year– Assesee, Gross Total Income, Procedure for Advance Payment of Tax and Tax Deducted at Source; AssessmentProcedure.
8) Central Excise Act-1944: Basic Concepts related to Excisable Goods, Classification of Goods, and Basic Concept of VAT.

Course Outline:

Unit 1: Introduction: Business Law**,** Constituents of Business**,** Meaning and Nature of Law**,** Sources of Indian Law, Concept of Artificial Legal Entity**,** Concept of Legal Rights**,** Concept of Property**,** Kinds of Property**,** Concept of Ownership and Possession**,** Essentials of Law.

Unit 2: Contract Law- 1: Contracts, Essentials of Valid Contract, Void, Voidable and Valid Agreements.

Unit 3: Performance of Contract, Remedies and Special Contracts: Performance of Contract, Contingent Contract, Quasi Contract, Remedies and Breach of Contract, Contracts of Agency, Contracts of Guarantee, Contracts of Indemnity, Letter of Credit Contracts, Employment Contracts, Indemnification.

Unit 4: Law on Special Contracts under Allied Laws: Partnership, Sale of Goods Act.

Unit 5: Company Law 1: Kinds of Company and Registration of Company, Memorandum of Association, Articles of Association, Prospectus, Share and Debenture and Capital.

Unit 6: Company Law II: Membership, Directors, Shareholders Meeting, Ordinary and Special Resolutions, Compromise, Arrangement and Reconstruction, Winding Up.

Unit 7: Law on Alternate Dispute Resolution: Law on Arbitration and Conciliation in India, Lok-Adalats

Unit 8: Law on Consumer Protection: Consumerism, Object, Definition, Consumer Dispute Redressal Mechanism.

Unit 9: Right to Information: Object and Evolution, Historical Background, Basic Features of the Act.

Unit 10: Information Technology Law: Introduction, Offences.

Unit 11: Intellectual Property Law: Evolution of the Patent System, Introduction to Copyright Law, Moral Rights or Droit Moral, Introduction to Trademark Law, What is a Trademark, Other Types of Intellectual Property.

Unit 12: Competition Laws: Monopolies and Restrictive Trade Practices Act, 1969, Competition Act, 2002, Anti-Competitive Agreements, Acquisition, Merger and Amalgamation, Competition Commission of India.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO302.1	**Remember**	Easily learn the various acts pertaining to business laws.
CO302.2	**Understand**	Understand the laws related to business activities.
CO302.3	**Analyse**	Analyse the business with government policies.
CO302.4	**Create**	Generate documentation to start a new project.

Suggested Reading:

1) The Indian Patent Act as Amended in2005.
2) The Indian Patent Act 1770 (AsAmended).
3) UK Copy RightAct.
4) The Copy Right Act1957.
5) The Trade Marks Act1999.
6) Jon Holyoak And Paul Torremans: Intellectual PropertyLaw
7) Stobbs, Gregory A, Software PatentWorldwide
8) Coppinger, Copyright (All Volumes) 15th Edition,Landon: Tottel Publishing2006
9) Anson's Law ofContract.
10) Prof. G.C.V. Subba Rao, Law of Contract I and II.

Semester	3	**Course Credits**	**4**	**Specialization**	International Business Management
Course Code	OMBIB-303			**Type**	Specialization Course
Course Title	Financial Institution and Banking (FIB)				

Course Description:

This course is structured to help students master established management principles and to confront the perplexing issues of risk, regulation, technology, and competition that bankers and other financial-service managers see as their greatest challenges for the present and future. Students will be exposed to key trends and changes in the financial-services sector. In addition, student will learn about various career opportunities in the banking and financial institution field. With this relevant information students are able to grasp the rapid changes that are happening in this course area and in the real world. Content and discussion will cover both domestic and international banking activities.

Course Objectives:

1) To be able to familiarize the students with the concept of banking andfinancial institutions.
2) To be able to understand the functions of financialinstitutions.
3) To be able to describe the components of financial system;and
4) To be able to understand the concept, features, importance, and problems faced by Co-operativebanks.

Course Outline:

Unit 1: Introduction to Indian Financial System: Financial system: Significance and Definition**,** Functions of the Financial System**,** Structure of the Financial System**,** Indian Financial System**,** Major Issues in the Indian Financial System: Narsimham Committee Report (1991.)

Unit 2: Introduction to Banking Sector in India: Meaning and Definition of Banking**,** Functions of Bank**,** History of Banking**,** Classifications of Banks**,** Reforms in Banking Sector**,** E- banking.

Unit 3: Reserve Bank of India: History of RBI**,** Role and Functions of Reserve Bank in India**,** Structure of RBI**,** RBI Weapons of Control**,** Departments of RBI.

Unit 4: Co-Operative Banking in India: Meaning and Definition of Co-operative Banks**,** Structure and Features of Co-operative Banks, History of Co-operative Banks in India, Types of Co-operative Banks**,** Problems of Co-operative Banks.

Unit 5: Commercial Banking: Meaning and Evolution of Commercial Banks, Functions and Role of Commercial Bank, Types of Commercial Banks, Commercial Banking System, Agency and General Utility Services Provided by Modern Commercial Banks.

Unit 6: Banking Systems: Unit Banking and Branch Banking, Deposit Banking, Mixed Banking and Industrial Banking, Group, Chain and Correspondent BankingSystems

Unit 7: Banking Regulation Act 1949: Need for Banking Act in India, History of Banking Legislation in India, Objectives of the Banking Regulation Act, 1949, Major Provisions of the Act, Defects in the Indian Banking Legislation.

Unit 8: Central Banking: Meaning and Definition, Evolution of Central Banks, Functions of Central Banks, Role of Central bank in a Developing Economy, Instruments of Monetary Control.

Unit 9: Retail Banking: Meaning and Definition of Retail Banking, Factors Affecting Growth of Retail Banking, Advantages and Disadvantages of Retail Banking, Challenges to Retail Banking in India, Strategies for Increasing Retail Banking Business, Emerging Issues in Retail Banking.

Unit 10: Banker and Customer Relationship: Meaning and Definition of Banker and Customer, General Relationship Between Banker and Customer, Banker as Agent and Banker as Trustee, Types of Customers, Services to Different Customer Groups.

Unit 11: Non-Banking Financial Companies: Meaning and Definition of Non-Banking Financial Companies, Classification of Non-Banking Financial Companies, Functions of Non- Banking Financial Companies, Salient Features of Non-Banking Financial Companies, Regulations of Non-Banking Financial Companies.

Unit 12: Specialized Financial Institutions: Need for and Importance of Specialized Financial Institutions (SFI), Types of Specialized Financial Institutions, Industrial Finance Corporations of India (I.F.C.I.), State Financial Corporations (SFCs), Industrial Development Bank of India (IDBI), Unit Trust of India (U.T.I), Industrial Credit and Investment Corporation of India (ICICI.)

Unit 13: Investment Institutions and Financial Services: Financial Service, Merchant Banking, Lease Financing, Merchant Banking, Housing Finance, Venture Capital, Insurance, Mutual Funds, Factoring.

Unit 14: Financial Markets and Instruments in Money Market: Financial Markets, Capital Markets, Money Market, Distinction between Capital and Money Market, Stock Exchanges.

Unit 15: International Financial Institutions: History of International Financial Institution, Types of International Financial Institution, World Bank, International Monetary Fund (IMF.)

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO303.1	**Remember**	Learn various functions of financial institutions.
CO303.2	**Understand**	Understand the basic concepts of banking and financial institutions.
CO303.3	**Analyse**	Exhibit the components of financial system.
CO303.4	**Apply**	Differentiate problems faced by co-operative banks and financial institutions.

Suggested Reading:

1. RuddarDatt&K.P.M.Sundharam, Indian Economy, 40thRevised Edition, S.Chand&Co.Ltd.,
2. H.R.Machiraju, Merchant Banking, 3rdEdition, New Age InternationalPublishers.
3. Textbook of Banking and Finance by N.K.Sharma.
4. Commercial Banking in India: A Beginners Module Developed by Mr. Abhijeet Roy, International Management Institute, NewDelhi.
5. M.Y.Khan, Indian Financial System, 4th Edition, TataMcGraw-Hill.

Semester	3	**Course Credits**	**4**	**Specialization**	International Business Management
Course Code	OMBIB-304			**Type**	Specialization Course
Course Title	International Marketing (IM)				

Course Description:

International marketing is the export, franchising, joint venture, or full direct entry of a marketing organization into another country. This can be achieved by exporting a company's product into another location, or entry through a joint venture with another firm in the target country, or foreign direct investment into the targetcountry.

Course Objectives:

1) To consider the basic concepts of internationalmarketing;
2) To get an insight of the various activities necessary for international marketing planning, the beginning of international marketing activities to be conducted by a domestic firm, and relevant issues on strategy and marketing management relevant to expanded global operations;
3) To analyze the environmental variables that influence internationalmarketing;
4) To describe the strategies and tactics that can lead to a successful international marketing given the environmental constraints; and
5) To discuss the more typical management decisions and problems faced highlighting those peculiar to the internationalarena.

Course Outline:

Unit 1: Scope & Size of International Markets: Introduction, Definitions, Reasons and Motivations Underlying International Trade and International Business, Exchange Rate and Balance of Payments, Basic Modes of Entry, Nature of International Marketing, World Trade: An Overview, India's ForeignTrade.

Unit 2: Conceptual Framework: Introduction, Global and Domestic Marketing.

Unit 3: Institutional Framework: Introduction, Institutional Bodies, Advisory Bodies, Commodity Organizations, Service Information, Government Participation in Foreign Trade, States Initiatives in Promoting Exports.

Unit 4: Cultural Environment: Introduction, Definition of Culture, Elements of Culture, Cultural Analysis.

Unit 5: Political & Legal Environment: Introduction, Political Risk: A Definition, Assessing and Managing Political Risk, Management of Political Risk, International Marketing and the Legal Environment, The Development and Scope of International Law, Incoterms, World Trade Organization (WTO).

Unit 6: Economic Environment: Introduction, World Trade: A Temporal Analysis, The Debt Problem, Major Developments in the International Economic Environment, IMF and World Bank, Regional Economic Groupings.

Unit 7: India's Export-Import Policy: Introduction, India's Exim Policy: A Backdrop, The Foreign Trade Regime: Analytical Phases and Changes Over Time, India's Exim Policy: Phases of Changes, Export-Import Policy 2002-07: Objectives, General Provisions Regarding Imports and Exports, Promotional Measures, Duty Exemption/Remission Scheme, Export Promotion Capital Goods Scheme, EOUs, EPZs, EHTPs, STPs, Deemed Exports.

Unit 8: Export –Import Documentation: Introduction, Need, Kinds of Documents, Principal Export Documents, Auxiliary Documents, Documents in Import Trade, Export Documentation & Procedures–Step byStep.

Unit 9: International Product Policy and Planning: Introduction, International Product Life Cycle, International Product Policy, Standardization vs. Adaptation, Planning the International Product Mix, Branding, Labelling, Packaging and Product Warranties and Services.

Unit 10: International Advertising: Introduction, International Advertising Strategy, Standardization or Adaptation, Elements of Advertising Strategy, Media Strategy, Advertising Agency, International Advertising Scene.

Unit 11: International Pricing Policy: Introduction, Components of Price, The Process of Price Selling, Pricing in International Market, Information for Pricing Decisions, Sources of Price Information, Issues in International Pricing, Trade Finance in India

Unit 12: International Distribution & Sales Policy: Introduction, International Distribution Channels, International Distribution Policy, Selecting Distribution Channels and Channel Members, International Physical Distribution Management.

Unit 13: International Market Selection: Introduction, Factors Influencing International Market Selection, The Process of Market Selection, Some Strategies.

Unit 14: International Marketing Research: Introduction, Marketing Research: The Global Scene, The

Scope of International Marketing Research, International Marketing Research Procedure, Techniques of International Marketing Research, Survey Research, Techniques of International Marketing Research, Analysis of Filed Data, Preparation of Research Report.

Unit 15: International Marketing Planning & Control: Introduction, Developing an International Marketing Plan, Issues in Framing International Marketing Plan, Organization of international Marketing. Framework for International Marketing Planning, International Marketing Control, and Control Sequence.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO304.1	**Remember**	Market activities for international trade and practices.
CO304.2	**Understand**	Understand the basic concepts of international marketing.
CO304.3	**Apply**	Manage International policy and planning.
CO304.4	**Analyse**	Analyse environmental factors to influence international marketing.
CO304.5	**Evaluate**	Exhibit the strategies and tactics successfully.

Suggested Reading:

1. Theodore Levitt, 'The Globalization of Markets', Harvard Business Review, 1983, May– June.
2. Peter Buckley and Pervez Ghauri, 'Globalization, Economic Geography and Multinational Enterprises', Journal of International Business Studies,2004
3. FiratFuat, 'Educator Insights: Globalization of Fragmentation– A Framework for Understanding Contemporary Global Markets', Journal of InternationalMarketing.
4. Borderless Management: Companies Strive to Become Truly Stateless', BusinessWeek, 23 May1994.
5. David A. Ricks, Blunders in International Business (Cambridge, Mass.: Blackwell Publishers,1993).
6. International Marketing–By Philip R. Cateora; John L. Graham and Prashant Salwan, TATA McGraw-Hill publication, 13thEdition.

Semester	3	**Course Credits**	**4**	**Specialization**	International Business Management
Course Code	OMBIB-305			**Type**	Specialization Course
Course Title	International Finance Management (IFM)				

Course Description:

This course focuses on the international financial management and international trade. Topics in financial management, viewed primarily from the perspective of managers doing business overseas, include the management of foreign exchange exposure, foreign direct investment decisions, and multinational capital budgeting.

Course Objectives:

1. To develop capabilities, skills, and knowledge for making sound financialdecisions;
2. To develop students on how to run their own MNC and write a feasibility report;and
3. To be able to solve simplecases.

Course Outline:

Unit 1: International Financial Management: An Introduction: Introduction, Multinational Corporation (MNC)**,** Steps in Internationalization**,** International Financial Management

Unit 2: International Economics: Introduction, International Financial Architecture**,** Origin of Developing Countries Debt Crisis, The East Asian Crisis (1997), Financial Flows to Developing Countries, International Trade Theories, Economic integration**,** Tariff and non-Tariff Barriers to Trade.

Unit 3: International Monetary System: Introduction**,** Exchange Rate Arrangement, IMF and International Liquidity.

Unit 4: International Financial Flow: Introduction, Forms of International Financial Flows, Structure of Balance of Payments, Equilibrium, Disequilibrium and Adjustment, India's Balance of Payments During the Period of Economic Reform.

Unit 5: Foreign Exchange Market: Introduction, Spot Exchange Market, Participants in the Spot Markets, Exchange Rate Quotations, Arbitrage, Forward Rate, and Forward Market

Unit 6: Parity Conditions in International Finance and Currency Forecasting: Introduction, Purchasing Power Parity Relationship, Interest Rate Parity Relationship, Exchange Rate and Foreign

Exchange Reserves, Exchange Rate and Balance of Payments (BOP), Exchange Rate and TechnicalAnalysis.

Unit 7: Currency Futures, Options and Swaps: Introduction, Currency Futures, Currency Options, Currency Swaps.

Unit 8: Management of Accounting and Exchange Exposure: Introduction, Different Types of Exchange Rate Exposures, Exchange RiskManagement.

Unit 9: Foreign Exchange Regulations and Taxation Issues: Introduction, Types of Taxes, Tax heavens, International Tax Management Strategy, The Modes of Double Taxation Relief, Indian Taxation Scenario, FEMA: An Introduction.

Unit 10: Raising Funds from International Market: Introduction, Euro Issue, Global Depository Receipts (GDRs), American Depository Receipts (ADRs), External Commercial Borrowings (ECBs), Advantages and Disadvantages of Overseas Financial Market.

Unit 11: Financing Foreign Trade: Introduction, Types of Export Credit, Pre-shipment Export Credit, Post-shipment Export Credit, Types of Letters of Credit, Export Credit in Foreign Currencies, Refinance from Reserve Bank of India, Role of Export Import Bank of India, Role of Export Credit GuaranteeCorporation.

Unit 12: Cost of Capital for MNCs: Introduction, Cost of Capital for MNCs vis-a-vis Domestic Firms, Cost of Capital Across Countries, Determining Cut-Off Rate for Foreign Projects Appraisal.

Unit 13: Capital Budgeting for MNC's: Introduction**,** Fundamentals of Evaluating Foreign Projects, Issues in Foreign Investment Analysis, Risk Analysis in International Investment Decision.

Unit 14: Working Capital Management for Domestics: Introduction, Working Capital Management in Domestic and Multinational Enterprises, Intra Corporate Transfer of Funds**,** Transfer Pricing, Management of Blocked Funds, Multinational Cash Management, Multinational Receivables Management, Multinational InventoryManagement.

Unit 15: Foreign Direct Investment: Introduction**,** Global Trends in FDI**,** Factors Motivating FDI**,** FDl and Some Subsequent Decisions**,** FDl and Host Government View**,** FOI and Taxation Issues.

Unit 16: International Portfolio Investments: Introduction**,** Benefits of International Investing, International Diversification, Barriers to International Diversification, Vehicles for Overcoming Capital Flow Barriers, Asset Allocation Policy and Management Style, Portfolio Hedging Strategies.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO305.1	**Understand**	Develop critical and analytical skills and the ability to work independently.
CO305.2	**Apply**	Demonstrate the understanding of international financial theory and applications.
CO305.3	**Analyse**	Develop a frame of reference through which to identify, evaluate, and solve problems pertaining to international financial with or without complete information.
CO305.4	**Evaluate**	Demonstrate communication and written skills.

Suggested Reading:

1. International Economics,9/E, Robert Carbaugh, Cengage- SouthWestern
2. International Business,12/E, John Daniels, Lee Radebaugh, Daniel Sullivan andPrashant Salwan,Pearson

Semester	3	**Course Credits**	**4**	**Specialization**	International Business Management
Course Code	OMBIB-306			**Type**	Specialization Course
Course Title	Security Analysis and Portfolio Management (SAPM)				

Course Description:

Security analysis and portfolio management course is to help students understand the investment field for sound investment decisions making. This course is designed to emphasize both theoretical and analytical aspects of investment decisions and deal with modern investment theoretical concepts and instruments. Security Analysis is the subject to study the composition and performance of stocks in capital market. The stocks are analyzed using tools of fundamental analysis and technical analysis. Portfolio management refers to the management or administration of a portfolio of securities to protect and enhance the value of the underlying investment. It is the management of various securities (shares, bonds etc.) and other assets (e.g. real estate), to meet specified investment goals for the benefit of the investors. It helps to reduce risk without sacrificingreturns.

Course Objectives:

1) To be familiarized with the fundamentals of security analysis and portfolio management concept.
2) To provide a conceptual insight to the valuation ofsecurities.
3) To provide an insight about the relationship of risk andreturn.
4) To be able to measure the return according to the expectations of the investors and portfolio management practices inIndia.

Course Outline:

Unit 1: Nature and Scope of Investments: Introduction: Investment- Meaning and Concept**,** Types of Investment**,** Securities, Financial System and Financial Market**,** Security Market.

Unit 2: Risk and Return: Measures of Return**,** Risk**,** Measuring the Risk of Expected Rate of Returns, Measuring Systematic Risk.

Unit 3: Security Market in India-I: Security Markets– Introduction**,** New Issue Market (Primary Market)**,** Stock Exchanges (Secondary Market)**,** Derivative Market**,** Functioning of Security Market**,** Market Index**,** Regulation of Security Market in India

Unit 4: Security Market in India-II: Listing, Trading, Clearing and Settlement

Unit 5: Fundamental Analysis: Fundamental Analysis, Equity Valuation Process, Advantages of Fundamental Analysis, Disadvantages of Fundamental Analysis.

Unit 6: Technical Analysis: Technical Analysis, Technical Analysis vs. Fundamental Analysis, Types of Charts, Basic Technical Tools, Market Indicators, Dow Theory, Strengths and Weaknesses of Technical Analysis.

Unit 7: Equity Stock Valuation Models: Equity Valuation- Introduction, Approaches to Valuation of Equity Stock, Methods of Equity Stock Valuation.

Unit 8: Bond Valuation Models: Bond– Introduction, Valuation of Bond, Components of Bond Valuation.

Unit 9: Portfolio Management: Management of Investments, Portfolio Management– Basics, Portfolio Management Strategies, Portfolio Management Services.

Unit 10: Portfolio Theories and Portfolio Construction: Portfolio Theories– Introduction, Markowitz Portfolio Optimization Model, Sharpe Single Index Model, Capital Asset Pricing Model, Arbitrage Pricing Theory, Asset Allocation Strategies.

Unit 11: Portfolio Evaluation and Revision: Portfolio Evaluation, Portfolio Revision.

Unit 12: Investment Avenues: Investment Avenues, Classification of Various Financial Instruments, Real Estate, Commodities, Self-Assessment Questions.

Unit 13: Personal Financial Management: Personal Financial Management, Financial Planning Process, Personal Budget, Parameters to Choose your Financial Planner, Types of Other Financial Advisors, AssetAllocation.

Unit 14: Tax Planning: Tax planning- Introduction, Tax Avoidance vs. Tax Evasion, Tax Planning Basics, Consequences of Avoidance, Ways to do Tax planning, Income Tax, Tax Planning Benefits, Penalties Under Income Tax Act for Tax Evasion, Self-Assessment Questions.

Unit 15: Wealth Management: Wealth Management, Private Wealth Management, Discipline of Wealth, Wealth Management Customers, Market Models, Features/ Characteristics of Good Wealth Management, Importance of Wealth Management.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO306.1	**Remember**	Learn the basic terms of security market in India.
CO306.2	**Understand**	Learn the conceptual insights of portfolio management.
CO306.3	**Apply**	Apply the fundamental and technical analysis terminology for valuation of securities.
CO306.4	**Evaluate**	Match the expectation of the investors and portfolio management practices.
CO306.5	**Analyse**	Analyse self-financial management for choosing financial planner.
CO306.6	**Create**	Design self-financial planner.

Suggested Reading:

1. Avadhani, V.A., Security Analysis & Portfolio Management, HimalayaPublishing House, NewDelhi.
2. Bhalla, V.K., Security Analysis & Portfolio Management S.Chand& Co., NewDelhi.
3. M. Ranganathan and R. Madhumathi: Investment Analysis and PortfolioManagement, Pearson Education, NewDelhi.
4. Prasanna Chandra: Investment Analysis and Portfolio Management, Tata McGraw- Hill, Delhi.
5. Avadhani, V.A., Security Analysis & Portfolio Management, Himalaya Publishing House, NewDelhi.
6. Bharti V. Phathak: Indian Financial System, Pearson Education,Delhi.
7. Fischer, D.E. &Jordan ,R,J. Security Analysis & Portfolio Management, Prentice Hall India, NewDelhi.
8. M. Ranganathan and R. Madhumathi: Investment Analysis and PortfolioManagement, Pearson Education, NewDelhi.
9. Prasanna Chandra: Investment Analysis and PortfolioManagement,

Semester-IV Generic Elective

Semester	4	**Course Credits**	**4**	**Specialization**	NA
Course Code	OMBE-403			**Type**	Generic Elective
Course Title	Soft Skills				

Course Description:

Soft skills are today's power skills. They are a blend of interpersonal, communication, and social intelligence skills that are in high demand across all industries and jobs. Together, these skills will help build relationships and improve productivity with internal and external clients.

Course Objectives:

1) Develop awareness of appropriate communicationstrategies;
2) Analyze a variety of communication act sand ethically use, document and integrate sources;and
3) Prepare, present messages with a specific intent, and use effective communication in personal and professionalsuccess.

Course Outline:

Unit 1: Business Etiquettes & Listening Skills: Get the First Impression Well- Greet others &Introduce Yourself, Body Language- Speak Well**,** Dressing Sense- Appeals to others**,** Telephone Etiquettes-Dining Etiquettes**,** Art of Effective Listening, Barrier to Effective Listening.

Unit 2: Public Speaking: Persuasion, Speaking Skills, Delivery, Visual Communication, Interpersonal & Technical Skills.

Unit 3: Personal Branding: Understanding Personal Branding, How to Sell Yourself- Appearance, Voice Modulation, Emotional Intelligence, Empathy and Rapport, Image Building, Designing Your Future Strategy.

Unit 4: Teamwork: Importance of Teamwork, Stages of Team, Teamwork Skills**,** Tips for BetterTeamwork

Unit 5: Problem Solving & Decision Making: Understanding Problem Solving, Developing Effective Problem Statements, Importance and Necessity of Decision Making, Process and Practical Way of Decision Making, Weighing Positives & Negatives, Six-Hat Thinking.

Unit 6: Self Analysis: Self-Esteem: Meaning, Importance, Positive Self-Esteem &Negative Self-Esteem**,** Self-Worth, Self-Respect and Self-Esteem, Building High Self-Esteem for Personality Development.

Unit 7: Time management: Goal Setting**,** How to prepare the timeline and allocate time to complete different tasks**,** How to successfully follow the prepared time-schedule.

Unit 8: Public Speaking: Importance & Process of Public Speaking**,** Ethics in public speaking**,** Analyzing the Audience**,** Methods of Delivery**,** Verbal and Non-Verbal Communication.

Unit 9: Goal setting: Wishes and Desires**,** Short-term, long-term and lifetime goals**,** Setting goals according to the parameters like financial, physical, intellectual, spiritualetc.

Unit 10: Nurturing Leadership Skills: Meaning, Characteristics of a Good Leader**,** Styles of Leadership**,** Creativity, Decision Making.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO403.1	**Remember**	Learn the ideology of listening skills.
CO403.2	**Understand**	Solve problems through soft skills.
CO403.3	**Apply**	Apply the aspect of teamwork to build better organizational results.
CO403.4	**Analyse**	Implement positive and negative problem to solve and make decision.

Suggested Reading:

1. Bovee, Courtland L, John V. Thill & Barbara E. Schatzman. Business Communication Today: 10th Edition. New Jersey: Prentice Hall,2010.
2. Kratz, Abby Robinson. Effective Listening Skills. Toronto: ON: IrwinProfessional Publishing,1995.
3. Lesikar, Raymond V and Marie E. Flatley. Basic Business Communication: Skills for Empowering the Internet Generation: 9th Edition. New Delhi: Tata McGraw-Hill,2002.
4. Barun K. Mitra Personality Development and Soft skills, Oxford UniversityPress

Semester	4	**Course Credits**	**4**	**Specialization**	NA
Course Code	OMBE-404			**Type**	Generic Elective
Course Title	Business Ethics and Corporate Governance (BECG)				

Course Description:

The core of a successful management lies in its Clarity of Vision, Plan of Action and more importantly Execution of the Plan of Action– the real gamut of operations as it were, and it is here that the importance of Corporate Governance and Ethics comes into being. The purpose of this course is to strengthen the ability to anticipate, critically analyze, appropriately respond to, and provide leadership regarding, ethical issues that students will confront as employees and eventually as managers of people, projects andenterprises.

Course Objectives:

1. To apply general ethical principles to particular casesand practices inbusiness.
2. To think independently and rationally about contemporary moralproblems.
3. To recognize the complexity of problems in practical ethics;and
4. To demonstrate how general concepts of governance apply in a situation or in each circumstance.

Course Outline:

Unit 1: Ethics, Values, Morals: Values, Moral, Overview of Ethical Theories, Utilitarian Ethics, Deontological Ethics, Virtue Ethics, Kantian Theory, Rights Based Theories, Contractarianism, Consequentialism, SituationEthics, Subjectivism, Cultural Relativism, Emotivism, Divine Command Theory, Moral Relativism, Intuitionism, Ethical Egoism, Main Difference Between the Theories, Common Ground Between Theories

Unit 2: Business Ethics: Features of Business Ethics, Characteristics, Importance of Business Ethics, Scope of Business Ethics, Elements of Business Ethics, Types of Business Ethics, Guideline, Advantages of Business Ethics, Social Responsibility, Business Ethics and Social Responsibility, Difference Between Business Ethics and Social Responsibility, Corporate SocialResponsibility, Business Ethics and Corporate Social Responsibility, Understanding Corporate Social Responsibility, Implementation of CSR

Unit 3: Business Ethics in Global Economy: Global Ethics, Business Ethics, Global Business Ethics, Principled Approaches to Business Ethics, Business Ethics and Business Development, Role of Business Ethics in Society, Business Ethics and Socio - Economic Development, Development of Business Ethics on

A Global Economy, Market Economy, Global Economy, Global Economic Ethics, Developing Ethics in Global Economy, Global Economic Ethics and Global Businesses, Inter-Relationship Between Business Ethics & Corporate, Governance, Globalization in Business, Impact of Globalization, Global Business Strategies, Challenges of New Era

Unit 4: Ethicsand Management: Organizational Ethicsand Management, Basic Ethical Elements, Ethical Theory and Leadership Empowerment, Stake Holders' Theory, Ethical System Implementation, Organization Ethics, Organizations ShapeIndividuals' Behavior, Characteristics of Organizational Ethics, Principles of Organizational Ethics, Necessity For Organizational Ethics, Personal Ethics, Ethical Lapsesand Organizational Culture, Basic Attributes of Ethical Workers, Benefits of Personal Ethics Statement, Code of Ethics,Ten Commandments of Ethical Business Behavior, Purpose of An Ethics Audit, Six Steps To Highly Effective Ethics Audits, Ethics Auditing, System of Ethics Audit

Unit 5: Areas of Business Ethics: Areas of Business Ethics, Functional Definition of Ethics, Common Functional Groupings, Reasons For Functional Area, Ethics in Functional Areas of AnOrganization, Ethics in Accounting, Unethical in Accounts, Ethical Marketing, Ethical Abuse, Advertisingin An Ethical Way, Ten Principles of Ethical Marketing, Unfairor Deceptive Marketing Practices, Offensive Materials And Objectionable Marketing Practices, Ethical Product and Distribution Practices, Global Business Ethics,Copyright

Unit 6: Environmental Ethics, Gender Ethics: Importance of Ecology, Three Solutions, Scope of Environmental Ethics, Environmental Ethicsand Environmental Philosophy, Causes of Environmental Problems, Types of Environmental Ethics, Environmental EthicsandIts Principles, The Future of Environmental Ethics, Gender Ethics, Sexual Harassment and Discrimination, Ethics of Care, Avoiding Gender Corruption, Corruption Impacts Women andMen, Women -Victims Of Corruption, Women as Indirect Victims of Corruption, Equality Act,Typesof Sex Discrimination

Unit 7: Moral Issues in Business : Justice in Business, Justice Theory, John Rawls's Thought Experiment, Justice, Equity And Responsibility, Economic Ethics, Neoclassical Economics, Culture, Behavioral Economics, Political Economy, Development Economics, Theories ForBusiness and Economic Ethics, Consumer Ethics, Business Ethics and Consumer ProtectionLegislations, Social Responsibility, Social and Corporate Responsibilities, The Need For Social Responsibility, Arguments For Social Responsibility, Arguments Against Social Responsibility

Unit8:CorporateGovernance and ItsSignificance: Values, Importance of Corporate Governance, Principles of Corporate Governance, Disclosureand Transparency, Corporate Governance, Need of Corporate Governance, Efforts to Improve Corporate Governance, TypesCorporate Ownership Structures,

Reforming the Corporate Governance System, Rule of Law, Common Issuesin Corporate Governance, Indian Model of Corporate Governance, Objectivesof Corporate Governance, New Provision for Directors and Shareholders, Corporate Governance Model Around The World

Unit 9: Managing People Ethically: Involvement of Employees, Additional Responsibilities of Management, Duties Of Manager, Management Skills, Implementing Systems, Managing People–Responsibilities, Moral And Ethical Duties of A Manager, Ways To Manage Ethical Risk,Managers Role in Ethical Conduct, Managers and Ethicsin Organizations, Scope of Responsibilities, Traditional Human Resources Role, Constant Updatingin Strategic Hr, Redundancy, Human Resource Planning, Understanding Human Resource Planning, Steps ToHumanResourcePlanning

Unit 10: Human Rights, Sustainability and Ethical Dilemma: Staffing Plan, CalculatingStaffing Needs,Complete Staffing Plan, Human Rights, Protection in Workplace, Breach of Human Rights, Important Rights, Sustainability, Sustainability Indicators, Sustainability Strategies in Businesses, Ethical Dilemma, Ethical Dilemmas in Business, Solving an Ethical Dilemma,Types of Dilemmas

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO404.1	**Remember**	Learn ethical values and ethics in business.
CO404.2	**Understand**	Understand the ethical dimensions of business for a working environment.
CO404.3	**Apply**	Apply various philosophies of some personalities.
CO404.4	**Analyse**	Analyse corporate social responsibility in a work culture.
CO404.5	**Create**	Create ethical values for good results.

Suggested Reading:

1) Corporate Governance in India-An Evaluation by S.C.Das, PHI Eastern EconomyEdition
2) Business Ethics-An Indian Perspective by Ronald Francis and Mukti Mishra,TMGH
3) Business Ethics in India -An Indian Perspective by A.C.Fernando, Pearson Publication 2nd Edition.

Semester-III Artificial Intelligence & Machine Learning Specialization

Semester	3	**Course Credits**	**4**	**Specialization**	Artificial Intelligence & Machine Learning
Course Code	OMBAIML301			**Type**	Specialization Course
Course Title	Basics of Artificial Intelligence & Machine Learning				

Course Description:

To develop semantic-based and context-aware systems to acquire, organize process, share and use the knowledge embedded in multimedia content. The research will aim to maximize automation of the complete knowledge lifecycle and achieve semantic interoperability between Web resources and services. Artificial Intelligence & Machine learning are pillars on which you can build intelligent applications. Artificial Intelligence and Machine Learning Fundamentals begin by introducing you to Python and discussing AI search algorithms.

Course Objectives:

1) Acquire advanced Data Analysis skills.
2) Stay Industry-relevant and grow in your career.
3) Create AI/ML solutions for various business problems.
4) Build and deploy production-grade AI/ML applications.
5) Apply AI/ML methods, techniques, and tools immediately.

Course Outlines:

Unit 1: Introduction to Data Science and AI & ML: Data Science, AI & ML, Use Cases in Business and Scope, Scientific Method, Modelling Concepts, CRISP-DM Method.

Unit 2: R Essentials Programming: Commands and Syntax, Packages and Libraries, Introduction to Data Types, Data Structures in R - Vectors, Matrices, Arrays, Lists, Factors, Data Frames, Importing and Exporting Data, Control structures, and Functions.

Descriptive Statistics: Data exploration (histograms, bar chart, box plot, line graph, scatter plot), Qualitative and Quantitative Data, Measure of Central Tendency (Mean, Median and Mode), Measure of Positions (Quartiles, Deciles, Percentiles, and Quantiles), Measure of Dispersion (Range, Median, Absolute deviation about median, Variance and Standard deviation), Anscombe's quartet, Other Measures: Quartile and

Percentile, Interquartile Range.

Unit 3: Statistical Analysis Initial Data Analysis: Relationship between attributes: Covariance, Correlation Coefficient, Chi-Square, Measure of Distribution (Skewness and Kurtosis), Box and Whisker Plot (Box Plot and its parts, Using Box Plots to compare distribution) and other statistical graphs.

Probability: Probability (Joint, marginal, and conditional probabilities), Probability distributions (Continuous and Discrete), Density Functions, and Cumulative functions.

Unit 4: Data Acquisition: Gather information from different sources, Internal systems, External systems, Web APIs, Open Data Sources, Data APIs, Web Scraping, and Relational Database access (queries) to process/access data.

Unit 5: Data Pre-processing and Preparation: Data Mining, Wrangling, Plyr packages, Cast/Melt

Unit 6: Data Quality and Transformation: Data imputation, Data Transformation (min-max, log transform, z-score transform, etc.,), Binning, Classing and Standardization, Outlier/Noise & Anomalies.

Unit 7: Handling Text Data: Bag-of-words, Regular Expressions, Sentence Splitting and Tokenization, Punctuations and Stop words, Incorrect spellings, Properties of words and Word cloud, Lemmatization and Term-Document TxD computation, Sentiment Analysis (Case Study).

Unit 8: Principles of Big Data: Introduction to Big Data, Challenges of processing Big Data (Volume, Velocity and Variety perspective), Use Cases.

Unit 9: Big Data Frameworks – Hadoop, Spark, and NoSQL: Processing, Storage and Programming Framework, Hadoop eco-system components and their functions, Essential Algorithms (Word count, Page Rank, IT-IDF), Spark: RDDs, Streaming and Spark ML, NoSQL concepts (CAP, ACID, NoSQL types).

Unit 10: Data Visualization: Science of Visualization, Visualization Periodic Table, Aesthetics and Storytelling, Concepts of measurement - scales of measurement, Design of data collection formats with illustration, Principles of data visualization - different methods of presenting data in business analytics, Concepts of Size, Shape, Color, Various Visualization types, Bubble charts, Geo-maps (Chlorpeths), Gauge charts, Tree map, Heat map, Motion charts, Force Directed Charts etc.

Unit 11: Sampling and Estimation: Sample versus population, Sample techniques (simple, stratified, clustered, random), Sampling Distributions, Parameter Estimation, Unbalanced data treatment.

Unit 12: Inferential Statistics: Develop an intuition of how to understand the data, attributes, distributions, Procedure for statistical testing, etc., Test of Hypothesis (Concept of Hypothesis testing, Null Hypothesis

and Alternative Hypothesis), Cross Tabulations (Contingency table and their use, Chi-Square test, Fisher's exact test), One Sample t test (Concept, Assumptions, Hypothesis, Verification of assumptions, Performing the test and interpretation of results), Independent Samples t test, Paired Samples t test, One way ANOVA (Post hoc tests: Fisher's LSD, Tukey's HSD), z-test and F-test.

Course Outcomes:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO301.1	**Remember**	The Basic Concept of Artificial Intelligence & machine Leering
CO301.2	**Apply**	Different Methods of AI and ML
CO301.3	**Analyze**	Analyze the recent changes at the Application Level
CO301.4	**Evaluate**	Evaluate how AI & ML Helps Business to Grow

Suggested Reading:

1. Artificial Intelligence: A Modern Approach- Textbook by Peter Norvig and Stuart J. Russell
2. An Introduction to Statistical Learning: With Applications in R - Gareth M. James, Daniela Witten, Trevor Hastie, Robert Tibshirani
3. Machine Learning: An Artificial Intelligence Approach: Jaime G. Carbonell, Ryszard S. Michalski, Tom M. Mitchell (auth.), Ryszard S. Michalski, Jaime G. Carbonell, Tom M. Mitchell (eds.)

Semester	3	**Course Credits**	**4**	**Specialization**	Artificial Intelligence & Machine Learning
Course Code	OMBAIML302			**Type**	Specialization Course
Course Title	Machine Learning				

Course Description:

Machine Learning is a key to develop intelligent systems and analyze data in science and engineering. Machine learning engines enable intelligent technologies such as Siri, Kinect, or Google self-driving car, to name a few. At the same time, machine learning methods help unlock the information in our DNA and make sense of the flood of information gathered on the web, forming the basis of a new Science of Data. This course provides an introduction to the fundamental methods at the core of modern machine learning. It covers theoretical foundations as well as essential algorithms for supervised and unsupervised learning.

Course Objectives:

1) To have a good understanding of the fundamental issues and challenges of machine learning: data, model selection, model complexity, etc.
2) To be able to design and implement various machine learning algorithms in a view of real-world applications.
3) To describe the Machine Learning approach and its relationship with Data Science.
4) To identify applications of Machine Learning.
5) Have an understanding of the strengths and weaknesses of many popular machine learning approaches.

Course Outlines:

Unit-1 Importance of Machine Learning: What is Machine Learning?, Machine Learning Concept with Definition, why Machine Learning?, Domain and Applications of Machine Learning, Types of Machine Learning, Future of Machine Learning, Machine Learning Support in Python.

Unit-2 Data Pre-Processing: Need of Data Pre-Processing, Steps for Data Pre-Processing in Machine Learning, Techniques of Data Pre-Processing for Machine Learning Using Python: Importing The Dataset, Missing Data, Categorical Data, Splitting the Dataset Into the Training Set and Test Set, Feature Scaling. Creating Our Own Dataset, Why and How to Do Feature Scaling in Machine Learning.

Unit-3 Regression: Simple Linear Regression, Simple Linear Regression Intuition, Simple Linear Regression in Python, Multiple Linear Regression, Multiple Linear Regression in Python, Polynomial Regression Intuition, Polynomial Regression in Python, SVR, SVR Intuition, SVR in Python.

Unit-4 Classification: Logistic Regression, Logistic Regression Intuition, Logistic Regression in Python, K-Nearest Neighbors (K-NN), K-NN Intuition, K-NN in Python, Support Vector Machine (SVM), SVM Intuition, SVM in Python, Kernel SVM, Kernel SVM Intuition, Kernel SVM in Python, Naïve Bayes, Naïve Bayes in Python, Decision Tree Classification, Decision Tree Classification Intuition, Decision Tree Classification in Python, Random Forest Classification, Random Forest Classification Intuition, Random Forest Regression in Python, Evaluating Classification Models Performance.

Unit-5 Clustering: K-Means Clustering, K-Means Clustering Intuition, K-Means Clustering in Python, Hierarchical Clustering, Hierarchical Clustering Intuition, Hierarchical Clustering in Python, Model-Based Clustering, Model-Based Clustering Intuition, Model-Based Clustering in Python, Density-Based Clustering, Density-Based Clustering Intuition, Density-Based Clustering in Python, Fuzzy Clustering, Fuzzy Clustering Intuition, Fuzzy Clustering in Python, Evaluating Clustering Models Performance.

Unit-6 Association Rule Learning: Apriori Algorithm, Apriori Algorithm Intuition, Apriori Algorithm in Python, Eclat Algorithm, Eclat Algorithm Intuition, Eclat Algorithm in Python.

Unit-7 Reinforcement Learning: Important terms used in Deep Reinforcement Learning, Working of Reinforcement Learning, Reinforcement Learning Algorithms, Characteristics of Reinforcement Learning, Types of Reinforcement Learning, Learning Models of Reinforcement, Q-learning Intuition, Q-learning in Python, Reinforcement Learning vs. Supervised Learning, Applications of Reinforcement Learning, why use Reinforcement Learning? And when not to use Reinforcement Learning? Challenges of Reinforcement Learning, Upper Confidence Bound (UCB), UCB Intuition, UCB in Python, Thompson Sampling, Thompson Sampling Intuition, Thompson Sampling in Python.

Unit-8 Deep Learning: Artificial Neural Networks, Artificial Neural Networks Intuition, Artificial Neural Networks in Python, Convolutional Neural Networks, Convolutional Neural Networks Intuition, Convolutional Neural Networks in Python

Unit-9 Dimensionality Reduction: Principal Component Analysis (PCA), PCA Intuition, PCA in Python, Linear Discriminant Analysis (LDA), LDA Intuition, LDA in Python, Kernel PCA (KPCA), Kernel PCA Intuition, Kernel PCA in Python.

Unit-10 Model Selection & Boosting: k-Fold Cross-Validation, k-Fold Cross Validation Intuition, k-Fold Cross-Validation in Python, Grid Search, Grid Search in Python, XGBoost, XGBoost Intuition, XGBoost in Python.

Course Outcomes:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO 302.1	**Remember**	Learn the Basics of Machine Learning
CO 302.2	**Understand**	Understand the various terms like Data Pre-Processing, Supervised, Unsupervised Learning, Classification, Regression, Dimensionality Reduction, etc.
CO 302.3	**Analyze**	Analyze and evaluate the various Machine Learning Algorithms
CO 302.4	**Apply**	Design and develop a Machine Learning Algorithms for an organization.

Suggested Reading:

1. Mastering Machine Learning with Python in Six Steps

A Practical Implementation Guide to Predictive Data Analytics Using Python

Manohar Swamynathan

Publication: Apress

2. Machine Learning

Step-by-Step Guide to Implement

Machine Learning Algorithms with Python

Author Rudolph Russell

3. Data Classification Algorithms and Applications

Edited by Charu C. Aggarwal

IBM T. J. Watson Research Center

Yorktown Heights, New York, USA

Semester	3	**Course Credits**	**4**	**Specialization**	Artificial Intelligence & Machine Learning
Course Code	OMBAIML303			**Type**	Specialization Course
Course Title	Performing Analytics with Python				

Course Description:

This course will take you from the basics of Python to exploring many different types of data. This course is designed to teach students how to analyze different types of data using Python. Learner's will know about how to prepare data for analysis, perform simple statistical analysis, create meaningful data visualizations, predict future trends from data, and more.

Course Objectives:

1) To understand the basic concepts of Python & its libraries
2) To understand Data Analytics using Python
3) To understand and use Python data science libraries as a tool for data analytics
4) To understand Data Modelling techniques.

Course Outlines:

Unit-1 - Python Fundamentals for Data Analytics: Python data structures, data types, tuples, operators, Event-driven programming, local and global variables, buttons and input fields - The canvas, static drawing, timers, interactive drawing -Lists, keyboard input, motion, positional/velocity control - Mouse input, more lists, dictionaries. Control statements, Functions, Object Oriented programming concepts using classes, objects and methods, Exception handling, Implementation of user-defined Modules and Package, File handling in python.

Unit-2 - Python Advance Concepts: Images - Classes, tiled images - Acceleration and friction, spaceship class, sprite class, sound - Sets, groups of sprites, collisions, sprite animation - Fundamentals of Data Manipulation with Python, RDBMS, UML.

Unit-3 - Python Libraries: Learn Numpy - a common scientific computation library, Getting familiar with Pandas for structural data processing, Learn the common statistical data analysis techniques in python, Getting familiar with simple linear regression.

Unit -4 : Introduction to Data Understanding and Preprocessing: Knowledge domains of Data Analysis, Understanding structured and unstructured data, Data Analysis process, Dataset generation,

Importing Dataset: Importing and Exporting Data, Basic Insights from Datasets, Cleaning and Preparing the Data: Identify and Handle Missing Values.

Unit-5: Data Processing and Visualization: Data Formatting, Exploratory Data Analysis, Filtering and hierarchical indexing using Pandas. Data Visualization: Basic Visualization Tools, Specialized Visualization Tools, Seaborn Creating and Plotting Maps.

Unit-6 : Mathematical and Scientific applications for Data Analysis: Numpy and Scipy Package, Understanding and creating N-dimensional arrays, Basic indexing and slicing, Boolean indexing, Fancy indexing, Universal functions, Data processing using arrays, File input and output with arrays.

Unit 7: Analysing Web Data: Data wrangling,Web scrapping, Combing and merging data sets, Reshaping and pivoting, Data transformation, String Manipulation, case study for web scrapping.

Unit-8 : Analytics part - I: Basic nomenclature - Analytics process model - Analytics model requirements - Types of data sources – Sampling - types of data elements - Visual Data Exploration and Exploratory Statistical Analysis - Missing Values - Outlier Detection and Treatment - Standardizing Data – Categorization - weights of evidence coding - Variable selection – Segmentation.

Unit-9: Analytics part - II: Predictive Analytics: Target Definition - Linear Regression - Logistic Regression - Decision Trees - Neural Networks - Support Vector machines - Ensemble Methods - Multiclass Classification Techniques - Evaluating Predictive Models.

Unit-10: - Social Networking: Social Network Analytics: Social Network Definitions - Social Network Metrics - Social Network Learning -Relational Neighbor Classifier - Probabilistic Relational Neighbor Classifier -Relational logistic Regression - Collective Inference. Benchmarking - Data Quality - Software – Privacy - Model Design and Documentation - Corporate Governance. Example applications: Credit Risk Modeling - Fraud Detection - Recommender Systems - Web Analytics.

Unit-11 Value Addition: Web Analytics, Introduction to Machine Learning, Applications of Machine Learning.

Course Outcomes:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO303.1	**Remember**	Learn the Basics of Python
CO303.2	**Understand**	Understand the Data Analytics using Python

CO303.3	**Analyze**	Analyze and implement various algorithms using Python
CO303.4	**Apply**	Design and develop an algorithm to solve business problems.

Suggested Reading:

1. Python Data Analytics

With Pandas, NumPy, and Matplotlib

Second Edition

Fabio Nelli

Publication: Apress

2. DATA ANALYSIS FROM SCRATCH WITH PYTHON

Step By Step Guide

Peters Morgan

3. SOCIAL MEDIA ANALYTICS STRATEGY

USING DATA TO OPTIMIZE BUSINESS PERFORMANCE

Alex Gonçalves

Publication: Apress

Semester	3	**Course Credits**	**4**	**Specialization**	Artificial Intelligence & Machine Learning
Course Code	OMBAIML304			**Type**	Specialization Course
Course Title	Statistics & Quantitative Techniques (SQT)				

Course Description:

Resources are always critical in any organization. They are unavailable in an unlimited manner and there are always constraints. Operation research is helpful in the situation of such constraint of resources. Managers have to manage limited available resources in such a way that neither production nor other activities get disturbed in the business. Facility design is a fascinating area for OR. The excitement of operation research lays in the application of quantitative techniques to real-world problems.

Course Objectives:

1) To impart knowledge in concepts and tools of OR and QT; and
2) To help students apply these tools in managerial decision-making.

Course Outlines:

Unit 1: Arranging Data to Convey Meaning: Presenting Data in Tables & Charts: Application Areas for Statistics, Statistical Methods, Understand Data, Organize and Classify Data, Graphical Representation of Data, Good & Bad Data Presentation.

Unit 2: Measures of Central Tendency – Mean, Median, Mode: Numerical Data Properties, Frequency, and Frequency Table, Summary Measures– Central Tendency.

Unit 3: Measures of Dispersion: Summary Measures– Variation.

Unit 4: Correlation Analysis: Correlation Analysis– Scatter Plots, Some Misconceptions About Correlation, Correlation Terminologies.

Unit 5: Simple And Multiple Regressions: Regression Analysis, Simple Regression, Multiple Regressions.

Unit 6: Association of Attributes: Notations, Classes and Class Frequencies, Relationship Between the Class Frequencies, Consistency of the Data, Independence of Attributes, Association of Attributes, Yules' Co-efficient of Association.

Unit 7: Probability & Probability Distribution: Notation and Terminology from Set Theory, Addition Theory of Probability, Conditional Probability, Multiplication Theory of Probability, Applications of Bayes' Theorem, Binomial Distribution, Poisson Distribution, Normal Distribution.

Unit 8: Linear Programming: Formulation & Graphical Solutions to LPP: Variables, Constraints, Objective, Phases of an Operations Research Project, Linear Programming– Formulation Graphical Solutions to LPP.

Unit 9: Transportation: Mathematical Formulation of Transportation Problem, North-West Corner Rule, Lowest Cost Entry Method, Vogel's Approximation Method, Test for Optimization.

Unit 10: Assignment Problems: Mathematical Statement of Assignment Problem, Solution Method for Assignment Problem, Travelling Salesman Problem.

Unit 11: Queuing Theory: Single Server & Multi-Server: Analysing Queuing Process, Constituents of Queuing System, Service Facility, Queuing Discipline, Kendall Notations, Single Server Models, Multi-Server Models

Unit 12: Markov Chain: Monte Carle Simulation: Simulation Procedure, Application of Simulation.

Unit 13: Games Theory: Zero-Sum Games, Fundamental Principles of Game Theory, Reducing by Dominance, Saddle Point, Strictly Determined Game, Mixing Strategies, Flow of Solution, Assumptions for Games Theory.

Unit 14: Decision Theory: Criteria for Decision Making: Decision Tables, Decision Making Process, Decision Criteria for Certainty, Decision Criteria for Uncertainty [5 Criteria], Decision Criteria for Risk.

Course Outcomes:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO 304.1	**Remember**	Learn the basic concepts of operational research.
CO 304.2	**Apply**	Easily apply the tools in managerial decision-making.
CO 304.3	**Analyze**	Grab the opportunities in operation as a career.
CO 304.4	**Creating**	Easily do operational research for better growth.

Suggested Reading:

1. Taylor III. Bernard W., Introduction to Management Science, Dorling Kindersley (India) Pvt. Ltd., licenses of Pearson Education in South Asia, 9th Edition, 2008.

2. Vohra N. D., Quantitative Techniques in Management, Tata McGraw-Hill Publishing Co. Ltd., New Delhi, 3rd Edition, 2007.

Semester	3	**Course Credits**	**4**	**Specialization**	Artificial Intelligence & Machine Learning
Course Code	OMBAIML305			**Type**	Specialization Course
Course Title	Business Intelligence				

Course Description:

Business Intelligence (BI) refers to technologies, applications, and practices for the collection, integration, analysis, and presentation of business information. The purpose of business intelligence is to support better business decision-making. This course provides an overview of the technology of BI and the application of BI to an organization's strategies and goals.

Course Objectives:

1) Introduce the concepts and components of Business Intelligence (BI)
2) Evaluate the technologies that make up BI (data warehousing, OLAP)
3) Define how BI will help an organization and whether it will help yours
4) Identify the technological architecture that makes up BI systems
5) Plan the implementation of a BI system

Course Outline:

Unit 1: Business Intelligence: Introduction, Meaning, Purpose, and Structure of Business Intelligence Systems. Understanding Multidimensional Analysis Concepts: Attributes, Hierarchies, and Dimensions in Data Analysis. Understanding Dimensional Data Warehouse: Fact Table, Dimension Tables, Surrogate Keys, and alternative Table Structure. What is multi-dimension OLAP?

Unit 2: On-Line Analytical Processing (OLAP): What Is OLAP? (OLAP and OLTP, Operational Data Stores, Variations in Data and Approach), OLAP Applications and Functionality, Multi-Dimensions (Thinking in More Than Two Dimensions, What Are the Possibilities? Drilling and Pivoting), OLAP Architecture (Cubism, Tools, ROLAP, MOLAP, HOLAP).

Unit 3: Creating your First Business Intelligence Project: Creating Data source, Creating Data view. Modifying the Data view. Creating Dimensions, Time, and Modifying dimensions. Parent-Child Dimension.

Unit 4: Data Mining: Meaning and purpose. Creating data for data mining. Data mining model creation. Selecting data mining algorithm. Understanding data mining tools. Mapping Mining Structure to Source Data columns. Using Cube Sources. Configuring Algorithm parameters.

Unit 5: The Spectrum of Business Intelligence: Enterprise and Departmental Business Intelligence, Strategic and Tactical Business Intelligence, Power and Usability in Business Intelligence, Finding the Right Spot on the Continuum, Business Intelligence: Art or Science?

Unit 6: Business Intelligence User Interfaces: Querying and Reporting, Reporting and Querying Toolkits, Basic Approaches (Building Ad-Hoc Queries, Building On-Demand Self-Service Reports, Enhancing and Modifying), Data Access (Pull-Oriented Data Access, Push-Oriented Data Access), Dashboards (EIS Is the Engine, Metric System and KPIs, Business Intelligence Dashboards).

Unit 7: Visualization: The Basics, Unconstrained Views, Guided Analysis (The Business Intelligence Two-Step), Handling Unstructured Data, Identifying Photographs.

Unit 8: Building the BI Project: Planning the BI project, Project Resources; Project Tasks, Risk Management and Mitigation, Cost-justifying BI solutions and measuring success, Collecting User Requirements, Requirements-Gathering Techniques; Prioritizing & Validating BI Requirements, Changing Requirements; BI Design and Development, Best Practices for BI Design; Post-Implementation Evaluations, Maintaining Your BI Environment.

Unit 9: Reporting authoring: Building reports with relational vs Multidimensional data models; Types of Reports – List, crosstabs, Statistics, Chart, Map, financial, etc; Data Grouping & Sorting, Filtering Reports, Adding Calculations to Reports, Conditional formatting, Adding Summary Lines to Reports. Drill up, drill-down, drill-through capabilities. Run or schedule reports, different output forms – PDF, Excel, CSV, XML, etc.

Unit 10: BI Deployment, Administration & Security: Centralized Versus Decentralized Architecture, BI Architecture Alternatives, phased & incremental BI roadmap, System Sizing, Measurements and Dependencies, System Sizing, Measurements, and Dependencies. Setting Early Expectations and Measuring the Results. End-User Provisos. OLAP Implementations. Expanding BI Authentication Authorization, Access Permissions, Groups and Roles, Single-sign on Server Administration, Manage Status & Monitoring, Audit, Mail server & Portal integration, Back-Up and Restore.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO305.1	**Remember**	Different Components Business Intelligence
CO305.2	**Apply**	Business User Interface to Different Modules of the Business
CO305.3	**Analyze**	Plan the implementation of a BI system
CO305.4	**Creating**	Evaluate the technologies that make up BI (data warehousing, OLAP)

Suggested Reading:

1. Artificial Intelligence for Business Optimization: Research and Applications - Bhuvan Unhelkar, Tad Gonsalves.
2. Business Intelligence_ A Managerial Approach- [Pearson Education [distributor], Prentice-Hall (2010_2011) - Turban, Efraim_Sharda, Ramesh_Delen, Dursun_King, David
3. Business intelligence and analytics: systems for decision support - Turban, Efraim
4. Business intelligence guidebook: from data integration to analytics - Sherman, Rick - Elsevier Science; Morgan Kaufman, Year: 2015;2014

Semester	3	**Course Credits**	**4**	**Specialization**	Artificial Intelligence & Machine Learning
Course Code	OMBAIML306			**Type**	Specialization Course
Course Title	R Programming for Data Analysis and Visualization				

Course Description:

The dependency of Business firms on data and information systems is continuously growing, a lot of raw data is generated on daily basis, which is meaningless unless analyzed and interpreted by using some sophisticated techniques. Data visualization provides a good, organized pictorial representation of the data which makes it easier to understand, observe, and analyze. In this course, learners will learn how to visualize data using R and its libraries to facilitate decision-making. Data visualization allows managers to gain insight into their vast amounts of data. It benefits them to recognize new patterns and errors in the data.

Course Objectives:

1) To understand the importance of data analysis and visualization techniques for managers
2) To learn to analyze the descriptive statistics using R
3) To learn to test hypotheses to interpret data by using R package
4) To Understand what plots are suitable for a type of data managers encounter with while making decisions.
5) To Visualize data by creating various graphs using R base package, lattice, and ggplot2 packages.

Course Outline:

Unit 1: Preliminaries and Introduction to R: What is R, Installing R and R studio, R studio overview, Working in the console, Arithmetic Operators, Logical Operations, Using Functions, Getting Help in R and Quitting RStudio

Types of variables, Creating variables, Using Variables, Numeric, character, and Logical variables and operators, Sorting Numeric, Character, and Factor Vectors, Special Values, Using the console, Creating an object in R, Data types in R - Integers and doubles, Objects and Data Types, Coercion rules in R, Functions in R, Functions, and arguments, Objects and Functions, Packages in R,

What is a Vector? create vectors, Naming a vector in R, Vector recycling, Vectorized operations, Slicing and indexing a vector in R, Extracting elements from a vector, Using the [] brackets, The power of vectorized operations, Changing the dimensions of an object in R.

Unit 2: Matrices: Matrices, Creating Matrices in R, Naming Dimensions, Colnames() and Rownames(), Matrix Operations, Indexing an element from a matrix, Slicing a matrix in R, Matrix operations in R, Visualizing With Matplot(), Subsetting, Visualizing Subsets Creating a factor in R, Factors in R

Unit 3: Fundamentals of Programming in R: Relational operators in R, Logical operators in R, Vectors and logical operators, If, else, else if statements in R, If, else, else if statements - Keep-In-Mind's, For loops in R, While loops in R, Repeat loops in R, Boolean logical operators, Building a function in R 2.0, Building a function in R 2.0 – Scoping, Creating functions, Calling functions, Exercise Scoping.

Unit 4: R packages and scripts: Installing and loading packages, setting up your working directory, Downloading and importing data, working with missing data, Extracting a subset of a data frame, Writing R scripts, Adding comments and documentation, Creating reports

Unit 5: Data Preparation: What are factors, gsub() and sub(), Dealing with Missing Data, What is an NA?, Way To Locate Missing Data, Data Filters: which() for Non-Missing Data, Data Filters: is.na() for Missing Data, Removing records with missing data, Reseting the dataframe index, Replacing Missing Data: Factual Analysis Method, Replacing Missing Data: Median Imputation Method (Part 1), Replacing Missing Data: Deriving Values Method, Visualizing results.

Unit 6: Data frames: Creating a data frame in R, Importing data into R, The Tidyverse package, Exploring your dataset, Using the $ sign, Basic operations with a Data Frame, Filtering a Data Frame, Introduction to qplot, Visualizing with Qplot, Building Dataframes, Merging Data Frames, Messy Data, Renaming Columns (Variable Names), Attaching / Detaching, Tabulating Data: Constructing Simple Frequency Tables, Ordering Factor Variables

Unit 7: Lists in R: Import Data Into R, Handling Date-Times in R, what is list, Naming components of a list, Extracting components lists: [] vs [[]] vs $, Adding and deleting components, Subsetting a list, Creating A Timeseries Plot, Apply Family of Functions, Import Data into R.

Unit 8: What is Apply Family: Using apply(), Recreating the apply function with loops, Using lapply(), Combining lapply() with [], Adding your own functions, Using sapply(), Nesting apply() functions, which.max() and which.min:

Unit 9: Advanced Visualization using R with GGplot2: Using the ggplot2package to visualize data, Grammar of Graphics- GGplot2, what is a Factor? Aesthetics, Plotting With Layers, Overriding Aesthetics,

Mapping vs Setting, Line chart, Bar charts, Histograms, and Density Charts, Pie chart Stacked Area Chart, Scatter plot and Trendline, Starting Layer Tips, Statistical Transformations, Using Facets, Coordinates, Perfecting by Adding Themes, Applying themes from ggthemes to refine and customize charts and graphs, Building data graphics for dynamic reporting

Unit 10: Data querying: SQL and R: Writing SQL statements in R, Using the Select, From, Where, Is, Like, Order By, Limit, Max, Min SQL functions, Querying the database with the dplyr, filter(), select()

Unit 11: Statistical data analysis using R: Measures of central Tendency (Mean, Median, Mode) using R, Measurement of Variation - Range, IQR and Standard Deviation (Using R), Descriptive Statistics Using psych Package, Central Limit Theorem

Unit 12: Hypotheses Testing using R: One Sample z Test Using R, One-Sample z Test using BSDA Package, One-Sample t-Test Using R, Visualizing One-Sample t-Test Results using Visualize Package, One-Sample Variance Test Using Envstats Package, Two-Sample Z Test Using R, Visualizing Two Sample Z Test Using Visualize Package, Two-Sample t-Test (Equal Variance) Using R, Two-Sample t-Test (Unequal Variance) Using R, Paired t-Test Using R, Two-Sample Variance Test (F Distribution) Using R, Visualizing Two Sample Variance Test Results using Visualize Package, Analysis of Variance (ANOVA) Using R, Goodness of Fit Test Using R, Contingency Table Using R

Unit 13: Introduction to Plotly, lattice, Esquisse, and colourpicker packages: Draw multiple-axes, scatter plots, line plots, histograms, contour plots, heatmaps, network graphs, 3D charts, and time series using plotly and lattice, drag-drop using Esquisse, exporting to visualization powerpoint and word documents, changing color themes using colourpicker.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO 306.1	**Understand**	The Use of R Programming for Data Visualization
CO 306.2	**Apply**	Apply Different Operations on Data Frames
CO 306.3	**Analyze**	The Efficiency of Tools for Data Visualization
CO 306.4	**Evaluate**	Evaluate the Different Outcomes of the R Programming for a Data Set

Suggested Reading:

1. Artificial Intelligence for Business Optimization: Research and Applications - Bhuvan Unhelkar, Tad Gonsalves.

2. Business Intelligence_ A Managerial Approach- [Pearson Education [distributor], Prentice-Hall (2010_2011) - Turban, Efraim_Sharda, Ramesh_Delen, Dursun_King, David
3. Business intelligence and analytics: systems for decision support - Turban, Efraim
4. Business intelligence guidebook: from data integration to analytics - Sherman, Rick - Elsevier Science; Morgan Kaufman, Year: 2015;2014

Semester-III Blockchain Technology Management Specialization

Semester	3	**Course Credits**	**4**	**Specialization**	Blockchain Technology Management
Course Code	OMBBTM301			**Type**	Specialization Course
Course Title	Basics of Blockchain Technology				

Course Description:

This is the first introductory course of basics of Blochchain Technology. The course is useful to acquaint students with basic elements of Blockchain Technology Management and their importance. The students would also be able to appreciate the importance and understand the modern concepts of block chain technology systematically.

Course Objectives:

1) To assess blockchain applications in a structured manner.
2) Understand and explore the working of Blockchain Technology
3) To strong technical understanding of Blockchain Technology
4) To introduce application areas, current practices, and research activity in Blockchain Technology.

Course Outline:

Unit 1: Introduction of Blockchain: What is Blockchain, History, Purpose, Blockchain Technology Mechanisms & Networks, Blockchain Origins, Objective of Blockchain, Blockchain Challenges, Transactions and Blocks, P2P Systems, Keys as Identity, Digital Signatures.

Unit 2: Introduction to Cryptography: What is Cryptography, types of Cryptography, what is Cryptocurrency, Public-key Cryptography, Private key Cryptography.

Unit 3: Blockchain Component: Cryptographic Hash function, Cryptographic nonce, Transactions, Asymmetric-key Cryptographic, Addresses and address Derivation, Private key storage, Ledger, Blocks, Chaining Blocks.

Unit 4: Consensus Models: Proof of Stake, Proof of Work, Proof of authority, Round Robin, Proof of Elapsed Time, Consensus Comparison Matrix, Ledger Conflicts, and Resolution.

Unit 5: Forking and Cryptographic Changes and Forks: How does it works, Types of Forks: Soft Forks, Hard Forks.

Unit 6: Ethereum Technology Overview: What is Ethereum? Ethereum Clients, Account Management, Ether, The Ethereum network, Mining, The Ethereum Foundation, Architectural Overview, Ethereum Blockchain Platform, Analyse Ethereum blockchain.

Unit 7: Smart Contracts, Dapps, And DAOs (concepts): What are Smart Contracts?, What is Ethereum Virtual Machine (EVM)?, What are Decentralized Autonomous Organizations (DAO)?, Quick Start Overview of Remix using JavaScript VM.

Unit 8: Hyperledger: Introduction, Hyperledger Fabric, and its architecture, Hyperledger Composer

Unit 9: Solidity Programming – Basics: Layout of a Solidity Source File, Structure of a Contract, Types, Units, and Globally Available Variables, Input Parameters, and Output Parameters.

Unit 10: Emerging Trends in Blockchain: Cloud-based blockchain, Multichain, Geth, Stellar, Ripple, R3 Corda, Blockchain API, Blockchain Sandboxes.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO301.1	**Remember**	Learn the basics of Blockchain Technology
CO301.2	**Understand**	Able to use the Technology
CO301.3	**Apply**	Exhibit the level of growth
CO301.4	**Analyze**	Perform the task using the Technology
CO301.5	**Evaluate**	Design, build and deploy smart contracts and distributed applications

Suggested Reading:

Blockchain Basics: A Non-Technical Introduction in 25 Steps

Author : Daniel Drescher

Publication: Apress

Semester	3	**Course Credits**	4	**Specialization**	Blockchain Technology Management
Course Code	OMBBTM302			**Type**	Specialization Course
Course Title	Blockchain Technology and Management				

Course Description:

The objective of this course is to familiarize the students with Blockchain Technology and Management. Students will learn what are the different tools and techniques of Blockchain Technology and Management.

Course Objectives:

1) Understand and explore the working of Blockchain technology management
2) Understand BitCoin and Cryptocurrency.
3) Apply the learning of solidity and de-centralized apps on Ethereum

Course Outline:

Unit-1: Technological and Cryptographic Elements in Blockchain: Public Key & Private Key, Real-life Scenario Challenges, Transactions Processing: Modification, Maintenance, Privacy Protection, Public-key Cryptography.

Unit 2: BitCoin and Cryptocurrency: Bitcoin, The Bitcoin Network, The Bitcoin Mining Process, Mining Developments, Bitcoin Wallets, Decentralization and Hard Forks, Ethereum Virtual Machine (EVM), Merkle Tree, Double-Spend Problem, Blockchain And Digital Currency, Transactional Blocks, Impact Of Blockchain Technology On Cryptocurrency.

Unit-3: Introduction to Ethereum: Ethereum, Introduction to Ethereum, Consensus Mechanisms, How Smart Contracts Work, Metamask Setup, Ethereum Accounts, Receiving Ether's Transaction, Smart Contracts.

Unit-4: Introduction to Hyperledger: Hyperledger Distributed Ledger Technology & its Challenges, Hyperledger & Distributed Ledger Technology, Hyperledger Fabric, Hyperledger Composer.

Unit-5: Solidity Programming: Solidity - Language of Smart Contracts, Installing Solidity & Ethereum Wallet, Basics of Solidity, Layout of a Solidity Source File & Structure of Smart Contracts, General Value Types (Int, Real, String, Bytes, Arrays, Mapping, Enum, address)

Unit-6: Blockchain Applications: Internet of Things, Medical Record Management System, Domain Name Service and Future of Blockchain, Alt Coins. Blockchain and Enterprise – A Technology of Coordination, Selection Criteria for Blockchain Applications (Decision Making)

Unit-7: Blockchain Platforms part I: Classification of Blockchain Platforms (Part 1), An Overview of the 5 Key Perspectives, Highlights of Major Blockchain Platform, Ethereum.

Unit-8: Blockchain Platforms part II: Trustlessness and Immutability of Blockchain Technology, Proof of Work and Proof of Stake, Token, Tokenizing Shares and Fund Raising, Hyperledger.

Unit-9: Emerging Trends in Blockchain: Alternative Blockchains and Next Emerging Trends Kadena, Ripple, Rootstock, Quorum, Tendermint, Scalability, Privacy, Other Challenges, Blockchain Research, Notable Projects, Miscellaneous Tools.

Unit-10: The Limitations, Opportunities, and Challenges of Blockchain: Limitations & opportunities of Blockchains, Risks, and Limitations of Blockchain: Privacy, What Are the Benefits of Blockchain in Banking, Healthcare.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO302.1	**Remember**	Various Blockchain Technology concepts
CO302.2	**Understand**	Understand Blockchain platform, hyperledger, benefits to different sector
CO302.3	**Apply**	Apply the skill by implementing it into practice
CO302.4	**Analyze**	Analyze various platforms of Blockchain Technology

Suggested Reading:

1. Narayanan, J. Bonneau, E. Felten, A. Miller, S. Goldfeder, "Bitcoin and Cryptocurrency Technologies: A Comprehensive Introduction", Princeton University Press, 2016.
2. Imran Bashir, "Mastering Blockchain: Distributed Ledger Technology, Decentralization and Smart Contracts Explained", Second Edition, Packt Publishing, 2018.

Semester	3	**Course Credits**	4	**Specialization**	Blockchain Technology Management
Course Code	OMBBTM303			**Type**	Specialization Course
Course Title	Cryptography and Information Security				

Course Description:

This course will emphasize on principles and practice of cryptography and information security: classical Systems, symmetric block ciphers (des, aes, other contemporary symmetric ciphers), linear and Differential cryptanalysis, perfect secrecy, public-key cryptography algorithms for factoring, and Discrete logarithms, cryptographic protocols, hash functions, authentication, key management, key Exchange, signature schemes, email and web security, viruses, firewalls, digital right management, And other topics. In this course, students will learn as aspects of information security and cryptography.

Course Objectives:

1) To understand basics of cryptography and information security
2) To be able to secure a message over insecure channel by various means
3) To learn about how to maintain the confidentiality, integrity, and availability of a data
4) To provide deeper understanding into cryptography, its application to network security, threats/vulnerabilities to networks, and countermeasures.
5) To familiarize with cryptographic techniques for secure (confidential) communication of two parties over an insecure (public) channel; verification of the authenticity of the source of a message.
6) To familiarize digital signature standards and provide solutions for their issues.

Course Outline:

Unit 1: Introduction to Cryptography and Block Ciphers: (Introduction to Cryptography and Block Ciphers) - Security trends, The OSI Security Architecture, A model for Network security. Introduction to security attacks - services and mechanism, introduction to cryptography, Conventional Encryption: Encryption model,classical encryption techniques, substitution ciphers and transposition ciphers, cryptanalysis,steganography - stream and blockciphers. Shannon's theory of confusion and diffusion - fiestalstructure. Classical encryption techniques:symmetric cipher modes, substitute techniques.

Unit 2: Block Cipher and Data Encryption Standards: Block Cipher Principles, Data Encryption Standards, the Strength of DES & AES, Differential

and Linear Crypt Analysis, Block Cipher Design Principles.(Advanced Encryption Standards) :Evaluation Criteria for AES, the AES Cipher. (More On Symmetric Ciphers): Multiple Encryption, Triple DES, Block Cipher Modes of Operation, Stream Cipher and RC4.(Introduction To Number Theory): Prime Numbers, Fermat's and Euler's Theorem, Testing for Primality, The Chinese Remainder

Theorem, Discrete logarithms,

Unit 3: Public Key Cryptography and RSA: Principles Public key crypto Systems, Diffie Hellman Key Exchange, the RSA algorithm, Key Management, , Elliptic Curve Arithmetic, Elliptic Curve Cryptography.(Message Authentication And Hash Functions): Authentication Requirement, Authentication Function, Message Authentication Code, Hash Function, Security of Hash Function and MACs.(Hash And Mac Algorithm) : Secure Hash Algorithm, Whirlpool, HMAC, CMAC.(Digital Signature) : Digital Signature, Authentication Protocol, Digital Signature Standard.

Unit 4: Authentication Application: Kerberos, X.509 Authentication Service, Public Key Infrastructure.(Email Security): Pretty Good Privacy (PGP) and S/MIME.(IP Security): Overview, IP Security Architecture, Authentication Header, Encapsulating Security Payload, Combining Security Associations and Key Management.

Unit 5: Integrity Checks and Authentication Algorithms: MD5 message digest algorithm - Secure hash algorithm (SHA) Digital Signatures: Digital Signatures - authentication protocols - digital signature standards (DSS) - proof of digital signature algorithm - Authentication Applications: Kerberos and X.509 - directory authentication service - electronic mail security-pretty good privacy (PGP) - S/MIME.

Unit 6: Program Security: Nonmalicious Program errors – Buffer overflow, Incomplete mediation, Time-of-check to Time-of- use Errors, Viruses, Trapdoors, Salami attack, Man-in-the- middle attacks, Covert channels.

Unit 7: Security in Networks: Threats in networks, Network Security Controls – Architecture, Encryption, Content Integrity, Strong Authentication, Access Controls, Wireless Security, Honeypots, Traffic flow security, Firewalls – Design and Types of Firewalls, Personal Firewalls, IDS, Email Security – PGP,S/MIME.

Unit 8: Web Security: Requirements, Secure Socket Layer (SSL) and Transport Layer Security (TLS), Secure Electronic Transaction (SET), Intruders, Viruses and related threats.(Firewall: Firewall Design principles, Trusted Systems.)

Unit 9: Security Issues on Cryptography and Network Security: Cryptanalysis, Steganography, Classical Encryption Techniques. Transposition Techniques.

Unit 10: Firewall and Intrusion Detection System: Firewall : need of firewall,types of firewall-packet filters,stateful packet filters, application gateways,circuit gateways, Intrusion detection system,vulnerability assessment,Anomaly detection,network based IDS, host-based IDS.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO303.1	**Remember**	Identify basic security attacks and services.
CO303.2	**Understand**	Understand & use symmetric and asymmetric key algorithms for cryptography.
CO303.3	**Apply**	Perform all the required calculations through relevant numerical problems.
CO303.4	**Analyze**	Implement the tools and techniques by learning financial practices.
CO303.5	**Evaluate**	Evaluate the impact of business decisions on Financial Statements, Working Capital, Capital Structure, and Capital Budgeting of the firm.

Suggested Reading:

1. Charlie Kaufman (2002), Network Security: Private Communication in a Public World, 2nd edition, Prentice Hall of India, New Delhi.
2. Atul Kahate (2008), Cryptography and Network Security, 2nd edition, Tata Mc Graw hill, India.
3. William Stallings, "Cryptography and Network Security Principles and Practices", Pearson/PHI.
4. W. Mao, "Modern Cryptography – Theory and Practice", Pearson Education.
5. Network Security Essentials: Applications and Standards, by William Stallings. Prentice-Hall.

Semester	3	**Course Credits**	4	**Specialization**	Blockchain Technology Management
Course Code	OMBBTM304			**Type**	Specialization Course
Course Title	Cloud Infrastructure and Services				

Course Description:

Cloud computing is an interesting domain, it helps businesses meet their need for software, hardware, and the right type of infrastructure that can keep projects going. The course gives you a top-down view of cloud computing, from applications and administration to programming, infrastructure, billing, and security. The topics include an overview of cloud computing, cloud systems, Load balancing in AWS, distributed storage systems, virtualization, security in AWS, and management services and Billing.

Course Objectives:

1) To develop an understanding of Cloud Computing and its benefits
2) Learners will understand the main principles of Cloud Computing and how they are implemented in Microsoft Azure, AWS, and Google Cloud Platform.

Course Outline:

Unit–1: Introduction to Cloud Technologies: Introduction to Cloud Technologies Introduction to Cloud Computing, History of cloud computing, cloud service options, Cloud Deployment models, Business concerns in the cloud.

Unit-2: Virtualization and Cloud Platforms: Virtualization and Cloud Platforms Exploring virtualization, Load balancing, Hypervisors, Machine imaging, Cloud marketplace overview, Comparison of Cloud providers.

Unit-3: Introduction to AWS: Introduction to AWS AWS history, AWS Infrastructure, AWS services, AWS ecosystem.

Unit-4: Programming, management console and storage on AWS: Programming, management console, and storage on AWS Basic Understanding APIs, AWS programming interfaces, Web services, AWS URL naming, Matching interfaces and services, Elastic block store, Simple storage service, Glacier, Content delivery platforms.

Unit-5: AWS identity services, security and compliance: Users, groups, and roles, Understanding credentials, Security policies, IAM abilities and limitations, AWS physical security, AWS compliance initiatives, Understanding public/private keys, and Other AWS security capabilities.

Unit-6: AWS computing and marketplace: Elastic cloud computes - Introduction to servers, Imaging computers, Auto scaling, Elastic load balancing, Cataloging the marketplace, AMIs, Selling on the marketplace.

Unit-7: AWS networking and databases; Virtual private clouds, Cloud models, Private DNS servers (Route 53), Relational database service, DynamoDB, ElastiCache, Redshift.

Unit-8: Other AWS Services and Management Services: Analytics services, Application services, Cloud security, CloudWatch, CloudFormation, CloudTrail, OpsWorks.

Unit-9: AWS billing and Dealing with disaster: Managing costs, Utilization and tracking, Bottom line impact, Geographic and other concerns, Failure plans, and Examining logs.

Unit-10: Deployment of Software Solutions and Web Applications: Deployment models, implementation of web services: SOAP, and REST,0

Course Outcome:

On successful completion of the course, the learner will be able to

CO#	Cognitive Abilities	Outcomes
CO304.1	**Remember**	Define the basic terms and concepts related to Cloud Computing
CO304.2	**Understand**	learners will understand the main principles of Cloud Computing and Services
CO304.3	**Apply**	Apply their knowledge in implementing cloud in Microsoft Azure, AWS, and Google Cloud Platform.
CO304.4	**Analyze**	Demonstrate their knowledge to implement use cases and configuration options for Azure App Services and AWS Application Services environments.

Suggested Reading:

1. Amazon Web Services For Dummies. Bernard Golden. For Dummies. ISBN-13: 978- 1118571835
2. Rajkumar Buyya, Cloud Computing: Principles and Paradigms, John Wiley & Sons, First Edition1.

Semester	3	**Course Credits**	4	**Specialization**	Artificial Intelligence & Machine Learning
Course Code	OMBBTM305			**Type**	Specialization Course
Course Title	Statistics & Quantitative Techniques (SQT)				

Course Description:

Resources are always critical in any organization. They are unavailable in an unlimited manner and there are always constraints. Operation research is helpful in the situation of such constraints on resources. Managers have to manage limited available resources in such a way that neither production nor other activities get disturbed in the business. Facility design is a fascinating area for OR. The excitement of operation research lays in the application of quantitative techniques to real-world problems.

Course Objectives:

1) To impart knowledge in concepts and tools of OR and QT; and
2) To help students apply these tools in managerial decision-making.

Course Outlines:

Unit 1: Arranging Data to Convey Meaning: Presenting Data in Tables & Charts: Application Areas for Statistics, Statistical Methods, Understand Data, Organize and Classify Data, Graphical Representation of Data, Good & Bad Data Presentation.

Unit 2: Measures of Central Tendency – Mean, Median, Mode: Numerical Data Properties, Frequency, and Frequency Table, Summary Measures– Central Tendency.

Unit 3: Measures of Dispersion: Summary Measures– Variation.

Unit 4: Correlation Analysis: Correlation Analysis– Scatter Plots, Some Misconceptions About Correlation, Correlation Terminologies.

Unit 5: Simple And Multiple Regressions: Regression Analysis, Simple Regression, Multiple Regressions.

Unit 6: Association of Attributes: Notations, Classes and Class Frequencies, Relationship Between the Class Frequencies, Consistency of the Data, Independence of Attributes, Association of Attributes, Yules' Co-efficient of Association.

Unit 7: Probability & Probability Distribution: Notation and Terminology from Set Theory, Addition Theory of Probability, Conditional Probability, Multiplication Theory of Probability, Applications of Bayes' Theorem, Binomial Distribution, Poisson Distribution, Normal Distribution.

Unit 8: Linear Programming: Formulation & Graphical Solutions to LPP: Variables, Constraints, Objective, Phases of an Operations Research Project, Linear Programming– Formulation Graphical Solutions to LPP.

Unit 9: Transportation: Mathematical Formulation of Transportation Problem, North-West Corner Rule, Lowest Cost Entry Method, Vogel's Approximation Method, Test for Optimization.

Unit 10: Assignment Problems: Mathematical Statement of Assignment Problem, Solution Method for Assignment Problem, Travelling Salesman Problem.

Unit 11: Queuing Theory: Single Server & Multi-Server: Analysing Queuing Process, Constituents of Queuing System, Service Facility, Queuing Discipline, Kendall Notations, Single Server Models, Multi-Server Models

Unit 12: Markov Chain: Monte Carle Simulation: Simulation Procedure, Application of Simulation.

Unit 13: Games Theory: Zero-Sum Games, Fundamental Principles of Game Theory, Reducing by Dominance, Saddle Point, Strictly Determined Game, Mixing Strategies, Flow of Solution, Assumptions for Games Theory.

Unit 14: Decision Theory: Criteria for Decision Making: Decision Tables, Decision Making Process, Decision Criteria for Certainty, Decision Criteria for Uncertainty [5 Criteria], Decision Criteria for Risk.

Course Outcomes:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO 304.1	**Remember**	Learn the basic concepts of operational research.
CO 304.2	**Apply**	Easily apply the tools in managerial decision-making.
CO 304.3	**Analyze**	Grab the opportunities in operation as a career.
CO 304.4	**Creating**	Easily do operational research for better growth.

Suggested Reading:

1. Taylor III. Bernard W., Introduction to Management Science, Dorling Kindersley (India) Pvt. Ltd., licenses of Pearson Education in South Asia, 9th Edition, 2008.

2. Vohra N. D., Quantitative Techniques in Management, Tata McGraw-Hill Publishing Co. Ltd., New Delhi, 3rd Edition, 2007.

Semester	3	**Course Credits**	4	**Specialization**	Blockchain Technology Management
Course Code	OMBBTM306			**Type**	Specialization Course
Course Title	Blockchain and FinTech				

Course Description:

Blockchain is a core technology in FinTech. The original design of blockchain-focused on the cryptocurrency "Bitcoin". Due to its specific characteristics, many companies and users now find blockchain very useful for applications in many areas, not limited to cyber currencies, including finance, logistics, insurance, medicine, and even music. However, the design of blockchain involves cryptographic technology, which cannot be easily understood by those who are not professionals in the area of IT and security. In order to better understand what kinds of applications best fit blockchain and other forms of distributed ledger technology and the potential of these emerging technologies, it is important to understand the design rationale, the basic technology, the underlying cryptographic fundamentals, and its limitations.

Financial technology (FinTech) is revolutionary and rapidly changing the financial services industry. Fintech (financial technology) is the umbrella term used for innovations in the financial technology space and includes the organizations and services that provide financial services to consumers using these technologies The program will impart a strong understanding of the Blockchain and FinTech technologies involved along with their applications/business as is being seen in the world today.

Course Objectives:

1) To have a conceptual understanding of foundational concepts and architecture of Blockchain and Fintech.
2) Be well familiar with the trending concepts of FinTech such as Blockchain, Artificial Intelligence/Machine Learning, Bitcoin/ Crypto currency Ecosystem, etc., and be able to improve existing business models and financial solutions using them.
3) To develop a different way of thinking about available data and how it can be used to impact managerial decision-making.
4) Be at the cutting edge of FinTech innovation as is happening today in the world and be able to undertake related innovations in business projects.
5) Understand recent FinTech developments and analyze their impact on the financial services industries

Course Outline:

Unit 1: Fintech Basics: What is Fin Tech: History of Fin Tech Evolution and the Fin Tech Landscape, FinTech Architecture, FinTech Technologies, Latest Trends and future of FinTech, Applications of FinTech, Use cases of FinTech in banks, Fintech startups, Fintech unicorns, and business models.

Unit 2: Machine Learning & AI: Introduction to Machine Learning, ML Algorithms and applications, AI and applications, AI/ML –changing business landscape, AI/ML –in practice, Use cases and applications.

Unit 3: Blockchain Technology and Infrastructure: Blockchain Foundations, Blocks and Blockchain, the Chain, Nodes and Network, Blockchain in Use, Trust Framework and Consensus Mechanisms, Public, Consortium, Private Blockchains, Blockchain Interoperability.

Unit 4: Blockchain and Cryptography: Cryptography, Application to Blockchain, Hash Functions, Public Key Cryptography, and Signing, Use cases and applications.

Unit 5: Smart Contracts and Hyperledgers: Understand smart contracts Computational model of Smart contracts, Ethereum and Working with Smart Contracts, Hyperledger Architecture, Hyperledger Blockchain Technology, Use cases of Smart contracts

Unit 6: Crypto-Currencies: Cryptocurrencies Primer, Bitcoin and Applications, Cryptocurrencies and Digital Crypto Wallets, Types of Cryptocurrencies, Cryptocurrencies and Applications, Regulations for Cryptos and tokens

Unit 7: Payments -Architecture and Technologies: Global Payment Ecosystem, Payments Architecture and Setup, Innovation in Consumer and Retail payments, Popular Payments Technology, Blockchain and Cryptocurrencies in Payments, Payment Stacks in India, B2B & B2B2C solutions, Innovative Products in Mobile based, Credit Cards, POS-based ecosystem.

Unit 8: Alternative Lending, P2P Lending, Crowd-Funding, And Infrastructure: Concept of P2P Lending, P2P and Marketplace Lending, P2P Infrastructure and technologies, Concept of Crowdfunding, Crowdfunding Architecture and Technology, P2P and Crowdfunding unicorns and business models, SME/MSME Lending: Unique opportunities and Challenges, Solutions and Innovations.

Unit 9: FinTech in Financial Services (FS of BFSI): Use cases of Wealth Management, Robo Advisory, Sentiment Analysis, etc. FinTech in Insurance (I of BFSI): Use cases on Insurance, Fraud Detection, etc.

Unit 10: FinTech Regulation and RegTech: FinTech Regulations, Evolution of RegTech, RegTech Ecosystem: Financial Institutions RegTech Ecosystem: Startups, RegTech Startups: Challenges, RegTech Ecosystem: Regulators, Industry Showcase: Use Case of AI in Smart Regulation and Fraud Detection, Regulatory Sandboxes, Smart Regulation

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO306.1	**Remember**	Learn and will explore the major areas of FinTech
CO306.2	**Understand**	Understand recent FinTech developments and analyze their impact on the financial services industries and the fundamental role of Data and Security in data-driven finance
CO306.3	**Apply**	Apply machine learning in robo-advising and FinTech
CO306.4	**Analyze**	Analyze alternative lending, and P2P technologies, and assess their impact on traditional banking and payment industries

Suggested Reading:

1. Fintech in a Flash: Financial Technology Made Easy by Agustin Rubini
2. FinTech Future: The Digital DNA of Finance by Sanjay Phadke
3. Blockchain & Fintech: A Comprehensive Blueprint to Understanding Blockchain & Financial Technology. Author: by Richard Hayen.

Semester-III Business Analytics Specialization

Semester	3	**Course Credits**	4	**Specialization**	Business Analytics
Course Code	OMBBA301			**Type**	Specialization Course
Course Title	Business Analytics-I				

Course Description

Business Analytics is a combination of Data Analytics, Business Intelligence, and Computer Programming. It is the science of analyzing data to find out patterns that will be helpful in developing strategies. Its usage can be found in almost every industry. This introductory course in Business Analytics introduces the basic concept of Business Analytics. The later part of the course covers the concepts of Finance and Human Resource Analytics.

Course Objectives

1) To understand the concept of Business Analytics and its importance in business decisions and strategy formulation.
2) To learn various tools and techniques of Business Analytics used for solving complex business situations.
3) To learn functional analytics tools and metrics from Finance and Human Resource domain.
4) To apply Business Analytics skills to solve the real-life business situation.

Course Outline:

Part A Business Analytics

Unit 1 Business Research Analytics: Problem Identification, Define Business problem or opportunity, Data, Data and information, Types of data, primary data, Secondary data, Discrete data, continuous data, Data collection, Data collection methods and instruments, Measurement and scaling Techniques, Descriptive vs. Analytical statistics, Population and Sample, Sampling, sampling distribution, Estimation and hypotheses testing,

Unit 2 Introduction to Business Analytics: Analysis vs. Analytics, Introduction to Business Analytics, Business Analytics overview & origin, What is Business Analytics, Who is a Business Analyst (Functions). Concepts of Descriptive, Diagnostic, Predictive and Prescriptive Analytics, Types of IT companies. Types

of Development Units, IT hierarchy, Business Analyst Prerequisites. Roles and Responsibilities of a BA. Do's and Don'ts of a BA.

Unit 3 Business Analytics and Business Intelligence: Getting Started with Business Intelligence, Using Analytical Information for Decision Support, Information Sources Before Dawn of BI?, Business Intelligence (BI) Defined, Evolution of BI and Role of DSS, EIS, MIS, and Digital Dashboards, Need for BI at Virtually all Levels, BI for Past, Present, and Future, The BI Value Chain, Introduction to Business Analytics.BI Definitions and Concepts, BI Component Framework, Who is BI for?, BI Users, Business Intelligence Applications, BI roles, and Responsibilities, popular BI tools

Unit 4 Business Analytics techniques: Introduction to Requirements Analysis, Stakeholder Analysis, Trend Analysis, Comparative Analysis, Pareto analysis, process modeling, root cause analysis, Fish bone analysis, SWOT analysis, GAP analysis, PESTLE analysis, Value-based Analysis, Theory of constraint, Feasibility study, current state analysis, Define Future State, Business case writing.

Unit 5 IT and Business Analytics: Business View of Information Technology Applications, Business Enterprise Organization, Its Functions, and Core Business Processes, Baldrige Business Excellence Framework (Optional Reading), Key Purpose of Using IT in Business, The Connected World: Characteristics of Internet-ready IT Applications, Enterprise Applications (ERP/CRM, etc.) and Bespoke IT Applications, Information Users and Their Requirements.

Part B Financial Analytics

Unit 6 – Fundamentals of Financial Mathematics: Number system, fraction, percentage, profit, loss, Arithmetic, and geometric sequences and series, Simple interest, compound interest, and annual percentage rates, Depreciation, Time value of money, discounting, Net present value and internal rate of return, Annuities, debt repayments, sinking fund, The relationship between interest rates and the price of bonds.

Unit 7 Financial Risk Analytics: Concept of Risk, Risk management, Types of Risks, Financial Markets, Types of financial risks, Steps in Risk Management Process, Risk Analytics, operational risk, credit risk, model risk, market risk (price risk, currency risk, interest rate risk), Steps in Risk management, Selection of appropriate risk management techniques, Trade-off between risk and return, Risk-free rate, risk premium, Required rate of return, Holding period yield, holding period return, expected return, Types of Risks-Systematic risk vs unsystematic risk, measures of systematic risks, measures of unsystematic risks.

Unit 8 Valuation analytics: Discounted cash flow techniques, Relative valuation Techniques, equity valuation, DCF, DDM, Present value of operating cash flows, present value of free cash flows, Relative equity valuation-PE ratio, Price to earning growth ratio, Price to book value ratio, Price-sales ratio,

Valuation of fixed income securities, zero-coupon bond, coupon bond, YTM, Non- linear relationship between bond prices and interest rates, the sensitivity of fixed income securities, convexity.

Unit 9 Market risk management: Diversification, Concept of portfolio Modern portfolio Theory, Markowitz Portfolio optimization model, Sharpe Single Index model, CAPM, Arbitrage pricing model, portfolio evaluation, Adjusting portfolio Beta, Sharpe measure, Treynor's measure, Jensen's measure, portfolio revision, Basel Norms for Market Risk, VaR.

Part C Human Resource Analytics

Unit 10 Introduction to HR Analytics: Evolution of HR Analytics, understanding HR analytics, Models of HR analytics, Three-level model, (Prescriptive Analytics, Predictive and Descriptive Analytics),4 level model, Eight level model, IT in HRM, Workforce Analytics: definition, evolution, function of Workforce analytics, Use of HR metrics to measure results in HR - Process vs Outcome, Efficiency vs Effectiveness, Lead vs Lag, challenges in measuring human capital, HR Business Framework, Concept of Balanced Score Card, Identifying key workforce questions, Strategic Case for Workforce Analytics, Data Sources, Power of combining data sources, Good, Important & Key Metrics.

Unit 11 Recruitment Analytics: Introduction, Recruitment, and Selection, Job analysis, Use of data analytics in job analysis, Human resource planning, Use of HR analytics in recruitment, Use of analytics in the selection, Ratios, and Metrics used in the selection process, (Fill-up ratio, Full time, Time to hire, Early turnover, Turnaround time, Source of hire, Cost per hire, first-year resignation rate, the Satisfaction rate of hiring managers, Termination during probation, Channel efficiency mix in terms of Direct hires, Employee referral hires, Agency hires & Lateral hires, Offer reject and renege, Fulfilment ratio, Quality of hire, Recruitment to HR cost. Use of KPIs in the selection process, Use of Artificial Intelligence in Recruitment and selection.

Unit 12 Training, development, and efficiency Analytics: Training needs identification, Use of analytics in Training and development. ROI of behavioral training, Performance appraisal, Use of HR analytics in performance appraisal, (Various measures and ratios), Make or Buy Model, Training effectiveness evaluation, Percentage of the employee trained, Internally and externally trained, Training hours and cost per employee, the Competence level of employee, Use of metrics in talent management, Employee engagement analytics, Compensation management, and HR analytics, Analytics in expatriate management.

Unit 13 HR Cost and Performance Metrics: Revenue per employee, Operating cost per employee, PBT per employee, HR cost per employee, HR to operating cost, Compensation to HR cost, HR budget variance, HR ROI, Calculating HR KPI, Scorecard based on recruitment, training and development, Calculating HR KPI, Scorecard based on employee retention, and turnover. Predicting individual and team

turnovers, Turnover costs for business implications, Selection decisions from previous performance data, Predictive modelling of individual and team performance, Identifying flight-risk candidates, Report generation.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO 301.1	**Remember**	Learn and remember the meaning and concepts of Business Analytics, Predictive Analytics, and Prescriptive Analytics.
CO 301.2	**Understand**	Understand how various Business Analytics tools and methods can be fitted to various business situations.
CO 301.3	**Analyze**	Analyze the decision-making environment and various decision-making methods using Business Analytics
CO 301.4	**Apply**	Apply various Business Analytics Methods to solve complex business situations.

Suggested Reading:

1. Predictive HR Analytics: Mastering the HR Metric Paperback – 3 March 20161 by Dr. Martin Edwards (Author), Kirsten Edwards
2. Essential Mathematics for Economics and Business Paperback – 21 August 2006 by Teresa Bradley (Author), Paul Patton (Author)
3. Fundamentals of Business Analytics, 2ed by Seema Acharya R N Prasad
4. Quantitative Analytics in Debt Valuation & Management (PROFESSIONAL FINANCE & INVESTM) by Mark Guthner.
5. Business Analysis Techniques: 99 essential tools for success

Semester	3	**Course Credits**	4	**Specialization**	Business Analytics
Course Code	OMBBA302			**Type**	Specialization Course
Course Title	Business Analytics-II				

Course Description

This course introduces the learners with functional analytics in the domains of Marketing Management, Supply Chain Management, and Operations Management. There many metrics and measures related to these functional domains which facilitate decision-making through numeric data analysis.

Course Objectives

1) To understand the importance of marketing, supply chain, and operations metrics and analytics
2) To learn to analyze the data generated at various functional units in the firms.
3) To inculcate analytical decision-making based on scientific numerical data analysis.
4) To apply the concepts of Marketing, Supply Chain, and Operations analytics to solve complex business problems.

Course Outline:

Part A Marketing Analytics

Unit 1 Introduction to Marketing Analytics: Marketing Analytics, Data for marketing Analytics, Descriptive, Predictive, and Prescriptive analytics in marketing, Segmentation Analytics: Market Segmentation Variables, Market Segmentation Types, Marketing Data Landscape, Data for Segmentation, Analytics for Need-Based Segmentation – Cluster analysis, clustering algorithm of consumer data, RFM Analysis, Life Cycle Segmentation, Cross Tabulation Segmentation, Regression-based segmentation, Clustering, Conjoint Analysis Segmentation, The Cluster Analysis + Discriminant Analysis Approach.

Unit 2 Market positioning Analytics: Rationale for Segment Targeting, Analytics for Perceptual Mapping and Product Positioning, Determinant attributes, Multi-Dimensional Scaling (MDS) and Factor Analysis, Relevance of Mapping for Product Positioning, Preference Mapping, Incorporating Preferences in Perceptual Mapping.

Unit 3 Analytics for Product/Service Design: The Relevance of Trade-off Approaches, Conjoint Analysis, Approaches to Conjoint Analysis, Interpreting Conjoint Results, Optimizing Design using Conjoint Results. Forecasting, Applying diffusion model, marketing mix models.

Unit 4 Customer growth analytics: Rationale for Customer Analytics, Customer acquisition cost, Customer Churn, Customer Attrition models, Customer lifetime value, Net promoter score, Calculating the number of new customers, Calculating average customer age & Days to convert, Calculating customer acquisition cost & Average purchases, Calculating touch points & Lead conversion, Analyzing age demographics, First contact with customer, Customer satisfaction, Understanding customer engagement, Diffusion Models - The Bass Model, Metrics for tracking customer experiences, customer lifetime value, Churn rate.

Unit 5 Modeling New Marketing Initiatives: Introduction to modeling, Evaluating new ad channels, Modeling tips, and best practices, Projecting ad revenue, Projecting organic follower revenue, Projecting expenses, Calculating net profit and breakeven, Understanding ROI, Calculating returns, Creating a single-variable sensitivity table, Creating a multi-variable sensitivity table.

Part B Supply Chain and Operations Analytics

Unit 6 Introduction to Supply Chain Analytics: Supply chain management for competitive advantage, Pull and Push supply chain, Creating a Demand-Driven Supply Chain, Gaining Visibility across the Supply Chain, Resolving Operations Problems Premptively, Logistics, Supplier performance, Demand forecasting, Vendor Intelligence, Vendor Rankings, Fulfillment Intelligence, Inventory Diagnostics, Shrinkage.

Unit 7 Inventory Analytics: Inventory, dependent and independent demand, Reasons to keep inventory, Holding cost, Procurement cost, Stock out cost, Economic order quantity, Inventory levels, Safety stock analytics, Service level and product availability measures, Fill rate, lead time uncertainties, Inventory levels probabilistic model for desired customer satisfaction level, Material variance, Inventory classification with emphasis on ABC analysis.

Unit 8 Distribution Analytics: Constrained optimization models, Linear Programming Problem, Use of LPP, Transportation model, Single facility location- Centre of gravity model, Multiple facility location problem mathematical model for popular location models, Set covering problem, Maximal covering problem, P center problem, P-Dispersion problem, P median problem, capacitated fixed charge location problem.

Unit 9 Merchandising Analytics: Assortment planning, GeoSpatial Analytics, Product placement, Space Optimisation, Product adjacency, Aligning store-level assortment with demand, Category Intelligence, Developing dynamic retail assortments, and Prioritization of Product categories.

Unit 10 Operations Analytics: Operations planning and scheduling, material requirement planning, MRPII and ERP, Facility Layout, Johnsons Algorithm for n Jobs and Two machines, n Jobs and Three Machines, Two jobs and m - Machines Problems, Queuing theory and its applications in service operations.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO 302.1	**Remember**	Learn and remember the meaning and concepts of Descriptive, Predictive, and Prescriptive Analytics in Supply Chain, Marketing, and Operations domain
CO 302.2	**Understand**	Understand Business Analytics techniques of Marketing and Supply Chain Management.
CO 302.3	**Analyze**	Analyze the decision-making environment and various decision-making methods using Business Analytics
CO 302.4	**Apply**	Apply various Marketing, Supply Chain, and Operations Analytics to solve complex business situations.

Suggested Reading:

1. Marketing Analytics by Seema Gupta and Avadhoot Jathar, Wiley.
2. Marketing Analytics - For Strategic Decision-Making by Moutusy Maity and Pavankumar Gurazada, Oxford Publication.
3. Supply Chain Analytics: Using Data to Optimise Supply Chain Processes (Mastering Business Analytics)by Peter W. Robertson.
4. Supply Chain Planning and Analytics: The Right Product in the Right Place at the Right Time by Gerald Feigin.
5. Business Analytics in Production & Operations Management, by Soluade Oredola

Semester	3	**Course Credits**	4	**Specialization**	Business Analytics
Course Code	OMBBA303			**Type**	Specialization Course
Course Title	Data Base Management System				

Course Description

This course introduces learner's to database management systems, with an emphasis on how to organize, maintain and retrieve - efficiently, and effectively - information from a DBMS and analyze complex business scenarios, create a data model. Understand basic SQL syntax and the rules for constructing valid SQL statements. This course will teach learners how to design, implement, and demonstrate a database solution for a business or organization.

Course Objectives

1) To excel in database design along with the basis which leads to the effective use of SQL.
2) To provide an environment that is both convenient and efficient to use in retrieving and storing database information.
3) Describe DBMS and its advantages and disadvantages.
4) Describe data models, schemas and instances, and data languages.
5) Develop the logical design of the database using data modeling concepts such as entity-relationship diagrams.

Course Outline:

Unit 1: Database Basics: Database System- concepts and architecture: Need for DBMS, Characteristics of DBMS, Database Users, 3-tier Architecture of DBMS (Its Advantages over 2-tier), Views of Data-Schemas and Instances, Data Independence.

Unit 2: Modelling Techniques: Different Types of Models, Introduction to ERD, Entities, Relationships, Representation of Entities, Attributes, Relationship Set, Generalization, Aggregation, Specialization. Structure of Relational Database and Types of Keys, Expressing M: N Relation.

Unit 3: Relational Model & Relational Database Design: Data modeling using the Entity-Relationship (ER) modeling and Enhanced Entity-Relationship (EER) modeling. Codd's Rules, Relational Model Concept, Relational Model Constraints. ERD, Relational database design using ER to relational mapping, Relational algebra and relational calculus, Tuple Relational Calculus, Domain Relational Calculus, SQL.

Unit 4: Normalization: Normal Forms, Properties of relational decomposition, Functional Dependencies, Normalization, Normal Forms Based on Primary Keys, Loss Less Joins, and Dependency Preserving Decomposition. Algorithms for relational database schema design.

Unit 5: Transaction: Concept of Transaction, ACID properties, States of Transaction, Implementation of Atomicity & Durability. Transaction processing concepts: Schedules and serializability, Optimistic Concurrency Control, Two-Phase Locking Techniques, Time Stamp Based Protocols, Granularity of Data Items, Deadlock, Database recovery concepts, and techniques.

Unit 6: Data Storage and indexing: Single level and multi-level indexing, Dynamic Multi-level indexing using B Trees and B+ Trees, Query processing and Query Optimization, Introduction to database security.

Unit 7: Introduction To Oracle Architecture: Memory Structures and Processes, User and Server Processes, Database Structures.

Unit 8: SQL Querries, Sub Queries, and Correlated Query: Select with all Options, Operators, Arithmetic, Comparison, Logical (in, between, like, all, %, _, any, exists, is null, and, or, not, Distinct), Clauses.

Unit 9: SQL Functions: Date: Sys_date, next_day, Add_months, last_day, months_between; Numeric: Round, trunc, abs, ceil, cos, exp, floor; Character: Initcap, lower, upper, ltrim, rtrim, translate, length, lpad, rpad, replace; Conversion: to_char, to_date, to_number; Miscellaneous: Uid, User, nvl, vsize, decode, rownum; Group Function: avg, max, min, sum, count, with Group by and Having Clause.

Unit 10: SQL Statements: Statements: DML Statements (Insert, Update, Delete with where clause), TCL (Commit, Rollback, Savepoint), Locks in Oracle, DDL statements.

Unit 11: Working With Table: Table: Create, Alter, Drop, Truncate, Rename, Constraints (Primary key, Foreign Key, Unique Key, Check, Default, Not Null, On Delete, Cascade), Column Level and Table Level Constraints, Oracle Objects, Views, Sequences, Synonyms, Index (Define, Alter and Drop)

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO303.1	**Remember**	Learn the basics of Database Management System and RDBMS
CO303.2	**Understand**	Understand data models, schemas and instances, and data languages.
CO303.3	**Apply**	Apply the knowledge in Business Environment in solving the problems
CO303.4	**Analyse**	Analyse different Data Models
CO303.5	**Evaluate**	Evaluate the knowledge by building a practical project

Suggested Reading:

1. Fundamentals of Database Systems By Pearson by Elmasri Ramez and Navathe Shamkant
2. Database Management Systems (Dbms) by Rajiv Chopra
3. Database System Concepts (McGraw-Hill International Editions Series)by Henry F. Korth and Abraham Silberschatz

Semester	3	**Course Credits**	4	**Specialization**	Business Analytics
Course Code	OMBBA304			**Type**	Specialization Course
Course Title	Business Statistics and Econometrics				

Course Description

This course is one of the important and inseparable parts of any Business Analytics and Data Science curriculum. The course includes the concepts of descriptive statistics, Inferential Statistics, and basic Econometrics. This course forms the basis for research, surveys, data collection, data processing, data analysis, and inferences. There are some Econometric methods as well which are highly useful in various managerial decisions such as forecasting.

Course Objectives

1) To gain basic understanding of descriptive and inferential statistics.
2) To understand various methods of data presentation and analysis for drawing useful inferences.
3) To inculcate the analytical decision-making approach among the learners.
4) To make learners apply the various statistical and Econometric methods in various business situations.

Course Outline:

Unit 1: Introduction to Classification and Presentation: Introduction to Statistics, Definition, functions, and limitations, Frequently used terms -Data, variable, Constants, Population and sample, Data collection, Measurement Scales, Classification of Data, Frequency distribution-Frequency distribution charts- discrete and continuous, Cumulative frequency distribution, Relative frequency distribution, Tabulation of data, Diagrammatic and graphical representation of data- Bar diagram-(Simple, Multiple, Component, percentage), Histogram, Frequency curve, Frequency polygon, Ogives, Pie-chart.

Unit 2: Averages and Dispersion: Measures of Central Tendency – Concept, Mean, Median, Mode for discrete and continuous series, properties, pros and cons of various measures of central tendency. Measures of Dispersion: Concept, Range, Inter-quartile range, Quartile deviation, Standard deviation, Variance, Mean deviation, Coefficient of variation. properties, pros, and cons of various measures of dispersion. Practical problems on averages and dispersion.

Unit 3: Relation between variables: Statistical versus Deterministic Relationships, Regression versus Causation, Regression versus Correlation Correlation Analysis– Scatter Plots, Some Misconceptions About

Correlation, Correlation Terminologies. Karl Pearsons's correlation coefficient, Spearman's Rank correlation coefficient, Partial and multiple correlations. Simple, partial, And Multiple Regressions. Association of Attributes: Notations, Classes, and Class Frequencies, Relationship, Between the Class Frequencies, Consistency of the Data, Independence of Attributes, Association of Attributes, Yules' Co-efficient of Association. , Chi-square crosstabulation

Unit 4: Probability & Probability Distribution: Notation and Terminology from Set Theory, Sample Space, Sample Points, and Events, Addition Theory of Probability, Multiplication Theory of Probability, Conditional Probability, Baye's Theorem, Applications of Bayes' Theorem, Probability distribution, the difference between frequency distribution and probability distribution, Shapes of distribution, Binomial Distribution, Poisson Distribution, Normal Distribution. Uniform distribution,

Unit 5: Sampling Fundamentals: Census and Sample Survey, Data collection methods, Measurement Scales, Important Scaling Techniques, Need for Sampling, Probability and Random Variables, Sampling fundamentals, Steps in Sampling Design, Sampling methods, Random variable, sampling errors, sampling distribution, standard error, Central limit Theorem, Sandler's A-test, Sampling Theory, sampling distribution of sample means, Sampling distribution of sample proportion, t-distribution, F-distribution, Chi-square distribution.

Unit 6: Statistical inference, the concept of Estimation, point, and Interval Estimation Estimating the population mean, Estimating population proportion, sample size determination, Hypotheses, the concept of null and alternative hypotheses, level of significance and confidence interval, Type I and Type II errors, one-tailed vs two-tailed hypotheses. Confidence-Interval. P-value, Acceptance region, Hypotheses testing procedure, Simple and composite hypotheses, Measuring the Power of a Hypothesis Test.

Unit 7: Hypotheses testing: Parametric methods-Hypothesis Testing of Means, Hypothesis Testing for Differences between Means, Hypothesis Testing for Comparing Two Related Samples, Hypothesis Testing of Proportions, Hypothesis Testing for Difference between Proportions, Hypothesis Testing for Comparing a Variance to Some Hypothesized Population Variance, Testing the Equality of Variances of Two Normal Populations, Hypothesis Testing of Correlation Coefficients, Chi-square as a Test for Comparing Variance, Conditions for the Application of $\chi 2$ Test, Non-parametric methods of hypotheses testing- sign test, Fisher-Irwin test, Kendall's test, Kruskal-Wallis test, Spearman's Rank Correlation

Unit 8: Statistical inference in two variable regression models: Population Regression Function (PRF), Intrinsically linear regression model, The Sample Regression Function (SRF), Ordinary Least Squares method of estimation, assumptions of OLS, Properties of OLS estimators, Properties of OLS under Normality, Standard Errors of Least-Squares Estimates, BLUE, The Gauss–Markov Theorem, The

Coefficient of Determination r, Covariance Between βˆ 1 and βˆ 2, The Least-Squares Estimator of σ2, consistency of Least square Estimators. Maximum Likelihood Estimation of Two-Variable Regression Model, Confidence Intervals for Regression Coefficients β1 and β2, Testing the Significance of Regression, Hypothesis Testing:

Unit 9: Statistical inference in multiple regression models: Multiple regression model, statistical properties, Estimation of parameters, the matrix form of the multiple regression model, The Meaning of Partial Regression Coefficients, OLS and ML Estimation of the Partial Regression Coefficients, Goodness of fit R2 and the Adjusted R2, Hypothesis Testing in Multiple Regression, Testing the Overall Significance of the Sample Regression, Restricted Least Squares: Testing Linear Equality Restrictions, Functional Forms of Regression Models, Qualitative (dummy) independent variables

Unit 10: Violations of Assumptions: Multicollinearity Nature of Multicollinearity, presence of perfect and imperfectly high multicollinearity, Consequences of multicollinearity, Detection of Multicollinearity, Remedial Measures for Multicollinearity, Heteroscedasticity Meaning and Nature of Heteroscedasticity, OLS Estimation in the Presence of Heteroscedasticity, The Method of Generalized Least Squares (GLS), Consequences of Using OLS in the Presence of Heteroscedasticity, Detection of Heteroscedasticity, Remedial Measures for Heteroscedasticity. Autocorrelation, Nature of the Problem, OLS Estimation in the Presence of Autocorrelation, The BLUE Estimator in the Presence of Autocorrelation, Consequences of Using OLS in the Presence of Autocorrelation, Detecting Autocorrelation, Remedial measures, Correcting autocorrelation using GLS.

Unit 11 Forecasting- Time series analysis: Approaches to Economic Forecasting, AR, MA, and ARIMA Modeling of Time Series Data, The Box–Jenkins (BJ) Methodology, Identification, Estimation of the ARIMA Model, Diagnostic Checking, Forecasting, Vector Autoregression, Measuring Volatility in Financial Time Series: The ARCH and GARCH Models.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO 304.1	**Remember**	Learn and remember the meaning and concepts of descriptive statistics, statistical inference, and Econometrics
CO 304.2	**Understand**	Understand how various statistical and Econometric methods can be fitted to various business situations.
CO 304.3	**Analyze**	Analyze the decision-making environment and various decision-making methods.
CO 304.4	**Apply**	Apply various Statistical and Econometric Methods to solve complex business situations.

Suggested Reading:

1. Basic Econometrics by Damodar Gujarati, Dawn Porter, et al. 1 July 2017.
2. Introduction to Econometrics | Third Edition | By Pearson by H Stock James and W. Watson Mark
3. BUSINESS STATISTICS: Text and Problems - With Introduction to Business Analytics | 2nd Edition by N D Vohra. Statistics for Business & Economics, 13E by David R. Anderson, Dennis J. Sweeney, et al.

Semester	3	**Course Credits**	4	**Specialization**	Business Analytics
Course Code	OMBBA305			**Type**	Specialization Course
Course Title	Performing Analytics with Python				

Course Description

This course will take you from the basics of Python to exploring many different types of data. This course is designed to teach students how to analyze different types of data using Python. Learner's will know about how to prepare data for analysis, perform simple statistical analysis, create meaningful data visualizations, predict future trends from data, and more.

Course Objectives

1) To understand the basic concepts of Python & its libraries
2) To understand Data Analytics using Python
3) To understand and use Python data science libraries as a tool for data analytics
4) To understand Data Modelling techniques.

Course Outline:

Unit-1 - Python Fundamentals for Data Analytics: Python data structures, data types, tuples, operators, Event-driven programming, local and global variables, buttons, and input fields - The canvas, static drawing, timers, interactive drawing -Lists, keyboard input, motion, positional/velocity control - Mouse input, more lists, dictionaries. Control statements, Functions, Object-Oriented programming concepts using classes, objects, and methods, Exception handling, Implementation of user-defined Modules and Packages, and File handling in python.

Unit-2 - Python Advance Concepts: Images - Classes, tiled images - Acceleration and friction, spaceship class, sprite class, sound - Sets, groups of sprites, collisions, sprite animation - Fundamentals of Data Manipulation with Python, RDBMS, UML.

Unit-3 - Python Libraries: Learn Numpy - a common scientific computation library, getting familiar with Pandas for structural data processing, Learn the common statistical data analysis techniques in python, Getting familiar with simple linear regression.

Unit-4: Introduction to Data Understanding and Preprocessing: Knowledge domains of Data Analysis, understanding structured and unstructured data, Data Analysis process, Dataset generation, Importing

Dataset: Importing and Exporting Data, Basic Insights from Datasets, Cleaning and Preparing the Data: Identify and Handle Missing Values.

Unit-5: Data Processing and Visualization: Data Formatting, Exploratory Data Analysis, Filtering, and hierarchical indexing using Pandas. Data Visualization: Basic Visualization Tools, Specialized Visualization Tools, Seaborn Creating and Plotting Maps.

Unit-6: Mathematical and Scientific applications for Data Analysis: Numpy and Scipy Package, Understanding and creating N-dimensional arrays, Basic indexing and slicing, Boolean indexing, Fancy indexing, Universal functions, Data processing using arrays, File input and output with arrays.

Unit 7: Analysing Web Data: Data wrangling, Web scrapping, Combing and merging data sets, Reshaping and pivoting, Data transformation, String Manipulation, case study for web scrapping.

Unit-8: Analytics part - I: Basic nomenclature - Analytics process model - Analytics model requirements - Types of data sources – Sampling - types of data elements - Visual Data Exploration and Exploratory Statistical Analysis - Missing Values - Outlier Detection and Treatment - Standardizing Data – Categorization - weights of evidence coding - Variable selection – Segmentation.

Unit-9: Analytics part - II: Predictive Analytics: Target Definition - Linear Regression - Logistic Regression - Decision Trees - Neural Networks - Support Vector machines - Ensemble Methods - Multiclass Classification Techniques - Evaluating Predictive Models.

Unit-10: - Social Networking: Social Network Analytics: Social Network Definitions - Social Network Metrics - Social Network Learning -Relational Neighbor Classifier - Probabilistic Relational Neighbor Classifier -Relational logistic Regression - Collective Inference. Benchmarking - Data Quality - Software – Privacy - Model Design and Documentation - Corporate Governance. Example applications: Credit Risk Modeling - Fraud Detection - Recommender Systems - Web Analytics.

Unit-11 Value Addition: Web Analytics, Introduction to Machine Learning, Applications of Machine Learning.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO305.1	**Remember**	Learn the Basics of Python
CO305.2	**Understand**	Understand the Data Analytics using Python
CO305.3	**Analyze**	Analyze and implement various algorithms using Python
CO305.4	**Apply**	Design and develop an algorithm to solve business problems.

Suggested Reading:

1. Python Data Analytics With Pandas, NumPy, and Matplotlib, Second Edition. Fabio Nelli Publication Apress
2. Data Analysis From Scratch With Python Step By Step Guide: Peters Morgan
3. Social Media Analytics Strategy Using Data To Optimize Business Performance Author: Alex Gonçalves Publication: Apress

Semester	3	**Course Credits**	4	**Specialization**	Business Analytics
Course Code	OMBBA306			**Type**	Specialization Course
Course Title	R programming for Data Analysis and Visualization				

Course Description

The dependency of Business firms on data and information systems is continuously growing, a lot of raw data is generated on daily basis, which is meaningless unless analyzed and interpreted by using some sophisticated techniques. Data visualization provides a good, organized pictorial representation of the data which makes it easier to understand, observe, and analyze. In this course, learners will learn how to visualize data using R and its libraries to facilitate decision-making. Data visualization allows managers to gain insight into their vast amounts of data. It benefits them to recognize new patterns and errors in the data.

Course Objectives

1) To understand the importance of data analysis and visualization techniques for managers
2) To learn to analyze the descriptive statistics using R
3) To learn to test hypotheses to interpret data by using R package
4) To Understand what plots are suitable for a type of data managers encounter with while making decisions.
5) To Visualize data by creating various graphs using R base package, lattice, and ggplot2 packages

Course Outline:

Unit 1: Preliminaries and Introduction to R: What is R, Installing R and R studio, R studio overview, Working in the console, Arithmetic Operators, Logical Operations, Using Functions, Getting Help in R and Quitting RStudio, Types of variables, Creating variables, Using Variables, Numeric, character and Logical variables and operators, Sorting Numeric, Character, and Factor Vectors, Special Values, Using the console, Creating an object in R, Data types in R - Integers and doubles, Objects and Data Types, Coercion rules in R, Functions in R, Functions, and arguments, Objects and Functions, Packages in R, What is a Vector? create vectors, Naming a vector in R, Vector recycling, Vectorized operations, Slicing and indexing a vector in R, Extracting elements from a vector, Using the [] brackets, The power of vectorized operations, Changing the dimensions of an object in R

Unit 2: Matrices: Matrices, Creating Matrices in R, Naming Dimensions, colnames() and rownames(), Matrix Operations, Indexing an element from a matrix, Slicing a matrix in R, Matrix operations in R, Visualizing With Matplot(), Subsetting, Visualizing Subsets Creating a factor in R, Factors in R.

Unit 3: Fundamentals of Programming in R: Relational operators in R, Logical operators in R, Vectors and logical operators, If, else, else if statements in R, If, else, else if statements - Keep-In-Mind's, For loops in R, While loops in R, Repeat loops in R, Boolean logical operators, Building a function in R 2.0, Building a function in R 2.0 – Scoping, Creating functions, Calling functions, Exercise Scoping

Unit 4: R packages and scripts: Installing and loading packages, setting up your working directory, Downloading and importing data, Working with missing data, Extracting a subset of a data frame, Writing R scripts, Adding comments and documentation, Creating reports

Unit 5: Data Preparation: What are factors, gsub() and sub(), Dealing with Missing Data, What is an NA?, Way To Locate Missing Data, Data Filters: which() for Non-Missing Data, Data Filters: is. na() for Missing Data, Removing records with missing data, Resetting the dataframe index, Replacing Missing Data: Factual Analysis Method, Replacing Missing Data: Median Imputation Method (Part 1), Replacing Missing Data: Deriving Values Method, Visualizing results.

Unit 6: Data frames: Creating a data frame in R, Importing data into R, The Tidyverse package, Exploring your dataset, Using the $ sign, Basic operations with a Data Frame, Filtering a Data Frame, Introduction to qplot, Visualizing with Qplot, Building Dataframes, Merging Data Frames, Messy Data, Renaming Columns (Variable Names), Attaching / Detaching, Tabulating Data: Constructing Simple Frequency Tables, Ordering Factor Variables

Unit 7: Lists in R: Import Data Into R, Handling Date-Times in R, What is list, Naming components of a list, Extracting components lists: [] vs [[]] vs $, Adding and deleting components, Subsetting a list, Creating A Timeseries Plot, Apply Family of Functions, Import Data into R

Unit 8: What is Apply Family: Using apply(), Recreating the apply function with loops, Using lapply(), Combining lapply() with [], Adding your own functions, Using sapply(), Nesting apply() functions, which.max() and which.min

Unit 9: Advanced Visualization using R with GGplot2: Using the ggplot2package to visualize data, Grammar of Graphics- GGplot2, What is a Factor?, Aesthetics, Plotting With Layers, Overriding Aesthetics, Mapping vs Setting, Line chart, Bar charts, Histograms, and Density Charts, Pie chart Stacked Area Chart, Scatter plot, and Trendline, Starting Layer Tips, Statistical Transformations, Using Facets, Coordinates, Perfecting By Adding Themes, Applying themes from ggthemes to refine and customize charts and graphs, Building data graphics for dynamic reporting

Unit 10: Data querying: SQL and R: Writing SQL statements in R, Using the Select, From, Where, Is, Like, Order By, Limit, Max, Min SQL functions, Querying the database with the dplyr, filter(), select()

Unit 11: Statistical data analysis using R: Measures of central Tendency (Mean, Median, Mode) using R, Measurement of Variation - Range, IQR and Standard Deviation (Using R), Descriptive Statistics Using psych Package, Central Limit Theorem Demonstration Using R, R Functions for Normal Distribution - rnorm, pnorm, qnorm, and dnorm, Plotting Normal Distribution Using R Functions and Visualize package, R Functions for Binomial Distribution - rbinom, pbinom, qbinom, and dbinom, Plotting Binomial Distribution Using R Functions, Binomial Distribution using Visualize Package, R Functions for Poisson Distribution - rpois, ppois, qpois, and dpois, Plotting Poisson Distribution Using R Functions, Poisson Distribution using Visualize Package,

Unit 12: Hypotheses Testing using R: One Sample z Test Using R, One-Sample z Test using BSDA Package, One-Sample t-Test Using R, Visualizing One-Sample t-Test Results using Visualize Package, One-Sample Variance Test Using Envstats Package, Two-Sample Z Test Using R, Visualizing Two Sample Z Test Using Visualize Package, Two-Sample t-Test (Equal Variance) Using R, Two-Sample t-Test (Unequal Variance) Using R, Paired t-Test Using R, Two-Sample Variance Test (F Distribution) Using R, Visualizing Two Sample Variance Test Results using Visualize Package, Analysis of Variance (ANOVA) Using R, Goodness of Fit Test Using R, Contingency Table Using R

Unit 13: Introduction to Plotly, lattice, Esquisse, and colourpicker packages: Draw multiple-axes, scatter plots, line plots, histograms, contour plots, heatmaps, network graphs, 3D charts, and time series using plotly and lattice, drag-drop using Esquisse, exporting to visualization powerpoint and word documents, Changing color themes using colourpicker.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO306.1	**Remember**	Learn the Basics of data visualization and its importance in business analytics
CO306.2	**Understand**	Understand descriptive statistical analysis using R programming, Inferential statistics such as estimation and hypotheses tests using R, Pre-Processing, Supervised, Unsupervised Learning, Classification, Regression,
CO306.3	**Analyze**	Learners will learn to analyze and visualize the data into various charts, plots, and diagrams using various visualization tools such as Ggplot2, Plotly, Lattice, etc.
CO306.4	**Apply**	Design and develop reports and presentations based on the data visualization

Suggested Reading:

1. R programming Advanced:: Grammer of Graphics - ggPlot2 map vs set, aesthetics & advanced visualizations by Arkaprabha (MachineL).
2. ggplot2: Elegant Graphics for Data Analysis (Use R!) by Hadley Wickham
3. R Programming Fundamentals: Deal with data using various modeling techniques by Kaelen Medeiros
4. Applied Data Visualization with R and ggplot2: Create useful, elaborate, and visually appealing plots by Dr. Tania Moulik.
5. Statistical Analysis using R Software by Dhaval Maheta.
6. Statistical Analysis In Simple Steps Using R by Kiran Pandya, Prashant Joshi, et al.

Semester-III FinTech Specialization

Semester	3	**Course Credits**	4	**Specialization**	FinTech
Course Code	OMBFT301			**Type**	Specialization Course
Course Title	FinTech Management				

Course Description:

This course will help the learners to understand the rapidly changing financial terminologies. Apply technology to various components & processes of financial services. Evaluate the impact of Fintech solutions on business sectors and customers. Remember various concepts such as Crowd funding, Cryptocurrency, blockchain, and machine learning. Understand the concept of Cryptocurrency and blockchain and its application in finance sector. Describe alternative finances Cryptocurrencies, blockchain, and the technologies supporting these.

Course Objectives:

1) To understand the term related to FinTech & its applications
2) Apply technology to various components & processes of financial services.
3) Learning new concepts in today's rapidly changing finance sector.
4) Understand the concept of Cryptocurrency and blockchain and its application in finance sector

Course Outline:

Unit 1: Introduction to FinTech: Concept, origin & meaning of the word FinTech, Emergence of FinTech in India, Significance of FinTech, Advantages of FinTech, Goals of FinTech, Key important areas in FinTech.

Unit 2: Role of FinTech in economic development: Opportunities and Challenges of Fintech, Fintech Evolution in different sectors of the industry, Banks, Start-ups and Emerging Markets, Recent developments in FinTech. Future prospects and potential issues with Fintech.

Unit 3: Analytical decision-making process FinTech: Analytical decision-making process, Characteristics of the analytical decision-making process in Fintech Management, Skills of a good business analyst using Big Data, FinTech as an aid to customer satisfaction.

Unit 4: Introduction to Data Science and AI & ML: Meaning of Data Science, AI & ML, Use Cases in Business and Scope, Scientific Method, Modelling Concepts, Skills of a good business analyst using Big Data, Artificial intelligence, and machine learning to evaluate investment opportunities.

Unit 5: Technology, Payments & FinTech: Understand the concept of Crypto currency, block chain, Artificial Intelligence, machine learning. Fintech users, Individual Payments, RTGS Systems, Immediate Payment Service (IMPS), Unified Payments Interface (UPI). Legal and Regulatory Implications of Crypto currencies, Payment systems, and their regulations.

Unit 6: Legal and Regulatory Implications: Legal and regulatory framework of Crypto currencies, Payment systems, and their regulations, optimize portfolios and mitigate risks in Fintech management. Overview of R Programming in Fintech and Business analytics applications in Healthcare Industry.

Unit 7: Fintech in Practice: Understanding Fintech, Fintech's Expanding Horizons, Digital cash & FinTech users, Types of FinTech, Benefits of FinTech for Personal Finance Management, Benefits of FinTech for Personal Finance Management, Opportunities & challenges of FinTech.

Unit 8: Digital Finance and Alternative Finance: A Brief History of Financial Innovation, Digitization of Financial Services, Crowd funding, Charity and Equity, P2P and Marketplace Lending, Introduction to the concept of Initial Coin Offering. Industry Showcase: How AI is transforming the future of FinTech.

Unit 9: FinTech Regulation and RegTech: FinTech Regulations: Global Regulations and Domestic Regulations, Evolution of RegTech, RegTech Ecosystem: Financial Institutions, RegTech Ecosystem: Startups RegTech, Startups: Challenges, RegTech Ecosystem: Regulators, Use of AI in regulation and Fraud detection.

Unit 10: Banking, Financial Services and Insurance (BFSI) & Fintech: Introduction to Fintech, Future of Fintech, Modern Banking Landscape, Dissecting Financial Services Value chain, Introduction to the Fintech landscape.

Unit 11: FinTech & Branchless Banking: Introduction to Financial Inclusion, Logic and logistics, Vehicles for Financial Inclusion, Business Correspondents, Business facilitators, Digital Banking Products for Financial Inclusion.

Unit 12: New age Payment System: Overview of global and domestic payment systems, Immediate Payment Service (IMPS), National Unified USSD Platform (NUUP) and UPI, Participants in UPI, Benefits to Participants, National Automated Clearing House (NACH) Aadhaar Enabled Payment System (AEPS), e-KYC, Cheque truncation System (CTS), National Financial Switch (NFS), RTGS, NEFT.

Unit 13: FinTech Innovation and Banking: Innovative Technologies in Banking: Artificial Intelligence, Machine Learning, Big Data, Block Chain, Forex Settlement.

Unit 14: Regulators in the Fintech domain: RBI, SEBI, International Financial Services Centres Authority (IFSCA), Financial Intelligence Unit, PFRDA, and IRDAI; Regulatory Sandbox.

Unit 15: Ethics in Fintech: Ethical issues relating to FinTech; ethical ways in which emerging technologies should be implemented; Cybersecurity, financial crimes, and ethics in online financial transactions; human biases and prejudices in AI; fintech for financial inclusion.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO301.1	**Remember**	Remember various concepts such as Crowd funding, Cryptocurrency, blockchain, and machine learning.
CO301.2	**Apply**	Apply technology to various components & processes of financial services
CO301.3	**Analyze**	Analyze the impact of Fintech solutions on business sectors and customers.
CO301.4	**Create**	A strong & understanding environment with FinTech applications for the various stakeholders.

Suggested Reading:

1. **Ethereum:** Blockchains, Digital Assets, Smart Contracts, Decentralized Autonomous Organizations by Henning Diedrich, CreateSpace Independent Publishing Platform, ISBN-13: 978-1523930470.
2. **Blockchain Applications:** A Hands-on Approach. by Arshdeep Bahga and Vijay Madisetti, Vpt, ISBN- 13: 978-0996025560.
3. **Bitcoin and Cryptocurrency Technologies:** A Comprehensive Introduction by Arvind Narayanan, Joseph Bonneau, Edward Felten, Andrew Miller, Steven Goldfeder, Princeton University Press, ISBN-13: 978-0691171692.
4. **Fintech for Beginners, Author Swanson Seth, Publisher:** Createspace Independent Publishing Platform ISBN: 9781539919315,9781539919315 Edition 1
5. **Fintech Bigtech And Banks Digitalization and Its Impact on Banking Business Models (Hb 2019) Author:** Tanda, Publisher- SPRINGER, ISBN 9783030224257

Semester	3	**Course Credits**	4	**Specialization**	FinTech
Course Code	OMBFT302			**Type**	Specialization Course
Course Title	Financial Institutions and Banking				

Course Description:

This course is structured to help students master the established management principles and to confront the perplexing issues of risk, regulation, technology, and competition, that bankers and other financial-service managers see as their greatest challenges for the present and future. Students will be exposed to key trends and changes in the financial services sector. In addition, students will learn about various career opportunities in the banking and financial institution field. With this relevant information, students will be able to grasp the rapid changes that are happening in this course area and the real world. Content and discussion will cover both domestic and international banking activities.

Course Objectives:

1) To be able to familiarize the students with the concepts of banking and financial institutions
2) To be able to understand functions of financial institutions
3) To be able to describe components of the financial system
4) To be able to understand the concept, features, importance, and problems faced by cooperative banks.

Course Outline:

Unit 1: Introduction to Indian Financial System: Financial system: Significance and Definition, Functions of the Financial System, Structure of the Financial System, Indian Financial System, Major Issues in the Indian Financial System: Narsimham Committee Report (1991)

Unit 2: Introduction to Banking Sector in India: Meaning and Definition of Banking, Functions of Bank, History of Banking, Classifications of Banks, Reforms in Banking Sector, E-Banking.

Unit 3: Reserve Bank of India: History of RBI, Role, and Functions of Reserve Bank in India, Structure of RBI, RBI weapons of Control, Departments of RBI.

Unit 4: Co-Operative Banking in India: Meaning and Definition of Co-Operative Banks, Structure, and Features of Co-Operative Banks, History of Co-operative Banks in India, Types of Co-Operative Banks, Problems of Co-Operative Banks.

Unit 5: Commercial Banking: Meaning and Evolution of Commercial Banks, Functions and Role of Commercial Bank, Types of Commercial Banks, Commercial Banking System, Agency and General Utility Services Provided by Modern Commercial Banks.

Unit 6: Banking Systems: Unit Banking and Branch Banking, Deposit Banking, Mixed Banking, and Industrial Banking, Group, Chain, and Correspondent Banking Systems.

Unit 7: Banking Regulation Act 1949: Need for Banking Act in India, History of Banking Legislation in India, Objectives of the Banking Regulation Act, 1949, Major Provisions of the Act, Defects in the Indian Banking Legislation.

Unit 8: Central Banking: Meaning and Definition, Evolution of Central Banks, Functions of Central Banks, Role of Central bank in a Developing Economy, Instruments of Monetary Control.

Unit 9: Retail Banking: Meaning and Definition of Retail Banking, Factors affecting Growth of Retail Banking, Advantages and Disadvantages of Retail Banking, Challenges to Retail Banking in India, Strategies for Increasing Retail Banking Business, Emerging Issues in Retail Banking.

Unit 10: Banker and Customer Relationship: Meaning and Definition of Banker and Customer, General Relationship between Banker and Customer, Banker as Agent and Banker as Trustee, Types of Customers, Services to Different Customer Groups.

Unit 11: Non-Banking Financial Companies: Meaning and Definition of Non-Banking Financial Companies, Classification of Non-Banking Financial Companies, Functions of Non-Banking Financial Companies, Salient Features of Non-Banking Financial Companies, Regulations of Non-Banking Financial Companies.

Unit 12: Specialized Financial Institutions: Need and Importance of Specialized Financial Institutions (SFI), Types of Specialized Financial Institutions, Industrial Finance Corporations of India (I.F.C.I.), State Financial Corporations (SFCs), Industrial Development Bank of India (IDBI), Unit Trust of India (U.T.I), Industrial Credit and Investment Corporation of India (ICICI)

Unit 13: Investment Institutions and Financial Services: Financial Service, Merchant Banking, Lease Financing, Merchant Banking, Housing Finance, Venture Capital, Insurance, Mutual Funds, Factoring.

Unit 14: Financial Markets and Instruments in Money Market: Financial Markets, Capital Markets, Money Market, Distinction Between Capital and Money Market, Stock Exchanges.

Unit 15: International Financial Institutions: History of International Financial Institution, Types of International Financial Institution, World Bank, International Monetary Fund (IMF.)

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO302.1	**Remember**	Learn various functions of financial institutions.
CO302.2	**Understand**	Understand the basic concepts of banking and financial institutions.
CO302.3	**Analyze**	Exhibit the components of the financial system
CO302.4	**Apply**	Differentiate problems faced by cooperative banks and financial institutions.

Suggested Reading:

1. Ruddar Datt & K.P. M. Sundharam, Indian Economy, 40th Revised Edition, S. Chand & Co. Ltd.
2. H.R. Machiraju, Merchant banking, 3rd Edition, New Age International Publishers
3. Textbook of Banking and Finance by N.K. Sharma
4. Commercial Banking in India: A Beginners Module developed by Mr. Abhijeet Roy, International Management Institute, New Delhi
5. H.R. Machiraju, Merchant banking, 3rdEdition, New Age International Publishers
6. M.Y. Khan, Indian Financial System, 4th Edition, Tata McGraw-Hill

Semester	3	**Course Credits**	4	**Specialization**	FinTech
Course Code	OMBFT303			**Type**	Specialization Course
Course Title	Quantitative Methods in Project Management				

Course Description:

This course reviews descriptive statistics, exploratory data, and probability distributions. We will then examine the theory and methods of statistical inference, emphasizing those applications most useful in modeling business problems. Topics include sampling theory, estimation, hypothesis testing, linear regression, analysis of variance, and several advanced applications of the general linear model.

Course Objectives:

1) Conduct a comparative evaluation of quantitative, qualitative, experimental, and survey research methods;
2) Design research based upon the research question and constraints;
3) Conduct descriptive and inferential statistical analysis using various tests;
4) Generate research questions and use statistical tools learned in the class to answer the questions.

Course Outline:

Unit 1: Quantitative Methods in Project Management: The History of Statistics & Operations Research, Nature of Statistics & Operations Research, Operations Research Approach to Problem Solving, Methodology of Operations Research, Applications of Quantitative Methods in Projects.

Unit 2: Data Presentation using Tables & Charts: Statistics for Projects, Classification of Data, Tabulation of Data, Graphical Presentation of Data, Good & Bad Data Presentation.

Unit 3: Properties of Numerical Data: of Central Tendency, Measures of Dispersion.

Unit 4: Correlation Analysis: Covariance and Correlation in Projects, Correlation Analysis using Scatter Plots, Karl Pearson's Coefficient of Correlation, Spearman's Rank Correlation Coefficient.

Unit 5: Simple and Multiple Regressions: Simple Regression Analysis, Multiple Regression Analysis, Assessing the Regression Equation.

Unit 6: Probability: Notation and Terminology from Set Theory, Addition Theory of Probability, Conditional Probability, Multiplication Theory of Probability, Applications of Bayes' Theorem.

Unit 7: Probability Distribution: Random Variables and Their Functions in Projects, Probability Distributions for Project Managers, Binomial Distribution, Poisson Distribution, Normal Distribution, The "S" Curve

Unit 8: Estimation and Sampling Distributions: Point Estimation for Population Parameter, Interval Estimation for Population Parameter, Law of Large Numbers and the Central Limit Theorem, Standardized Sampling Distributions, Confidence Intervals, Determination of Sample Size.

Unit 9: Parametric Hypothesis Testing for Projects: The Type 1 and Type 2 Error, Interval of Acceptance, testing for the Validity of the Hypothesis, Large Sample Test for Population Mean, Small Sample Test for Population Mean, The Comparison of Two Populations, Analysis of Variance.

Unit 10: Non-Parametric Hypothesis Testing for Projects: Runs Test for Randomness of Data, Mann-Whitney U Test, Wilcoxon Matched-Pairs Signed Rank Test, Kruskal-Wallis Test, Spearman's Rank Correlation, Chi-Square Tests.

Unit 11: Linear Programming Problem (LPP): Variables, Constraints, Linear Programming–Formulation, Graphical Solutions to LPP, Simplex Solutions to LPP, Transportation Models as Special Case of LPP, Assignment Models as Special Case of Transportation Models.

Unit 12: Single Server Queuing Theory: Analyzing Queuing Process, Constituents of Queuing System, Service Facility, Queuing Discipline, Kendall Notations, Applications of Single Server Model in Projects.

Unit 13: Monte Carle Simulation: Simulation Procedure, Applications of Simulation in Projects.

Unit 14: Games Theory: Fundamental Principles of Game Theory, Reducing by Dominance, Saddle Point, Strictly Determined Game, Mixing Strategies, Flow of Solution, Assumptions for Games Theory, and Applications of Games Theory in Projects.

Unit 15: Decision Theory: Decision-making Process, Decision Making under Certainty, Decision Making under Uncertainty, Decision Making under Risk, Decision Tree.

Unit 16: Six Sigma for Project Management: Six Sigma Methodologies, Meaning of 3.4 Defective Parts per Million, Six Sigma and Process Capability, Quality Function Deployment, Validating the Quality Function Deployment Analysis.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO303.1	**Understand**	Understand various tools to test statically analyses.

CO303.2	**Analyze**	Able to generate research questions for testing.
CO303.3	**Apply**	Easily conduct a comparative evaluation of research methods.
CO303.4	**Create**	Able to design research questions and constraints.

Reference Books:

1. Quantitative Methods in Project Management – John C. Goodpasture – J. Ross Publishing, Inc.
2. A Guide to the Project Management Body of Knowledge (PMBOK Guide) — 2000 Edition, Project Management Institute, Newtown Square, PA.
3. Good Pasture, John C., Managing Projects for Value, Management Concepts, Vienna, VA, 2001.
4. Downing, Douglas and Clark, Jeffery, Statistics the Easy Way, Barrons Educational Series, Hauppauge, NY, 1997.
5. Operations Research: Theory and Applications – J. K. Sharma - Macmillian Operations Research: Problems and Solutions – J. K. Sharma – Macmillian
6. Business Statistics – Naval Bajpai – Pearson Education
7. Statistical Methods – S.P. Gupta
8. Statistics for Management – Levin, and Rubin – Pearson Education
9. Statistics for Business – Stine and Foster – Pearson Education

Semester	3	**Course Credits**	4	**Specialization**	FinTech
Course Code	OMBFT304			**Type**	Specialization Course
Course Title	E-Commerce & Global Financial Trends				

Course Description:

The goal of this course is to provide students with a deep understanding of financial management issues in a global setting. The course aims to help students develop analytical tools that incorporate key international considerations into fundamental financial decisions. The cases provide opportunities to build the skills needed to create and capture value across borders.

Course Objectives:

1) To develop capabilities, skills, and knowledge for making sound financial decisions
2) To develop students on "how to run their own MNC and write a feasibility report"
3) To be able to solve simple cases

Course Outline:

Unit 1 Introduction to E-Commerce: Meaning, Definition, advantages, risk, origin & working of an E-Commerce

Unit 2 Scope of E-Commerce: The Digital Revolution and Society, The Digital and Social Worlds, The Digital Economy, The Digital Enterprise, Virtual Communities, Online Communities, etc.

Unit 3 Emerging E-Commerce Platforms: E-Business, Electronic Markets, and Networks; The Content and Framework of E-Commerce, Classification of E-Commerce by the Nature of the Transactions and the Relationships Among Participants.

Unit 4 E-Commerce Business Models: Integrating the Marketplace with the Marketspace, Web 2.0. Drivers, Benefits, and Limitations of E-Commerce, Impact of E-Commerce on business, government, customers, citizens, and society.

Unit 5 Mobile Commerce: Social Commerce and IoT, Mobile Commerce, Attributes Applications and Benefits of M-Commerce, Mobile Marketing - Shopping and Advertising. Social Commerce: Social Commerce,

Unit 6 E-Commerce and Social Media: Social Business (Enterprise), Social Business Networks and Social Enterprise, Social Media, Platforms for Social Networking; Social Media Marketing, Enterprise 2.0,

Improved Business Models. Entrepreneur Networks, Enterprise Social Networks, The Benefits and Limitations of Social Commerce, Benefits to Customers, Retailers, Employees

Unit 7 Consumer-to-Consumer Electronic Commerce (C2C): Person-to-Person models. Internet of Things: Concept of IoT, Smart Homes and Appliances, Smart Cities, Smart Cars, Wearable Computing, and Smart Gadgets.

Unit 8 Digital Business Ecosystem: Electronic Commerce Mechanisms, Online Purchasing Process, E-Marketplaces- Types, Components and Participants, Disintermediation and Reintermediation; Customer Shopping Mechanisms, Websites, Malls, and Portals, Websites, Electronic Malls, Web (Information) Portals. Intermediaries:

Unit 9 Intermediaries in E-Marketplaces: Role of Intermediaries in E-Marketplaces, Merchant Solutions: Electronic Catalogues, Search Engines, and Shopping Carts, Electronic Catalogues, E-Commerce Search Activities, Auctions - Traditional Auctions Versus E-Auctions, Dynamic Pricing.

Unit 10 Global Financial Trends: Digital Payments: Smart Cards, Stored-Value Cards, EC Micropayments, Payment Gateways, Mobile Payments, Digital, and Virtual Currencies, Security, Ethical, Legal, Privacy, and Technology Issues.

Unit 11 Digital Business Applications: Electronic Retailing: B2C Electronic Retailing, Characteristics, Advantages, Limitations, E-Tailing Business Models, Classification of Models by Distribution Channel, Referring Directories, Malls with Shared Services. Social Shopping, Concept, Benefits and Drivers, Social Shopping Aids

Unit 12 Changing faces of Marketplaces: Understanding, Reviews, Ratings of various Marketplaces, Real-Time Online Shopping. The Online Versus Off-Line Competition, Click-and Brick models, Product and Service Customization and Personalization. Fintech: E-Banking, Mobile Banking, Pure Virtual Banks, Insurance, and Stock Trading, Other Mobile Finance Applications.

Unit 13 Digital Government: Government to-Citizens, Government-to-Business, Government-to-Government, Government-to-Employees Models, Internal Efficiency and Effectiveness, E-Government and Social Networking, M-Government. E-Learning, E-Training, and E-Books, Online Corporate Training, Social Networks, and E-Learning, E-Learning Management Systems, Electronic Books.

Unit 14 Digital Business Applications: Online Travel and Tourism Services, Characteristics of Online Travel, Benefits, Limitations, and Competition in Online Travel Services. E-Employment, Online Job Market, Social Networks Based Job Markets, Social Recruiting, Virtual Job Fairs and Recruiting Events, Benefits, and Limitations of the Electronic Job Market.

Unit 15 Innovation in the E-World: E-Health: Definition, Electronic Medical Record Systems (EMR), Doctors' System, Patients Services, Medical Devices, and Patients Surveillance. Entertainment, Media & Gaming, Service Industry Consumer Applications. Digital Products, Internet TV and Internet Radio, Social Television (TV) Mobile Entertainment, Mobile Marketing, Mobile Streaming Music and Video Providers, Gaming - Mobile Games, Educational Social Games; Mobile Gambling, Mobility, and Sports; Social Entertainment, etc.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO304.1	**Remember**	Demonstrate the wide spectrum of E-Commerce & understand its overall impact on the global finance
CO304.2	**Understand**	Understand the fast-changing electronic world with the international technology
CO304.3	**Analyze**	Analyze the changing pattern and adopt to these rapid changes to be ahead in the competition
CO304.4	**Apply**	Apply E-Commerce & its latest utilities through various applications & channels to Demonstrate appositive change

Reference Books:

1. 4th edition, "E-Business and E-Commerce Management", Dave Chaffey
2. Financial Management by Jonathan Berk, Peter DeMarzo, and Ashok Thampy (Pearson Publication)
3. Financial Management by Khan and Jain (TATA McGraw-Hill)
4. Financial Management by I.M.Pandey (Vikas Publication)
5. Financial Management Principle and Practices by S. Sudarsana Reddy (Himalaya Publication)
6. Financial Management by Prasanna Chandra, TMH, 7th Edition

Semester	3	**Course Credits**	4	**Specialization**	FinTech
Course Code	OMBFT305			**Type**	Specialization Course
Course Title	Security Analysis and Portfolio Management				

Course Description:

Security analysis and portfolio management course helps students to understand the investment field for sound investment decisions making. This course is designed to emphasize both theoretical and analytical aspects of investment decisions and deals with modern investment theoretical concepts and instruments. Security Analysis is the subject to study the composition and performance of stocks in capital market. The stocks are analyzed using tools of fundamental analysis and technical analysis. Portfolio management refers to the management or administration of a portfolio of securities to protect and enhance the value of the underlying investment. It is the management of various securities (shares, bonds, etc.) and other assets (e.g. real estate), to meet specified investment goals for the benefit of the investors. It helps to reduce risk without sacrificing returns.

Course Objectives:

1) To familiarize with the fundamentals of security analysis and portfolio management concepts;
2) To provide a conceptual insight to the valuation of securities;
3) To provide an insight about the relationship of risk and return; and
4) To be able to measure the return according to the expectations of the investors and portfolio management practices in India.

Course Outline:

Unit 1: Nature and Scope of Investments: Introduction: Investment- Meaning and Concept, Types of Investment, Securities, Financial System, and Financial Market, Security Market.

Unit 2: Risk and Return: Measures of Return, Risk, Measuring the Risk of Expected rate of Returns, Measuring Systematic Risk

Unit 3: Security Market in India-I: Security Markets– Introduction, New Issue Market (Primary Market), Stock Exchanges (Secondary market), Derivative Market, Functioning of Security Market, Market Index, Regulation of Security Market in India.

Unit 4: Security Market in India-II: Listing, Trading, Clearing, and Settlement.

Unit 5: Fundamental Analysis: Fundamental Analysis, Equity Valuation Process, Advantages of Fundamental Analysis, Disadvantages of Fundamental Analysis.

Unit 6: Technical Analysis: Technical Analysis, Technical Analysis vs. Fundamental Analysis, Types of Charts, Basic Technical Tools, Market Indicators, Dow Theory, Strengths and Weaknesses of Technical Analysis.

Unit 7: Equity Stock Valuation Models: Equity Valuation- Introduction, Approaches to Valuation of Equity Stock, Methods of Equity Stock Valuation.

Unit 8: Bond Valuation Models: Bond– Introduction, Valuation of Bond, Components of Bond Valuation.

Unit 9: Portfolio Management: Management of Investments, Portfolio Management– Basics, Portfolio Management Strategies, Portfolio Management Services.

Unit 10: Portfolio Theories and Portfolio Construction: Portfolio Theories– Introduction, Markowitz Portfolio Optimization Model, Sharpe Single Index Model, Capital Asset Pricing Model, Arbitrage Pricing Theory, Asset Allocation Strategies.

Unit 11: Portfolio Evaluation and Revision: Portfolio Evaluation, Portfolio Revision.

Unit 12: Investment Avenues: Investment Avenues, Classification of Various Financial Instruments, Real Estate, Commodities, and Self-Assessment Questions.

Unit 13: Personal Financial Management: Personal Financial Management, Financial Planning Process, Personal Budget, Parameters to Choose Your Financial Planner, Types of Other Financial Advisors, Asset Allocation.

Unit 14: Tax Planning: Tax Planning- Introduction, Tax Avoidance vs. Tax Evasion, Tax Planning Basics, Consequences of Avoidance, Ways to do Tax Planning, Income Tax, Tax Planning Benefits, Penalties under Income Tax Act for Tax Evasion, Self-Assessment Questions.

Unit 15: Wealth Management: Wealth Management, Private Wealth Management, Discipline of Wealth, Wealth Management Customers, Market Models, Features/ Characteristics of Good Wealth Management, Importance of Wealth Management.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO305.1	**Understand**	Learn the basic terms of security market in India.

CO305.2	**Apply**	Apply the fundamental and technical analysis terminology for valuation of securities.
CO305.3	**Evaluate**	Match the expectation of the investors and portfolio management practices.
CO305.4	**Analyze**	Analyze self-financial management for choosing financial planner.

Reference Books:

1. Aradhana, V.A., Security Analysis & Portfolio Management, Himalaya Publishing House, New Delhi.
2. Bhalla, V.K., Security Analysis & Portfolio Management S. Chand& Co., New Delhi.
3. M. Ranganathan and R. Madhumathi: Investment Analysis and Portfolio Management, Pearson Education, New Delhi.
4. Prasanna Chandra: Investment Analysis and Portfolio Management, Tata McGraw- Hill, New Delhi.
5. Bharti V. Phathak: Indian Financial System, Pearson Education, New Delhi

Semester	3	**Course Credits**	4	**Specialization**	FinTech
Course Code	OMBFT306			**Type**	Specialization Course
Course Title	Security Analysis and Portfolio Management				

Course Description:

This course will be useful for students to know about the concept of financial market and its use in an organization. A financial market brings buyers and sellers together to trade in financial assets. Money markets are used by the government and corporate entities to borrow and lend in the short term. Capital markets are used for long-term assets, which have maturities of greater than one year.

Course Objectives:

1) To make students familiar with the analytical tools used for financial analysis;
2) To understand the accounting aspects;
3) To get acquainted with the concept of the IFRS;
4) To have knowledge of convergence of Indian Accounting Standards with the IFRS; and
5) To know the comparative analysis of Indian GAAP and the IFRS

Course Outline:

Unit 1: Financial Institutions: Different Groups of Institutions, Reserve Bank of India, Commercial Banks, Development Financial Institutions, Insurance Institutions, and Other Financial Institutions.

Unit 2: Securities and Exchange Board of India: Overview of the Securities and Exchange Board of India Act, 1992, Powers and Functions of SEBI, Investigations by SEBI, Registration Certificate by SEBI, Penalties, and Adjudication, Securities Appellate Tribunals, and Private Placement to Qualified Institutional Buyers.

Unit 3: Non-Banking Financial Companies: Functions of Non-Banking Financial Companies, Role of Different Non-Banking Financial Companies, Regulations Regarding Non-Banking Financial Companies, Causes for Failure of NBFCs.

Unit 4: Venture Capital: Functions of Venture Capital, Modes of Finance by Venture Capital, Role of SEBI in Venture Capital, and Venture Capital Scenario in India.

Unit 5: Stock Exchanges in India: Functions of Stock Exchange, Bombay Stock Exchange, National Stock Exchange, Trading in Stock Exchange, and Depositories Services.

Unit 6: Stock Markets Indicators and Interest Rates: Objectives of Indices, Types of Indices, Sensex, Nifty, Interest Rates.

Unit 7: Capital Markets: Functions of Capital Market, Players in Capital Market, Role of SEBI in Capital Market, Investment Instruments in Capital Market, Modes of Raising Finance in Capital Market.

Unit 8: Money Markets: Functions of Money Market, Role of RBI in Money Market, Players in Money Market, and Instruments Used in Money Market.

Unit 9: Merchant Banking: Evolution of Merchant Banking, Role of Merchant Banker in Capital Market, SEBI Guidelines Regarding Merchant Banker.

Unit 10: Mutual Funds: The Evolution of Mutual Funds, The Concept of Mutual Fund, Types of Mutual Fund Schemes, Net Asset Value, Mutual Funds Functioning in India.

Unit 11: Trading in Derivatives: Intra-day Trading, Trading in Futures, Trading in Options, Risk in Derivatives Trading.

Unit 12: Credit Rating: Need for Credit Rating, Parameters of Credit Rating, Credit Rating Agencies, Credit Rating Symbols, Country Risk Rating.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO306.1	Remember	Learn the tools for financial analysis.
CO306.2	Understand	Enhance comparative analysis of Indian GAAP and the IFRS
CO306.3	Analyze	Analyse Compare accounting aspects with financial markets
CO306.4	Apply	Learn Indian Accounting Standards to implement them in corporate life.

Reference Books:

1. Financial ACCT with course mate-Godwin/Aderman/Sanyal-Cengage Learning
2. Financial Management by Jonathan Berk, Peter DeMarzo, and Ashok Thampy
3. Financial Management by Khan and Jain (TATA McGraw-Hill)
4. Financial Management by I.M. Pandey (Vikas Publication)
5. Financial Management Principle and Practices by S. Sudarsana Reddy
6. Financial Management by Prasanna Chandra, TMH, 7th Edition

Semester-III Logistics, Material & Supply Chain Management Specialization

Semester	3	**Course Credits**	4	**Specialization**	Logistics & Supply Chain Management
Course Code	OMBLSCM301			**Type**	Specialization Course
Course Title	Logistics & Supply Chain Management (LSCM)				

Course Description:

This course is designed to explain the basic theory and techniques of Supply Chain Management (SCM) to examine the issues and problems associated with SCM in changing the business environment and to show how SCM can improve an enterprises effectiveness and competitiveness.

Course Objectives:

1) To understand the importance of SCM;
2) To know the various aspects of SCM; and
3) To study the current trends in SCM.

Course Outlines:

Unit 1: Introduction to Supply Chain Management: The Management Concept and Evolution of SCM, What is SCM? The Basic SCM Model, Relationships in SCM, Significance of SCM, Case Studies, Fundamentals of Logistics Management.

Unit 2: Fundamentals of Supply Chain Management: Decision Phases in Supply Chain, The macro processes of Supply Chain, Push-Pull based SCMs, Morkov Chain, Different types of Logistics, SCM in Indian Industry, Reverse SCM and Logistics, and Other Related Topics.

Unit 3: Inventory Control Management and Supply Chain Management: Need for Holding Inventory, Types of Inventories, Inventory Under Conditions of Uncertainty, Symptoms of Poor Inventory Management, Significance of Inventory Control Management, Inventory Control Organization, Duties of Inventory Control Department, Conducting Inventory– Methods of Inventory Control, Selective Inventory Control, Inventory Management in India, Inventory Ratios, Service Level, Understocking and Overstocking Costs.

Unit 4: Economic Order Quantity: The Economic Order Quantity [EOQ], The Derivation of EOQ, Standard Deviation, Practical Inventory Systems, Methods of Computation of EOQ, Cost Sensitivity

Analysis, Integrated EOQ-ABC Analysis, Economic Purchase Quantity, Practical Considerations of EOQ in terms of Rate of Receipt and Rate of Usage, Additional Problems on EOQ.

Unit 5: Stores Management and Supply Chain Management: Duties of the Store Officer, Interdepartmental Relations, Corporate Policy, and Stores Management, Types of Stores, Warehouses, Store Organization, Store Layouts, Features of Good Store Keeping, Safety Measures, Training.

Unit 6: Stores in Supply Chain: Care of Materials, Features of Ideal Storage Equipments, The Storage Equipments, The Store Records, The Store Reports, The Store Ratios, The Store Audit, Disposal, Replacement Analysis.

Unit 7: IT Enabled Supply Chain: Types of SCM Software, Macro-Processes CRM, ISCM and SRM, Transaction Management with EDI, Supply Chain IT in Practice, E-Business and Supply Chain, E-Sourcing, Data Requirements from SCM, Legacy Systems.

Unit 8: Material Handling and Transportation: Significance of MHT, Functions of MHT Management, Factors Influencing Transport Decisions, Various Modes of Transport, Design Options, Transportation During Trade-Offs, Routing and Scheduling, Material Handling, Material Handling Ratio, Principle of Unit Load and Concept of Containerization and Palletization, Containerization, Transportation Techniques, Material Handling Equipments, Traffic Management, Total Cost of Transport, Insurance Management.

Unit 9: Strategic Fit: Implied Demand Uncertainty, Understanding the Capabilities of Supply Chain, Other Issues Affecting Strategic Fit, Drivers and Obstacles, Decision Making in Supply Chain, Designing Supply Chain Distribution Network, Design Patterns of Distribution Network.

Unit 10:Network Design in Supply Chain: Factors Affecting Network Design, A Framework for Network Design Decisions, Taking Supply Chain Decisions Under Uncertain Conditions, Forecasting Demand, Methods of Forecasting, Role Played by Aggregate Planning, Action Plan, Strategy, Aggregate Planning Implementation, Managing the Supply, Implementing Solutions.

Unit 11: Manufacturing and Supply Chain Management: Product Life Cycle, Item Management, Kanban Systems, Assembly Line, Basic MRP Logic.

Unit 12: Channels of Distribution: Functions Performed by Distribution Channel, Services to the Customer, Vertical Marketing Systems [VMS], Horizontal Marketing Systems [HMS], Multi-Channel Marketing Systems [MMS], The Internet, Distribution Channel Design, Factors Affecting Choice of Distribution Channel.

Unit 13: International Logistics: International Shipping, Multimodal Transport, Air Transport.

Unit 14: Advanced Topics in Supply Chain Management: Customer Relationship Management (CRM), Electronic Data Interchange (EDI), Business Telecommunication, Electronic Supply Chain Management (eSCM), Supply Chain Software, Digital Content Management, Business Process Re-engineering (BPR), Decision Support Systems and SCM

Course Outcomes:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO301.1	**Remember**	Learn the importance of supply chain management.
CO301.2	**Understand**	Understand the basic concepts of supply chain management.
CO301.3	**Analyze**	Exhibit current trends in supply chain management.
CO301.4	**Apply**	Apply skills to implement various aspects of supply chain management.

Suggested Reading:

1. Oracle e-Business Suite, Manufacturing and Supply Chain Management Oracle Press
2. Manufacturing Planning and Control for Supply Chain Management, F. Robert Jacobs, William Berry, D. Clay Whybark, Thomas Vollmann, McGraw-Hill Professional Publishing
3. Manufacturing, Planning and Control Systems for Supply Chain Management, William Berry, D. Clay Whybark, Thomas Vollmann McGraw-Hill Publishing
4. Manufacturing Operations and Supply Chain Management – ALean Approach, David H. Taylor, David Brunt Cengage Learning Publishing
5. Supply Chain Design and Management: Strategic and Tactical Perspectives, Manish Govil, Jean-Marie Proth Academic Press

Semester	3	**Course Credits**	4	**Specialization**	Logistics & Supply Chain Management
Course Code	OMBLSCM302			**Type**	Specialization Course
Course Title	Production Planning & Control				

Course Description:

To develop a broad conceptual framework based on the research, which has been done in the recent past, and to bridge the gap between the theoretical solutions on one hand and the real-world problems on the other in production planning and control.

Course Objectives:

1) To understand the various components and functions of production planning and control such as work-study, product planning, process planning, production scheduling, inventory control; and
2) To know the recent trends like Manufacturing Requirement Planning (MRP II) and Enterprise Resource Planning (ERP).

Course Outlines:

Unit 1: Understanding the Project: Introduction to Project, Projects in Different Fields, Classification of Projects, Project Classification Based on Nature of Project, Characteristics of Project.

Unit 1: Production Planning and Control: Production Control, Role of Production Planning and Control, Objectives of Production Planning and Control, Significance, Functions, Factors Affecting Production Planning and Control, Symptoms of Poor Production Planning and Control, Organisation for PPC Function, Manufacturing Planning and Control, Measurement of Effectiveness, Production Planning and Control in Services.

Unit 2: Demand Management: Functions, Demand Planning, Demand Forecasting, Forecasting Techniques, Bullwhip Effect, Strategies for Demand Fluctuations, Demand Management in Services.

Unit 3: Sales & Operations Planning (SOP): Features, Objectives and Functions, Benefits, Process of SOP, Requirements for implementation, Implementation of SOP, Key Indicators of a Successful SOP

Unit 4: Capacity Planning: Meaning of Capacity, Types of Capacity, Capacity Management, Capacity Shortage, Factors Affecting Capacity, Capacity Planning, Capacity Planning, and Product Life Cycle, Capacity Expansion Strategies.

Unit 5: Aggregate Planning: Capacity and Demand Balance, Aggregate Planning Strategies, Steps in Aggregate Planning, Use of QT in Aggregate Planning, Aggregate Planning in Services, Trends in Aggregate Planning.

Unit 6: Master Production Schedule: Objectives of the MPS, MPS and Production Plan, Key Terms in MPS, Output of MPS, Steps in MPS, Time Fences and Time Zones, Changing MPS, Evaluation of MPS.

Unit 7: Material Requirement Planning Schedule: MRP System, MRP Process, Lot Sizing Rules, MRP Computations, Regeneration, and Net Change, Assumptions in MRP, Benefits of MRP, MRP Implementation, Software for MRP.

Unit 8: Production Activity Control: Concept of Production Activity Control, Functions of Production Activity Control, Role of Shop Planner, Information and Documents, Operations Scheduling, Loading, Sequencing, Dispatching, Input/Output Control.

Unit 9:High Volume Production Activity Control: Types of Production, Flow Production, Characteristics of Flow Production, Requirements of Flow Production, Planning and Control In Flow Production, Line Balancing, Terminology in Line Balancing, Line Balancing Methods, Line Balancing Procedure, Kilbridge and Wester method.

Unit 10: Job Shop Production Activity Control: Job Production, Characteristics of Job Shop Production, Complexity of Job Shop, Production Activity Control in Job Shop, Terminology in Job Shop Planning, Job Shop Scheduling, Sequencing Rules, Gantt Chart, Approaches to Job Shop Scheduling.

Unit 11: Sequencing Models: Meaning of Sequencing, Taxonomy of Sequencing Models, General Assumptions in Sequencing, Priority Rules for Job Sequencing, Factors Affecting Sequencing, Sequencing in Flow Shop, Johnson's Method, N Jobs- Three Machines Sequencing, Sequencing in Job Shop.

Unit 12: JIT and Kanban: Concept of JIT, Philosophy of JIT, Elements of JIT, JIT Purchasing, Application of JIT, Benefits, Limitations of JIT, Concept of Kanban, Objectives, and Functions of Kanban, Dual Card Kanban, Pull System, Principles of Implementation.

Unit 13: Project Scheduling: Characteristics of Project, Project Scheduling, Gantt Chart, Network Scheduling, PERT/CPM, Probabilistic Activity Time, Precedence Diagramming Method (PDM), Critical Chain Scheduling.

Unit 14: PPC in Service Industry: Characteristics of Service Business, Differences Between Service and Manufacturing, OPC in Service Industry, Effect of Poor Planning in Service Industry, OPC in Logistics Operations, Operation Planning in Entertainment Business, Operations Control at Air France, OPC in IT Industry, OPC in Health Care.

Course Outcomes:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO302.1	**Remember**	Learn basic concepts of production planning & control.
CO302.2	**Analyze**	Exhibit recent trends of manufacturing requirement planning.
CO302.3	**Evaluate**	Easily implement 5 M concept into practice.
CO302.4	**Apply**	Implement various components and functions into practice.

Suggested Reading:

1. Thomas E Vollman, William L Berry, D Cay Whybark and F Roberts Jacob MANUFACTURING PLANNING AND CONTROL FOR SUPPLY CHAIN MANAGEMENT, Tata McGraw–Hill Publishing Company Ltd (2005)
2. Daniel Sipper, Robert L, Bulfin, Jr. PRODUCTION PLANNING, CONTROL, AND INTEGRATION McGraw-Hill Companies Inc.
3. Seetharama L Narsimhan, Dennis W McLeavy, Peter J Billington PRODUCTION PLANNING AND INVENTORY CONTROL Prentice-Hall Of India Pvt Ltd, New Delhi (2003)
4. Landvater Darryl V WORLD-CLASS PRODUCTION AND INVENTORY MANAGEMENTJohn Wiley and Sons, New York 1997
5. H J Zimmermann, M G Sovereign QUANTITATIVE MODELS FOR PRODUCTION MANAGEMENT Englewood Cliffs N J: Prentice Hall 1974

Semester	3	**Course Credits**	4	**Specialization**	Logistics & Supply Chain Management
Course Code	OMBLSCM303			**Type**	Specialization Course
Course Title	Inventory Management & MRP Systems				

Course Description:

This course emphasizes inventory control management for production planning and includes topics in inventory control with known and unknown demand, forecasting, lot sizing, dispatching, scheduling, and materials requirement planning (MRP), just-in-time models, and pull control systems, and aggregate planning.

Course Objectives:

1) To know roles and responsibilities of inventory managers and how to improve customer service through inventory management.
2) To understand the concept the objectives and importance of MRP
3) To understand and describe the various MRP system outputs
4) To understand the management issues in independent demand inventories

Course Outlines:

Unit 1: Elements of Inventory Management: Concept of Inventory, Pressures for Low Inventory and High Inventory, Role of inventory in operations, Types of inventory – seasonal, decoupling, cyclic, pipeline, Safety stock. Inventory costs - carrying cost, ordering cost, shortage cost, holding cost

Unit 2: Inventory Control systems: Continuous Review (Q) systems, Periodic Review (P) systems, ABC Classification system, Issues in the P and Q systems of inventory control.

Unit 3: Economic Order Quantity Models: The Basic EOQ Model, Production Quantity Model, Computer Solution of EOQ model with MS Excel, Quantity Discounts, Computer Solution of Quantity Discounts model with MS Excel, Reorder Point, Safety Stocks, Service Level, Reorder point with variable demand, Computer Solution of Reorder point with MS Excel, Order quantity for periodic inventory system, Order quantity with variable demand, Computer Solution of fixed period model with MS Excel.

Unit 4: Just-In-Time: Principles of just-in-time, Core logic of JIT, Main features for stocks, Achieving just-in-time operations, other effects of JIT, Benefits, and disadvantages of JIT, Comparison with other methods of inventory management. KANBAN as a control tool. Vendor-managed inventory.**Unit 5: Make Or Buy Decisions:** Factors influencing Make Or Buy Decisions-cost, quality, capacity core v/s noncore,

management strategy. Evaluation of performance of Materials function: cost, delivery, quality, methodology of evaluation, Use of ratios - inventory ratios, inventory analysis like ABC, FSN: Fast slow, Non-moving, HML-High Medium, Low, XYZ. Materials Management in JIT Environment

Unit 6: Dynamic Inventory Problems under Risk: General characteristics, Types of inventory control systems with known stock-out costs and service levels, Approximate and exact methods for safety stock determination.

Unit 7: Material Requirements Planning (MRP): An Overview of MRP, Objectives of MRP, Importance of MRP, MRP Logic, MRP System Inputs, MRP Processing, MRP System Outputs, Building Blocks of the MRP, Multiple Levels in Products, Product Structure Tree, Bill of Materials, Time Phasing Requirements and Incorporating Lead-Time Information, Determining Lot Size, Basic MRP Record and Record Processing, Safety Stock and Safety Lead-Time, Advantages and Limitations of MRP, ERP and its Significance in Inventory Management

Unit 8 : MRP, MRP-II and DRP: short comings of MRP, Design of MRP system and its variants (MRP-II and DRP).

Unit 9: Inventory-Related Issues and Costs: Management Issues in Independent-demand Inventories, Routine Inventory Decisions, Measuring Inventory System Performance, Deciding Timing Implementation, Different Inventory Costs, Order Preparation Costs, Inventory Carrying Costs, Shortage and Customer Service Costs, Incremental Inventory Costs.

Unit 10: JIT-based Approaches for Materials Management: Concepts and Issues, Relationship with Lean Engineering practices, Design of JIT-based inventory management systems.

Unit 11: Basics of Purchasing Management: Fundamentals & importance of industrial purchasing, Types of purchasing, Related techniques (non-quantitative & quantitative) in purchasing, Measurement & evaluation of performance of suppliers & purchasing systems.

Unit 12: Theory of Constraints and Materials Management: Concept and Issues, Bottleneck and non-bottleneck resources, Process and transfer batches, Capacity constraint resources, D-B-R scheduling, and VAT plants, Effect on materials management.

Course Outcomes:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO303.1	**Remember**	Define The Key Terms Associated With Inventory Management.
CO303.2	**Understand**	Classify Various Types Of Inventory, And Inventory Costs
CO303.3	**Apply**	Calculate Economic Order Quantity And Stock Levels Under Various Conditions.
CO303.4	**Analyze**	Compare And Contrast Various Methods Of Inventory Control
CO303.5	**Evaluate**	Assess Various Factors Influencing Make Or Buy Decisions.

Suggested Reading:

1. Mercado, E. (2007). Hands-On Inventory Management. New York: Auerbach Publications.
2. Muckstadt JA, Sapra A. (2010). Principles of Inventory Management: When You are Down to Four, Order More. Springer: New York, NY.
3. Wild, T. (2002). Best Practice in Inventory Management. London: Routledge.
4. Just-in-Time Manufacturing by Korgaonker, Macmillan
5. Nahmias, S. (2008). Production and Operations Analysis. McGraw-Hill/Irwin. Sixth edition.

Semester	3	**Course Credits**	4	**Specialization**	Logistics & Supply Chain Management
Course Code	OMBLSCM304			**Type**	Specialization Course
Course Title	Packaging and Distribution Management				

Course Description:

The course will train learners over the complete cycle of distribution of goods from supplier to customer. This program wants to be recognized as highest standard for packaging and distribution managerial skills and capacity building for Logistics.

Course Objectives:

1) Learning to design packaging utilizing different materials: metal, glass, plastic, paper, and corrugated
2) Analyze and solve technical problems in packaging manufacturing through the application of packaging engineering principles
3) Develop an understanding of logistics operating areas and their interrelationship
4) Understand the importance and implications of a customer-focused logistics strategy

Course Outline:

Unit 1: Packaging/Packing Materials & Components: Various Materials/Metals Flexible, Folding, Insulated, Corrugated Packing Materials-Packing materials: Paper, Wood, Adhesive, Aluminium foil, Cushioning-stuff, Packaging gas, Pallet, Paperboard, Plastic wrap, Shrink wrap, Screw cap, Slip sheet-Security printing- Stretch wrap – Time-temperature indicator- Tinplate.

Unit 2: Packaging Industry Process and Machining: Packaging Demands of Consumer goods Industry-Packaging Demands of Industrial Users-Technology Trends in Packaging Industry – Aseptic processing - Authentication -Automatic identification and data capture - Blow fill seal - Blow moulding - Containerization -Electronic article surveillance -Graphic Design -Induction sealing - Plastic welding - Printing

Unit 3: Packing and Packaging: Meaning, Functions, and Essentials of Packing- Packaging: Meaning, Functions, and Essentials of Packaging- Difference between Packing and Packaging-Packing for Storage-Packing for Overseas Shipment- Packing for Inland Transportation- Packaging for Product content

Protection - Test of packaging: Mechanical, Climatic & Lab test- International Care labeling code - Packaging cost.

Unit 4: Packaging Types: Primary, Secondary and Tertiary- Requirements of Consumer Packaging, Channel Member Packaging, and Transport Packaging - Shrink packaging – Identification codes, bar codes, and electronic data interchange (EDI)- Universal Product Code- GS1 Standards- package labels- Symbols used on packages and labels Heavy, Medium and small Packaging- Active packaging-Child-resistant packaging Pilfer/Tamper Evident/Proof Packaging-Product-Packaging compatibility- Parma Packaging- Food Packaging- Electronic goods Packaging- FMCG packaging- Heavy engineering Goods/Equipment Packaging.

Unit 5: Packing Considerations: Protection, Convenience, Environment, Use/Re- use- Cost and Competition – Packing as a systems approach to Logistics- Transport/Storage Requirements- Physical, Chemical Environmental, Biological Nature of the Products Packing as Protection Against Hazards-

Package design considerations: Structural design, marketing, shelf life, quality assurance, logistics, legal, regulatory, graphic design, end-use, environmental factors- Packaging for Marketing and Visual Appeal- Biodegradation -Recycling: Glass, Plastic &Paper-Reuse- Sustainable packaging - Waste management.

Unit 6: Packaging Economics: Packaging Cost Vs Product cost- Cost Reduction in Packaging Packing for Inventory Control, Value Analysis- Packing and Value Engineering Packaging Laws-Consumer Protection in Food Packaging, Marking and Labeling, Ecofriendly Packaging for Exports- Scientific Packaging- Standardization in Packaging.

Unit 7: Quality assurance: Radio-frequency identification, Track and trace -Vacuum forming Verification and validation - Barcode printer - Barcode reader -Bottling line –Carton machine- Check weighed - Conveyor system -Heat gun - Heat sealer - Industrial robot Injection molding machine –Logistics automation

Unit 8: Distribution: Definition – Need for physical distribution – functions of distribution – marketing forces affecting distribution. The distribution concept – System perspective. Physical distribution trends in India. Transportation: Scope – principles of transportation function – relationship of transportation to other business functions

Unit 9: Channels of distribution: role of marketing channels– channel functions channel structure designing distribution channel – choice of distribution channel factors affecting. Intermediaries: functions of intermediaries – types of intermediaries – variables in selecting channel members – motivating – training – evaluating channel members – modifying channel arrangements

Unit 10: Transportation management: Legal types - Modes of transportation – Transport mode selection –methods – transport costs –rate profiles–transport regulations– intra and interstate transport of goods. Transport Industry in India - International Transport – Rail ways, Road transport, Ports – Transport Security - Trends in Modern Transport

Unit 11: Order processing and Unitization: Defining Order Processing – order acquisition – order entry– document processing – status reporting – factors affecting processing time – Customer service. Unitization –functions of Packaging – concept of unitization – Palletization Containerization– Costs of packaging – designing a package – packaging materials – choosing right materials – Contain in India.

Unit 12: Distribution control & Evaluation: Distribution control – stages of control process – standards & goals–performance report - measurement – monitoring – corrective action. Organization for Distribution: Distribution Organization structure – Private & Public organizations - conflict resolution – Rising costs& need for control – complexities of physical distribution. Transport organization: Functions –structure – hierarchy – Transport & Logistics organizations.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO304.1	**Remember**	Describe the role of packaging & distribution in the operations industry
CO304.2	**Understand**	Formulate logistics strategies from a supply chain network perspective
CO304.3	**Analyze**	Analyze the level of uncertainty associated with the supply of products and services to targeted customer segments and justify the choice of a supply chain strategy and its fit with competitive strategy.
CO304.4	**Apply**	Evaluate logistics supply chain networks and strategies.

Suggested Reading:

1. Alan Ruston, Phil Crouches, Peter Baker. (2014)
2. The Handbook of Logistics and Distribution Management:kogan page India New Delhi. D K Agrawal. (2007).
3. Distribution and Logistics Management: A Strategic Marketing Approach: Macmillan publishers. India. Kapoor Satish K &KansalPurva.(2003)
4. Basics of Distribution Management: A Logistical Approach: Prentice HALL of India.

Semester	3	**Course Credits**	4	**Specialization**	Logistics & Supply Chain Management
Course Code	OMBLSCM305			**Type**	Specialization Course
Course Title	World Class Manufacturing				

Course Description:

Consistent with the Shingo Principles of continuous improvement, the World Class Manufacturing (WCM) training program is designed to train individuals to improve employee morale, individual and company performance, and company profits at all levels of the organization by highlighting the value and non-value added activities.

Course Objectives:

1) To help students understand the global competitive environment being faced by manufacturers;
2) To help students to know the impact of IT revolution on manufacturing competitiveness;
3) To help students understand the different international practices & models adopted by various organizations;
4) Understand various practices being taken up by Indian Industries; and
5) To help students know about the maintenance management practices.

Course Outline:

Unit 1: Overview of "World Class Manufacturing": Common characteristics of WCM, World-Class Organization of Future, What it Takes to Stay World Class?, Emergence of "World Class" Concept, Case Studies.

Unit 2: Vision, Mission, Values, Business & Manufacturing Strategies: Mission Statement, Vision Statement, Values, Interrelationship Between Values, Mission, and Vision, Strategy, Vision, Mission, Competitive Advantage, Business Strategy, Manufacturing Strategy, Current Issues.

Unit 3: Organization Design, Human Resources, Technology, and Performance Measurement: Organization Design, Human Resource, Technology, and Performance Measurement

Unit 4: Information Systems, Management Direction, and Operations Capabilities: Information Systems, Management Direction, Operating Model, Operating Capabilities.

Unit 5: Quality: 'Quality', Total Quality Control, Quality Planning, Quality Control, Quality Improvements, Total Quality Management (TQM)

Unit 6: Customer Service: What is Customer Service?, Essentials of Customer Service, A Few Basic Rules About Customer Service, Tips for Better Customer Service, Finer Points of Excellent Customer Service, Secrets of Customer Service, Five Customer Service Trends You Can't Ignore, Customer Service Skills, Customer Relations Management (CRM), CRM for Small Business, Companies Known for Their Extraordinary Customer Service.

Unit 7: World Class Manufacturing: History of World Class Manufacturing, World Class Manufacturing Philosophy, World-Class Manufacturing Defined, Changing Scenario in Manufacturing, Framework for Continuous Improvement, Imperatives for Increased Productivity, Opportunities for Improvement, Actual Company Performance Improvements, Examples of World Class Manufacturing Firms.

Unit 8: Product and Process Design: Product, Product Design, R&D Strategies, Modern Approaches to Design & Development, Process, Process Analysis, Process Capability.

Unit 9: Waste Elimination: What is "Waste", Seven Wastes, Definition of 'Waste', Five 'S', Flexible Workforce, Equipment Maintenance, Total Productive Maintenance (TPM), Statistical Process Control (SPC), Poka Yoke, Reduced Set up Time, Just-In-time (JIT), Three 'Ms' (Muda, Mura, Muri).

Unit 10: Lean Six Sigma: Lean Manufacturing, Six Sigma, Execution Infrastructure for Lean Six Sigma Applications, Software used for Six Sigma, Tools for Lean Six Sigma.

Unit 11: Toyota Production System (TPS): History, Underlying Principles of TPS, The 14 Principles, Essential Features of TPS, Techniques used in TPS.

Unit 12:Contributions of Experts To WCM: Dr. Edward Deming, Seven Deadly Diseases, Quotations and Concepts of Deming, Philip Crosby, Shigeo Shingo, Kaoru Ishikawa, Michael Porter, Case Study:- The Silicon Valley Case, Value Chain, Four Corners Model, C. K. Prahlad, Stephen Covey, Peter Senge.

Unit 13: Modern Techniques: Theory of Constraints (TOC), Synchronous Manufacturing, Business Process Reengineering (BPR), Benchmarking, Knowledge Management, Game Theory, Flexible Machining System.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO305.1	**Remember**	Learn the global competitive environment.
CO305.2	**Understand**	Differentiate the role of IT and Manufacturing competitiveness.
CO305.3	**Analyze**	Exhibit international projects and techniques.
CO305.4	**Apply**	Apply the skills to implement maintenance management practices.

Suggested Reading:

1. World Class Manufacturing: The Lessons of Simplicity Applied by Richard J. Schonberger,
2. Japanese Management Techniques: Nine Hidden Lessons in Simplicity. by Richard J. Schonberger,
3. Operations Strategy: Focusing Competitive Excellence (Quantitative Methods and Applied Statistics Series)by Peter W. Stonebraker and G. Keong Leong
4. Toyota Production System: Beyond Large-Scale Production by Taiichi Ohno
5. Manufacturing Strategy: Text and Cases- Terry Hill

Semester	3	**Course Credits**	4	**Specialization**	Logistics & Supply Chain Management
Course Code	OMBLSCM306			**Type**	Specialization Course
Course Title	Statistics & Quantitative Techniques (SQT)				

Course Description:

Resources are always critical in any organization. They are unavailable in an unlimited manner and there are always constraints. Operation research is helpful in the situation of such constraints of resources. Managers have to manage limited available resources in such a way that neither production nor other activities get disturbed in the business. Facility design is a fascinating area for OR. The excitement of operation research lays in the application of quantitative techniques to real-world problems.

Course Objectives:

1) To impart knowledge in concepts and tools of OR and QT; and
2) To help students apply these tools in managerial decision-making.

Course Outlines:

Unit 1: Arranging Data to Convey Meaning: Presenting Data in Tables & Charts: Application Areas for Statistics, Statistical Methods, Understand Data, Organize and Classify Data, Graphical Representation of Data, Good & Bad Data Presentation.

Unit 2: Measures of Central Tendency – Mean, Median, Mode: Numerical Data Properties, Frequency, and Frequency Table, Summary Measures– Central Tendency.

Unit 3: Measures of Dispersion: Summary Measures– Variation.

Unit 4: Correlation Analysis: Correlation Analysis– Scatter Plots, Some Misconceptions About Correlation, Correlation Terminologies.

Unit 5: Simple And Multiple Regressions: Regression Analysis, Simple Regression, Multiple Regressions.

Unit 6: Association of Attributes: Notations, Classes and Class Frequencies, Relationship Between the Class Frequencies, Consistency of the Data, Independence of Attributes, Association of Attributes, Yules' Co-efficient of Association.

Unit 7: Probability & Probability Distribution: Notation and Terminology from Set Theory, Addition

Theory of Probability, Conditional Probability, Multiplication Theory of Probability, Applications of Bayes' Theorem, Binomial Distribution, Poisson Distribution, Normal Distribution.

Unit 8: Linear Programming: Formulation & Graphical Solutions to LPP: Variables, Constraints, Objective, Phases of an Operations Research Project, Linear Programming– Formulation Graphical Solutions to LPP.

Unit 9: Transportation: Mathematical Formulation of Transportation Problem, North-West Corner Rule, Lowest Cost Entry Method, Vogel's Approximation Method, Test for Optimization.

Unit 10: Assignment Problems: Mathematical Statement of Assignment Problem, Solution Method for Assignment Problem, Travelling Salesman Problem.

Unit 11: Queuing Theory: Single Server & Multi-Server: Analysing Queuing Process, Constituents of Queuing System, Service Facility, Queuing Discipline, Kendall Notations, Single Server Models, Multi-Server Models

Unit 12: Markov Chain: Monte Carle Simulation: Simulation Procedure, Application of Simulation.

Unit 13: Games Theory: Zero-Sum Games, Fundamental Principles of Game Theory, Reducing by Dominance, Saddle Point, Strictly Determined Game, Mixing Strategies, Flow of Solution, Assumptions for Games Theory.

Unit 14: Decision Theory: Criteria for Decision Making: Decision Tables, Decision Making Process, Decision Criteria for Certainty, Decision Criteria for Uncertainty [5 Criteria], Decision Criteria for Risk.

Course Outcomes:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO 304.1	**Remember**	Learn the basic concepts of operational research.
CO 304.2	**Apply**	Easily apply the tools in managerial decision-making.
CO 304.3	**Analyze**	Grab the opportunities in operation as a career.
CO 304.4	**Creating**	Easily do operational research for better growth.

Suggested Reading:

1. Taylor III. Bernard W., Introduction to Management Science, Dorling Kindersley (India) Pvt. Ltd., licenses of Pearson Education in South Asia, 9th Edition, 2008.
2. Vohra N. D., Quantitative Techniques in Management, Tata McGraw-Hill Publishing Co. Ltd., New Delhi, 3rd Edition, 2007.

Semester-III Digital Marketing Specialization

Semester	3	**Course Credits**	4	**Specialization**	Digital Marketing Specialization
Course Code	OMBDM 301			**Type**	Specialization Course
Course Title	Introduction to Digital Marketing				

Course Description:

Global Business is increasingly confronted with the need to participate and manage in a real-time digital environment. Hence businesses need to consider how to take advantage of digital technologies as a tool and potential imperative for competitive advantage and whether their current marketing strategies are coherent with strategies for the digital market. Designed to provide students with a comprehensive understanding of the impact of marketing in the digital environment, Digital Marketing targets the Web, mobile, iPads as well as social media in the context of both their technological underpinnings and facilitation of delivery mechanisms.

Course Objectives:

1) Interpret the traditional marketing mix within the context of a changing and extended range of digital strategies and tactics.
2) Comprehend the importance of conversion and working with digital relationship marketing.
3) Integrate digital marketing and traditional marketing efforts.

Course Outline:

Unit 1: Marketing: Introduction, Significance, Core Concepts, Needs, Wants, Demand – Market It's Meaning and Classification, Marketing Management– Meaning and Functions, Market Segmentation and Targeting, Marketing Organization and Types.

Unit 2: Basics of the Internet: World Wide Web, Domain Name System, HTTP Status Code, Web Browsers, Search Engines, Web hosting, and domain hosting.

Unit 3: Digital Marketing: Definition, History & Evaluation, Importance, and Types of Digital Marketing approach, the 4 Ps of marketing and their implications for digital marketing

Unit 4: Digital Marketing Process: Digital Marketing Vs Traditional Marketing Which kind of marketing is better, How can organizations Use Both Digital & Traditional Marketing

Unit 5: Digital Media Planning: Develop media objectives, Construct planning timeline, Create media strategies, Define media mix allocation, Executing campaigns, and Manage campaigns

Unit 6: Targeted Traffic Management: Bringing Targeted Traffic-Inbound, Outbound Converting Traffic into Leads.

Unit 7: Effective Digital marketing: Digital Marketing Be Used to Develop Brands and Drive Sales.

Unit 8: Mobile Marketing: Key Mobile Marketing Concepts, Trends in Mobile, Opportunities & Risks, Mobile Devices, SMS Content, SMS Strategy, Mobile Advertising.

Unit 9: e-Commerce: Overview of e-commerce, e-Commerce Business Models, Ethics Scope, Advantages & Disadvantages

Unit 10: Strategy & Planning: Key Strategy & Planning Concepts, First Steps, Planning, Situation Analysis, Information Gathering, and Target Audience.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO301.1	**Remember**	Recall the basic aspects of Digital Marketing.
CO301.2	**Understand**	Demonstrate cognitive knowledge of the skills required in conducting online research and research on online markets, as well as in identifying, assessing, and selecting digital market opportunities
CO301.3	**Apply**	Exhibit emerging ideas and practices in the field of Digital Marketing.
CO301.4	**Analyze**	Analyze the confluence of marketing, operations, and human resources in real-time delivery.
CO301.5	**Evaluate**	Explain emerging trends in digital marketing and critically assess the use of digital marketing tools by applying relevant marketing theories and frameworks.

Suggested Reading:

1. Digital Marketing Excellence: Planning, Optimizing and Integrating Online Marketing by Dave Chaffey and PR Smith.
2. Understanding Digital Marketing: Marketing Strategies for Engaging the Digital Generation by Damian Ryan.

Semester	3	**Course Credits**	4	**Specialization**	Digital Marketing Specialization
Course Code	OMBDM 302			**Type**	Specialization Course
Course Title	Search Engine Optimization (SEO)				

Course Description:

This course is designed for practical learning, therefore, most concepts will be linked with hands-on training, where students will be expected to work with marketing datasets, dummy display ads, virtual website optimization, and SEO based on instructions in lectures and class discussions. The live experience of analyzing responses with analytical software, the launching of dummy display ads, and creating optimization of a website through Google AdWords are some of the key features of the program.

Course Objectives:

1. To instil the skill to optimize a website involves editing its content, adding content, doing HTML, and associated coding to both increases its relevance to specific keywords and remove barriers to the indexing activities of search engines.
2. To Learn to promote a site to increase the number of backlinks, or inbound links, is another SEO tactic; and
3. To understand the relation between SEO & SEM, as when both are blended well what it results in.

Course Outline:

Unit 1: Introduction and Importance of SEO: Introduction to Search Engine, introduction to "Organic" in SEO, White hat vs black hat SEO, SEO guidelines – Google Webmaster and Bing

Unit 2: How Search Engines Work – Crawling, Indexing, And Ranking: What are a search engine crawling, indexing, Search engine ranking, Search engines find your pages, Robots.txt, Defining URL parameters in GSC, Common navigation mistakes, 4xx codes, 5xx codes, Robots meta directives, X-Robots-Tag, the role of links in SEO, the role of content in SEO, Engagement metrics, Localized search

Unit 3: Keyword Research: Discovering Keywords, Uncovering Search Volume, Long Tail Keywords, Search Volume - Keywords by Competitor, Season and Region, User's Intent-Based Format, Keyword Tools.

Unit 4: On-Page SEO: Website content, Do's and Don'ts, NAP, Beyond content: Other optimizations, Image optimization, correct Snippets, Title tags, meta description, URL structure, Protocols: HTTP vs HTTPS.

Unit 5: Off-Page SEO: Page Rank, Link Building, Backlink, Blog Creation, Off-Page SEO Activities.

Unit 6: Technical SEO: Understanding how websites work – server to browser, Understanding HTML, CSS, and JavaScript for a healthy website, Client-side rendering versus server-side rendering, how search engines understand websites, canonicalization, how users interact with websites

Unit 7: Link building establishing authority: What are links, E-A-T, and links to your site, followed vs. no-followed links, Healthy link profile, Link building do's & don'ts, high-quality backlinks, Measuring and improving link efforts

Unit 8: Measuring and Tracking SEO success: Goal setting tips, Engagement metrics, Conversion rate, Time on a page, Pages per visit, bounce rate, search traffic, Google Analytics, Keyword rankings, Number of backlinks, Tools for SEO audit, SEO fixes, SEO planning & execution

Unit 9: Search Engine Marketing (SEM): Role of pay per click in website listing, how to run ads on Search Engines, Search Ad Networks, A/B Testing

Unit 10: Website Optimization: Before You Create a website: Digital Assets, Keyword Research, Choose Domain Name, Choose SEO Friendly Design (Mobile SEO).

After You Create a website: Add Content, Optimize Content, add a Sitemap, Integrated social media, Check Your Web Analytic.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO304.1	**Remember**	Choose best SEO practices to incorporate on a website & learn how to perform Keyword Research
CO304.2	**Understand**	Understand Search Engines & Ranking Concepts, Off-Page optimization, and implementation method
CO304.3	**Apply**	Make use of Pay Per click and other SEO techniques
CO304.4	**Analyze**	Analyse & Monitor SEO progress using free tools

Suggested Reading:

1. The Art of SEO: Mastering Search Engine Optimization 3rd Edition by Eric Enge, Stephan Spencer, and Jessie Stricchiola

2. SEO Fitness Workbook, 2017 Edition: The Seven Steps to Search Engine Optimization Success on Google Paperback, by Jason McDonald Ph.D.
3. Search Engine Optimization All-in-One for Dummies 3rd Edition by Bruce Clay

Semester	3	**Course Credits**	4	**Specialization**	Digital Marketing Specialization
Course Code	OMBDM 303			**Type**	Specialization Course
Course Title	Integrated Marketing Communication				

Course Description:

During this course, students will explore and understand the scope of marketing communications. More specifically, the module will introduce key terms, definitions, concepts, current theories, and practices used in Integrated Marketing Communications. It will explain the communication process and explore the use of the main promotional tools of advertising, public relations, sales promotion, direct marketing, event marketing, online marketing, and the science of what goes in the mind of people.

Course Objectives:

1) To analyze and respond appropriately to key issues in marketing communications within a given context;
2) To determine and evaluate marketing information required to plan and manage integrated marketing communications campaigns;
3) To analyze and evaluate data and present coherent recommendations that inform creative and effective marketing communications decisions;
4) To evaluate the applicability of academic/abstract models/theories/frameworks to contextualized marketing communications issues on contemporary media and communication strategies; and
5) To develop an application of literacy, the ability to deliver ideas, and concepts related with clarity, focus, and cogency via written work and oral means.

Course Outline:

Unit 1: Marketing and Marketing Communications Overview: What is Integrated Marketing Communications, The Key drivers of IMC, Creating the Pull and Push, The Principles of IMC, How IMC Plays a Role in the Overall Marketing Plan, The Features of IMC, The Five-Step IMC Planning Process, and Desired Outcomes of IMC?

Unit 2: The Communications Model: Communication models, The IMC Plan, IMC Planning Models

Unit 3: Fundamental IMC Decisions: Targeting Consumers and Prospects, Segmentation and Target Marketing, Defining the Target Audience, Behaviour Graphic Targeting, Forms of Behavioral

Segmentation, Psychographic Targeting, Demographic Targeting, Geographic Targeting, Positioning, Setting Marcom Objectives, Hierarchy of IMC Effect, Criteria for Setting IMC Objectives, IMC Budgeting.

Unit 4: Buying Behavior: Targeting Consumers and Prospects, Factors that Influence Buyer Behavior, Buying Motives, Buying Situations, Buying Process, Business Buyers, Participants in the Business Buying Process, Major Influences on Business Buyers, Organizational Buying/Purchasing/Procurement Process.

Unit 5: Message and Response: The Message, Message Strategies, Message Models, Means-End Chaining, Perception, Learning &Attitudes.

Unit 6: Brands: The Importance of Brands in the Market Today, What is a Brand? , What are the Benefits of Branding, Types of Brands, Brand Building, Situation Analysis, Brand Identity, Brand Identity Elements, Positioning, Verbal, Visual, Brand Personality, How IMC creates brands?

Unit 7: Participants in The IMC Process: The Organization or Company, Participants, Advertising Agencies, PR Agency, Event Management Company, Direct Marketing Agency/Digital Marketing Agency, Photographers, Production Company, Design Agency.

Unit 8: Planning the IMC Campaign: The Five-Step Model, Establishing the Budget.

Unit 9: IMC Tools – Advertising: Types of Advertising, Strategic Advertising Approaches, Creative Strategy, Effective Advertising, Media, Media Vocabulary, Which Medium should be Used?, Media Selection and Buying, New Media.

Unit 10: Public Relations & Corporate Communications: What is Public Relations?, Proactive Marketing Oriented Public Relations, Reactive Marketing Oriented Public Relations, Scope of PR, The Role of the PR Practitioner, Corporate Communications.

Unit 11: Web Marketing and Digital Marketing: Websites, Generating Website Traffic, Social Media, Mobile Marketing, Email Marketing, Web Vocabulary.

Unit 12: Sponsorships, Events, Exhibitions/Tradeshows/Expositions: Sponsorships, Events, and Exhibitions/Tradeshows/Expositions.

Unit 13: Packaging, Merchandising: Packaging, Product Design, Merchandising.

Unit 14: Direct Marketing & Sales Promotion: Direct Marketing, Database Marketing, Sales Promotion.

Unit 15: Other Tools of Communication: Product Placement, Word of Mouth, Customer Experience Management, Corporate Identity.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO303.1	**Remember**	Learn the integration of all marketing perspectives.
CO303.2	**Understand**	Understand the key issues in promotional campaigns.
CO303.3	**Apply**	Easily analyze the marketing information for integration.
CO303.4	**Analyze**	Develop skills in effective marketing communication.
CO303.5	**Evaluate**	Learn the integration of all marketing perspectives.

Suggested Reading:

1. Marketing Communications - An Integrated Approach by PA Smith & Jonathan Taylor
2. Advertising and Promotion, An IMC Approach by Shimp
3. Integrated Advertising, Promotion and Marketing Communications by Kenneth Clow, Donald Baack.

Semester	3	**Course Credits**	4	**Specialization**	Digital Marketing Specialization
Course Code	OMBDM 304			**Type**	Specialization Course
Course Title	Social Media Marketing				

Course Description:

Social media marketing is a powerful way for businesses of all sizes to reach prospects and customers. Customers interact with brands through social media, and if you are not speaking directly to your audience through social platforms like Facebook, Twitter, Instagram, and Pinterest. Great marketing on social media can bring remarkable success to businesses, creating devoted brand advocates, and even driving leads and sales. This course lays the foundation for social media marketing. You will learn how to select a social media channel that fits your needs, set goals and success metrics, and determine who your target audience is.

Course Objectives:

1) To understand the major social media platforms, how they function, and what role they play in marketing
2) Create SMART goals, identify KPIs, and define your target audience and their customer journey.
3) Choose the right social media platforms and learn how to create social media policies.

Course Outline:

Unit 1: Introduction: Introduction to Social Media Marketing, what is social media, the importance of social media, history of social media marketing

Unit 2: Types of Social Media Marketing Platforms: Microblogging (Twitter, Tumblr), Photo sharing (Instagram, Snapchat, Pinterest), Social networking (Facebook, LinkedIn, Google+), and Video sharing (YouTube, Facebook Live, Periscope, Vimeo).

Unit 3: Social Media Optimization: Key Concepts, Business Profile Creation, Brand Awareness, Social Engagement, Viral Marketing,

Unit 4: Facebook Marketing: Introduction to Facebook Marketing, Facebook Profiles, Facebook Places, Facebook Groups, Facebook Community, Adverts, Campaign, Do's & don'ts of Facebook, Facebook Apps

Unit 5: Twitter Marketing: Introduction, Driving traffic, Monitor brand, Platform, and usage

Unit 6: Instagram Marketing: Understanding Instagram and its basic algorithm, account setup, the difference between different accounts, advertising on Instagram, marketing through stories and hashtags, using analytics, video broadcasting

Unit 7: Video Marketing: Video Marketing, YouTube, Vimeo, Dailymotion, Ranking Factors of a Video, Increase Subscribers and Views, Promote Your Video Ads.

Unit 8: Email Marketing: Introduction to email marketing, Challenges and Solutions, Types of emails, email marketing metrics, Do's, and Don'ts.

Unit 9: Monitoring Social Media Accounts: SMO at Various Levels, Tools to Measure Your Popularity, Traffic, Analytics, and Statistics.

Unit 10: Best Practices for Different platforms: Different social media platforms and their impact on business, best practices, and keeping with trends. Case Study.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO304.1	**Remember**	Choose effective social media marketing strategies for various types of industries and businesses.
CO304.2	**Apply**	Identify the major social media marketing portals that can be used to promote a company, brand, product, service, or person.
CO304.3	**Evaluate**	Evaluate a company's current situation, isolate social media issues and provide solutions by identifying appropriate social media marketing portals to influence consumers and improve the company's reputation
CO304.4	**Create**	Create a social media marketing plan and track progress in achieving goals with a variety of measurement tools, services, and metrics

Suggested Reading:

1. Likable Social Media by Dave Kerpen
2. Audience: Marketing in the Age of Subscribers, Fans & Followers by Jeffrey Rohrs
3. The Art of Social Selling by Shannon Belew

Semester	3	**Course Credits**	4	**Specialization**	Digital Marketing Specialization
Course Code	OMBDM 305			**Type**	Specialization Course
Course Title	Emerging Trends in Information Technology				

Course Description:

Technology is ever-evolving, every day something new is being developed or is on the verge of development, and so is the case of information technology. The Latest Trend in Information Technologies are Cloud Computing, the Internet of Things (IoT), Big Data, Cyber Security, Context- Rich Systems, Increased Automation, continued mobile pervasiveness, Web-Scale IT, and 3D printing. By learning the course students will be able to understand the various terms related to information technology.

Course Objectives:

1) To make students aware of the changes in technologies, applications, and Systems around us.
2) To use the current trends and technologies as per the demand.
3) To understand the day-to-day growth in information technology; and
4) Ensure students use the currents trends while performing their activities

Course Outline:

Unit 1: E-Commerce: Overview of E-Commerce, Models of E-Commerce, Scope of E-Commerce, Advantages, and Disadvantages of E-commerce, Creation of E-Commerce Sites BPR & E-Commerce, Ethics & E-Commerce.

Unit 2: M-Commerce: Overview of Mobile-Commerce attributes of M-Commerce, Drivers of M-Commerce, M-Commerce Security Issues, and Separating Mobile Commerce from Electronic Commerce, Applications of M-Commerce.

Unit 3: Customer Relationship Management: Marketing Management, Marketing Strategy, Service Management, Business Process Outsourcing, and Business Continuity Plan.

Unit 4: E-Banking: What is E-Banking? Advantages of E-Banking, Securities in E-Banking, Electronic Payment System, Services Provided in E-Banking, Electronic Clearing System.

Unit 5: E- Logistics: What are E-Logistics, Logistics & Supplier Chain Management, Warehousing Management, and Transportation/Distribution Management?

Unit 6: E-Learning: Features of e-Learning (Advantages), e-Learning Models, Different Types of Learning, e-Learning Tools and Technologies, and Standards for e-Learning.

Unit 7: GIS: What is GIS?, Nature of Geographic Data, Spatial Objects & Data Models, Getting Map on Computers, GIS Standards &Standardization Process of GIS Development, Implementation and Deployment Phases.

Unit 8: Knowledge Management: Components and Type of Knowledge, Knowledge Management, Cycle &Knowledge Management Architecture, Knowledge Management Tools, Knowledge Management Approaches.

Unit 9: E-Governance and E- Agriculture: Challenges to E-Governance, Strategies, and Tactics for Implementation of E-Governance.

Unit 10: Biometric Technologies: RFID, Retina Scanning, Facial Reorganization, Fingerprint scanning, Hand geometry, DNA (Working principles) Application Area.

Unit 11: Enterprise Content Management: Process, Types of Content.

Unit 12: Social Networking: Types of Social Networking Sites, Niche Advantages of Social Networking Sites, Drawbacks of Social Networking Sites, Social Networking Sites for Business, Security Issues with Social Networking Sites.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO305.1	**Remember**	Learn the integration of all marketing perspectives.
CO305.2	**Understand**	Understand the key issues in promotional campaigns and know what goes in the mind of consumers.
CO305.3	**Apply**	Apply the strategies to survive in the market during competition.
CO305.4	**Analyze**	Easily analyze the marketing information for integration.
CO305.5	**Evaluate**	Exhibit emerging ideas and practices in the field of digital marketing.

Suggested Reading:

1. Management Information Systems: Managing the Digital Firm, 13/E, by Laudon/Laudon.
2. Reema Thareja, "Data Warehouse", Publisher: Oxford University Press.
3. Jiawei Han, Micheline Kamber, Jian Pei "Data Mining: Concepts and Techniques", 2nd Edition, Publisher: Elsevier/Morgan Kaufmann.

Semester	3	**Course Credits**	4	**Specialization**	Digital Marketing Specialization
Course Code	OMBDM 306			**Type**	Specialization Course
Course Title	Web Designing and Content Management				

Course Description:

This course will introduce students to a variety of methods for creating websites. They will learn the basic HTML, and basic CSS or Cascading Style sheets. In addition, this course provides information on how to work with graphics and dynamic web content and upload their sites to the web. The primary application used will be Adobe Muse.

Course Objectives:

1) Express knowledge of a variety of ways that websites may be developed.
2) Continue to demonstrate a progressive knowledge of Adobe Photoshop regarding image development. Know what it takes to create an art suitable for web publication.
3) Understand how to use HTML and CSS for basic web development. Know how to work the HTML and CSS within Dreamweaver and create pages with the use of Notepad.
4) Understand a variety of websites that are available and what makes each of them unique; and
5) Understand Adobe MUSE for web development.

Course Outline:

Unit 1: Internet and Web Technology: Computer Network Basics, Packet Switching, and TCP/IP, The Web, Basic Internet Tools, The Domain Name System, Cloud Computing, Web Apps.

Unit 2: Web &Hyper Text Markup Language (HTML): Web Architecture, Web Server, Types of Web Sites, Web Development Life Cycle, what is a Web Browser? HTML Introduction, Document Structure, Basic Tags of HTML, Creating First Web Page, Meta tags, Validating your HTML, Accessibility.

Unit 3: HTML: Formatting of Text, Links, Lists, HTML Images, and Tables.

Unit 4: HTML: Frames, Image Map, Forms.

Unit 5: Cascading Style Sheets: Three Ways to Insert CSS, About DOCTYPEs, Creating a CSS File, A Word about Fonts, Classes, A Better CSS Editor, ID-Based Styles, Styling Backgrounds, Styling Text, Styling Links, Styling Tables.

Unit 6: JavaScript: JavaScript Output, JavaScript Statements, JavaScript Variables, JavaScript Data Types , JavaScript Objects, JavaScript Operators, Conditional Statements, Loop Statements, Functions.

Unit 7: Introduction to PHP: Installing PHP, Testing PHP, Creating Your First Script, Embedding PHP within HTML, Comments, Variables, Data Types, Operators and Expressions, Constants.

Unit 8: PHP: Conditional Statements, Ternary Operator, Loop Statements, Activity, Strings, Arrays, Functions.

Unit 9: MySql: Relational Databases, Setting Up MySQL, Connecting to MySQL from PHP, Handling Errors.

Unit 10: Introduction to Content Management System: Essentials of A CMS, CMS Features and Functions, Types of CMS, Open-Source CMS, Commercial CMS, CMS, and Usability.

Unit 11: Building Websites Using Joomla: Installation, Working with Joomla! How to Create Joomla Articles, How to Link Articles in the Joomla Menu, How to Manage Article Categories, Joomla Component Page.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO306.1	**Remember**	Learn the ways to develop websites.
CO306.2	**Understand**	Understand the usage of creating pages with notepads.
CO306.3	**Analyze**	Grab knowledge to create art suitable for web publication.
CO306.4	**Create**	Develop a unique website through understanding the subject.

Suggested Reading:

1. Database Systems Concepts – by Korth
2. Programming with C Author: E. Balagurusamy
3. D. P. Sharma, Fundamentals of Computer, IT & Programming with "C" (CBC Publication).
4. V. Rajaraman, Fundamentals of Computers, PHI Publication.
5. Alexis Leon, Mathews Leon, Introduction to Computers, Leon Press.
6. E Balagurusamy, Fundamentals of Computers, TataMcGraw-Hill

Semester-IV Project 5Work

Semester	4	**Course Credits**	**8**	**Specialization**	NA
Course Code	OMBP-405			**Type**	Core Activity
Course Title	Project Work Report				

Project Work Description:

Significance of the Project Report: Many learners underestimate the significance of a project report and make a mistake of thinking that excellent marks can be scored by simply producing a good lay-out. This is fundamentally not the case as many projects are graded well below their potential because of an indifferent or poor write-up. In order to acquire the right balance, a learner should consider the aim behind making a good project. It provides the opportunity for a learner to demonstrate independence and originality, to plan and organize the project work, and to put into practice some of the techniques a learner has been taught throughout theprogram.

Meaning of a Project: The word project actually means something that comes before anything else is done. A project can be defined as a temporary endeavour undertaken to achieve a particular aim or it is a study of factual information for comprehending and applying the various concepts of the course into practice. In simple words, a project can be understood as a practice of verification or demonstration of concepts or processeslearnt.

Learners are allowed to take up any topic of their interest and choice for project work. It is also a technique of self-learning and learning by doing. It has a practical value. The purpose of the project is not to generalize but to study the situation with a practical orientation.

Complete guidelines for a project work proposal, guide, approval of the project, actually carrying project work, report writing, submission details will be provided by the Institute at the appropriatetime.

Semester-IV Marketing Management Specialization

Semester	4	**Course Credits**	**4**	**Specialization**	Marketing Management
Course Code	OMBM-401			**Type**	Specialization Course
Course Title	International Marketing (IM)				

Course Description:

International marketing is the export, franchising, joint venture or full direct entry of a marketing organization into another country. This can be achieved by exporting a company's product into another location, or entry through a joint venture with another firm in the target country, or foreign direct investment into the target country.

Course Objectives:

1) To consider the basic concepts of internationalmarketing.
2) To get an insight on the various activities necessary for international marketing planning, the beginning of international marketing activities to be conducted by a domestic firm, and relevant issues on strategy and marketing management relevant to expanded global operations;
3) To analyze the environmental variables that influence internationalmarketing;
4) To describe the strategies and tactics that can lead to successful international marketing given those environmentalconstraints;
5) To discuss the more typical management decisions and problems faced, highlighting those peculiar to the internationalarena.

Course Outline:

Unit 1: Scope & Size of International Markets: Introduction, Definitions, Reasons and Motivations Underlying International Trade and International Business, Exchange Rate & Balance of Payments, Basic Modes of Entry, Nature of International Marketing, World Trade: An Overview, India's Foreign Trade.

Unit 2: Conceptual Framework: Introduction, Global and Domestic Marketing.

Unit 3: Institutional Framework: Introduction, Institutional Bodies, Advisory Bodies, Commodity Organizations, Service Information, Government Participation in Foreign Trade, States Initiatives in Promoting Exports.

Unit 4: Cultural Environment: Introduction, Definition of Culture, Elements of Culture, Cultural

Analysis.

Unit 5: Political & Legal Environment: Introduction, Political Risk: A Definition, Assessing and Managing Political Risk, Management of Political Risk, International Marketing and the Legal Environment, The Development and Scope of International Law, Incoterms, World Trade Organization (WTO.)

Unit 6: Economic Environment: Introduction, World Trade: A Temporal Analysis, The Debt Problem, Major Developments in the International Economic Environment, IMF and World Bank, Regional Economic Groupings.

Unit 7: India's Export-Import Policy: Introduction, India's Exim Policy: A Backdrop, The Foreign Trade Regime: Analytical Phases and Changes Over Time, India's Exim Policy: Phases of Changes, Export Import Policy 2002-07: Objectives, General Provisions Regarding Imports and Exports, Promotional Measures, Duty Exemption/Remission Scheme, Export Promotion Capital Goods Scheme, EOUs, EPZs, EHTPs, STPs, Deemed Exports.

Unit 8: Export –Import Documentation: Introduction, Need, Kinds of Documents, Principal Export Documents, Auxiliary Documents, Documents in Import Trade, Export Documentation & Procedures– Step byStep.

Unit 9: International Product Policy and Planning: Introduction, International Product Life Cycle, International Product Policy, Standardization vs. Adaptation, Planning the International Product Mix, Branding, Labelling, Packaging and Product Warranties and Services.

Unit 10: International Advertising: Introduction, International Advertising Strategy, Standardization or Adaptation, Elements of Advertising Strategy, Media Strategy, Advertising Agency, International Advertising Scene.

Unit 11: International Pricing Policy: Introduction, Components of Price, The Process of Price Selling, Pricing in International Market, Information for Pricing Decisions, Sources of Price Information, Issues in International Pricing, Trade Finance in India

Unit 12: International Distribution & Sales Policy: Introduction, International Distribution Channels, International Distribution Policy, Selecting Distribution Channels and Channel Members, International Physical Distribution Management.

Unit 13: International Market Selection: Introduction, Factors influencing international Market Selection, The Process of Market Selection, SomeStrategies.

Unit 14: International Marketing Research: Introduction, Marketing Research: The Global Scene, The Scope of International Marketing Research, International Marketing Research Procedure, Techniques of International Marketing Research, Survey Research, Techniques of International Marketing Research, Analysis of Filed Data, Preparation of Research Report.

Unit 15: International Marketing Planning & Control: Introduction, Developing an International Marketing Plan, Issues in Framing International Marketing Plan, Organization of International Marketing, Framework for International Marketing Planning, International Marketing Control, Control Sequence.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO401.1	**Remember**	Learn marketing activities for international trade and practices.
CO401.2	**Understand**	Understand the basic concepts of international marketing.
CO401.3	**Apply**	Manage international policy and planning.
CO401.4	**Analyse**	Analyse the environmental factors to influence international marketing.
CO401.5	**Evaluate**	Exhibit the strategies and tactics successfully.

Suggested Reading:

1. Theodore Levitt, 'The Globalization of Markets', Harvard Business Review, 1983, May– June.
2. Peter Buckley and Pervez Ghauri, 'Globalization, Economic Geography and Multinational Enterprises', Journal of International Business Studies,2004
3. FiratFuat, 'Educator Insights: Globalization of Fragmentation – A Framework for Understanding Contemporary Global Markets', Journal of InternationalMarketing.
4. Borderless Management: Companies Strive to Become Truly Stateless', BusinessWeek, 23 May1994.
5. David A. Ricks, Blunders in International Business (Cambridge, Mass.: Blackwell Publishers,1993).

Semester	4	**Course Credits**	**4**	**Specialization**	Marketing Management
Course Code	OMBM-402			**Type**	Specialization Course
Course Title	Integrated Marketing Communication (IMC)				

Course Description:

During this course, students will explore and understand the scope of marketing communications. More specifically, the module will introduce key terms, definitions, concepts, current theories, and practices used in Integrated Marketing Communications. It will explain the communication process and explore the use of main promotional tools of advertising, public relations, sales promotion, direct marketing, event marketing, onlinemarketing and science of what goes in the mind of people.

Course Objectives:

1) To analyze and respond appropriately to key issues in marketing communications within a givencontext.
2) To determine and evaluate marketing information required to plan and manage integrated marketing communicationscampaigns.
3) To analyze and evaluate data and present coherent recommendations that informs creative and effective marketing communications decisions.
4) To evaluate the applicability of academic/abstract models/theories/frameworks to contextualized marketing communications issues on contemporary media and communication strategies;and
5) To develop application of literacy, ability to deliver ideas, concepts and related with clarity, focus and cogency via written work and oralmeans.

Course Outline:

Unit 1: Marketing and Marketing Communications Overview: What is Integrated Marketing Communications, The Key drivers of IMC, Creating the Pull and Push, The Principles of IMC, How IMC Plays a Role in the Overall Marketing Plan, The Features of IMC, The Five Step IMC Planning Process, and Desired Outcomes of IMC.

Unit 2: The Communications Model & Fundamental IMC Decisions: Communication Models, The IMC Plan, IMC PlanningModels, Targeting Consumers and Prospects, Segmentation and Target Marketing, Defining the Target Audience, Behaviour Graphic Targeting, Forms of Behavioral Segmentation, Psychographic Targeting, Demographic Targeting, Geographic Targeting, Positioning, Setting Marcom Objectives, Hierarchy of

IMC Effect, Criteria for Setting IMC Objectives, IMCBudgeting.

Unit 3: Buying Behavior, & Message and Response: Targeting Consumers and Prospects, Factors that Influence Buyer Behavior, Buying Motives, Buying Situations, Buying Process, Business Buyers, Participants in the Business Buying Process, Major Influences on Business Buyers, Organizational Buying/Purchasing/ProcurementProcess. The Message, Message Strategies, Message Models, means– End Chaining, Perception, Learning &Attitudes.

Unit 4: Brands: The Importance of Brands in the Market Today, What is a Brand? , What are the Benefits of Branding, Types of Brands, Brand Building, Situation Analysis, Brand Identity, Brand Identity Elements, Positioning, Verbal, Visual, Brand Personality, How IMC creates brands?

Unit 5: Participants in The IMC Process and Planning the IMC Campaign: The Organization or Company, Participants, Advertising Agencies, PR Agency, Event Management Company, Direct Marketing Agency/Digital Marketing Agency, Photographers, Production Company, Design Agency. The Five-Step Model, Establishing the Budget.

Unit 6:Advertising: Types of Advertising, Strategic Advertising Approaches, Creative Strategy, Effective Advertising, Media, Media Vocabulary, Which Medium should be Used?, Media Selection and Buying, New Media.

Unit 7: Public Relations, Corporate Communications and Publicity:

What is a Public Relations? Proactive Marketing Oriented Public Relations, Reactive Marketing Oriented Public Relations, Scope of PR, The Role of the PR Practitioner, Corporate Communications. Sponsorships, Events, and Exhibitions/Tradeshows/Expositions. Packaging, Product design, Merchandising

Unit 8: Web Marketing and Digital Marketing: Websites, Generating Website Traffic, social media, Mobile Marketing, Email Marketing, WebVocabulary.

Unit 9: Direct Marketing, Sales Promotion, and Other Tools of Communication: Product Placement, Word of Mouth, Customer Experience Management, Corporate Identity

Unit 10: Neuromarketing: What is Neuromarketing? Neuromarketing and Science of Influence, Neuromarketing and IMC.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO402.1	**Remember**	Learn the integration of all marketing perspectives.
CO402.2	**Understand**	Understand the key issues in promotional campaigns.
CO402.3	**Analyse**	Easily analyse the marketing information for integration.
CO402.4	**Create**	Develop skill of effective marketing communication.

Suggested Reading:

1. Marketing Communications - An Integrated Approach by PA Smith & JonathanTaylor
2. Advertising and Promotion, An IMC Approach byShimp
3. Integrated Advertising, Promotion and Marketing Communications by KennethClow, DonaldBaack.

Semester-IV Human Resource Management Specialization

Semester	4	**Course Credits**	**4**	**Specialization**	Human Resource Management
Course Code	OMBH-401			**Type**	Specialization Course
Course Title	Strategic HR (SHR)				

Course Description:

This course contains the detail about the different HRM strategic methods of recruitment. This course is designed to identify the role of human resources; the processes, and activities used to strategically formulate and implement human resources objectives, practices, and policies to meet the short- and long-range organizational needs and opportunities; human resources contributions to organizational effectiveness.

Course Objectives:

1) To understand the role of human resources in formulating the strategies of the organization;
2) To learn the different HR strategy to develop the organization;and
3) To learn the policies for defining organizational needs andopportunities.

Course Outline:

Unit 1: Introduction to Strategic HRM: Definition, Need and Importance**,** Evolution of SHRM**,** Business and Corporate Strategies**,** Integrating HR with Business Strategies**,** Developing HR Plans andPolicies.

Unit 2: Introduction to Strategic HRM: Technology and Structure**,** Work Force Diversity**,** Demographic Shifts**,** Temporary Contract Labour**,** Global Environment of Business: New Paradigms for International**,** Global Sourcing of Labour**,** WTO and Labour Standards.

Unit 3: Strategic approach for Building HR: Influences on Staffing**,** Sources of Recruitment**,** Methods of Recruitment**,** New Approaches to Recruitment**,** Staffing Process: Recruitment and Selection Employees**,** Strategic Recruitment and Selection**,** Hiring is a Diverse Force.

Unit 4: Developing HR Strategy: Critical Areas, Planning and Managing HR Strategy Development, Strategy Issues, Implementing HR Strategy, Strategic Issues of Organizational Improvement, Internal Benchmarking, Strategic HR Programme, The Role of HR – MATRIX.

Unit 5: Strategic Approach to Human Resource Evaluation (HRE): Human Resource Evaluation–

Genesis, HRE- Definition & Overview, Rationale for HRE, Measures of HRM Performance, Approaches to HRE.

Unit 6: HR and Retention Strategies: Executive Education**,** Flexi Timing**,** Telecommuting**,** Employee Empowerment & Involvement**,** Autonomous Work Teams.

Unit 7: Training and Developing Strategies: Training as a Strategic Organizational Activity, Competency Mapping, Creating Learning Organizations, Multi Skilling, Succession Planning, Cross Cultural Training, Training Techniques.

Unit 8: Designing and Initiating Strategic HRM: Orientation of HRM**,** Pragmatic Steps for Implementation**,** Reorganizing the Personnel Function**,** Strategies in Action**,** HR Competencies**,** Diagnosing Needs**, and** Structuring HR.

Unit 9: Reward and Compensation Strategies: Performance Based Pay**,** Skill Based Pay**,** Team Based Pay**,** Profit Sharing**,** Executive Compensation**,** BroadBranding.

Unit 10: Measuring the Impact of Strategic HRM Strategies: Identification Consideration for Employee Needs**,** How Can HR Add Value**,** Benchmarking**,** Building Competitive Advantage**,** Predictions of Business Outcome, Alignment Through Organization Development.

Unit 11: Human Aspect of Strategic Implementation: Behavioral Issues in Strategic Implementation**,** Matching Culture with Strategic**,** Human Side of Mergers Acquisitions**,** Leadership Power and Policies**,** Employees Morale, Personal Values in Business Ethics**,** Development of HR as a Value Addition Function.

Unit 12: The Context of Strategic Change: Changing Business Environment, Changing Managerial Strategies, Cultural Changes**,** Resistance to Change, Facet of Change Management**,** Checklist of Managing Change

Unit 13: Managing HR in Merger and Down Sizing: Motive Behind Mergers Acquisition and Which is the Best, Macro Economic Factors Effecting Mergers, Why Alliance Take Place, Consideration for Mergers and Acquisition, Industry Determinants of the Mergers, Versus Alliances Discussion, Role of Human Resource Management in Mergers/Acquisition, Effects of Downsizing**,** Managing HR in Down Sizing.

Unit 14: Mentor Relationship: Perspective of Mentoring**,** Mentoring vs. Coaching, Training and Counselling**,** Roles of Mentors**,** Relationship– Formal- Informal Mentoring**,** Outcome of Mentoring Programmes**,** Barriers to Mentoring**,** Mentoring Relationships SHRM Approaches.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO401.1	**Remember**	Learn the policies to define organizational opportunities.
CO401.2	**Understand**	Understand the basic concepts of Strategic Human Resource Management.
CO401.3	**Apply**	Generate the opportunities of human resource into an organization.
CO401.4	**Analyse**	Develop an organization by learning strategies.

Suggested Reading:

1. Strategic Human Resource Management**Paperback**– byCatherine Truss, David Mankin, Clare Kelliher
2. Armstrong's Essential Human Resource Management Practice: A Guide to People Management (Paperback) by MichaelArmstrong

Semester	4	**Course Credits**	**4**	**Specialization**	Human Resource Management
Course Code	OMBH-402			**Type**	Specialization Course
Course Title	HR Audit (HRA)				

Course Description:

This course will give the understanding of HR Audit concept and knowledge. This course will help to evaluate the efficacy of present human resources in an organization.

Course Objectives:

1) To learn the concepts and framework of HRaudit;
2) To implement the knowledge of HR Audit in business development;and
3) To learn the concept of HRIS.

Course Outline:

Unit 1: Preface to HR Audit: Research Evidence for Good HR Practices Relating to Business Improvement**,** Impact of Good HR Practices: The Indian Experience, Linkages Between HRD Instruments, Processes, Outcomes and Organizational**,** Effectiveness**,** Elements for Good HRD: Need for Realignment**,** Approaches to Evaluate the HR Function and Its Impact.

Unit 2: HR Audit: Concept of HRD Audit**,** Why do companies want HRD Audit?**,**Role of HRD Audit in Business Improvement**,** Limitations of HRD Audit.

Unit 3: Linkages of HR Strategies With HR Audit: Challenges of a World Class Organization Due to Globalization**,** How to Create a World Class Organization?, HR Strategies at Corporate Level, HR Implications of Restructuring**,** HR Strategies in Service Sector**,** The Need for HRD in the Services Sector, Auditing HR Strategies**,** Linking Strategy Audit with the HRD Score Card.

Unit 4: Linkage of HR Styles and Culture With HR Audit: OCTAPACE Culture**,** Top Management Styles in Building Culture, Auditing HR Culture, Auditing the Styles of Top Management.

Unit 5: Linkage of HR Audit With HRD Structures: Current HR Structures and Structural Alternatives**,** Assessing the HRD Activities and their Relevance**,** Auditing HR Structure.

Unit 6: Linkage of HR Audit with HR Systems: HR Systems and Subsystems**,** A More Rationalized Systems Approach**,** Auditing HR Systems.

Unit 7: Linkage of HR Audit with HR Competencies: Challenges for HR Professionals**,** Myths and Realities Affecting HR Profession**,** Six Principles of HR Effectiveness, Competencies Needed by HR Managers**,** Auditing HRCompetencies.

Unit 8: HR Audit Methodology: Interviews**,** Observation**,** and Questionnaires

Unit 9: HRD Score Card and Audit Report: HR Systems Maturity**,** HR Competencies in the Organization**,** HR Culture and Values**,** HR Linkage to Business Goals**,** Writing the HR Audit Report.

Unit 10: Designing & Using HR Audit For Business Improvement: Who Should Conduct HR Audit?**,**Preparation of HR Audit**,** Role of CEO, Top Management, Line Managers, HR & Unions**,** Competencies and Qualifications of Auditors**,** Ethics & Values**,** How to Use HRAudit?

Unit 11: Human Resource Information Systems (HRIS): Concept of HRIS**,** Need of HRIS**,** Effectiveness of HRIS**,** Designing and implementing of HRIS**,** HRIS as a Tool**,** HRIS Leadership.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO402.1	**Remember**	Learn the process of human resource information system.
CO402.2	**Understand**	Understand the HR audit as a reward management.
CO402.3	**Apply**	Implement the knowledge of audit in business.
CO402.4	**Understand**	Understand the basic concepts of HR audit.

Suggested Reading:

1. HR Focus - May 2003: What Are the Top HRIS Issues in2003?
2. Davenport, T. H. (1998), "Putting the Enterprise into the Enterprise System" Harvard Business Review,July/August**.**

Semester-IV Finance Management Specialization

Semester	4	**Course Credits**	**4**	**Specialization**	Finance Management
Course Code	OMBF-401			**Type**	Specialization Course
Course Title	Project Finance and Budgetary Control (PFBC)				

Course Description:

This course will help you understand the "macro" big picture and "micro" line item context and trends of finance—as well as the mechanics of developing budgets. It will give the students the necessary tools to make sound financial decisions for your business Unit. Whether the goal is to stay on budget, increase overall cost savings or meet specific profitability targets, real-world exercises will help students become familiar with the standard financial documents, and use budget and estimating methods and tools more effectively. Specifically, they will review and discuss commonly used financial metrics to not only understand the numbers, but also to explore the not-so-obvious financial impacts of typical operating decisions and actions—from a project to organizationallevel.

Course Objectives:

1) To be able to describe the concept, components of project finance and linkagebetween planning, analysis and selection ofproject;
2) To know the key parties to project finance and the documentation process involved init;
3) To gain knowledge of sources of finance available forprojects.
4) To describe the strategies employed in managing risk;and
5) To be able to solve simplecases.

Course Outline:

Unit 1: Introduction to Project Finance: Characteristics of a Project, what is Project Finance? Essentials of Project Financing**,** Importance of Project Financing, Project Financing Structures**,** Project Financing in India**,** Key parties to a Project Financing**,** Key Documents in a Project Financing**,** Risks in ProjectFinancing.

Unit 2: Projects- Financial Structuring: Common Objectives of the Project**,** The Promoters Role**,** Capital Investment Decision**,** Investment Criteria.

Unit 3: Projects – Sources of Finance: Sources of Capital.

Unit 4: Project Financing- Cost of Capital: Introduction, Investors in a Project, Financing Decision, Definition of Cost Capital, Measurement of Cost of Capital, Cost of Debt, Cost of Equity, Cost of Retained Earnings, Weighted Average Cost of Capital (WACC), Financing Structure.

Unit 5: Projects - Market, Technical & Financial Feasibility: Market Feasibility, Technical Feasibility, and Financial Feasibility.

Unit 6: Financial Estimates and Projections: Objectives of Financial Statements, Users of Financial Statements, Profit & Loss Statement/Operating Statement, Balance Sheet, Funds Flow Statement, Cash Flow Statement, Ratio Analysis, Significance of Ratio Analysis, Limitations of Ratio Analysis.

Unit 7: Projects - Lenders' Appraisal: Financial Feasibility Analysis, Technical Feasibility Analysis, Economic Feasibility Analysis, Management Competency Appraisal, Risk Analysis by Lenders, Restrictive Covenants, Non- Recourse and Recourse Financing, why do Projects Fail?

Unit 8: Project Risk Analysis: Sources of Risk, Project Risk Identification, Operating Risk, Risk Management.

Unit 9: Financing Infrastructure Projects: Characteristics of Infrastructure Finance, Infrastructure Project Finance vs. Traditional Finance, New Approach for Infrastructure Projects, Infrastructure Project Finance– Advantages, Infrastructure Project Finance– Participants, Financing Mechanism, Steps in Infrastructure Project Finance, Risks, and Its Mitigation

Unit 10: Budgetary Control: Definition of Budgetary Control, Advantages and Limitations of Budgetary Control, Types of Budgets, Master Budget, On the Basis of Capacity, Preliminaries in the Installation of Budget System.

Unit 11: Standard Costing: Meaning of Standard Costing, Relation Between Budgetary Control and Standard Costing, Advantages of Standard Costing, Disadvantages of Standard Costing, Suitability of Standard Costing as a Management Tool, Relationship of Standard Costing and BudgetaryControl.

Unit 12: Variance Analysis: Material Variances, Labour Variances, Overhead Variances, Sales Variances.

Unit 13: Zero-Base Budgeting, Performance Budgeting: Basic Steps in the Implementation of Zero-Base Budgeting, Advantages of Zero Base Budgeting, Disadvantages of Zero Base Budgeting, Performance Budgeting, Steps in Performance Budgeting.

Unit 14: Capital Budgeting Methodologies: Meaning of Capital Budgeting, Capital Budgeting Methodologies.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO401.1	**Remember**	Learn the basic concepts of Project finance
CO401.2	**Understand**	Understand the documentation process pertaining to project finance.
CO401.3	**Apply**	Able to select a project by understanding the basic concept.
CO401.4	**Evaluate**	Differentiate risk and returns with strategic analyses.
CO401.5	**Analyse**	Grab the opportunities with available project.

Suggested Reading:

1. Projects- Planning, Analysis, Selection, Financing, Implementation and Review by Prasanna Chandra; Tata McGraw-Hill Publishing Co. Ltd. 7thEdition
2. Project Management by Bhavesh Patel; Vikas Publishing House Pvt. Ltd. Second Edition.
3. Financial Management by Ravi M. Kishore; Taxman Allied Services(P) Ltd. 6thEdition.
4. Banking Strategy, Credit Appraisal and Lending Decisions by Hrishikesh Bhattacharya; Oxford UniversityPress.

Semester	4	**Course Credits**	**4**	**Specialization**	Finance Management
Course Code	OMBF-402			**Type**	Specialization Course
Course Title	Insurance and Risk Management (IRM)				

Course Description:

Risk management course is of importance to business students expecting to deal with business and professional lives in the future. This subject is designed to introduce and discuss various risk management concepts, tools, and techniques in global context. Using integrated approaches, the course will emphasize discussion on the design and implementation of risk management practices. Basically, it purports to help students realize, understand, and master various state-of- the-art risk management theories and practices for their advancement in the future.

Course Objectives:

1) To provide a broad understanding of risk and insurance as a tool to manageit.
2) To form the foundation to facilitate the students for their further studies oninsurance.
3) To understand the principles of risk management andinsurance.
4) To be able to manage personal risks and deal effectively with the insurancemechanism.
5) To be able to analyze the issues and concerns pertaining to claims management and the documents requirement for putting up aclaim.

Course Outline:

Unit 1: Introduction to Insurance and Risk Management: Insurance Business Lines & Importance of Insurance, Distribution Channels of Insurance, History of Risk, Meaning and Definition, Risk and Insurability, Categories of Risk, Insurance as Risk Management Tool.

PART A. LIFE INSURANCE

Unit 2: Basic Elements of Life Insurance (Part A–Life Insurance): Life insurance-A Brief History, Needs and Advantages of Life Insurance, Concept of Life Insurance, General Principles of Life Insurance, Fundamental Principles of Life Insurance, Risk, Peril and Hazard.

Unit 3: Life Insurance Products: Term Insurance Plans, Whole Life Plans, Endowment Plans, Money Back Policies, Child Plans, Annuity Plans, Group Insurance, Unit Linked Insurance Plans (ULIPs), Riders, Needs and LifeInsurance.

Unit 4: Life Insurance Underwriting: Underwriting: Concept, Objectives & Principles, Medical Underwriting, Financial Underwriting, Underwriting Process, Classification ofLives, Assessment of Risk and Underwriting Decisions, Life Insurance Agent: Primary Underwriter, Individual & Group Underwriting: Comparison, Data Required for Underwriting, Occupational Ratings.

Unit 5: Channels of Distribution: Life Insurance is Sold, Not Bought, Traditional Distribution Channels, Individual Agent: The Main distributor, Advantages & Limitations of Traditional Distribution Channels, Multi-Distribution Channels: The Win-Win Relationship, Banc Assurance, Insurance Broking, Corporate Agent, Emerging Alternate Channels.

Unit 6: Life Insurance Claims Management: Meaning & Types of Life Insurance Claims, Claim Adjudicator's Concerns, Special Cases in Claims, Rider Claims, Claim Process: Steps, Foundation for Claim Settlement: Utmost Good Faith, IRDA & Grievance Redressal.

PART B. GENERAL INSURANCE

Unit 7: Basic Elements of General Insurance (Part B. General Insurance): History of General Insurance in India, Hazards, Insurance Contracts, Principle of Utmost Good Faith, Insurable Interest, Indemnity, Subrogation, Contribution, Doctrine of Proximate Cause, Marine Insurance–Principles.

Unit 8: General Insurance Products: Personal Insurance, Commercial Insurance, Industrial Insurance, and Liability Insurance.

Unit 9: General Insurance Claims: Claims Management in General Insurance- Issues & Concerns, Various Classes of General Insurance: Claims Procedure & Documentations, Marine Insurance Claims–Discussion of Legal Judgments.

PART C. RISK MANAGEMENT

Unit 10: Risk Management: Need & Process: The Need for Risk Management, Retirement Needs and Risk Management, Enterprise Risks: Need for Integrated Risk Management, Steps for Risk Management Process.

Unit 11: Non-Insurance Methods of Risk Management: Non-Insurance Methods of Risk Management, Risk Avoidance, Loss Control, Theories of Accident Causation, Risk Retention, Risk Transfer & Instruments of Risk Transfer, The Value of Risk Management.

Unit 12: Risk Management through Insurance Methods: Retirement Issues, Three Pillars of Retirement, Indian Annuity Market: Structure and Challenges, Retirement planning and Financing Strategies, Managing New Risks: Reinsurance, White Labeling& Government Actions, Employee Benefits, Employee

Health InsuranceBenefits.

Unit 13: Reinsurance: Reinsurance: Meaning, Definition and Concept**,** History of Reinsurance**,** Risk Distribution through Reinsurance**,** Risk Management Through Reinsurers**,** Benefits of Reinsurance**,** Categories of Reinsurance**,** Proportional Reinsurance**,** Non-Proportional Reinsurance: Excess of Loss (XL) Reinsurance**,** Transfer of Risks: From Insurers to Reinsurers.

PART D. INSURANCE REGULATIONS, CONSUMER SATISFACTION & BUSINESSETHICS

Unit 14: Government Regulation of Insurance Industry: Need for Regulation of Insurance Industry**,** The Legal Background of Insurance Regulation**,** Responsibilities of the Insurance Regulators**,** Regulations Concerning Insurance Intermediaries**,** Regulations Concerning Insurance Advertisements**,** Regulations for Consumer Protection**,** IRDA Regulations for Rural and Social Sector Obligations**,** Regulation of Rates, Expenses & ContractualWordings.

Unit 15: Consumer Satisfaction and Business Ethics: Consumer Satisfaction–Definitions and Analysis**,** Buying Indecisions, Consumer Dissatisfaction, Ethical Behaviour in Insurance**,** Insurance Ombudsman**,** Consumer Protection.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO402.1	**Remember**	Learn the basic concepts of insurance and risk management
CO402.2	**Understand**	Able to understand risk and insurance.
CO402.3	**Apply**	Grab the opportunities in insurance sector.
CO402.4	**Analyse**	Differentiate the personal risk and professional risk.
CO402.5	**Create**	Easily claim management and its documentation.

Suggested Reading:

1. Essentials of Insurance – A Risk Management Perspective: Emmett Vaughan, Therese Vaughan
2. Marketing Life and Health Insurance: Nancy E. Strickler; Life Management Institute
3. Marketing Financial Services: Donnelly/ Berry/ Thompson
4. Insurance New Product Introduction: Challenges & Solutions: Sanjaya Kumar, Muthu Subramanian, John Streatfeild; Viewpoint/Infosys Technologies;2007
5. The Economics of Insurance - How Insurers Create Value for Shareholders: Swiss Re,2001

Semester-IV Information and Technology (IT) Specialization

Semester	4	**Course Credits**	**4**	**Specialization**	Information Technology Management
Course Code	OMBI-401			**Type**	Specialization Course
Course Title	Software Project Management (SPM)				

Course Description:

This course will provide you with a working knowledge of creating projects using MS Project. It will also give you an idea about how to create project plans, create tasks and organize them, setup work resources and assigntasks.

Course Objectives:

1) Define the scope of software projectmanagement.
2) Distinguish software and other types of project development and various stages of a software project and role management;and
3) Problems and concerns of software projectmanagement.

Course Outline:

Unit 1: Software Project Management Framework: Project Attributes**,** Project Constraints**,** Features of Projects**,** Project Management Function, Defining Software Project Management**,** Umbrella Activities under Software Project Management, The Role of the Software Project Manager, Project Management Life Cycle, Project Closure.

Unit 2: Software Risk Management: Risk Management Process, Risk Management Planning, Common Sources of Risk for Information Technology Projects, Risk Management, Create a Risk Management Plan.

Unit 3: Software Cost Estimation Technique: Project Cost Management, Basic Principles of Cost Management**,** Resources Planning**,** Cost Estimating, Parametric Models, Cost Budgeting**,** Functional Point Analysis**,** Delphi Cost Model.

Unit 4: Software Time Estimation Technique: Organizing Information Before You Build a Timeline**,** Work Break Down Structure**,** Schedule Development.

Unit 5: Software Testing and Maintenance: Testing Principles, Verification & Validation, Testing Strategy, Level of Testing, Software Maintenance.

Unit 6: Software Configuration Management and Quality Assurance: Configuration Management, Configuration Management Plan, Software Quality Assurance, Software Quality Assurance Activities.

Unit 7: Software Quality Management: Quality Planning, Quality Assurance, Quality Control, Modern Quality Management, Improving Information Technology Project Quality, Maturity Models.

Unit 8: Team Management: Characteristics of Performance Management, An Effective Performance Management Process, Team Structure, Group Behavior, Stages of Group Development, Group Behavior Model, Intergroup Dynamics and Behavior, Team and Team working, Decision Making, Managing Customer Expectation.

Unit 9: Role of User in Project: Defining User Types, What is the Role of the End-User in IT Projects?, The Changing Role of the User in the Development of Application Software, Software Implementation, Implementation.

Unit 10: Communication Management: The Importance of Project Communications Management, Communications Planning, Information Distribution, Understanding Human and Individual Communications Needs, Performance Reporting, Suggestions for Improving Project Communications.

Unit 11: Software Release Management: Release Management Process Overview, Release Building, Acceptance Testing, Release Preparation.

Unit 12: Project Procurement Management: Procure Management Process, Tools and Techniques for Procurement Planning: Outputs from Procurement Planning, Requesting Seller Responses (Solicitation), Source selection, Contract Administration, Using Software to Assist in Project Procurement Management.

Unit 13: Implementation Management: Implementation Process, Deploy, Approaches of Project Implementation, Evaluating Project Success.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO401.1	**Remember**	Learn the scope of software management.
CO401.2	**Understand**	Easily learn the types of project development.
CO401.3	**Apply**	Differentiate problems and manage solutions.
CO401.4	**Analyse**	Learn the basic concepts of software project management.

Suggested Reading:

1. Release Management Process by Fermi NationalLaboratory
2. Schwalbe 2006, Information Technology Project Management,4th Edition, Thomoson Course Technology
3. Project Management Institution, 2004 Project Management Body ofKnowledge
4. Ian Summerville Software Engineering, 6th edition Pearson Education Asia,2001.
5. Ivan Jacobson, Grady Booch, James Rum Baugh: The Unified Software Development Process– Pearson Education 2007. M.A. Parthasarathy: PracticalSoftware
6. Estimation, Pearson Education,2007.
7. Steve MC Connell: Software Estimation, Demystifying the Black Art, MicrosoftPress, 2006.

Semester	4	**Course Credits**	**4**	**Specialization**	Information Technology Management
Course Code	OMBI-402			**Type**	Specialization Course
Course Title	Emerging Trends in Information and Technology (ETIT)				

Course Description:

The Latest Trend of Information Technologies is:Cloud Computing, Internet of Things (IoT), Big Data, Cyber Security, Context-Rich Systems, Increased Automation, continued mobile pervasiveness, Web-Scale IT, 3D printing. By learning the course students will able to understand the various terms related to informationtechnology.

Course Objectives:

1) To make students aware of the changes in technologies, applications and Systems around us.
2) To use the current trends and technologies as per thedemand.
3) Students will be able to understand the day-to-day growth;and
4) One can perform as per the newtrends.

Course Outline:

Unit 1: E–Commerce: Overview of E-Commerce, Models of E-Commerce, Scope of E- Commerce, Advantages and Disadvantages of E-commerce, Creation of E-Commerce Sites, BPR & E-Commerce, Ethics &E-Commerce.

Unit 2: M-Commerce: Overview of Mobile-Commerce attributes of M-Commerce, Drivers of M-Commerce, M-Commerce Security Issues, and Separating Mobile Commerce from Electronic Commerce, Applications of M-Commerce.

Unit 3: Customer Relationship Management: Marketing Management**,** Marketing Strategy**,** Service Management**,** Business Process Outsourcing**,** and Business Continuity Plan.

Unit 4: E-Banking: What is E-Banking? Advantages of E-Banking**,** Securities in E-Banking**,** Electronic Payment System, Services Provided in E-Banking**,** Electronic Clearing System.

Unit 5: E- Logistics: What is E-Logistics, Logistics & Supplier Chain Management**,** Warehousing Management, Transportation/Distribution Management.

Unit 6: E-Learning: Features of e-Learning (Advantages), e- Learning Models**,** Different Types of

Learning, e-Learning Tools and Technologies**,** Standards for e-Learning.

Unit 7: GIS: What is GIS?, Nature of Geographic Data**,** Spatial Objects & Data Models, Getting Map on Computers, GIS Standards &Standardization Process of GIS Development**,** Implementation and Deployment Phases.

Unit 8: Knowledge Management: Components and Type of Knowledge**,** Knowledge Management**,** Cycle &Knowledge Management Architecture**,** Knowledge Management Tools**,** Knowledge Management Approaches.

Unit 9: E- Governance and E- Agriculture: Challenges to E–Governance, Strategies and Tactics for Implementation of E–Governance

Unit 10: Biometric Technologies: RFID**,** Retina Scanning**,** Facial Reorganization**,** Fingerprint scanning**,** Hand geometry, DNA (Working principles) Application Area.

Unit 11: Enterprise Content Management: Process**,** Types of Content.

Unit 12: Social Networking: Types of Social Networking Sites, Niche Advantages of Social Networking Sites, Drawbacks of Social Networking Sites, *Social* Networking Sites for Business, Security Issues with Social Networking Sites

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO402.1	**Remember**	Learn the laws and regulation of information technology
CO402.2	**Understand**	Learn changes in technology and applications.
CO402.3	**Apply**	Able to use current trends and technology.
CO402.4	**Analyse**	Exhibit the level of growth.
CO402.5	**Create**	Perform the task as per the latest trends.

Suggested Reading:

1. Multimedia Communications: Applications, Networks, Protocols and Standards, Fred Halsall, Addison WesleyPublications.
2. Multimedia Communications: Protocols and Applications, Franklin F Kuo, J.Joaquin Garcia, Wolf Gang Effelsberg, Prentice HallPublications

3. E-Commerce: Implementing Global Marketing Strategies by Bohdan O.Szuprowicz.
4. Electronic Commerce: Opportunities and Challenges by Syed Mahbubur Rahman, MaheshRaisinghani
5. J. Schiller, "Mobile Communications", Addison Wesley,1999
6. D. Johnson, D Maltz, "Protocols for Adaptive Wireless and Mobile Networking", IEEE Personal Communication, 3(1), February 1996
7. R. Caceres, L. Iftode, "Improving the Performance of Reliable Transport Protocols in Mobile Computing Environments", IEEE J. Selected Areas of Communications, June1995

Semester-IV Project Management (PM) Specialization

Semester	4	**Course Credits**	**4**	**Specialization**	Project Management
Course Code	OMBP-401			**Type**	Specialization Course
Course Title	Quantitative Methods in Project Management (QMPM)				

CourseDescription:

This course reviews descriptive statistics, exploratory data, and probability distributions. We will then examine the theory and methods of statistical inference, emphasizing those applications most useful in modeling business problems. Topics include sampling theory, estimation, hypothesis testing, linear regression, analysis of variance, and several advanced applications of the general linearmodel.

Course Objectives:

1) Conduct a comparative evaluation of quantitative, qualitative, experimental, and survey researchmethods.
2) Design research based upon the research question andconstraints.
3) Conduct descriptive and inferential statistical analysis using varioustests.
4) Generate research questions and use statistical tools learned in the class to answer the questions.

Course Outline:

Unit 1: Quantitative Methods in Project Management: The History of Statistics & Operations Research**,** Nature of Statistics & Operations Research**,** Operations Research Approach to Problem Solving**,** Methodology of Operations Research**,** Applications of Quantitative Methods inProjects.

Unit 2: Data Presentation using Tables & Charts: Statistics for Projects**,** Classification of Data, Tabulation of Data**,** Graphical Presentation of Data**,** Good & Bad Data Presentation.

Unit 3: Properties of Numerical Data: of Central Tendency, Measures of Dispersion.

Unit 4: Correlation Analysis: Covariance and Correlation in Projects**,** Correlation Analysis using Scatter Plots**,** Karl Pearson's Coefficient of Correlation**,** Spearman's Rank Correlation Coefficient.

Unit 5: Simple and Multiple Regressions: Simple Regression Analysis**,** Multiple Regression Analysis**,** Assessing the Regression Equation.

Unit 6: Probability: Notation and Terminology from Set Theory, Addition Theory of Probability, Conditional Probability, Multiplication Theory of Probability, Applications of Bayes'Theorem.

Unit 7: Probability Distribution: Random Variables and Their Functions in Projects, Probability Distributions for Project Managers, Binomial Distribution, Poisson Distribution, Normal Distribution, The "S" Curve

Unit 8: Estimation and Sampling Distributions: Point Estimation for Population Parameter, Interval Estimation for Population Parameter, Law of Large Numbers and the Central Limit Theorem, Standardized Sampling Distributions, Confidence Intervals, Determination of Sample Size.

Unit 9: Parametric Hypothesis Testing for Projects: The Type 1 and Type 2 Error, Interval of Acceptance, Testing for the Validity of the Hypothesis, Large Sample Test for Population Mean, Small Sample Test for Population Mean, The Comparison of Two Populations, Analysis of Variance.

Unit 10: Non-Parametric Hypothesis Testing for Projects: Runs Test for Randomness of Data, Mann-Whitney U Test, Wilcoxon Matched-Pairs Signed Rank Test, Kruskal-Wallis Test, Spearman's Rank Correlation, Chi SquareTests.

Unit 11: Linear Programming Problem (LPP): Variables, Constraints, Linear Programming–Formulation, Graphical Solutions to LPP, Simplex Solutions to LPP, Transportation Models as Special Case of LPP, Assignment Models as Special Case of Transportation Models.

Unit 12: Single Server Queuing Theory: Analyzing Queuing Process, Constituents of Queuing System, Service Facility, Queuing Discipline, Kendall Notations, Applications of Single Server Model in Projects.

Unit 13: Monte Carle Simulation: Simulation Procedure, Applications of Simulation in Projects.

Unit 14: Games Theory: Fundamental Principles of Game Theory, Reducing by Dominance, Saddle Point, Strictly Determined Game, Mixing Strategies, Flow of Solution, Assumptions for Games Theory, and Applications of Games Theory in Projects.

Unit 15: Decision Theory: Decision-making Process, Decision Making under Certainty, Decision Making under Uncertainty, Decision Making under Risk, Decision Tree.

Unit 16: Six Sigma for Project Management: Six Sigma Methodologies, meaning of 3.4 Defective Parts per Million, Six Sigma and Process Capability, Quality Function Deployment, Validating the Quality Function Deployment Analysis.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO401.1	**Understand**	Understand various tools to test statically analyses.
CO401.2	**Analyse**	Able to generate research questions for testing.
CO401.3	**Apply**	Easily conduct a comparative evaluation of research methods.
CO401.4	**Create**	Able to design research questions and constrains.

Suggested Reading:

1. Quantitative Methods in Project Management – John C. Goodpasture – J. Ross Publishing,Inc.
2. A Guide to the Project Management Body of Knowledge (PMBOK Guide) — 2000 Edition, Project Management Institute, Newtown Square,PA.
3. Good Pasture, John C., Managing Projects for Value, Management Concepts,Vienna, VA,2001.
4. Downing, Douglas and Clark, Jeffery, Statistics the EasyWay, BarronsEducational Series, Hauppauge, NY,1997.
5. Operations Research: Theory and Applications – J. K. Sharma - Macmillian Operations Research: Problems and Solutions – J. K. Sharma –Macmillian
6. Business Statistics – Naval Bajpai – PearsonEducation
7. Statistical Methods – S.P.Gupta
8. Statistics for Management – Levin and Rubin – PearsonEducation
9. Statistics for Business – Stine and Foster – PearsonEducation

Semester	4	**Course Credits**	**4**	**Specialization**	Project Management
Course Code	OMBP-402			**Type**	Specialization Course
Course Title	Project Quality Management (PQM)				

Course Description:

This course reviews descriptive statistics, exploratory data, and probability distributions. We will then examine the theory and methods of statistical inference, emphasizing those applications most useful in modeling business problems.

Course Objectives:

1) Examine the roles of business process and project quality management in an organizationalculture;
2) Identify the benefits of common continuous qualityapproaches;
3) Comprehend and apply quantitative methods for qualityimprovements;
4) Evaluate and recommend best practices for implementing project qualitymanagement;
5) Demonstrate an understanding of business process and project quality management;and
6) Identify industry standards and best practices used in business process and project quality management.

CourseOutline:

Unit 1: Project Quality Management: Evolution of Project Quality Management, Need of Project Quality Management**,** Understanding Quality in Project Management**,** Brief View of Quality, Benefits ofQuality.

Unit 2: Concept of Project Quality: Project Quality Management Process, Project Statement, Elements of the Project Statement, The Concept Phase.

Unit 3: Project Quality Initialization: Customer Satisfaction**,** Define Team Operating Principle**,** Developing and Adapting Quality Policy**,** Manage Project Team, Roles and Responsibilities in Project**,**Stakeholders.

Unit 4: Quality Management at Different Stages of Project: The Traditional Approach**,** Project Phases**,** Phase to Phase Relation**,** Process and Procedure**,** Issues in Management Procedure**,** Project Control Systems.

Unit 5: Progression of Quality and Its Current Application to Project: Customer and System, Scientific Management System, Introduction to Japanese Quality System, Continuous Improvement

Program (Kaizen), Training, Development and Leadership.

Unit 6: Tools for Managing Project Quality: Collecting and Understanding Project Data**,** Tools for Collecting Data, Tools for Understanding Data**,** Representing & Scheduling Techniques**,** Histogram, Graph**,** and ParetoChart.

Unit 7: Formulating Project Process: Analyzing Project Process**,** Tools and Techniques for Understanding Process**,** Flow Chart, Control Chart**,** Run Chart**,** Cause and Effect Diagram.

Unit 8: Project life Cycle and Organization: Project Life Cycle- Overview**,** Distinctive Factors of Project Life Cycle**,** Various Project Phases**,** Organization Structure.

Unit 9: Quality Management Systems: Quality Planning**,** Quality Assurance**,** Quality Control**,** Role of Inspection**,** Improvement Methodology.

Unit 10 Project Risk Management: Definition of Risk Management, Types of Risk**,** Decision- Making Under: Certainty, Risk and Uncertainty**,** Risk identification**,** Qualitative Risk Analysis**,** Quantitative Risk Analysis**,** Risk Management Methodology.

Unit 11: Total Quality Management: Quality Management Plan**,** Primary Elements of TQM, Quality Planning, Quality and Responsibility**,** Implementing Steps for TQM**,** Characteristics of Successful TQM Planning.

Unit 12: Project Closure: Project Participation**,** Acquire and Develop the Project Team**,** Enable Program Capability**,** Collect and Share Project Closure Lessons**,** Identify and Reward Project Participators.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO402.1	**Remember**	Learn the best practices used in business process.
CO402.2	**Understand**	Develop the skills of quality improvement.
CO402.3	**Create**	Easily identify the benefits of quality approach.
CO402.4	**Apply**	Examine project quality management into organization.

Suggested Reading:

1. Project Quality Management By RoseKenneth
2. A Guide to Passing Operations, Project and Quality Management By RigardSteenkamp
3. Project Management and Product Development By BlantonGodfrey
4. Total Quality Through Project Management ByLeavitt,Philip
5. Reward Management By Armstrong andMicheal
6. Strategic Reward Management By Robert , HenryM

Semester-IV Operations Management (OM) Specialization

Semester	4	**Course Credits**	**4**	**Specialization**	Operations Management
Course Code	OMBO-401			**Type**	Specialization Course
Course Title	Work System Design (WSD)				

Course Description:

Work System Design deals with the systematic examination of the methods of doing work with an aim of finding the means of effective and efficient use of resources and setting up of a standard of performance for the work being carried out. The systematic examination of work involves what is done and how it is done. As well as what is the standard time to do the work. This is required to have an in-depth analysis of all the elements, factors, resources, and relationships affecting the efficiency and effectiveness of the work being studied. The course also aims at scientifically establishing the time required for a qualified worker to carry out a work element at a defined rate of working. Ergonomic aspects of work system design are also included in the course contents. The scope of this course is not only limited to the manufacturing applications, but it is also relevant for service sectorindustry.

Course Objectives:

1) The student should be able to document information system requirement and propose an information system design for a realorganization.
2) The student should be able to understand and implement the proper structure of work system what they learn;and
3) Learn the problem-solving techniques and operations analysis which will be useful to create a proper and appropriate work environment.

Course Outline:

Unit 1: Introduction to Work System Design: Definition of Work System, Special Cases, Work System Framework, Work System Life Cycle Model, Work System Method, A Problem- Solving Approach, Work Design & Productivity, Productivity Models, Models of National Economy, The WorkplaceDesign.

Unit 2: Problem-Solving Tools: Exploratory Tools, Recording and Analysis Tools, Quantitative Tools**,** Worker MachineRelationship.

Unit 3: Operations Analysis: Operations Purpose, Part/Product Design, Specification and Tolerance, Manufacturing and Process Sequencing, Setup and Tools, Material Handling**,** Work Design.

Unit 4: Design of Manual Work, Workplace, Equipment and Tools: Anthropometry & Design, Principles of Work Design, Principles of Workplace Design, Principles of Machine and Equipment Design, Principles of Tool Design, Cumulative Trauma Disorders (CTD.)

Unit 5: Design of the Work Environment: Impact of Temperature, Role of Ventilation, Noise and Its Impact, Lighting, OHSAS 18001:2004.

Unit 6: Design of Cognitive Work: Information Theory, Human Information Processing Model, Perception and Signal Detection Theory, Coding of Information: General Design Principles, Display of Visual Information, Display of Auditory Information, Environmental Factors, Dissociating the Signal from Noise, Human Computer Interaction: Hardware Considerations, Pointing Devices**,** Human Computer Interaction: SoftwareConsiderations.

Unit 7: Anthropometry & Work Design: Using design Limits, Avoiding Pitfalls in Applying Anthropometric Data, Solving a Complex Sequence of Design problems, Need for Indian Anthropometry, Guidelines for Design Use, Percentile Selection for Design Use, Use of Average, Concept of Male-Female Combined Data for Design Use, PracticalApplications.

Unit 8: Muscular System and Work: Characteristics of Health Problems, Basic Risk Factors for the Development of Musculoskeletal Disorders, Factors Contributing to theDevelopment to Musculoskeletal Disorders, Factors to be Considered in Prevention, Guidance on Main Risk Factors, Basic Rules for Preventive Actions inPractice.

Unit 9: Thermal Environment: Physiological Measurements, Thermal Balance, Thermal Indices**,** Heating Systems.

Unit10: Standard Data and Formulas: Standard Time Data Development, Tabular Data, Using Nomograms and Plots, Formula Construction from Empirical Data, Plot Data and Compute Variable Expressions, Analytical Formulas**,** Standard Data Usage.

Unit11: Occupational Noise Environment: The Risk Factor and Its Health Outcome, Health Outcomes to Include in the burden of Disease Assessment, Exposure Indicator, Estimating Relative Risks for Health Outcomes, By Exposure Level, Estimating the Attributable Fraction and the Disease Burden, Uncertainty in Exposure Estimates¸ Policy Implications.

Unit 12: Occupational Vibrations: Vibration**,** whole-body, Vibration Measurement, Vibration Limits,

Identification of Risks Areas, Vibrations Prevention and Control, Vibration Control in the Working Environment, Vibration MeasurementSystem.

Unit 13: Creating High Performance Work System: Principle of Shared Information and Knowledge Development, The Principle of Performance- Reward Linkage and Egalitarianism, Anatomy of High-Performance Work Systems, Fit it all Together, Implementing the System, Navigating the Transition to High-Performance Work Systems, Outcomes of High-Performance Work Systems.

Unit 14: Workstation, Work Study and Ergonomics: Method Study, Charts and Diagram used in Method Study, Occupational Overuse Syndrome, Job Design**,** Work Measurement.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO401.1	**Remember**	Recall problem solving tools.
CO401.2	**Understand**	Easily understand document information system.
CO401.3	**Apply**	Implement the proper structure of work system.
CO401.4	**Analyse**	Learn the work system for operational activity.
CO401.5	**Apply**	Use problem solving techniques and operation.

Suggested Reading:

1. Genesca, G.E.; Grifell, T. E. (1992) "Profits and Total Factor Productivity: A Comparative Analysis". Omega, the International Journal of Management Science 20 (5/6):553–568
2. Gollop, F.M. (1979). "Accounting for Intermediate Input: The Link Between Sectoral and Aggregate Measures of Productivity Growth". Measurement and Interpretation of Productivity, (National Academy of Sciences)
3. Kendrick, J.W. (1984). Improving Company Productivity, The Johns Hopkins University Press
4. Kurosawa (1975), "An aggregate index for the analysis of productivity", Omega 3 (2): 157–168
5. Loggerenberg van, B.; Cucchiaro, S., (1982), "Productivity Measurement and theBottom Line", National Productivity Review 1 (1): 87–99
6. Pineda, A. (1990). A Multiple Case Study Research to Determine and respond to Management Information Need Using Total-Factor Productivity Measurement (TFPM). Virginia Polytechnic Institute and StateUniversity
7. Resnick, M. L., Zanotti, A. (1998). Using ergonomics to target productivity improvements.

Computers and Industrial Engineering,33,1-2.

8. Saari, S. (2006), "Productivity, Theory and Measurement in Business" (PDF), Espoo, Finland: European ProductivityConference
9. Saari, S. (2006a). Productivity, Theory and Measurement in Business, Productivity Handbook (In Finnish), MIDO OY, pp. 272
10. Wells, M (2000) Office clutter or meaningful personal displays: The role of office personalization in employee and organizational well-being. *Journal of Environmental Psychology*, 20,3

Semester	4	**Course Credits**	**4**	**Specialization**	Operations Management
Course Code	OMBO-402			**Type**	Specialization Course
Course Title	Technology Management (TM)				

Course Description:

This course guides senior undergraduates through the technology development process and is intended to appeal to those interested in the evolution, managing technology-oriented firms, creating technology-driven start-ups, or consulting to such firms. Students will understand how to better select technological opportunities and understand organizational challenges that prevent these technologies from being successful. The class consists of case studies, and storytelling amongstudents.

Course Objectives:

1) Develop an awareness of the range, scope, and complexity of technological innovation and the issues related to managing technologicalchange;
2) Understand different approaches to managinginnovation;
3) Clearly identify drivers and barriers to technological innovation within anorganization; and
4) Understand what it takes to manage technologicalinnovation.

Course Outline:

Unit 1: Introduction to Technology: Concept and Meaning of Technology, Nature of Technology, History of Technology, Management of Technology, Types of Technology, Impact of Technology on Society and Business.

Unit 2: Nature of Technological Change: Concept of Technological Change, Inventions, Life Cycle of Technology, Technological Progress, Technological Transition.

Unit 3: Economics of Technology: The Link to Economic Prosperity, Cost of Capital, How Firms Can Improve Their Economic Performance, Opportunity Costs and Technology, Technology Investment Decisions by the Private Sector, Tax Policy of Government and Investments in R&D by Private Enterprise, Uncertainty and Technology, Government Policies and Technology Changes, Technology and Individual Income, Economies of Scale and Technology, Production Possibilities Curve, Case study of Digital Fabrication Technology.

Unit 4: Technology and Competition: Using Technology to Stay Competitive, Product, New Product

Development, New Product Review System, Product Design, Modern approaches to Design & Development, Case study (Technology and Competitiveness), Government Policies and Technology Improvements

Unit 5: Technology Forecasting: Technology Monitoring, Technology Forecasting, Technology Forecasting Tools, Technology Roadmaps, Morphological Analysis and Relevance Tree, Mission FlowDiagram.

Unit 6 Technology Assessment: Choice of Technology, Choice of Technology at National level, Market Forces and Technology Choice, Points of Consideration for Choice of Manufacturing Technology, Technology Leadership, Technology Acquisition, Innovation and Creativity, Management ofInnovation.

Unit 7 Technology Strategy: Strategy, Hunger and Wheelan's Strategy Formulation Model, Setting of Strategy, Strategic Plan, Technological Strategy, Business Driven Technological Strategy, Technology Crisis – A Case Study.

Unit 8: Diffusion and Adoption of Technology: Technology Diffusion, Technology Adoption, The Role of Social Systems in Diffusion, Diffusion of New Technology, Rate of Technology Diffusion, Need-Based Diffusion Strategies, Case Study – Diffusion of "Face Book."

Unit 9: Technology Transfer: Technology Transfer, The Technology Transfer Framework, Reconfiguration of Technology, The Ideal Technology Selection Process, Assessing the Appropriateness of a Technology, Risk in Technology Transport, Outsourcing, Technology sourcing, Process of Technology Transfer.

Unit 10: Managing New Technologies: New Technologies, Emerging Technologies, Evaluation of Emerging Technology, Implementing Emerging Technology, Managing Lead Time for New Technology, TechnologyPartnerships.

Unit 11: Technology and Human Resource: Technology Integration, Technology Integration in Education, The Growing Importance of Technology, Human Resource and Technology, Impact of Technology on HR, Psychology and Technology, Internet Addiction– A Case Study, Resistance to Change, Technology and OrganizationalStructure.

Unit 12: Social Issues of Technology: Impact of Technology on Society, Effect of Technology on Children, Social Impact of Computers, Technology for Social Control, Technological Change and Employee Relations in India, Technology and Environment.

Unit 13: Technology Management in Indian Industries: Current Trends, Current Position of Indian

Software Industry, Technology in Indian Railways, L&T, Infosys, Indian Government's Initiatives in R&D.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO402.1	**Remember**	Learn the basic concepts of technology management.
CO402.2	**Understand**	Identify the barriers to technological innovations.
CO402.3	**Apply**	Grab the tools to manage technological innovation.
CO402.4	**Analyse**	Manage innovations in operation management.

Suggested Reading:

1. Management of Technology - KhalilTarek.
2. Handbook of Technology Management – Gaynor,McGraw-Hill
3. An Evolutionary Theory of Economic Change – By Richard R. Nelson, Sidney G.Winter
4. Technological Change – Edwin Mansfield

Semester-IV Hospital Administration and Healthcare Management (HAHM)Specialization

Semester	4	**Course Credits**	**4**	**Specialization**	HAHM
Course Code	OMBHA-401			**Type**	Specialization Course
Course Title	Hospital Administration & Bio-medical Waste Management (HABWM)				

Course Description:

This course will give the in-depth knowledge about hospital administration and bio medical waste management, medical tourism.

Course Objectives:

1) To understand the human resource requirement of the hospital and to plan the human resource requirement of thehospital;
2) To understand the human resource challenges in health care services;and
3) To learn the role of hospital in primary healthcare.

Course Outline:

Unit 1: Introduction to Hospital and Health Care Management: Rationale and Importance of Hospital Management**,** What Is A Hospital? Evolution of Hospitals**,** Role of Hospital**,** Classification of Hospitals**,** Challenges of Hospitals**,** Looking Ahead.

Unit 2: Role of Hospital Administrator: Hospital Organization and Administration**,** Indian Scenario**,** Duties of a Hospital Administrator**,** Skills of a Hospital Administrator**,** Attributes of a Hospital Administrator**,** Role Profile of a Hospital Administrator.

Unit 3: Role of Hospitals in Primary Health Care: Definition of Primary Health Care**,** Rationale for Adopting Primary Health Care, Brief History of Primary Health Care, Elements of Primary Health Care, Goals of Primary Health Care, Objectives of Primary Health Care, Pillars of Primary Health Care, Principles of Primary Health Care, Strategies of Primary Health Care, Problems of Implementation of Primary Health Care Programme**,** Why Should Hospitals Be Involved in Primary Health Care Delivery?**,** What is the Ideal System of Health Care Delivery?**,** How to Integrate Primary Health Care Into Hospital System?

Unit 4: Medical Insurance: Tax Based System or Social Insurance**,** International Scenario**,** Indian Scenario**,** Key Stakeholders**,** Types of Health Insurance**,** Cashless TPA**,** IRDA**,** CBHI**,** Private Health

Insurance Schemes, Risks in Health Care Insurance, Some Important Issues in Health Care Insurance in India, The Road Ahead.

Unit 5: Medical Tourism: History, Scope, Medical Tourism Process, The International Scenario, Medical Tourism Market Drivers, Benefits of Medical Tourism, Growth Barriers of Medical Tourism, Medical Tourism: Recent Trends, Issues in Medical Tourism, Medical Tourism in India, Driving Factors of Medical Tourism in India, SWOT Analysis of Medical Tourism in India, Future of Medical Tourism inIndia.

Unit 6: Human Resource Management in Hospitals: Nature of Human Resource Management, Human Resource Management Activities, Important Terms, Human Resource Management, Human Resource Development, Personnel Management, Human Resource Management roles, HR Functions in Health care, JCI and Human Resource Management, Principles of JCI and Human Resource Management, JCI and Human Resource Management Theories, JCI and Human Resource Management Performance Chain-Meso Framework, The Concept Of Organizational Climate, Assumption of Human Resource Management, HR Utilization, Characteristics Of Human Resource Management, Functions Of Human Resource Management, Importance Of Human Resource Management, Role Of Human Resource Manager, Causes For Poor Human Resource Management, Human Resource Accounting, Auditing AndResearch.

Unit 7: High Performance Work Practices (HPWP)**and Quality of Care in Hospitals:** Human Resource Challenges In Health Care, Classification of High Performance Work Practices (HPWP), Facilitators of HPWP, HPWP Category 1: Organizational Engagement Practices, Organizational Engagement Practices-A Case Study, HPWP Category 2: Staff Acquisition and Development Practices, HPWP Category 2: Staff Acquisition And Development Practices-A Case Study, HPWP Category 3: Frontline Empowerment Practice, HPWP Category 3: Frontline Empowerment Practice-A Case Study, HPWP Category 4: Leadership Alignment/Development, HPWP Category 4: Leadership Alignment/Development-Case Study, Facilitating the Adoption of High-Performance Work Practices, OrganizationalAssessment-Checklist.

Unit 8: Manpower Planning in Hospitals: Nature and Scope of Manpower Planning, Objectives of Manpower Planning, Need for Manpower Planning, Benefits of Manpower Planning, Problems and Limitations of Man PowerPlanning, Ingredients of Sound Manpower Planning, Techniques of Man Power Planning, Manpower Planning Steps, Planning Job Requirements and Job Descriptions, Human Resource Requirements in Hospitals.

Unit 9: Staffing Norms-Human Resource Requirement in Hospitals: Manpower Forecasting, Techniques for Forecasting of Human Resource Needs, Application of Manpower Forecasting Techniques in Hospitals, Staffing Norms.

Unit 10: Training and Development in Hospitals: Need and Rationale of Training, Definition of

Training and Development, Symptoms for Training and Development, Elements of Training, Objectives of Training, Training, Development and Education, Benefits of Training, Advantages of Training and Development, Changing Facets of Training, Roles and Responsibilities for the Trainers.

Unit 11: Training Needs Assessment in Hospitals: Designing a Training Programme, Training Need Analysis, Essentials of Good Training, Training Principles, Techniques Used to Determine Training Needs, Phases in Training Process, Training and Development Techniques, Training Operations, Tips to Make a Successful Training Program inHospital.

Unit 12: Management Development: Management Development Programmes, Principles of Management Development, Grooming Leaders, Management Development Methods, Line and Staff Responsibilities in Management Development, NewerMethods.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO401.1	**Understand**	Understand human resource challenges.
CO401.2	**Apply**	Develop human resource requirement of the hospital.
CO401.3	**Analyse**	Plan human resource requirement of the hospitals.
CO401.4	**Create**	Develop a skill to learn the role of hospital in primary healthcare.

Suggested Reading:

1. Ghei, P. N. Hospital Management Training inIndia.
2. Lyton, Rolf P. and Pareek, Udai. 1978 Training forDevelopment.
3. McGhee, William and Thayer, Paul W. (1961) Training in Business andIndustry
4. Akinyele, D. K. 1999. Principles and Practice of Management in HealthcareServices
5. Dunn, R. T. 2007. Haimann's HealthcareManagement.
6. Goyal, R. C. 2006. Hospital Administration and Human ResourceManagement.
7. Hospital Administration CM-Francis
8. Hospital Administration-Joshi &Joshi

Semester	4	**Course Credits**	**4**	**Specialization**	HAHM
Course Code	OMBHA-402			**Type**	Specialization Course
Course Title	Operations Management in Hospitals (OMH)				

Course Description:

This course will inculcate the detailed knowledge about operation management in hospitals. It will improve the process of hospital in facilitating patient care.

Course Objectives:

1) To learn the hospital process and itssystem;
2) To learn the designing of the hospital and its process;and
3) To improve the process of hospital and patientcare.

Course Outline:

Unit 1: Introduction to Operations Management: Why Learn Operations Management? The Historical Evolution of Operations Management, Operations Today, Key Issues for Today's Business Operations, Important Concepts, Goods and Service.

Unit 2: Production and Operations Management: Classification of Production System, Production Management, Operations Management, Strategic Role F Operations, Strategic Planning, Production System Vs. Operations Management, International Dimensions of Productivity, Supply Chain Management-The Need.

Unit 3: Operations Management and Decision Making: Characteristics of Decisions, Framework for Decision-Making, Decision-Making Methods, Decision Support System, Systems Approach, Break Even Analysis.

Unit 4: Service Operations Management: Stages in Service Operations Management, Stage 1- Service Awakening, Stage Two- Breaking Free from Product Based Roots, Stage 3-SERVICE Management Era, Stage 4- The Mature Stage, Service Operations Management Agenda.

Unit 5: Operations Management in Health Care Industry: What is Operations Management in Hospitals?Need for Operations Management in Health Care, Issues in Health Care, Responsibilities of Operations Management, Challenges-Solutions Through Operations Management, Systems Approach to Hospital OperationsManagement.

Unit 6: Operations Management of Outpatient Services Protocols: Scope of Protocol, Staff Development & Training, Information and Communication Technology (ICT), Clinical Priority & Chronological Management, Maximum Waiting Time, Capacity Analysis & Management, Protecting Capacity & Cancellation/Reduction of Clinics, Appointment/Booking Systems, Calculation of the Outpatient Waiting Time, The Management of Appointments**,** Transfers Between Hospitals or to Alternative Providers.

Unit 7: Designing Operational management in Accident and Emergency Department: What Is Operations Management In Hospitals? Need for Operations Management in Health Care, Issues in Health Care, Responsibilities of Operations Management**,** Challenges-Solutions Through Operations Management**,** Systems Approach to Hospital Operations Management.

Unit 8: Product, Process Designing, Facility Location and Layout Effective Product Design: Product Development Process**,** Process and Design Analysis**,** Essentials of Design Process**,** The Design Process**,** Facility Planning**,** Objectives of Facility Planning**,** Facility PlanningProcess.

Unit 9: Capacity Planning: Need for Capacity Planning, Process of Capacity Planning, Importance of Capacity Decisions, Aggregate Planning, Strategic Capacity Planning, Design and Systems Capacity, Improving Hospital Operational Efficiency By Appropriate Capacity Comparison.

Unit 10: Facility Planning and Designing of A Hospital: Factors Affecting Utilization of Hospital Services, Data Required in Planning the Hospital, Guiding Principles in Facility Planning of a Hospital, Essential Features of Hospital Designing, Emerging Issues in Hospital Design**,** Phases of Hospital Project**,** Project Planning and Implementation, Guidelines in the Planning and Design of a Hospital and other Health Facilities**,** Guidelines in Facility Designing of a Hospital for PhysicallyChallenged.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO402.1	**Remember**	Learn the basic concepts of operations management in hospitals.
CO402.2	**Understand**	Learn the hospital process and its system.
CO402.3	**Apply**	Design the hospitals and its process.
CO402.4	**Analyse**	Improve the process of hospital and patient care.

Suggested Reading:

1. Everett, E. Adam, Jr., Ronald J. Ebert, Production and OperationsManagement,
2. R. Pannerselvam, Production and Operations Management, Prentice- Hall of India Private Limited, 9th print, 2004.

Semester-IV International Business Management (IBM) Specialization

Semester	4	**Course Credits**	**4**	**Specialization**	International Business Management
Course Code	OMBIB-401			**Type**	Specialization Course
Course Title	Foreign Exchange Management (FEM)				

Course Description:

This course addresses the problems faced by small business firms in handling foreign exchange (FX) transactions. The first part of the course examines the working of FX markets and the settlement systems used by small companies. The second section of the course investigates how exchange rates are determined and if changes in the exchange rate can be predicted. The third part of the course studies why firms position against exchange risk and how to measure exposure to exchange rates. In the fourth section of the course, we examine the valuation of international products and the financial risk faced with delays in foreign exchangesettlements.

Course Objectives:

1) To create an understanding on foreign exchange market in India and rate mechanism.
2) To learn about Financial Institute, Exchange Control Regulation, andFEMA.
3) To be able to manage foreign exchangerisk.
4) To explain techniques that can be used to hedge risk in foreign exchange market.
5) To understand the principles of currencyvaluation.

Course Outline:

Unit 1: Introduction to International Finance: Meaning and Scope of International Financial Management, Meaning and Scope of Foreign Exchange Management, International Capital Markets, International Financial System, International Monetary System, Multinational Corporations (MNCs), Overview of India's Foreign Trade.

Unit 2: International Monetary and Financial Institutes: International Monetary Fund (IMF), International Bank for Reconstruction and Development (IBRD), International Development Agency (IDA), Asian Development Bank (ADB), Bank for International Settlement (BIS), General Agreement on Tariffs and Trade (GATT), World Trade Organization (WTO), International Chamber of Commerce (ICC). International Finance Corporation (IFC).

Unit 3: Indian Monetary and Financial Institutes: Reserve Bank of India (RBI), Export Import Bank of India (EXIM Bank), Export Credit Guarantee Corporation (ECGC), Foreign Exchange Dealers Association of India (FEDAI), Director General of Foreign Trade (DGFT), Directorate General of Economic Enforcement.

Unit 4: Exchange Control Regulations and FEMA: Foreign Exchange Management Act (FEMA), Foreign Exchange Management (Current Account Transactions) Rules, 2000, Exchange Control Regulations for Exports, Exchange Control Regulations for Imports.

Unit 5: Exchange Rate Mechanism: Meaning of Exchange Rate, Evolution of Exchange Rate Policy, Types of Exchange Rate Policies, Factors Affecting Exchange Rate

Unit 6: Theories of Exchange rate : Demand and Supply Theory, Balance of Payment Theory, Purchase Price Parity Theory, Interest Rate Parity Theory, Appreciation and Depreciation of a Currency, Intervention by RBI in Exchange Rate, Foreign Exchange Reserve Management.

Unit 7: Foreign Exchange Markets: Meaning and Importance of Foreign Exchange Market, Features of Foreign Exchange Market, Players in the Foreign Exchange Market, Types of Exchange Rate Quotations in the Market.

Unit 8: Glossary of Foreign Exchange Market Terms: Mid-Rate, Spread and Profit Margins, Cross Rate or Chain Rule, Spot Rate and Forward Rate, Arbitration, Squaring Up of Positions by Authorized Dealers, Movement of Exchange Rates in India Over a Period of Time.

Unit 9: Foreign Exchange Risks Part I: Meaning and types of Risk, Foreign Exchange Rate Risk, Foreign Exchange Exposure Risk, Foreign Exchange Transactions Risk, Foreign Exchange Economic Exposure Risk

Unit 10: Foreign Exchange Risks Part II: Accounting Standards on Foreign Exchange by ICWAI, Interest Rate Risk, Default Risk, Liquidity Risk, Operations Risk, Country Risk.

Unit 11: Foreign Exchange Risk Management-Derivatives: Meaning and Concept of Derivatives, Types of Derivatives, Forward Contracts, Future Contracts, Put Options, Call Options, Currency Swaps, Interest Rate Swaps, Other Tools of Exchange Risk Management.

Unit 12: Export and Import Finance: Methods of Payments in International Trend, Non-Fund Facilities, Letter of Credit. UCPDC 600, Bank Guarantee, International Working Capital Assessment, Factoring & Forfeiting, Export Finance& Import Finance.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO401.1	**Remember**	Learn the basic concepts of foreign exchange market.
CO401.2	**Understand**	Learn about Financial Institutes.
CO401.3	**Apply**	Manage foreign exchange risk.
CO401.4	**Evaluating**	Understand techniques to hedge risk in foreign exchange market.

Suggested Reading:

1. Foreign Exchange (practice, concepts and control) - C.Jeevanandam, Sultan Chand & SonsPublications.
2. International Economics Theory andPolicy,6/E Paul Krugman, Maurice Obstfeld, PearsonEducation
3. Foreign Exchange Management Manual–Ashok Sexena Jain Book Publications2011
4. Foreign Exchange, International Finance and Risk Management - A.V. Rajwade and H.G.Desai, Shroff Publishers andDistributors
5. Foreign Exchange and Risk Management - C. Jeevanandam,JainBook Publications 2017
6. Documentary Credits - D.C. Gardener Macmillan India,1998

Semester	4	**Course Credits**	**4**	**Specialization**	International Business Management
Course Code	OMIBE-402			**Type**	Specialization Course
Course Title	Insurance and Risk Management (IRM)				

Course Description:

Risk management course is of importance to business students expecting to deal with business and professional lives in the future. This subject is designed to introduce and discuss various risk management concepts, tools, and techniques in global context. Using integrated approaches, the course will emphasize discussion on the design and implementation of risk management practices. Basically, it helps students realize, understand, and master various state-of-the-art risk management theories and practices for their advancement in the future.

Course Objectives:

1) To provide a broad understanding of risk and insurance as a tool to manageit;
2) To form the foundation to facilitate students for their further studies oninsurance;
3) To understand the principles of risk management andinsurance;
4) To be able to manage personal risks and deal effectively with the insurancemechanism; and
5) To be able to analyze the issues and concerns pertaining to claims management and the documents requirement for putting up aclaim.

Course Outline:

Unit 1: Introduction to Insurance and Risk Management: Insurance Business Lines & Importance of Insurance**,** Distribution Channels of Insurance**,** History of Risk, Meaning and Definition**,** Risk and Insurability**,** Categories of Risk**,** Insurance as Risk Management Tool.

PART A. LIFE INSURANCE

Unit 2: Basic Elements of Life Insurance (Part A–Life Insurance): Life Insurance-A Brief History**,** Needs and Advantages of Life Insurance**,** Concept of Life Insurance**,** General Principles of Life Insurance**,** Fundamental Principles of Life Insurance**,** Risk, Peril and Hazard.

Unit 3: Life Insurance Products: Term Insurance Plans**,** Whole Life Plans**,** Endowment Plans**,** Money Back Policies**,** Child Plans**,** Annuity Plans**,** Group Insurance**,** Unit Linked Insurance Plans (ULIPs)**,** Riders**,** Needs and LifeInsurance.

Unit 4: Life Insurance Underwriting: Underwriting: Concept, Objectives & Principles, Medical Underwriting, Financial Underwriting, Underwriting Process, Classification of Lives, Assessment of Risk and Underwriting Decisions, Life Insurance Agent: Primary Underwriter, Individual & Group Underwriting: Comparison, Data required for Underwriting, Occupational Ratings.

Unit 5: Channels of Distribution: Life Insurance is Sold, Not Bought, Traditional Distribution Channels, Individual Agent: The Main distributor, Advantages & Limitations of Traditional Distribution Channels, Multi-Distribution Channels: The Win-Win relationship, Banc Assurance, Insurance Broking, Corporate Agent, Emerging AlternateChannels.

Unit 6: Life Insurance Claims Management: Meaning & Types of Life Insurance Claims, Claim Adjudicator's Concerns, Special Cases in Claims, Rider Claims, Claim Process: Steps, Foundation for Claim Settlement: Utmost Good Faith, IRDA & Grievance Redressal.

PART B. GENERAL INSURANCE

Unit 7: Basic Elements of General Insurance (Part B. General Insurance): History of General Insurance in India, Hazards, Insurance contracts, Principle of Utmost Good Faith, Insurable Interest, Indemnity, Subrogation, Contribution, Doctrine of Proximate Cause, Marine Insurance –Principles.

Unit 8: General Insurance Products: Personal Insurance, Commercial Insurance, Industrial Insurance, and Liability Insurance.

Unit 9: General Insurance Claims: Claims Management in General Insurance- Issues & Concerns, Various Classes of General Insurance: Claims Procedure & Documentations, Marine Insurance Claims–Discussion of Legal Judgments.

PART C. RISK MANAGEMENT

Unit 10: Risk Management: Need & Process: The Need for Risk Management, Retirement needs and risk management, Enterprise Risks: Need for Integrated Risk Management, Steps for Risk Management Process.

Unit 11: Non-Insurance Methods of Risk Management: Non-Insurance Methods of Risk Management, Risk Avoidance, Loss Control, Theories of Accident Causation, Risk Retention, Risk Transfer &Instruments of Risk Transfer, The Value of Risk Management.

Unit 12: Risk Management Through Insurance Methods: Retirement Issues, Three Pillars of Retirement, Indian Annuity Market: Structure and Challenges, Retirement planning and Financing Strategies, Managing New Risks: Reinsurance, White Labeling& Government Actions, Employee Benefits, Employee Health

Insurance Benefits.

Unit 13: Reinsurance: Reinsurance: Meaning, Definition and Concept, History of Reinsurance, Risk Distribution Through Reinsurance, Risk Management Through Reinsurers, Benefits of Reinsurance, Categories of Reinsurance, Proportional Reinsurance, Non-Proportional Reinsurance: Excess of Loss (XL) Reinsurance, Transfer of Risks: From Insurers to Reinsurers.

PART D. INSURANCE REGULATIONS, CONSUMER SATISFACTION & BUSINESS ETHICS

Unit 14: Government Regulation of Insurance Industry: Need for Regulation of Insurance Industry, The Legal Background of Insurance Regulation, Responsibilities of the Insurance Regulators, Regulations Concerning Insurance Intermediaries, Regulations Concerning Insurance Advertisements, Regulations for Consumer Protection, IRDA Regulations for Rural and Social Sector Obligations, Regulation of Rates, Expenses & ContractualWordings.

Unit 15: Consumer Satisfaction and Business Ethics: Consumer Satisfaction–Definitions and Analysis, Buying Indecisions, Consumer Dissatisfaction, Ethical Behaviour in Insurance, Insurance Ombudsman, Consumer Protection.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO402.1	**Remember**	Learn the basic concepts of Insurance and risk management
CO402.2	**Understand**	Understand risk and insurance.
CO402.3	**Apply**	Grab the opportunities in insurance sector.
CO402.4	**Analyse**	Differentiate the personal risk and professional risk.
CO402.5	**Create**	Easily claim management and its documentation.

Suggested Reading:

1. Essentials of Insurance – A Risk Management Perspective: Emmett Vaughan,Therese Vaughan
2. Marketing Life and Health Insurance: Nancy E. Strickler; Life ManagementInstitute
3. Marketing Financial Services: Donnelly/Berry/Thompson
4. Insurance New Product Introduction: Challenges & Solutions: Sanjaya Kumar,Muthu Subramanian, John Streatfeild; View Point/Infosys Technologies;2007
5. The Economics of Insurance -- How Insurers Create Value for Shareholders: SwissRe, 2001

Semester-IV Artificial Intelligence & Machine Learning Specialization

Semester	4	**Course Credits**	**4**	**Specialization**	Artificial Intelligence & Machine Learning
Course Code	OMBAIML401			**Type**	Specialization Course
Course Title	Application of AI in Business				

Course Description:

Artificial intelligence has a wide range of uses in businesses, including streamlining job processes and aggregating business data. Researchers aren't exactly sure what artificial intelligence means for the future of business, specifically as it relates to blue-collar jobs. AI is expected to take digital technology out of the two-dimensional screen and bring it into the three-dimensional physical environment surrounding an individual. "Artificial intelligence" is a broad term that refers to any type of computer software that engages in humanlike activities – including learning, planning, and problem-solving. Calling specific applications "artificial intelligence" is like calling a car a "vehicle" – it's technically correct, but it doesn't cover any of the specifics.

Course Objectives:

1) Understand how AI integrated with Business.
2) Learn IOT for Business.
3) Understand How AI Framework and Its Application works in real Business Word.
4) Learn about the different AI-Based Business Software.

Course Outline:

Unit 1 – Introduction to AI Framework: Defining AI, History of AI, impact of AI on jobs, a technology overview, role of Big Data, Cloud AI, Fourth industrial revolution, What Is Machine Learning? barriers to AI, AI Advantages and Disadvantages, AI cases studies.

Unit 2 – AI Impact on Digital Marketing: AI Application for Digital Marketing, Microsoft Translator, Google Voice Typing and recognition, Search Engine Searching Algorithm, Ai Base Search Engine & Digital Marketing Tools, SEO Optimization.

Unit 3 - IoT (Internet of Things): IoT Architecture and protocols, Various Platforms for IoT, Real-time Examples of IoT, Overview of IoT components and IoT Communication Technologies, Challenges in IoT.

Unit 4 - Cloud Platforms for IoT: Virtualization concepts and Cloud Architecture, Cloud computing, benefits Cloud services (SaaS, PaaS, IaaS), Cloud providers & offerings, Study of IoT Cloud platforms, ThingSpeak API and MQTT, Interfacing ESP8266 with Web services.

Unit 5 - Business Intelligence Technology Counterparts: Data Warehousing (What Is a Data Warehouse?, Data Marts and Analytical Data, Organization of the Data Warehouse), Enterprise Resource Planning, Distributing the Enterprise (First ERP, then Business Intelligence, The Current State of Affairs), Customer Relationship Management(CRM, ERP, and Business Intelligence, Customer Decisions, Decisions About Customers), Business Intelligence and Financial Information.

Unit 6 - The Spectrum of Business Intelligence: Enterprise and Departmental Business Intelligence, Strategic and Tactical Business Intelligence, Power and Usability in Business Intelligence, Finding the Right Spot on the Continuum, Business Intelligence: Art or Science?.

Unit 7 -Artificial Intelligence and Expert Systems: Concepts and Definitions of Artificial Intelligence, Artificial Intelligence Versus Natural Intelligence, Basic Concepts of Expert Systems, Applications of Expert Systems, Structure of Expert Systems, Knowledge Engineering, Development of Expert Systems.

Unit 8 - Business intelligence Applications: Marketing models: Relational marketing, Sales force management, Logistic and production models: Supply chain optimization, Optimization models for logistics planning, Revenue management systems.

Data envelopment analysis: Efficiency measures, Efficient frontier, The CCR model, Identification of good operating practices

Unit 9 - How AI Transforms Business: Machine Learning, Cyber Security, Customer relationship management, Internet and Data Research, Digital personal assistants, HR and Recruitment, Marketing and sales management, and Optimizing finance and operations.

Unit 10 - AI Software Tools for Business: SAS Business Analytics (SAS BA), QlikView, Board, Splunk, Sisense, Microstrategy, KNIME, Dundas BI, TIBCO Spotfire, Tableau Big Data Analytics, SAp Business Object, LOOKER.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO401.1	**Remember**	How AI Integrated with the Business
CO401.2	**Apply**	Apply AI in Different Business Sectors

CO401.3	**Analyze**	The Efficiency of AI in Business After Using the Different Applications
CO401.4	**Evaluate**	Evaluate the need of Ai in Business

Suggested Reading :

1. Deep Learning Book by Aaron Courville, Ian Goodfellow, and Yoshua Bengio.
2. Sebastian Raschka_ Vahid Mirjalili - Python Machine Learning_ Machine Learning and Deep Learning with Python, scikit-learn, and TensorFlow 2 (2019)
3. Deep learning for the life sciences_vijay pande
4. Fundamentals of deep learning_ designing next-generation machine intelligence algorithms-O'Reilly Media (2015_2017) - Buduma, Nikhil_ Locascio, Nicholas

Semester	4	**Course Credits**	**4**	**Specialization**	Artificial Intelligence & Machine Learning
Course Code	OMBAIML402			**Type**	Specialization Course
Course Title	Introduction to Deep Learning				

Course Description:

This course is an introduction to deep learning, a branch of machine learning concerned with the development and application of modern neural networks. Deep learning algorithms extract layered high-level representations of data in a way that maximizes performance on a given task. For example, asked to recognize faces, a deep neural network may learn to represent image pixels first with edges, followed by larger shapes, then parts of the face like eyes and ears, and, finally, individual face identities.

Deep learning is behind many recent advances in AI, including Siri's speech recognition, Facebook's tag suggestions, and self-driving cars. We will cover a range of topics from basic neural networks, convolutional and recurrent network structures, deep unsupervised and reinforcement learning, and applications to problem domains like speech recognition and computer vision. Prerequisites: a strong mathematical background in calculus, linear algebra, and probability & statistics (students will be required to pass a math prerequisites test), as well as programming in Python and C/C++. There will be assignments and a final project.

Course Objectives:

1) Introduce the basic concept of Deep Learning.
2) Understand the context of neural networks and deep learning.
3) Know how to use a neural network.
4) Understand the data needs of deep learning.
5) Have a working knowledge of neural networks and deep learning.
6) Explore the parameters for neural networks.

Course Outline:

Unit 1- Introduction to Deep Learning: Introduction to deep learning and biological motivation, Applications of deep learning, suitable problems for deep learning, Neurons, Neural Network, Activation Function.

Unit 2- Neural Networks: Single-layer neural network, Stochastic Gradient Descent, Gradient Descent Extensions, Gradient Descent Regularization, Multilayer Perceptron, Back propagation, Chain Rule, Deep Learning Model.

Unit 3 - Feedforward neural networks: Pattern classification using perceprton, Multilayer feedforward neural networks (MLFFNNs), Backpropagation learning, Empirical risk minimization, Regularization, Autoencoders

Unit 4 - Convolutional Neural Network: Introduction with Background and Application, properties of CNN Motivation for Convolutional Layer, CNN Architecture, Training for Deep CNN, Padding and Stride, Computer vision tasks.

Unit 5 - Unsupervised Representational Learning: Introduction with Motivation and Application, Auto encoder, Neural Language Processing, Word embeddings, Generative models, Generative Adversarial Networks.

Unit 6 - RNN, LSTM and GRU: RNN, LSTM, GRU- Image Segmentation, Image classification, Object Detection, Automatic Image Captioning, Image generation with Generative Adversarial Networks, LSTM as a classifier Model, Attention Models for Computer Vision.

Unit 7 - Deep neural networks (DNNs): Difficulty of training DNNs, Greedy layerwise training, Optimization for training DNNs, Newer optimization methods for neural networks (AdaGrad, RMSProp, Adam), Second-order methods for training, Regularization methods (dropout, drop connect, batch normalization)

Unit 8 - Generative models: Restrictive Boltzmann Machines (RBMs), Stacking RBMs, Belief nets, Learning sigmoid belief nets, Deep belief nets.

Unit 9 – Advanced topics, Recent papers, Influential papers: Deep reinforcement learning, Deep Learning: Good – Great, Visual Question Answering, Visual Dialog, Novel deep methods (Deep internal learning, Deep image prior), Recent works, How to stay updated?

Unit 10 – Applications & Tools: Applications in vision, speech and natural language processing, Tools (Tensorflow, Pytorch)

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO402.1	**Remember**	The Various Methods of Deep Learning
CO402.2	**Apply**	Different Methods and Algorithm of Deep Learning
CO402.3	**Analyze**	Analyze the Development of Recent AI Tools
CO402.4	**Evaluate**	Evaluate Working Knowledge of Neural Networks and Deep Learning

Suggested Reading :

1. Deep Learning Book by Aaron Courville, Ian Goodfellow, and Yoshua Bengio.
2. Sebastian Raschka_ Vahid Mirjalili - Python Machine Learning_ Machine Learning and Deep Learning with Python, scikit-learn, and TensorFlow 2 (2019)
3. Deep learning for the life sciences_vijay pande
4. Fundamentals of deep learning_ designing next-generation machine intelligence algorithms-O'Reilly Media (2015_2017) - Buduma, Nikhil_ Locascio, Nicholas

Semester-IV Blockchain Technology Management Specialization

Semester	4	**Course Credits**	4	**Specialization**	Blockchain Technology Management
Course Code	OMBBTM401			**Type**	Specialization Course
Course Title	Enterprise Blockchain Applications & Hyperledger				

Course Description:

Blockchain solves a core problem: many organizations want to share data in a distributed database, but no single owner will be trusted by every user. Blockchain technologies enable direct transactions in a secure, transparent way, baking trust into systems that operate with the efficiency of a peer-to-peer network. Hyperledger technologies are open source code bases built with collaborative design and overnance, enterprises have embraced them as trusted infrastructure for building blockchain solutions. Students will gain an understanding of how to build blockchain applications using Hyperledger thereby adding value for their business. Learner's will gain knowledge of the frameworks.

Course Objectives:

1. Understand Hyperledger, its various technologies, and business use.
2. To understand necessary frameworks, standards, guidelines, and tools to build open-source blockchains and related applications for use across various industries.

Course Outline:

Unit 1: Consensus Models: Proof of Stake, Proof of Work, Proof of authority, Round Robin, Proof of Elapsed Time, Consensus Comparison Matrix, Ledger Conflicts, and Resolution.

Unit 2 : Forking: Soft Forks, Hard Forks, Cryptographic Changes, and Forks

Unit 3: Ethereum Technology Overview: Ethereum, Ethereum Clients, Account Management, Ether, The Ethereum network, Mining, The Ethereum Foundation, Architectural Overview, Ethereum Blockchain Platform, Analyse Ethereum blockchain.

Unit 4 : Hyperledger: Distributed ledger frameworks and domain-specific blockchains Hyperledger: Domain-specific blockchain technologies, Hyperledger frameworks, Hyperledger Fabric and its architecture, Hyperledger Composer.

Unit 5: Hyperledger tools: Hyperledger Caliper. Hyperledger Cello. Cello is a Blockchain module toolkit., Hyperledger Explorer.Hyperledger Composer. Hyperledger Quilt. ...Hyperledger Ursa.

Unit 6: Hyperledger libraries: Hyperledger Indy, Hyperledger Fabric, Hyperledger Iroha, Hyperledger Sawtooth Hyperledger Besu.

Unit 7: Enterprise Blockchain: Hyperledger, Assisted Practise: Setup Sawtooth Network and Create Basic Transactions, Hyperledger Iroha, Assisted Practise: Setup Iroha Network and Create Basic Transaction, Hyperledger Fabric, Hyperledger Fabric Transaction, Fabric Network Types.

Unit 8: Solidity Programming Basics: The layout of a Solidity Source File, Structure of a Contract, Types, Units, and Globally Available Variables, Input Parameters, and Output Parameters.

Unit 9: Smart Contracts and Network: What are smart contracts, How smart contracts works, Benefits of smart contracts, Applications of smart contracts, and How it can be used in Supply chain management.

Unit 10: The promise of business blockchain technologies: Introduction, When to use or not to use blockchain technologies, Existing Hyperledger blockchain use cases.

Unit 11: Emerging Trends in Blockchain: Cloud-based blockchain, Multichain, Geth, Stellar, Ripple, R3 Corda, Blockchain API, Blockchain Sandboxes.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO401.1	**Remember**	Learn the Hyperledger Framework
CO401.2	**Understand**	Tools & libraries of Hyperledger Framework
CO401.3	**Apply**	How to build blockchain applications
CO401.4	**Analyze**	Analyze the Hyperledger applications in a structured manner.

Suggested Reading:

1. Blockchain Development with Hyperledger: Build decentralized applications with Hyperledger Fabric and Composer, Author: Salman A. Baset (Author), Luc Desrosiers (Author), Nitin Gaur (Author)
2. Enterprise Blockchain Development: With Hyperledger Fabric and Composer Author: Sudip Ghosh Ernesto Lee.

Semester	4	**Course Credits**	4	**Specialization**	Blockchain Technology Management
Course Code	OMBBTM402			**Type**	Specialization Course
Course Title	Design and Development of Blockchain Applications				

Course Description:

This program caters to graduates in any discipline and working professionals from diverse backgrounds and basic programming knowledge is good to have. The Blockchain market is expected to reach USD 39.7 billion by 2025, at a growth rate of 67.3 percent. This program prepares both new and experienced professionals — with a passion for blockchain and technical background — for a thriving career in blockchain.

Course Objectives:

1) Become proficient in AWS and Microsoft Azure
2) Understand the different architecture and deployment models of cloud
3) Understand Decentralised Financial Application

Course Outline:

Unit 1: Application Architecture and Deployment: Building an application on Health care management for Covid patients. Create user stories, selecting a blockchain framework to use, di¬erent tools to create the whole project. coding and deploying the application using smart contracts. Understanding how the whole project works as a unit and deploy the solution on cloud. Baas on AWS

Unit 2: Architecting A Decentralised Finance (Defi) Application: DeFi with a use cases: how to create solution for the use case on Ethereum network. Network interoperability, ZKP, Light weight clients, etc.

Unit 3: Other Blockchain Frameworks And Their Use Cases: Blockchain frameworks other than Ethereum and Hyperledger. Introduction to networks like R3 Corda, Ripple, Iota, etc.

Unit 4: Cloud Computing on AWS: Compute, Load Balancing, Autoscaling, Storage, Replication and Life Cycle Management, AWS Organization and Identity, Networking, and Data migration.

Unit 5: Managed Services on AWS: Databases (RDS, DynamoDB), Web Application Firewall, SNS, SQS, Cloudwatch, Athena, Quicksight and Kinesis, Serverless (Lambda).

Unit 6: Azure Infrastructure: Introduction to Azure & its services, Azure Virtual Machines (Networking components, Configuring high availability, Scale sets, Autoscaling, etc.), Storage (Blob Storage, Azure

Files), Virtual Networking (Networking Options, VNet Peering, VNet to VNet setup), Azure Resource Manager (Building ARM template, Powershell, CLI, Cloud shell usage).

Unit 7: Azure Data Platforms: Cosmos DB, SQL Database, Data Services Introduction.

Unit 8: Google Cloud Platform: Regions, Resources and Services Overview, Google Compute Engine, Instance Groups, Load Balancing, and Autoscaling, Storage and Networking, GCloud and Cloud SDK, Google App Engine, Google Kubernetes Engine.

Unit 9: Blockchain Applications: Internet of Things, Medical Record Management System, Domain Name Service and Future of Blockchain, Alt Coins.

Unit 10: Capstone Project: A set of projects that allows you to apply your learnings to industry-inspired use cases and add it to your portfolio for potential employers.

Experiments:

1. Create a Simple Blockchain in any suitable programming language.
2. Build Hyperledger Fabric Client Application.
3. Build Hyperledger Fabric with Smart Contract.
4. Create Case study of BlockChain being used in illegal activities in the real world.
5. Using Python Libraries to develop BlockChain Application.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO402.1	Remember	How to design and develop Blockchain Applications
CO402.2	Understand	Understand the AWS, Azure, Google Cloud, AWS Technology
CO402.3	Apply	Apply the knowledge and skill for the development project.
CO402.4	Analyze	Analyze different tools and techniques of Blockchain

Suggested Reading:

1. Learning AWS by Amit Shah, Aurobindo Sarkar
2. Learn Microsoft Azure for Beginners by Henry Stromm

Supplementary Resources:

- NPTEL online course: https://nptel.ac.in/courses/106/104/106104220/#
- Udemy: https://www.udemy.com/course/build-your-blockchain-az/

Semester-IV Business Analytics Specialization

Semester	4	**Course Credits**	4	**Specialization**	Business Analytics
Course Code	OMBBA401			**Type**	Specialization Course
Course Title	Business Mathematics and Optimization Techniques				

Course Description

The business environment has become very complex due to growing competition, emerging technologies, and availability of large data. Therefore, sound decision-making based upon some analytical and rational methods is inevitable. There is a growing need of managers who can make use of analytical approaches to solve complex business situations. This course will equip the learners with statistical and mathematical optimization methods which will help them to optimize business decisions.

Course Objectives

1) To make learners understand business environment and importance of optimized decision making.
2) To inculcate analytical decision-making skills and abilities among the learners.
3) To develop analytical skills among the students while dealing with business situations
4) To equip the learners with operations research tools and techniques for help them make sound decisions and solve complex business problems.

Course Outline:

Unit 1: Preliminaries and System of Equations: The straight-line equation, intercepts, Translations of linear functions, Applications, Simultaneous Equations, Equilibrium and break-even using simultaneous equations, Equations of Quadratic, cubic, and other polynomial functions, Exponential and Logarithmic functions. Equation of circle, hyperbolic functions.

Unit 2: Vectors, Matrices, and Determinants: Vectors, Types of Vectors, Addition of Vectors, Multiplication of a Vector by a Scalar, Product of Two Vectors, Eigen analysis, Define matrices Basic Concepts, Operation on Matrices -Add, subtract and transpose matrices, Multiply matrices, Apply matrix arithmetic, Use matrix arithmetic to simplify calculations for large arrays of data., Inverse of a matrix, Application of matrix arithmetic, Solution of equations: elimination methods (Guassian and Gauss Jordan)

Determinants-Definition, evaluate a 2 x 2 determinant, Evaluate 3 x 3 determinants, Use determinants to solve equations: Cramer's rule, Application of determinants, The Inverse Matrix and Input/Output Analysis, write a system of equations in matrix form, solve a set of equations using the inverse matrix, Input/output analysis.

Unit 3: Sets, Relations, and Functions: Concept of Sets, Basic operations on sets, Complex number, Cartesian product of two sets, Relations, Properties of Relations, Functions, Natural domain and range of function, Rectangular co-ordinate system, quadrants, Linear functions, x and y intercepts of linear functions, Functional Representation –Graphs of various functions, Even and Odd function, Vertical line test, Reflexivity, symmetry and transitivity, Functions on general sets, Examples of real function, Composition of functions, One-to-one, onto and inverse functions, Real functions of several variables, Quadratic, cubic and other polynomial functions, Exponential and Logarithmic function.

Unit 4: Limits, Continuity, and Derivatives: Limits of functions, Additional real function limit concepts, Multivariate limits, Continuity, Derivative definition and meaning, derivative by first principle, first-order derivative (slope of function), formulae, Working with derivatives, Smoothness, Second-order derivatives and point of inflection, Basic Ordinary Differential Equations, Partial derivatives up to second order, Applications of partial differentiation.

Unit 5: Optimization using calculus: Unconstrained optimization, Maximization and minimization of convex functions. Necessary and sufficient conditions for local minima, Convexity and concavity of functions of one and two variables, Optimization of function of one variable and multiple variables-speed and order of convergence, unibariate search – steepest and desent methods- metcher reeves' method - conjugate gradient method. Stationary points; Functions of single and two variables; Global Optimum, Gradient vectors; Examples. Stationary points; Functions of single and two variables; Global Optimum, Gradient vectors; Examples, Optimization of function of multiple variables subject to equality constraints; Lagrangian function Optimization of function of 1 multiple variable subject to equality constraints; Hessian matrix formulation; Eigen values, Kuhn-Tucker Conditions.

Unit 6: Integration: Integration as anti-derivative process, The power rule for integration, Area under a curve, Approximate integration, Indefinite integrals, Explicit integration methods, Volume integrals, Improper integrals, Application: Mean, variance and expectation, First-order differential equations and applications, Differential equations for limited and unlimited growth.

Unit 7: Linear Programming: Standard form of linear programming (LP) problem; Canonical form of LP problem; Assumptions in LP Models; Elementary operations, Graphical method for two-variable optimization problem; Motivation of simplex method, Simplex algorithm, and construction of simplex

tableau; Simplex criterion; Minimization versus maximization problems, Revised simplex method; Duality in LP; Primal dual relations; Dual Simplex method; Sensitivity or post optimality analysis.

Unit 8: Dynamic Programming: Sequential optimization; Representation of multistage decision process; Types of multistage decision problems; Concept of sub-optimization and the principle of optimality, Recursive equations – Forward and backward recursions; Computational procedure in dynamic programming (DP), Discrete versus continuous dynamic programming; Multiple state variables; curse of dimensionality in DP.

Unit 9: Decision Analysis and Theory Of Games: Decision Making under Certainty-Analytic Hierarchy Process (AHP), Decision Making under Risk, 3 Decision under Uncertainty, Introduction – Terminology in Game theory - Solution of games with saddle points and without saddle points – 2×2 games – dominance principle – m X 2 & 2 X n games - Graphical method.

Unit 10: Stochastic models of decision making: Monte Carlo Simulation, Types of Simulation, Elements of Discrete-Event Simulation, Generation of Random Numbers, Mechanics of Discrete Simulation, Methods for Gathering Statistical Observations, Definition of a Markov Chain, Absolute, and n-Step Transition Probabilities, Classification of the States in a Markov Chain, Steady-State Probabilities and Mean Return Times of Ergodic Chains, Analysis of Absorbing States. Decision Tree- Decision Tree structure, Nodes, and Branches, Decision tree terminal values, Decision tree probabilities, Rollback method.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO401.1	**Remember**	Learn and remember the meaning and concepts of Business optimization.
CO401.2	**Understand**	Understand how Business decisions are optimized using Mathematical and Statistical methods
CO401.3	**Analyze**	Analyze the decision-making environment and various decision-making methods.
CO401.4	**Apply**	Apply various optimization techniques to solve complex business situations.

Suggested Reading:

1. Linear And Nonlinear Optimization, Second Edition by Stephen G. Nash and Ariela Sofer Igor Griva.

2. Linear and Nonlinear Optimization: 253 (International Series in Operations Research & Management Science) by Richard W. Cottle and Mukund N. Thapa.
3. An Introduction to Nonlinear Optimization Theory by Marius Durea and Radu Strugariu
4. Operations Research by PK Gupta and D.S Hira

Semester	4	**Course Credits**	4	**Specialization**	Business Analytics
Course Code	OMBBA402			**Type**	Specialization Course
Course Title	Python Programming for data visualization				

Course Description

This course is all about data visualization, the art, and science of turning data into readable graphics. We'll explore how to design and create data visualizations based on data available and tasks to be achieved. Data visualization provides a good, organized pictorial representation of the data which makes it easier to understand, observe, and analyze. In this course, learners will learn how to visualize data using Python and its libraries to facilitate decision-making. Data visualization allows managers to gain insight into their vast amounts of data. It benefits them to recognize new patterns and errors in the data. Making sense of these patterns helps the managers pay attention to areas that indicate red flags or progress. This process, in turn, drives the business ahead.

Course Objectives

1) To understand the importance of data visualization and its importance in business decision making
2) To gain the basic understanding of the data visualization methods, tools, and techniques
3) To enable learners to provide a good, organized pictorial representation of the data
4) To make learners to identify patterns, trends, and outliers in large data sets.

Course Outline:

Unit 1: Preliminaries and Introduction to data visualization: What is data visualization, Importance of data visualization in business decision making, Introducing Jupyter Notebook, Installing Pandas and Matplotlib, Working with Jupyter notebook, Creating notebooks and running cells, Shutting down the notebook server, How Cell Output Works, Command Mode Shortcuts, Cell Types: Markdown Time!, Restarting The Kernel, Viewing The Docs Inside A Notebook, EXERCISE: Jupyter Notebook

Unit 2: Dataframes and Datasets: Datasets and CSV, Pd.read_csv & Data-frames, Inspecting DataFrames: head(), tail(), etc., DataTypes and info(), Non-comma Separators: Netflix Dataset, Overriding Headers.

EXERCISE: DataFrames & Datasets. Basic Data-frame Methods and Computations Min & Max, Sum & Count, Mean, median, mode, Describe with numeric values, Describe with Text values, Exercise on basic

data frame methods Filtering data frames Filtering Dataframes with a Boolean Series, Filtering and comparison operators, The Between Method, The isin() Method, Combining Conditions Using AND (&), Combining Conditions Using OR (|), Bitwise Negation, isna() and notna() Methods, Filtering + Plotting Examples, Filtering Exercises

Unit 3: Indexing and sorting: Set_Index Basics, set_index: The World Happiness Index Dataset, setting index with read_csv, sort_values intro, sorting by multiple columns, sorting text columns, sort_index, Sorting and Plotting!, loc, iloc, loc & iloc with Series, EXERCISE: Indexes & Sorting.

Unit 4: Adding and Removing columns: Dropping Columns, Dropping Rows, Adding Static Columns, Creating New "Dynamic" Columns, Finding The Highest price/sqft homes, Finding Largest Bitcoin Price Changes,

EXERCISE: Adding/Removing Columns & Rows. Renaming Columns and Index Labels, The replace() method, Updating Values Using loc[], Updating Multiple Values Using loc[], Making Updates With loc[] and Boolean Masks, EXERCISE: Updating Values

Unit 5: Working with types and NA values: Casting Types With astype(), Introducing the Category Type, Casting With pd.to_numeric(), dropna() and isna(), fillna(),

EXERCISE: Dealing With NA Values, Working with dates and Times Why Dates Matter, Converting With pd.to_datetime(), Specifying Fancy Formats With pd.to_datetime(), Dates and DataFrames, The Useful dt Properties, Comparing Dates, Finding Starlink Flybys in UFO dataset, Datemath and Time Deltas, Bill Board charts and dataset exploration,

EXERCISE: Dates & Times

Unit 6: Matplotlib: Intro to Matplotlib, Our First Matplotlib Plots!, plt.show(), Anatomy of Plots, Figsize & Plot Dimensions, Changing Matplotlib Stylesheets, Line Styles, Colors, Widths, and More!, Plot Labels & Titles, Changing X & Y Ticks, Adding Legends To Plots, Creating Bar Plots, Creating histogram, Creating Scatter Plots

Creating Pie Charts, Working With Subplots.

Unit 7: Pandas Plotting: What are pandas? Where it is used? Series in pandas, Index objects, Reindex, Drop Entry, Selecting Entries, Data alignment, rank, and sort, Changing Pandas Plot Styles, Adding Labels and Titles to Pandas Plots, Using rename() When Plotting, Closer Look at Pandas Bar Plots,

EXERCISE: Pandas Plotting, Pandas Histograms, Box Plots, Pandas Line Plots,

EXERCISE: Pandas Plotting, Pandas Scatter Plots, Multiple Plots On The Same Axes, UFOS Plotting, Pandas Automatic Subplots, Manual Subplots With Pandas, Exporting Figures With savefig()

Unit 8: Hierarchical Indexing: Groupby With Multiple Columns, Creating a MultiIndex With set_index, Sorting A MultiIndex, Using .loc[] With A MultiIndex, Cross Sections With The XS Method, get_level_values(), Hierarchical Columns, Stack() and Unstack(), Plotting With Unstack(), Grouping By Index

Unit 9: Apply, Map, Applymap: Applying Functions To Series, Apply() With Lambdas & Arguments, Apply() w/ DataFrames: Columns, Apply() w/ DataFrames: Rows, The Series Map() Method, The ApplyMap() Method

Unit 10: Combining Series and Data frames: Concatenating Series, Concatenating Series By Index, Inner vs. Outer Joins, Concatenating DataFrames By Columns, Concatenating DataFrames By Index, The DataFrame Merge() Method, Merge() w/ Left, Right, Inner, & Outer Joins, Merge() On and Suffixes Arguments

Unit 11: Seaborn: Intro to Seaborn, The Helpful load_dataset() method, Seaborn Scatterplots, Seaborn Lineplots, The relplot() Method, Resizing Seaborn Plots: Aspect & Height, Seaborn Histograms, KDE Plots, Bivariate Distribution Plots, Rugplots, The Amazing displot() Method Seaborn categorical plots Countplot, Strip & Swarm Plots, Boxplots, Boxenplots, Violinplots, Barplots, The Big Boy Catplot Method Controlling Seaborn Aesthetics Changing Seaborn Themes, Customizing Styles with set_style(), Altering Spines With despine(), Changing Color Palettes

Unit 12: Tableau: Connecting Data in Tableau, Exploring Tableau's Interface, Create Chart in Tableau, Duplicating a Sheet, Creating a Table, Creating Custom Fields, Creating a Custom Field and Adding Calculations to a Table, Adding Totals and Subtotals, Adding a Custom Calculation, Inserting a Filter, Working with Joins in Tableau, Area Chart, Bar Chart, Box-and-whisker Plots, Cartogram, Gantt Chart, Heat Map, Histogram, Scatter Plot, Timeline, Treemap.

Unit 13. Ggplot and Plotly: Ggplot- build data visualizations like bar charts, pie charts, histograms, scatterplots, error charts, and so on. combine many types of data visualization components or layers into a single visualization. create visualizations directly from your Pandas data frame. Plotly-Scatter plots, histograms, line charts, bar charts, box plots, multiple axes, sparklines, dendrograms, 3-D charts, contour charts, share plots, spot outliers, or anomalies.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO402.1	**Remember**	Learn basics of Python strings, variable data frames, and functions
CO402.2	**Understand**	Understand various Python libraries such as Matplotlib, Seaborn, Pandas, etc.
CO402.3	**Analyze**	Analyze and Visualize data using various Packages such as
CO402.4	**Apply**	Design and develop a Machine Learning Algorithms for an organization.

Suggested Reading:

1. Learn and Practice Data Visualization using Python by Swapnil Saurav
2. Hands-On Data Analysis and Visualization With Pandas by PURNA CHANDER RAO. KATHULA.
3. Data Visualization with Python for Beginners: Visualize Your Data using Pandas, Matplotlib, and Seaborn (Machine Learning & Data Science for Beginners) by Ai Publishing

Semester-IV FinTech Specialization

Semester	4	**Course Credits**	4	**Specialization**	FinTech
Course Code	OMBFT401			**Type**	Specialization Course
Course Title	Project Finance & Budgetary Control				

Course Description:

This course will help students understand the "macro" big picture and "micro" line item context and trends of finance, as well as the mechanics of developing budgets. It will give the students the necessary tools to make sound financial decisions for their Business Unit. Whether the goal is to stay on budget, increase overall cost savings or meet specific profitability targets, real-world exercises will help them become familiar with the standard financial documents, and use the budget and estimating methods and tools more effectively. Specifically, they will review and discuss commonly used financial metrics to not only understand the numbers but also to explore the not-so-obvious financial impacts of typical operating decisions and actions from a project to organizational level.

Course Objectives:

1) To be able to describe the concept, components of project finance, and the linkage between planning,
2) analysis, and selection of project;
3) To know the key parties to a project financing and the documentation process involved in it;
4) To gain knowledge of sources of finance available for projects;
5) To describe the strategies employed in managing risk; and
6) To be able to solve simple cases.

Course Outline:

Unit 1: Introduction to Project Finance: Characteristics of a Project, what is Project Finance? Essentials of Project Financing, Importance of Project Financing, Project Financing Structures, Project Financing in India, Key Parties to a Project Financing, Key Documents in a Project Financing, Risks in Project Financing.

Unit 2: Projects- Financial Structuring: Common Objectives of the Project, The Promoters Role, Capital Investment Decision, Investment Criteria.

Unit 3: Projects – Sources of Finance: Sources of Capital, Internal sources vs External source, Cost of sourcing the finance for the business.

Unit 4: Project Financing- Cost of Capital: Introduction, Investors in a Project, Financing Decision, Definition of Cost Capital, Measurement of Cost of Capital, Cost of Debt, Cost of Equity, Cost of Retained Earnings, Weighted Average Cost of Capital (WACC), Financing Structure.

Unit 5: Projects- Market, Technical & Financial Feasibility: Market Feasibility, Technical Feasibility, and Financial Feasibility.

Unit 6: Financial Estimates and Projections: Objectives of Financial Statements, Users of Financial Statements, Profit & Loss Statement/Operating Statement, Balance Sheet, Funds Flow Statement, Cash Flow Statement, Ratio Analysis, Significance of Ratio Analysis, Limitations of Ratio Analysis.

Unit 7: Projects- Lenders' Appraisal: Financial Feasibility Analysis, Technical Feasibility Analysis, Economic Feasibility Analysis, Management Competency Appraisal, Risk Analysis by Lenders, Restrictive Covenants, Non-Recourse and Recourse Financing, Why do Projects Fail?

Unit 8: Project Risk Analysis: Sources of Risk, Project Risk Identification, Operating Risk, Risk Management.

Unit 9: Financing Infrastructure Projects: Characteristics of Infrastructure Finance, Infrastructure Project Finance vs. Traditional Finance, New Approach for Infrastructure Projects, Infrastructure Project Finance– Advantages, Infrastructure Project Finance– Participants, Financing Mechanism, Steps in Infrastructure Project Finance, Risks and Its Mitigation.

Unit 10: Budgetary Control: Definition of Budgetary Control, Advantages, and Limitations of Budgetary Control, Types of Budget, Master Budget, On the Basis of Capacity, Preliminaries in the Installation of Budget System.

Unit 11: Standard Costing: Meaning of Standard Costing, Relation Between Budgetary Control and Standard Costing, Advantages of Standard Costing, Disadvantages of Standard Costing, Suitability of Standard Costing as a Management Tool, Relationship of Standard Costing and Budgetary Control.

Unit 12: Variance Analysis: Material Variances, Labour Variances, Overhead Variances, and Sales Variances.

Unit 13: Zero-Base Budgeting, Performance Budgeting: Basic Steps in the Implementation of Zero-Base Budgeting, Advantages of Zero-Base Budgeting, Disadvantages of Zero-Base Budgeting, Performance Budgeting, Steps in Performance Budgeting.

Unit 14: Capital Budgeting Methodologies: Meaning of Capital Budgeting, Capital Budgeting Methodologies

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO401.1	**Remember**	Learn the basic concepts of project finance.
CO401.2	**Understand**	Understand documentation process pertaining to project finance.
CO401.3	**Apply**	Able to select a project by understanding the basic concept.
CO401.4	**Evaluate**	Differentiate risk and returns with strategic analyses
CO401.5	**Analyze**	Grab the opportunities with available project

Suggested Reading:

1. Projects- Planning, Analysis, Selection, Financing, Implementation and Review by Prasanna Chandra; Tata McGraw-Hill Publishing Co. Ltd. 7th Edition.
2. Project Management by Bhavesh Patel; Vikas Publishing House Pvt. Ltd. 2nd Edition.
3. Financial Management by Ravi M. Kishore; Taxman Allied Services(P) Ltd. 6th Edition.
4. Banking Strategy, Credit Appraisal and Lending Decisions by Hrishikesh Bhattacharya; Oxford University Press.

Semester	4	**Course Credits**	4	**Specialization**	FinTech
Course Code	OMBFT402			**Type**	Specialization Course
Course Title	Cyber Laws and Hacking				

Course Description:

All the necessary documents, information, and data are stored in a computer these days which shall be protected with utmost care. There is a lot of demand for cybersecurity and ethical hacking professionals to keep all the sensitive information protected from the hackers and develop new computers protecting the system. During the program, ethical hackers are taught how to find loopholes in the security system and to report these threats to their owners, and provide necessary solutions to protect the data and networks. To pursue ethical hacking certification, candidates need to take up the certified ethical hacking examination. Ethical hackers shall have good technical and analytical skills with in-depth knowledge of various computer software and programs.

Course Objectives:

1) To Understand the basics of Ethical hacking and Cyber Laws
2) Exhibit knowledge to secure corrupted systems, protect personal data, and secure computer networks in an organization.
3) Practice with an expertise in academics to design and implement security solutions.
4) Develop cyber security strategies and policies.
5) Understand principles of web security and to guarantee a secure network by monitoring and analyzing the nature of attacks through cyber/computer forensics software/tools and installation.

Course Outline:

Unit 1 – Ethical hacking: Freeware Beware, Types of Hackers, why do Hackers hack? What is Cyber Crime? Types of Cyber Crimes, what is Hack Value? What is Ethical Hacking? Legality of Ethical Hacking, Potential security threats to our system – Physical & Non - Physical threats, Skills required to be an Ethical Hacker, Tools required for Ethical Hacking.

Unit 2 – Setting up your cyber security lab: Setting Up and Creating Your Own Virtual Machine Lab for Penetration Testing (Using VMware's Workstation).

Unit 3 – Open-source intelligence and information gathering: Looking up Public and Private IP Addresses, Google Hacking Database and Google Dorks, Using Shodan – The Search Engine for Hackers,

Active Information Gathering, Email Tracking, and Spoofing, Being Anonymous, Vulnerability Assessment Tools (VAS)

Unit 4 – Hacking and cracking windows & mobile platforms: Windows Password and Operating System Hacking, HACKING & CRACKING, WINDOWS & MOBILE PLATFORMS, Android Mobile Phone Hacking and Tracking

Unit 5 – Phishing: Using Spear Phishing, Fake FB and IG Profiles, Phishing, Phishing Detection, Case studies of Social Media Frauds and Cyber Crimes.

Unit 6 – Viruses and malware & WIFI hacking: Batch File Viruses, RATs (Remote Access Trojans), Virus, Worms, VIRUSES AND MALWARE & WIFI HACKING, Wifi Hacking, Using Airmon-ng with Wordlist Method, Using Wifi Cracker Tools - Fern, Wifi Cloning (Evil-Twin) A ack and Rogue AP, Wireless Security - Restricting Wifi Access

Unit 7 – Cyber security fundamentals- concepts & problems: Need of Cyber Security, The CIA Triad, Risk Governance, and Risk Management, Understanding Privacy, Anonymity and Pseudonymity, CYBER SECURITY, FUNDAMENTALS – CONCEPTS & PROBLEMS, The Threat and Vulnerability Landscape, Asset Selection, Understanding Hack Value, Threat Modelling and Risk Assessment, The Zero Trust Model, Top 3 Security Measures for Online Security, Understanding Hackers, Crackers, Viruses, Malware and Rootkits, Darknets, Dark Markets and Exploit Kits, Cyber Threat Intelligence, Hash functions, Digital Certificates, HTTPS, End-to-End Encryption, Steganography, Concluding remarks.

Unit 8 – Setting up the cyber lab: Using VMware, Virtual Box, SETTING UP THE, CYBER LAB, Kali Linux

Unit 9 – Operating system, security & privacy: Security Features and Functionality, Security Bugs and Vulnerabilities, Windows 10 Cortona, Privacy Seing, Wifi Sense, Windows 7, 8, 8.1 – Privacy and Tracking, Mac – Privacy and Tracking, Linux and Unix OS, Debian and Arch, Qubes OS, Subgraph OS, Trisquel OS, Tails and Whonix OS, Mobile OS with Security like LineageOS, Sailfish, Importance of Patching, Windows 7, 8, 8.1, 10 Auto Updates and Patching, Linux Debian Patching, Mac Patching, Defence Against Social Engineering Attacks, Information Disclosure and Identity Strategies for Social Media, Identity Verification and Registration, Behavioural Security Controls against Phishing, Spam, Scam and Cons, Security Domains, Physical and Hardware Isolation, Virtual Machine Hardening, Whonix OS.

Unit 10 – Routers-Port & Vulnerability scanning: The Home Router, Using Shodan and Nmap, Internal Vulnerability Scanning – MBSA, NMAP, Fing & OpenVAS.

Unit 11 – Firewalls & network attacks, network monitoring & online tracking: Firewalls and Network Attacks, Network Attacks, ARP Spoofing and Switches, Effective Network Isolation, Network Monitoring, and Online Tracking, Finding Malware and Hackers, Types of Tracking, IP Address, Cookies, Scripts, and Super Cookies, Browser Fingerprinting and Internet Profiling, Search Engine Tracking, Censorship and Privacy, Private and Anonymous Search, Browser HTTP Filters, Ad and Track Blockers, History, Cookies and Super Cookies, VPNs and TOR.

Unit 12 – File and disk encryption: Crypto Algorithms, Brute Force Attacks and Implementation, Containers, Volumes, and Partitions, Disk Encryption, File Encryption, Nesting Crypto Systems and Obfuscation, Secure File Deletion.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO402.1	**Remember**	Learn the basics of Ethical Hacking
CO402.2	**Understand**	Understand the performance and troubleshoot cyber security systems.
CO402.3	**Analyze**	Analyze and evaluate the cyber security needs of an organization
CO402.4	**Apply**	Design and develop a security architecture for an organization

Suggested Reading:

1. CYBER LAWS & INFORMATION TECHNOLOGY by Dr. Jyoti Rattan & Dr. Vijay Rattan.
2. Cyber Law in India by Talat Fatima.
3. The Basics of Hacking and Penetration Testing by Patrick Engebretson.
4. Gray Hat Hacking: The Ethical Hacker's Handbook, Fifth Edition - Allen Harper, Daniel Regalado, Chris Eagle, Branko Spasojevic, Stephen Sims, Ryan Linn, Shon Harris.

Semester-IV Logistics, Materials and Supply Chain Management

Semester	4	**Course Credits**	4	**Specialization**	Logistics & Supply Chain Management
Course Code	OMBLSCM 401			**Type**	Specialization Course
Course Title	Supply chain analytics				

Course Description:

This course showcases real-life applications of analytics in various domains of supply chain management, from competitive analysis and benchmarking, to selling, distribution and logistics, inventory management, sourcing and supply management, and to supply chain integration in a variety of industries. Learners learn to define the right data set, ask the right questions to drive supply chain efficiency and business value, and use the right models and tools to develop data-driven decisions.

Course Objectives:

1) To make the learners understand the basics of supply chain analytics.
2) To equip the learner's Basic analytical methods
3) To make learners understand How to apply basic probability models
4) To give learners insight of Statistics in supply chains
5) To make learners understand Formulating and solving optimization models

Course Outline:

Unit 1: Overview of Logistics and Supply Chain Management: Introduction, SCM and Competitive Advantage, Driving Forces in Business and SCM, Overview of Logistics Management, Overview of Supply Chain Management, Supply Chain Analytics

Unit 2: Overview of optimization Methods: Introduction and Historical Perspective, Constrained Optimization Models, Assumptions of an LLP, General Form of LLP, Graphical Solution to Furniture Problem, Simplex Method, A Few Examples of Formulation of LLP, Transportation Problem, Assignment Problem

Unit 3: Decisions in Warehousing: Introduction and Space Determination in Warehouse Planning, Warehouse Operations, and Layout Decisions, Handling Decisions, Layout Configuration Decisions.

Unit 4: Facility Locations and Discrete Location Models: Introduction, Single Facility Location Problems, Multiple Facility Location Problems, Mathematical Formulations of Popular Location Problems, Conclusion.

Unit 5: Facility Locations through Heuristic and Other Approaches: Introduction, Heuristic Methods, P-Median Solution for Example 4.1, Greedy Drop Heuristic for Capacitated Depots with Fixed Costs, Capacitated Fixed Charge Model Solution for Example 4.1, Mathematical Programming Approach to Facilities Location Problems, Baumol and Wolfe Method, Spatial Interaction Models.

Unit 6: Inventory Concepts, Costs and Basic Models: Introduction, Reasons for Keeping Inventory, Reasons against Keeping Inventory, ABC Analysis and Pareto Analysis (80-20 Rule), Managing Inventories and Inventory-Carrying Costs, Single-Period Inventory Models (Newsvendor Model), Optimal Stock Level in Newsvendor Models (for Continuous Distributions), Repetitive Order Quantities (Pull Models), Production Order Quantities (POQ) Models, Quantity Discount EOQ Models.

Unit 7: Inventory decisions under Uncertainty: Introduction, Factors Affecting Safety Inventory, Understanding Demand Uncertainty, Service Levels and Product Availability Measures, Average Inventory Level, Estimation of Unit Service Level or Fill Rate, Impact of Lead Time Uncertainty on Inventory Decisions, Backorder Case, Lost Sales Case.

Unit 8: Joint Replenishment and Lot Sizing in Inventory Decisions: Introduction and Inventory Investment Decisions, Lot Sizing Inventory Management Interpolation Technique, Lagrangian Multipliers, Joint Replenishment of Multiple Items, Lot-Sizing Techniques (Dynamic Lot Sizing), Multi-Echelon Inventory Decisions, Risk Pooling or Centralization of Inventories.

Unit 9: Trade-Off Decisions and Network Models in Transportation: Introduction, Basic Trade-Offs in Transport Decisions, Transport Service Selection, Operational Planning in Transportation, Network Models, Minimal Spanning Tree, Shortest Path Algorithms, Bellman-Ford Algorithm (for Negative Link Lengths), Floyd-Warshall Algorithm, Maximum Flow Model.

Unit 10: Routing Using the Traveling Salesman Problem Algorithms in Transportation: Introduction, Characteristics of Routing and Scheduling Problems, The Traveling Salesman Problem, Heuristics for Solving a TSP, Construction Heuristics, k-Opt Tour Improvement Method.

Unit 11: Routing and Scheduling Problems and Methods: Introduction, Vehicle Routing Problems, Branch and Bound Method for Solving Routing Problems, Clarke-Wright Savings Algorithm for Solving Routing Problems, Sweep Heuristic for Solving VRPs, Generalized Assignment Method, Vehicle Scheduling Methods, Deficit Function Approach to Vehicle Scheduling.

Unit 12: Multi-Criteria Decision Making: Introduction, Multiple-Attribute Utility Theory, Terminologies in MADM or MCDM Methods, Analytic Hierarchy Process, Technique for Order of Preference by Similarity to Ideal Solution (TOPSIS), Basics of Fuzzy Logic, Fuzzy Analytic Hierarchy Process, Fuzzy TOPSIS.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO401.1	**Remember**	Learn supply chain analytics job opportunities, requirements, and preparation.
CO401.2	**Understand**	Understand the importance of the basics of Supply chain Analytics and Optimization
CO401.3	**Analyze**	Analyze the level of uncertainty associated with the supply of products and services to targeted customer segments and justify the choice of a supply chain strategy and its fit with competitive strategy.
CO401.4	**Apply**	Apply the knowledge of how analytics can be applied to various domains of a supply chain, from selling, to logistics, production, and sourcing, to generate a significant social/economic impact. You will also learn job market trends, job requirements, and preparation.

Suggested Reading:

1. Supply Chain Logistics Management, Donald Bowersox, David Closs, M Bixby Cooper, Tata McGraw Hill.
2. Operations Management, William J. Stevenson, TMGH.
3. Operations Management, Lee Krajewski, Larry Ritzman, Manoj Malhotra, Pearson Education.
4. Introduction to Materials Management, J.R. Tony Arnold, Stephen Chapman, Ramakrishnan, Pearson.

Semester	4	**Course Credits**	4	**Specialization**	Logistics & Supply Chain Management
Course Code	OMBLSCM 402			**Type**	Specialization Course
Course Title	Just in Time & lean.				

Course Description:

The journey of reducing waste, optimizing processes, and engaging your team starts here. Just-in-Time manufacturing (JIT), popularized by Toyota in the 20th century, remains the time-tested cornerstone of any lean organization. Its principles have lifted businesses out of crises and propelled them to heightened levels of profitability. Whether you are a lean sensei who is continuously learning or a beginner new to the world of lean manufacturing, this course is for you. While basic knowledge of lean is helpful, ultimately there are no prerequisites. The course is ideal for lean practitioners, operations managers, line supervisors, business leaders, and quality professionals alike who want to set a lean example. JIT manufacturing will improve your on-time delivery, reduce inventory, increase morale, and ultimately save costs.

Course Objectives:

1) To impart knowledge for facilitating the worker environment.
2) To identify hidden manufacturing wastes.
3) To impart knowledge on a systematic approach to implementing lean manufacturing practices

Course Outline:

Unit 1: Introduction to Just in Time (JIT): History and Philosophy of Just in time, Cultural Aspects, Just in Time (JIT) Approaches, Cycle Time Reduction, Waste Reduction, Flow Breakdowns, Scope of Just in Time (JIT), JIT Application Profile, Seven Wastes in JIT, Elements of JIT, People Involvement, Plants, Systems, Purchasing.

Unit 2: Goals, Benefits, and Limitations of JIT: Benefits of JIT, Limitations of JIT, Implementation of JIT Concept, Keys to Successful Implementation of JIT.

Unit 3: Understanding and Controlling Variation: Sources of Variation, Causes of Variation, Variability, Forms of Variability. Responses to Variability, Reducing Variability.

Unit 4: Introduction to Materials Requirement Planning: Push and Pull Systems, Need for MRP, Terms Used in Material Resource Planning (MRP), Prerequisites and Assumptions of MRP.

Unit 5: Inputs to MRP: Master Production Schedule (MPS), Bill of Material (BOM), Inventory Record File, MRP Outputs, Primary Outputs, Secondary Outputs, Inventory Forecast, Factors Affecting the Computation of MRP.

Unit 6: Push and Pull Models: Understanding Push Model, Advantages of "Push" Model, Disadvantages of "Push" Model, Understanding the Pull Model, Advantages of "Pull" Model, Disadvantages of "Pull" Model, Evaluation of MRP Push versus JIT Pull, Combining MRP and JIT.

Unit 7: Just-In-Time (JIT) and Competitive Advantage: Relationship between JIT and Competitive Advantage, JIT Contribution to Competitive Advantage, main advantages of MRP, MRP). Limitations and Advantages of MRP.

Unit 8: Limitations and Implementation Barriers of JIT: Advantages of JIT, Disadvantages of JIT, Limitations, and Advantages of MRP, Advantages & comparison of MRP & JIT.

Unit 9: JIT Layout: Plant Layout, Objectives of Plant Layout, Objectives of Plant Layout, Principles of Plant Layout, Classification of Layout, Process Layout, Product Layout, Combination Layout, Fixed Position Layout, Group Layout (Cellular Layout).

Unit 10: JIT Layouts and Design Flows: JIT Layout, Distance Reduction, Increased Flexibility, Impact on Employees, Reduced Space, and Inventory.

Unit 11: SMED: Introduction to Single Minute of Die (SMED), History of SMED, Implementation of SMED, Formal Method of SMED.

Unit 12: Introduction to Kanban: A Brief History of Kabana, Reasons for Implementing Kanban Scheduling, Kanban Implementation Process, Keys to a successful implementation of Kanban, Forming Kanban Team.

Unit 13: Introduction to Lean Manufacturing: Objectives of Lean Manufacturing, Key Principles of Lean Manufacturing, Elements of Lean, Characteristics of Successful Lean Manufacturing, Advantages and Disadvantages of Lean Manufacturing, Lawson Lean Manufacturing Solutions.

Unit 14: History of Lean Systems: Lean Manufacturing Tools and Techniques, Cellular Manufacturing, Continuous Improvement, Production Smoothing, Standardization of Work, Total Productive Maintenance, Other Waste Reduction Techniques, Implementing Lean.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO402.1	**Remember**	Identify and Quantify the hidden manufacturing wastes in industries.
CO402.2	**Understand**	Develop a roadmap for successful implementation of lean principles, Identify and organize the element.
CO402.3	**Analyze**	Analyze the effectiveness of lean manufacturing tools.
CO402.4	**Apply**	Identify and organize the elements of just-in-time manufacturing, and lean manufacturing.

Suggested Reading:

1. Paul Myerson "Lean Supply Chain and Logistics Management", McGraw-Hill Education, 2012.
2. Martin Christopher, "Logistics and Supply Chain Management, Pearson publications, 2011.
3. Robert Jacobs Richard B Chase "Operations and Supply Chain Management" McGraw-Hill Irwin, 2012.
4. Bill Kerber, Brian J Dreckshage, "Lean Supply Chain Management Essentials: A Framework for Materials Managers", CRC Press, 2011.
5. Baudin Michel, "Lean Logistics: The Nuts and Bolts of Delivering Materials and Goods", Productivity Press, New York, 2005.

Semester-IV Digital Marketing Specialization

Semester	3	**Course Credits**	4	**Specialization**	Digital Marketing Specialization
Course Code	OMBDM 401			**Type**	Specialization Course
Course Title	Product and Brand Management				

Course Description:

The objective of this course is to learn the fundamentals of Product and Brand Management. The Product Management Part aims to make participants understand competition at the product level as well as brand level.

Course Objectives:

1) To explain various concepts of product and brand management.
2) To understand principles of branding, brand equity, and its components.
3) To understand the implications of planning, implementing, and evaluating branding strategies.
4) To highlights various problems and challenges faced by an organization regarding the planning and implementation of product and brands.

Course Outline:

Unit 1: Product Management - Basic Concepts: What is a Product? Product Development, Marketing Organization, Factors Affecting Product Design, Product Mix & Line Decisions.

Unit 2: Developing Product Strategy: The linkage between Product Strategies with Strategic Management, Environmental Appraisal, Corporate Level Product Strategies, Business Level Product Strategies, Portfolio Analysis: BCG Matrix and GE-9Cell, Product Line Decisions, and Extensions.

Unit 3: Product Life Cycle & Marketing Strategies: Introduction Phase, Growth Phase, Maturity Phase, Decline Phase, Types of Customers at Different Stages of PLC, Strategies at Different Stages of PLC, Product Life Cycle (PLC) Extension Strategies.

Unit 4: New Product Development: Market Potential & Sales Forecasting, New Product Development Process, Idea Generation & Screening, Concept Development, Test Marketing.

Unit 5: Test Marketing: Testing New Products, Concept Testing, Market Tests, Quasi Market Tests.

Unit 6: Product and Marketing Mix: Product and Pricing, Product and Channel Management, Product and Promotion.

Unit 7: Product Launch: Preparation for Launch, The Final Decisions, The Launch Process, New Technologies for Product Launches.

Unit 8: Brands – Concepts: What is Brand?, Commodities vs. Brands, The Role of Brands: Brand Image, Brand Equity, Aaker Model, Brands as Competitive Advantage.

Unit 9: Brand Positioning: Brand Knowledge, Identifying & Establishing Brand Position, Positioning Strategies, Process of Brand Positioning, Types of Branding, Brand Audit.

Unit 10: Brand Marketing: Criteria for choosing Brand Elements, Options &Tactics for Brand elements, Integrated Marketing Communication, Brand Associations.

Unit 11: Branding Strategies: Criteria for Choosing Brand Elements, Product Strategy, Pricing Strategy, Channel Strategy, Global Brand Strategy, Umbrella Brand Strategy, Line Brand Strategy, Private Labels.

Unit 12: Brand Equity: Measuring Brand Equity, Measuring Sources of Brand Equity, Growing & Sustaining Brand Equity.

Unit 13: Co-branding, Brand Extension andMulti-brand: What is Co-Branding? The Logic of Co-branding, Brand Extension, MultibrandPolicy, Managing Brands Over Time, Managing Brands Over Geographic Boundaries and Segments.

Unit 14: Winning Brands and Customer Satisfaction: Top Management Commitment to Establish Brands, Customer Satisfaction and Customer Delight, Internal Brand Building, Brand Awareness, and Brand Recall, Customer Loyalty.

Unit 15: Brands and Product Innovation: Changing customer preferences, Lasting Impact of Brands, and Product Innovation are Must Sustain the Competition.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO401.1	**Remember**	Learn the basic concept of Product and Brand Management.
CO401.2	**Understand**	Understand the components of Branding and Brand Equity.
CO401.3	**Apply**	Implications of evaluating branding strategies.
CO401.4	**Analyze**	Develop the result by understanding problems and challenges.

Suggested Reading:

1. Kahn, Kenneth B. (2001). New Product Planning.New Delhi, India: Response Books Page 1-6, 17-20.
2. Mukherjee, Kaushik (2009) Product Management, New Delhi, India: PHI Learning Pvt. Ltd.
3. Lehmann, Donald R, and Winer, Russell S, (1997) Product Management, Singapore, Irwin/ McGraw-Hill.
4. Majumdar, R, (1998), Product Management in India, New Delhi, India, Prentice Hall of India, Page 29-39, 66-71.
5. Kotler, Philip, (1999), Marketing Management, New Delhi, India, Prentice Hall of India, pages 399-404.

Semester	3	**Course Credits**	4	**Specialization**	Digital Marketing Specialization
Course Code	OMBDM 402			**Type**	Specialization Course
Course Title	International Marketing				

Course Description:

International marketing is the export, franchising, joint venture, or full direct entry of a marketing organization into another country. This can be achieved by exporting a company's product to another location, entering through a joint venture with another firm in the target country, or foreign direct investment into the target country.

Course Objectives:

1) To consider the basic concepts of international marketing.
2) To get an insight into the various activities necessary for international marketing planning, the beginning of international marketing activities to be conducted by a domestic firm, and relevant issues on strategy and marketing management relevant to expanded global operations.
3) To analyze the environmental variables that influence international marketing.
4) To describe the strategies and tactics that can lead to successful international marketing given the environmental constraints; and
5) To discuss the more typical management decisions and problems faced highlighting those peculiar to the international arena.

Course Outline:

Unit 1: Scope & Size of International Markets: Introduction, Definitions, Reasons and Motivations Underlying International Trade and International Business, Exchange Rate and Balance of Payments, Basic Modes of Entry, Nature of International Marketing, World Trade: An Overview, India's Foreign Trade.

Unit 2: Conceptual Framework: Introduction, Global and Domestic Marketing.

Unit 3: Institutional Framework: Introduction, Institutional Bodies, Advisory Bodies, Commodity Organizations, Service Information, Government Participation in Foreign Trade, States Initiatives in Promoting Exports.

Unit 4: Cultural Environment: Introduction, Definition of Culture, Elements of Culture, Cultural Analysis.

Unit 5: Political & Legal Environment: Introduction, Political Risk: A Definition, Assessing and Managing Political Risk, Management of Political Risk, International Marketing and the Legal Environment, The Development and Scope of International Law, Incoterms, World Trade Organization (WTO).

Unit 6: Economic Environment: Introduction, World Trade: A Temporal Analysis, The Debt Problem, Major Developments in the International Economic Environment, IMF and World Bank, Regional Economic Groupings.

Unit 7: India's Export-Import Policy: Introduction, India's Exim Policy: A Backdrop, The Foreign Trade Regime: Analytical Phases and Changes Over Time, India's Exim Policy: Phases of Changes, Export-Import Policy 2002-07: Objectives, General Provisions Regarding Imports and Exports, Promotional Measures, Duty Exemption/Remission Scheme, Export Promotion Capital Goods Scheme, EOUs, EPZs, EHTPs, STPs, Deemed Exports.

Unit 8: Export-Import Documentation: Introduction, Need, Kinds of Documents, Principal Export Documents, Auxiliary Documents, Documents in Import Trade, Export Documentation & Procedures–Step by Step.

Unit 9: International Product Policy and Planning: Introduction, International Product Life Cycle, International Product Policy, Standardization vs. Adaptation, Planning the International Product Mix, Branding, Labelling, Packaging and Product Warranties, and Services.

Unit 10: International Advertising: Introduction, International Advertising Strategy, Standardization or Adaptation, Elements of Advertising Strategy, Media Strategy, Advertising Agency, International Advertising Scene.

Unit 11: International Pricing Policy: Introduction, Components of Price, The Process of Price Selling, Pricing in International Market, Information for Pricing Decisions, Sources of Price Information, Issues in International Pricing, Trade Finance in India.

Unit 12: International Distribution & Sales Policy: Introduction, International Distribution Channels, International Distribution Policy, Selecting Distribution Channels and Channel Members, International Physical Distribution Management.

Unit 13: International Market Selection: Introduction, Factors Influencing International Market Selection, The Process of Market Selection, Some Strategies.

Unit 14: International Marketing Research: Introduction, Marketing Research: The Global Scene, The Scope of International Marketing Research, International Marketing Research Procedure, Techniques of International Marketing Research, Survey Research, Techniques of International Marketing Research, Analysis of Filed Data, Preparation of Research Report.

Unit 15: International Marketing Planning & Control: Introduction, Developing an International Marketing Plan, Issues in Framing International Marketing Plan, Organization of international Marketing. Framework for International Marketing Planning, International Marketing Control, and Control Sequence.

Course Outcome:

On successful completion of the course the learner will be able to:

CO#	Cognitive Abilities	Outcomes
CO402.1	**Remember**	Market activities for international trade and practices.
CO402.2	**Understand**	Understand the basic concepts of international marketing.
CO402.3	**Apply**	Manage International policy and planning.
CO402.4	**Analyze**	Analyze environmental factors to influence international marketing.

Suggested Reading:

1. Theodore Levitt, 'The Globalization of Markets, Harvard Business Review, 1983, May– June.
2. Peter Buckley and Pervez Ghauri, 'Globalization, Economic Geography and Multinational Enterprises', Journal of International Business Studies, 2004
3. First Fuat, 'Educator Insights: Globalization of Fragmentation– A Framework for Understanding Contemporary Global Markets', Journal of International Marketing.
4. Borderless Management: Companies Strive to Become Truly Stateless', Business Week, 23 May 1994.
5. David A. Ricks, Blunders in International Business (Cambridge, Mass.: Blackwell Publishers, 1993).
6. International Marketing–By Philip R. Cateora; John L. Graham and Prashant Salwan, TATA McGraw-Hill publication, 13th Edition.