Subject Title :		Emerging Trends In Information Technology		
Subject Ref. No.	MAN591	No. of Credits	:	04
Course Objective	To make aware student the changes in technologies, applications and Systems around us.			
Prerequisite :	Students must have knowledge of internet.			
Unit –I :	**E-Commerce** **Introduction:** E-commerce as Business need-commerce Types, Advantages, Disadvantages, e-Commerce Architecture, **Internet Payment Systems** - Characteristics - 4C Payment Methods - SET Protocol for Credit Card Payment - E-Cash, E-Check - Overview of Smart Card			
Unit –II :	**E-mail & Internet:** 1. Introduction 2. E-mail Account & Its Functions 3. Search Engine 4. Surfing WebPages 5. Basics of Social Networking Site			
Unit –III :	**E-Banking** Transactions : Inter Banking, Intra Banking, Electronic Payments, (Payment – Gatewa y Example) Securities in E-banking (SSL, Digital Signatu res – Examples) Services Provided : ATM, Smart Card ECS(Electronic Clearing System) e.g. Telephone , Electricity Bills			
Unit – IV :	**E – Governance & E – Agriculture** E –Governance Models : (G2B,G2C,C2G,G2G), Challenges to E – Governance, Strategies and tactics for implementat ion of E – Governance, Types of Agriculture information (Soil, Water, Seeds, Market rate) & Technique dissemination , Futu re trade marketing, Corp Management , Query redresses System, (Information Kiosk, IVR etc), Case Study			
Unit – V :	**E-learning –** Models WBT, CBT, Virtual Campus , LMS & LCMS, Video Conferencing, Chatting Bulleting, Building Online Community, Asynchronous / Synchronous Learning, Case Study			
Text Books :	1. E – Commerce : Milind Oka			
Reference Books :	1. Internet (Use of Search Engines Google & yahoo etc) 2. E –Commerce : C.V.S. Murty 3. Fire Wall and Internet Security: William Cheswick, Stevens, Aviel Rubin 4. The Essent ial Guide to Knowledge management :Amrit Tiwana 5. The GIS Book: George B. Karte. 6. Management Information System: Laudon & Laudon			

REGULATIONS SPECIFIC TO

M.B.A. PROGRAMME

IN

UNIVERSITY DEPARTMENT OF MANAGEMENT

SCIENCE

Dr. BabasahebAmbedkarMarathwada University, Aurangabad.

(With Effect from Academic Year 2016-17)

REGULATIONS
Specific to
M.B.A. Programme (Full Time)

1. ELIGIBILITY FOR ADMISSION:
Master of Business Administration

a) Candidates shall have passed any Bachelor's degree examination from any recognized University with not less than 50% (45% for SC/ST category belonging to Maharashtra State only) in any discipline recognized by the Association of Indian Universities.

b) The admissions will be on the basis of CAP (Centralized Admission Process) as   per norms laid down by DTE.

c) A limited number of admissions are offered to Foreign Nationals and Indians Living Abroad in accordance with the rules applicable for such admission, issued from time to time.

d) If, at any time after admission, it is found that candidate had not in fact fulfilled all the requirements stipulated in the offer of admission, in any form whatsoever, including possible misinformation etc., this matter shall be reported to the respective committee, recommending revoking the admission of the candidate.

e) The institute reserves the right to cancel the admissions of any student and ask him to discontinue his studies at any stage of his career on the grounds of unsatisfactory academic performance, indiscipline or any misconduct.

2. DURATION

The duration of study shall be a minimum of 2 years and maximum of 4 years.

3. ADMISSION/PROMOTION CRITERIA

If candidate gets selected for UDMS MBA course through DTE admission process, he/she have to apply on the application form of the University provided with the prospectus. Once the candidate is admitted to the MBA course, the Student will be promoted to promoted to next semeste r with full carryon; subject to the registration of candidate in every consecutive semeste r. Dropout student will be allowed to register for respective semester as and when the concerned courses are offered by the Department, subject to the condition that his/her tenure should not exceed more than twice the duration of MBA course from the date of first registration at UDMS. The admission of respective student will automatically get cancelled if he/she fails to complete the course in maximum period. (Four years/Eight Semesters)

4.   MEDIUM OF INSTRUCTION:

The medium of instruction shall be in English.

5. CREDITS AND DEGREES

   i. A candidate who has successfully completed all the Core courses, Elective courses and Project Work as prescribed for the MBA Programme and Service courses as approved by the University with prescribed CGPA shall be eligible to receive the degree.

  ii. One Credit shall mean one teaching period of one hour per week for one semester (of 15 weeks) for theory courses.

6. COURSES

The MBA programme comprises of

    i. Foundat ion Course: It may be of two kinds Compulsory Foundat ion Course for Knowledge Enhancement and Elective Foundat ion Course for value based education.

   ii. Core Course: A core course is course that a candidate admitted to particular P.G. programme must successfully complete to receive the degree.

  iii. Elective Course: Elective courses identified by the Departmental Committee of the department offering the programme. Means these courses given to the candidate as optional from which he/she have to opt for specialization.

  iv. Service Course: There shall be one/two service courses, one amongst the department of the School of Professional Studies and one amongst all university departments. The service courses will be offered in third and fourth semesters only.

   v. Each course shall include lectures/tutorials/laboratory work/field work/ seminar/practical training/assignments /mid-term and term end examinations/research paper/report writing or review of literature and any other innovative practice etc, to meet effective teaching and learning needs.

  vi. Each course shall have a unique alphanumerical
code. For eg.
MANB402   Statistical Methods
Here,

     MAN means Management
     Science **B** means MBA course
     402 means Subject Code

  vi. The departmental committee shall design the course structure including the detailed syllabus for this MBA programme offered by the department. The department committee shall have the freedom to introduce new courses and / or to modify / redesign existing courses and replace any existing course with a new course to facilitate better exposure and training for the candidates.

  vii. **Attendance:** A student must have 75% of mandatory attendance in each Course for appearing in the examination. In the event of Non-Compliance of Attendance criteria(75%), students will have to seek admission next year so as to complete the course. However Student having 65% attendances with medical certificate can apply to the H.O.D. for condonation of attendance.

7. REGISTRATION FOR SERVICE COURSE

   i. The student will register the service course of his interest either in III Semester or IV Semester in the concerned department on official registration form. The teacher in charge of the respective course will keep the record of the students registered.

Maximum 15 days period will be given from the date of admission for completion of registration procedure. The departmental committee shall follow a selection procedure to avoid overcrowding to a particular course(s)

ii. No student shall be permitted to register for more than one service course in a semester.

iii. University shall prescribe the maximum number of students in each course taking into account the teachers and physical facilities available in the department.

iv. The University may make available to all students a listing of all the courses offered in every semester specifying the credits, the prerequisites, a brief description or list of topics the course intends to cover, the instructor who is giving the courses, the time and place of the classes for the course. This information shall be made available on the University Website.

v. Normally no service course shall be offered unless a minimum of 10 students are registered.

vi. The Student shall have to pay the prescribed fee per course per semester/year for the registration as decided by the University.

8. DEPARTMENTAL COMMITTEE

As an autonomous department, MBA course is monitored by Departmental Committee. The Committee consists of H.O.D. (Director) as Chairman and some/all Respective Faculty of the Department as its members..

9. GRIEVANCE REDRESSAL SCHEME

The University shall form a Grievance Redressal Committee for this course in UDMS with the course teacher and HOD, which shall solve all grievances relating to the Assessment of the student.

10. GRADE AWARDS

i. In order to pass the examination following Choice Based Credit and Grading System (CBC&GS) will be followed. Ten point rating scale shall be used for evaluation of performance of the student to provide Letter Grade for each course and overall grade for this course. Grade points are based on the total number of marks obtained by him / her in all the heads of the examination of the course. These grade points and their equivalent range of the marks are shown separately in following:

Table -I: Ten Point grades and grade description

Sr. No.	Equivalent Percentage	Grade points for SGPA and CGPA	Grade	Grade Description
1.	90 – 100	9.00 – 10	O	Outstanding
2.	80 – 89.99	8.00 – 8.99	A++	Excellent
3.	70 – 79.99	7.00 – 7.99	A+	Exceptional

4.	60 – 69.99	6.00 – 6.99	A	Very Good
5.	55 – 59.99	5.50 – 5.99	B+	Good
6.	50 – 54.99	5.00 – 5.49	B	Fair
7.	45 – 49.99	4.50 – 4.99	C+	Average
8.	40.01 – 44.99	4.01 – 4.49	C	Below Average
9.	40	4.00	D	Pass
10.		0.00	F	Fail

ii.   **Table – II: Classification for the degree is given as follows**

Classification	Overall letter grade
First Class with distinction	*A+ and above*
First Class	*A*
Higher Second Class	*B+*
Second Class	*B*
Pass	*C+ to D*
Fail	*F*

iii.   In the event of student registered for the examination (i.e. Internal Tests/End Semester Examination/Practical/Seminar/Project Viva-voce), non-appearance shall be treated as the student deemed to be absent in the respective course.

iv.   Minimum D grade shall be the limit to clear /pass the course/subject. A student

with F the course by reappearing in the next successive semester examinations. grade will be considered as 'failed' in the concerned course and he/she has to clear There will be

no revaluation or recounting scheme under this system.

v.   Using table I, Semester Grade Point Average (SGPA) and then Cumulative Grade Point Average (CGPA) shall be computed. Results will be announced at the end of each semester and Cumulative Grade Card with CGPA will be given on completion of the course.

11. COMPUTATION OF SGPA (SEMESTER GRADE POINT AVERAGE) & CGPA (CUMULATIVE GRADE POINT AVERAGE)

The computation of SGPA and CGPA will be as below:

i.   Semester Grade Point Average (**SGPA**) is the weighted average of points obtained by a student in a semester and will be computed as follows:

$$SGPA = \frac{Sum(Course\ Credit\ *\ Number\ of\ Points\ in\ concern\ course\ gained\ by\ the\ student)}{Sum\ (Course\ Credit)}$$

The SGPA for all the six semesters will be mentioned at the end of every semester.

ii.   The Cumulative Grade Point Average (**CGPA**) will be used to describe the overall performance of a student in all semesters of the course and will be computed as follows:

$$CGPA = \frac{Sum(All\ Six\ semester\ SGPA)}{Total\ number\ of\ semesters}$$

The SGPA and CGPA shall be rounded off to the second place of decimal.

12. EVALUATION SCHEME

i.   Each 4 Credit theory course will be of 100 Marks and be divided in to Internal Examination (Sessional) of 20 Marks and Semester End Examination of 80 Marks.

(ie. 20+80=100).

ii. Each 2 Credit theory course will be of 100 Marks and be divided in to Internal Examination (Sessional) of 10 Marks and Semester End Examination of 40 Marks. (ie. 10+40=50).

iii. The Internal Evaluation shall be done on the basis of weekly exams, assignments, fieldwork, seminars, review writing etc.

iv. Semester End Examination Evaluation Scheme

- English shall be the medium of instruction and examination.
- Examination shall be conducted at the end of each semester as per the academic calendar notified by department itself.
- The Semester End Examination theory question paper will have two parts **(20 + 60 = 80)** Marks for 4 Credit/100 marks course and **(10 + 30 = 40)** Marks for 2Credit/ 50 marks paper.

b) For Implant Training and Project Work:

i At the end of second semester, all students will have to undergo Summer Training (MANB-551) of 6-8 weeks with an industrial, business or service organization. The condition of successfully completing the programme shall not be deemed to have been satisfied unless a student undergoes summer training under the supervision of the department in organization as approved by the Departmental/Faculty from time to time. Each student will be required to submit the implant training report to the Department/faculty for the work undertaken during this period within three weeks of the commencement of the third semester for the purpose of evaluation in the third semester. Also during Third Semester, in consultation with respective Project Guide the Topic based on selected elective, for Fourth Semester Project would be finalized (MANB 552) and subsequently Final Synopsis for the same would be submitted by the student.

ii The final project study (MANB-553) shall commence from third semester and the report should be submitted towards the end of the fourth semester. The project report should cover the theoretical background, field study and comparative analysis. Alternatively the students may take up the problems from the industry and construct a case study. The case studies can also be submitted as project reports.

iii. The project topic should be in the area of specialization and should necessarily include field work and library work.

iv. The student will be expected to make a presentation/viva-voce of the project work towards the end of the last semesters.

v. Out of aggregate 200 marks assigned to the project report. 100 Marks are assigned to the concerned guide from the industry and 100 Marks are assigned to the Departmental Examination. Further the project report, presentation and viva-voce will be evaluated jointly by the internal and external examiner.

vi. Two typed copies of Project Report shall be submitted by the candidate to the concerned teacher for Evaluation.

c) At the end of each semester the Committee of Department shall assign grades to the students and will prepare the result. Also, the Department will display the grade points and grades for the notice of students.

d) Every student shall have the right to scrutinize answer sheets of mid semester/semester end examinations and seek clarifications from the faculty regarding evaluation of the sheets as per Grievance Schedule.

13. RULE FOR OFFERING ELECTIVES

The number of students required for offering an Elective /Specialization shall be a batch of minimum of 10 students.

14a. READMISSION FOR PURSUING ADDITIONAL ELECTIVE COURSES

A student can be given readmission for pursuing additional electives, for MBA DUAL specialization, after completion of MBA programme subject to payment of requisite fees as prescribed by the department. Such candidates have to satisfy all the rules including attendance rule in vogue on par with regular students. However they (students who have pursued MBA Course within the Department) are exempted from appearing in those subjects which they have already passed. The same exemption does not apply to those students who have completed their MBA Course from other than University Department of management Science. The admission for the same must be done within three years after completion of MBA programme.

14b. ADMISSION FOR PURSUIING OPTIONAL FOREIGN LANGUAGE COURSE

A student can opt for foreign language course offered by department concurrently with the regular course subject to following terms:
1. The number of students required for offering an optional foreign language course shall be a batch of minimum of 10 and maximum of 60 students.
2. Also the course will be offered subject to availability of faculty/experts.

15. GRADE CARD

The University shall issue a Grade Card for the student, containing the grades obtained by the student in the previous semester and his Semester Grade Point Average (SGPA)

The grade card shall list:

(a) The title of the courses along with code
(b) The credits associated with the course,
(c) The grade and grade points secured by the student,
(d) The total credits earned by the student in that semester.
(e) The SGPA of the student,
(f) The total credits earned by the students till that semester and
(g) The CGPA of the student (On Successful Completion of Programme).

(h) Cumulative Grade Card
The grade card issued on completion of the programme shall contain the name of the programme, the department / school offered the programme, the titles of the courses taken, the credits associated with each course, grades awarded, the total credits earned by the student, the CGPA and the class in which the student is placed.

16. GENERAL CLAUSE

It may be noted that beside the above specified rules and regulations all the other rules and regulations in force and applicable to semester system in Post-Graduate courses in Dr. Babasaheb Ambedkar Marathwada University will be applicable as amended from time to time by the University. The students shall abide by all such Rules and Regulations.

Structure of MBA Programme under CBC&GS

Sem	Course	Ref. No	Subject Title	Credit	No. of Hrs. per Sem/Minm Assessment/ Tutorial	Exam Hrs.	Marks Internal	Marks End Sem Exam	Total
I	Generic Foundation Course	MANB401	Management Practices and Organizational Behavior	4	60 -02	3	20	80	100
		MANB402	Statistical Methods	4	60 -02	3	20	80	100
		MANB403	Managerial Economics	4	60 -02	3	20	80	100
		MANB404	Research Methodology	4	60 -02	3	20	80	100
		MANB405	Accounting for Managers	2	30 -02	1.5	10	40	50
		MANB406	Environment Management	2	30 -02	1.5	10	40	50
		IC 001	Constitution of India	2	30 -02	1.5	10	40	50
	Skill Based Foundation Course	MANB407	Computer Applications	2	30 -02	1.5	10	40	50
		MANB408	English Language Proficiency	2	30 -02	1.5	10	40	50
		MANB451	Community Service – I	2	30 -03	--	50	--	50
	Core Course	MANB452	Project	2	30	--	50	--	50
			Total	**30**	**450**		**230**	**520**	**750**

Sem	Course	Ref. No	Subject Title	Credit	No. of Hrs. per Sem/Minm Assessment/ Tutorial	Exam Hrs.	Marks Internal	Marks End Sem Exam	Total
II	Generic Foundation Course	MANB409	Optimization Techniques	4	60 -02	3	20	80	100
		MANB410	Human Resource Management	4	60 -02	3	20	80	100
		MANB411	Financial Management	4	60 -02	3	20	80	100
		MANB412	Marketing Management	4	60 -02	3	20	80	100
		MANB413	Production and Operation Management	4	60 -02	3	20	80	100
		MANB414	Business Legislation	4	60 -02	3	20	80	100
	Skill Based Foundation Course	MANB415	Soft Skill Development	2	30 -02	--	50	--	50
		MANB416	Employability Skills	2	30 -02	--	50	--	50
		MANB453	Community Service – II	2	30	--	50	--	50
	Core Course	MANB454	Project	2	30	--	50	--	50
	Open Elective Course	MANB42X	Elective I	2	30 -02	1.5	10	40	50
			Total	**34**	**510**		**330**	**520**	**850**

Elective-I

	Ref. No	Subject Title	Credit	No. of Hrs.	Exam Hrs.	Internal	End Sem Exam	Total
Open Elective Course	MANB421	Corporate Governance	2	30 -02	1.5	10	40	50
	MANB422	International Business Environment	2	30 -02	1.5	10	40	50
	MANB423	Ethics in Management	2	30 -02	1.5	10	40	50
	MANB424	Creativity and Innovations	2	30 -02	1.5	10	40	50

Sem	Course	Ref. No	Subject Title	Credit	No. of Hrs. per Sem/Minm Assessment/ Tutorial	Exam Hrs.	Marks		Total
							Internal	End Sem Exam	
III	Core Course	MANB501	Business Policies and Strategic Analysis	4	60 -02	3	20	80	100
		MANB502	DSS and MIS	2	30 -02	1.5	10	40	50
	Specialization- **Finance/Marketing/Human Resource Mgmt/Production and Operations/IT**								
	Core Course as per specialization	*Given in following table	Subject I	4	60 -02	3	20	80	100
			Subject II	4	60 -02	3	20	80	100
			Subject III	4	60 -02	3	20	80	100
			Subject IV	4	60 -02	3	20	80	100
			Subject V	4	60 -02	3	20	80	100
			Subject VI	4	60 -02	3	20	80	100
		MANB551	Inplant Training Report	4	60	--	20	80	100
		MANB552	Project	2	30	--	50	--	50
			Total	**36**	**540**		**220**	**680**	**900**

*Table showing Electives as per specialization.

Specialization- **Finance**

Sem	Course	Ref. No	Subject Title	Credit	No. of Hrs. per Sem/Minm Assessment/ Tutorial	Exam Hrs.	Marks		Total
							Internal	End Sem Exam	
III	Core Course (Finance)	MANB503F	Money, Banking & Finance	4	60 -02	3	20	80	100
		MANB504F	Working Capital Management	4	60 -02	3	20	80	100
		MANB505F	Corporate Taxation	4	60 -02	3	20	80	100
		MANB506F	Investment Management	4	60 -02	3	20	80	100
		MANB507F	Financial Decision Analysis	4	60 -02	3	20	80	100
		MANB508F	Management of Financial Institutions	4	60 -02	3	20	80	100

Specialization- **Marketing**

Sem	Course	Ref. No	Subject Title	Credit	No. of Hrs. per Sem/Minm Assessment/ Tutorial	Exam Hrs.	Marks		Total
							Internal	End Sem Exam	
III	Core Course (Marketing)	MANB503M	Consumer Behavior	4	60 -02	3	20	80	100
		MANB504M	Advertising Management	4	60 -02	3	20	80	100
		MANB505M	Industrial Marketing	4	60 -02	3	20	80	100
		MANB506M	Brand Management	4	60 -02	3	20	80	100
		MANB507M	Sales & Distribution Management	4	60 -02	3	20	80	100
		MANB508M	Digital Marketing	4	60 -02	3	20	80	100

Specialization- **Human Resource Management**

Sem	Course	Ref. No	Subject Title	Credit	No. of Hrs. per Sem/Minm Assessment/ Tutorial	Exam Hrs.	Marks		Total
							Internal	End Sem Exam	
III	Core Course (HRM)	MANB503H	Management of Industrial Relations	4	60 -02	3	20	80	100
		MANB504H	Human Resource Planning and Development	4	60 -02	3	20	80	100
		MANB505H	Training and Development	4	60 -02	3	20	80	100
		MANB506H	Performance Management Systems	4	60 -02	3	20	80	100
		MANB507H	HRD – Strategies and Systems	4	60 -02	3	20	80	100
		MANB508H	Cross Culture and Global HRM	4	60 -02	3	20	80	100

Specialization- **Production & Operations**

Sem	Course	Ref. No	Subject Title	Credit	No. of Hrs. per Sem/Minm Assessment/ Tutorial	Exam Hrs.	Marks		Total
							Internal	End Sem Exam	
III	Core Course (P&O)	MANB503P	Production Planning & Control	4	60 -02	3	20	80	100
		MANB504P	Purchasing and Materials Management	4	60 -02	3	20	80	100
		MANB505P	Service Operations Management	4	60 -02	3	20	80	100
		MANB506P	Applied Operation Research	4	60 -02	3	20	80	100
		MANB507P	Logistics Management	4	60 -02	3	20	80	100
		MANB508P	World Class Manufacturing	4	60 -02	3	20	80	100

Specialization- **Information Technology**

Sem	Course	Ref. No	Subject Title	Credit	No. of Hrs. per Sem/Minm Assessment/ Tutorial	Exam Hrs.	Marks		Total
							Internal	End Sem Exam	
III	Core Course (IT)	MANB503I	Strategic Management & IT	4	60 -02	3	20	80	100
		MANB504I	System Analysis and Design	4	60 -02	3	20	80	100
		MANB505I	Database Management System	4	60 -02	3	20	80	100
		MANB506I	Internet Programming for E-Commerce	4	60 -02	3	20	80	100
		MANB507I	RDBMS and SQL Concepts	4	60 -02	3	20	80	100
		MANB508I	Application Development Using Oracle	4	60 -02	3	20	80	100

Sem	Course	Ref. No	Subject Title	Credit	No. of Hrs. per Sem/Minm Assessment/ Tutorial	Exam Hrs.	Marks		Total
							Internal	End Sem Exam	
IV	Core Course	MANB509	Entrepreneurship Development	4	60 -02	3	20	80	100
		MANB510	Quality Management	4	60 -02	3	20	80	100
		MANB511	Indian Economy	4	60 -02	3	20	80	100
		MANB553	Major Project	8	120	--	40	160	200
			Total	**20**	**300**		**100**	**400**	**500**

			Course Total	**120**	**1800**		**880**	**2120**	**3000**
			Service Course	**4**	**60**		**20**	**80**	**100**
			GRAND TOTAL	**124**	**1860**		**900**	**2200**	**3100**

Subject Title	:	Management Practices & Organizational Behaviour			
Subject Ref. No.	:	MANB401	**No. of Credits**	:	4
			No. of Periods / Week	:	4
			Assignments / Sessional	:	20
			Semester Examination	:	80

Course Objective : The Subject intends to empower the students to understand the nuances of Organizational Functioning with special reference to Human Behavior, Group Dynamics, Organizational Learning & thereon; thereby making them capable of working in an organizational set-up.

Pre Requisite : The students are expected to be prepared with the theoretical aspects of the same, so that the mentor could facilitate the minds to absorb its practical aspects.

Unit – I : **Genesis of Management Thought & Conceptualization:** Understanding of Management Concepts, Evolution of Management Thought, Systems and Contingency Approach for understanding organizations, Managerial Processes, Functions, Skills & roles of a Manager in an organization; Management by Objectives (MBO).

Unit – II : **Management of Individual Behavior in Organization - I:**
Personality, Perceptions, Values, Attitudes, Learning.

Unit – III : **Management of Individual Behavior in Organization - II:**
Work motivation & Employee Engagement, Individual decision making & problem solving

Unit – IV : **Group Dynamics:**
Corporate Leadership, Emotional Intelligence, Understanding & managing group processes-Interpersonal and Group Dynamics - Communication, Group Decision-making, Organizational Design & Structure, Recreation & Work Stress

Unit – V : **Society vis-à-vis Organization:**
Corporate Social Responsibility; Corporate Global Citizenship in the wake of Globalization

Text Books : 1. Luthans, F. *Organizational Behaviour*, 7th ed., New York, McGraw Hill, 1995.
2. Robbins, S.P. *Management*, 5th ed., New Jersey, Englewood Cliffs, Prentice Hall Inc., 1996.
Robbins, S.P. *Organizational Behaviour*, 7th ed., New Delhi, Prentice hall of India, 1996

Additional Reference Books : 1. Koonz, H. and Weachirch, H. *Management*. 10th ed., New York, McGraw Hill, 1995.
2. Goleman, Daniel *Emotional Intelligence,*
3. Harvard Business Review's Leadership Manual
www.hbpr.com

Subject Title	:	Statistical Methods			
Subject Ref. No.	:	MANB402	**No. of Credits**	:	4

No. of Periods / Week	:	4
Assignments / Sessional	:	20
Semester Examination	:	80

Course Objective : The objective of the course is to make student familiar with statistical techniques relevant to management science and focus on applied aspects of subject.

Pre Requisite	:	Basic knowledge of mathematics.
Unit – I	:	Measures of central tendency, mean-median-mode, measures of dispersion, means and standard deviation.
Unit – II	:	Correlation analysis and regression analysis.
Unit – III	:	Time series analysis: components, methods of measurement moving averages and methods of Least Squares.
Unit – IV	:	Probability and probability distribution, Business Forecasting
Unit – V	:	Statistical Reference: Test of Hypothesis, Chi square test, F-test and Analysis of variance.

Text Books	:	1. Gupta S P, *StatisticalMethods,* New Delhi S Chand and Co Ltd 2008
		2. Elhans D N, VeenaAgrawal, B M Fundamental of Statistics New Delhi, KitabMahal, 2002.
		3. Sharma S D, Operation's Research, KedarNath and Ram Nath and Co., Meerut, 2000
Additional	:	1. C Satyadevi, *Quantitative* , New Delhi S Chand and Co Ltd 2009
Reference Books		2. Shrivastava V K, Shenoy G V, Sharma S C, *Quantitative Techniques and Managerial Decisions*, New Delhi, New Age International Ltd, 2005
		3. Shrivastav, *Statistics for Management*, Tata McGraw Hill, 2000
		4. Levin Richard I and Rubin David S Statistics for Management, New Prentice Hall Inc. 1995.

Subject Title	:	Managerial Economics			
Subject Ref. No.	:	MANB403	**No. of Credits**	:	4
			No. of Periods / Week	:	4
			Assignments / Sessional	:	20
			Semester Examination	:	80

Course Objective : The objective of the course is to acquaint the students with concepts and technologies needed in economics and to enable them to apply this knowledge in business decision making at firm level.

Pre Requisite : Basic understanding of concepts, theories of economics.

Unit – I : **Introduction:**
      i.   Basic concepts and Principles
      ii.   Theory of firm

Unit – II : **Theory of Demand:**
      i.   Demand and supply analysis
      ii.   Consumer preference and choice
      iii.   Elasticity of demand
      iv.   Demand forecasting

Unit – III : **Theory of Production and Cost:**
      i.   Production Theory
      ii.   Cost concepts

Unit – IV : **Market Structure:**
      i.   Perfect Competition
      ii.   Monopoly
      iii.   Oligopoly

Unit – V : **Macro-Economic Aspects:**
      i.   National Income
      ii.   Money Supply and Inflation
      iii.   Business cycles

Subject Title	:	Research Methodology		
Subject Ref. No.	:	MANB404	**No. of Credits**	: 4
			No. of Periods / Week	: 4
			Assignments / Sessionals	: 20
			Semester Examination	: 80

Course Objective : To equip the students with the basic understanding of the research methodolo and to provide an insight into the application of modern analytical tools a techniques for the purpose of management decision making.

Pre Requisite : NA.

Unit – I : Nature and Scope of Research Methodology; Research Problem identification; Types of Problems; Problem solving process; Problem Formulation and Statement of Research Objectives; Research Applications.

Unit – II : Research process; Research designs-exploratory, descriptive & experimental research designs

Unit – III : Methods of Data Collection – Observational and Survey methods; Questionnaire Design; Attitude measurement Techniques; Motivational Research Techniques; Administration of Surveys;

Unit – IV : Sample Design; Selecting an Appropriate Statistical Technique; Field Work and Tabulation of Data;

Unit – V : Analysis of Data-; Use of SPSS and other Statistical Software Packag Advanced Techniques for Data Analysis – ANOVA, Discriminant Analys Factor Analysis, Conjoint Analysis, Multidimensional Scaling and Clusteri Methods; Organization structure of research; Research Proposal; Purpose a types of Research Proposal.

Text Books :
1. Research methodology methods & techniques by C.R. kothari
2. Statistical methods: Dr.S.P. Gupta-sultan Chand & sons New Delhi.
3. Research methodology by gupta
4. Research methodology in social science by Giridhari
5. Management Research Methodology by K.N. Krishnaswamy, Appa Iyer sivakumar and M. Mathirajan.
6. Management Research by Andrews, F.M. and S.B. Withey Social Indicators of Well Being. Plenum Press. NY, Bennet, Roger
7. Survey Methods by Fowler, Floyd J.Jr.,
8. Exploring Research by Salkind, Neil J.,

Subject Title	:	Accounting for Managers		

Subject Ref. No.	:	MANB405	**No. of Credits**	:	2
			No. of Periods / Week	:	2
			Assignments / Sessionals	:	10
			Semester Examination	:	40

Course Objective : 1. The basic purpose of this course is to develop an insight of postulates, principles and techniques of accounting.
2. To plan the work & take decisions on the basis of accounting information.

Unit – I : **Financial Accounting** – Concepts, Importance and Scope, Generally Accepted Accounting Principles of Double Entry System of Book-Keeping, Ledger Posting, Preparation of Trial Balance sheet, Preparation of Final Accounts with simple Adjustments

Unit – II : **Management Accounting** – Meaning, Aims, Objectives, Functions, Advantages and Limitations of Management Accounting Difference between Management Accounting and Financial Accounting; Financial Analysis Fund Flow and Cash Flow Statements.

Unit – III : **Cost Accounting:** - Meaning, Concept, Relationship Between Cost Accounting and Financial Accounting, Cost Elements – Material Labour and Overheads, Preparation of Cost Sheet

Unit – IV : **Marginal Costing**, Absorption Costing and Breakeven Analysis, **Standards Costing** and Variance Analysis.

Text Books : 1) 'Advanced Accountancy' by Shukla and Grewal.
2) 'Advanced Financial Accounting' by R.L.Gupta
3) 'Advanced Accounting' by Jain and Naranmg.
4) 'Advanced Accounting' by Khan and Jain.
5) 'Advanced Accountancy' by S.N.Maheswari.

Note : Every week there will be compulsory class test.
Outcome : The students will have better understanding of Accounting data & will be able to take decisions of the firm on the basis of Financial Statements.

Subject Title	:	Environment Management			
Subject Ref. No.	**:**	MANB406	**No. of Credits**	**:**	2
			No. of Periods / Week	**:**	2
			Assignments / Sessionals	**:**	10
			Semester Examination	**:**	40

Course Objective : UNs Resolution for 2010 & the World Millennium Goals have Environment & Sustainable Development as the core objective. The course is designed to make the budding managers sensitized to Environment along with developing an understanding of inclusive & sustainable growth; thereby creating Managers that cater to the societal demands along with the organizational priorities.

Unit – I : Environment Management: Fundamentals-Sustainable Development, Implications of human population growth, Limits to growth, Environment and Business Schools.

Unit – II : Energy Management-Fossil Fuels use, Nuclear – Wind – Hydro Energy, Bio-fuel; Recycling Industry; Ecosystem Concepts; Ecology: Industrial Ecology, Agro-ecology.

Unit – III : Environment Management System; EMS Standards; Audit Scheme; Clearance/Permissions for establishing industry; Carbon Credit.

Unit – IV : Environmental Management and Valuation: Environmental Accounting, Green Funding, Green Banking; Environment Ethics; Environmental Health & Protection; GATT/ WTO Provisions; Environmental Law.

Unit – V : Pollution and Waste Management- Air, Water, Noise & Land Pollution; Waste Management; Biodiversity Management; forest products and Trade; Global-warming; Bharat Stage – II & Euro – II; Role of NGO's.

Subject Title	:	Computer Applications		
Subject Ref. No.	:	MANB408	**No. of Credits**	:	2

			No. of Periods / Week	:	2
			Assignments / Sessional	:	10
			Semester Examination	:	40

Subject Title	:	English Language Proficiency			
Subject Ref. No.	:	MANB409	**No. of Credits**	:	2
			No. of Periods / Week	:	2
			Assignments / Sessional	:	10
			Semester Examination	:	40

Course Objective : 1. The basic purpose of this course is to acquaint the students with the nuances of English language & enhance interpersonal, social skills etc.

Pre-requisite : Basic awareness of English language.

Unit – I :
   I. **Spoken Vs Written Communication**
   II. **Introduction to English**

Unit – II : **Basics of Grammar**

Unit – III : **Building Vocabulary, Speed Reading**

Unit – IV : **Reading Comprehension skills**

<div align="center">II Semester</div>

Subject Title	:	Optimization Techniques			
Subject Ref. No.	:	MANB410	**No. of Credits**	:	4
			No. of Periods / Week	:	4
			Assignments / Sessionals	:	20
			Semester Examination	:	80

Course Objective : The objective of the course is to develop in understanding a basic optimization techniques and their role in Managerial Decision Making.

Pre Requisite : Students are required to revise knowledge of statistical methods.

Unit – I	:	Basics of Operation Research, Applications in Managerial decision making.
Unit – II	:	Linear Programming, Basic Concepts and methods of solution.
Unit – III	:	Assignment and transportation models, replacement theory.
Unit – IV	:	Queuing theory, game theory and simulation.
Unit – V	:	Decision theory, inventory management techniques, project management by PERT/CPM.

Text Books	:	1. Taha, H A Operations Research- An Introduction, New york, Mc-Miillan, 1989
		2. Narag A S, Linear Programming and Decision Making, New Delhi, Sultan Chand, 1995.
		3. Sharma S D, Operation's Research, KedarNath and Ram Nath and Co., Meerut, 2000
Additional Reference Books	:	1. KantiSwarup Gupta, P. K. Manmohan, Operations Research, Sultan Chand and Sons Edu, Publishers, New Delhi 2003
		2. Gupta, Prem Kumar and Hira, D S Operations Research, New Delhi, S Chand and Co Ltd 2000

Subject Title:	HUMAN RESOURCE MANAGEMENT
Subject Ref. No.:	MANB-411
No. of credits:	04
No of periods /week:	04
Assignments/ sessions:	20
Semester Exam:	80
Course Objectives:	In a complex world of industry and business organizational efficiency is largely dependent on the contribution made by the members of the organization. The Objectives of this course is to sensitize students to the various facets of managing people and to create an understanding of the policies and practices of human resource management.
Pre-requisites:	Functions of Human Resource Management, Basics of Human Resource Planning and its role in Human Resource Management.
Unit-I	**Conceptualization & fundamentals**: Introduction to HRM, corporate objectives & HPM, Concepts & functions of HRM, comparison between Personnel Management & HRM, corporate level strategies & its effect on HRM
Unit-II	**Employment:** Job Design, Job Analysis, Human Resource Planning, Recruitment, Selection, Placement, Induction.
Unit-III	**Human Resource Development**: Training & Development, career planning & succession Planning, Performance Appraisal, Potential Appraisal, Promotion, Transfer & Demotion, Retention & Retrenchment strategies, Exit Interviews
Unit-IV	**Compensation** : Job Evaluation, Wage & salary Administration, fringe Benefits, social Security measures
Unit-V	**Employee Engagement Practices**: Employee welfare, Industrial Relations, Trade Unions, Dispute Resolution & Grievance Management

Text Books:

1. Dessler, Gary Human Resource Management, Prentice Hall
2. Aswathappa K. Human Resources and Personnel Management Tata McGraw Hill New Delhi, 1997.
3. P. Subba Rao; Personnel And Human Resource Management" Text & Cases, Himalay Publishing House. 2009.
4. Sarma A.M., Performanc Management systems, Himalaya Publication House, 2008.
5. Kandula, Performance Management, straltgies, interventions, Drivers, Printice Hall of India, 2007.
6. Cardy, Performance Management concepts skills & exercise, printice Hall of India 2007.

Subject Title	:	Financial Management		
Subject Ref. No.	:	MANB412	**No. of Credits** :	4
			No. of Periods / Week :	4
			Assignments / Sessionals :	20
			Semester Examination :	80

Course Objective : The purpose of this course is in creating awareness and understanding of three core areas of Financial Management- Investment Decisions, Financing Decisions and Dividend Decisions

Pre Requisite : Elementary Understanding of concepts related to Finance.

Unit – I : **Foundations of Finance:**
Overview, Time value of money and Valuation of Bonds and Shares

Unit – II : **Analysis and Control:**
Cash flow statement, Financial Statement Analysis, Cost-Volume-Profit Analysis, Budgeting and Profitability.

Unit – III : **Long Term Investment Decision:**
Capital Budgeting, Cost of Capital, and Risk Analysis.

Unit – IV : **Current Asset Management:**
Working Capital Management, Management of Cash, Receivables and Inventory, Working Capital Financing.

Unit – V : **Leverage Decisions, Capital Structure Decisions, Long-term Financing and Dividend Policies and Its Determinants**

Text Books :
1. *FinancialManagement*- Khan and Jain Sixth Ed- Tata McGraw Hill.
2. *FinancialManagement*-Prasanna Chandra – Seventh Ed, Tata McGraw Hill.
3. *FinancialManagement- Principle*s *and Practice*- G Sudarshana Reddy, Himalaya Publications
4. *FinancialManagemen*- *R. M Shrivastav*Himalaya Publications
5. *FinancialManagement*-I M Pandey, Vikas Publications 10th Ed

Additional Reference Books :

Subject Title	:	Marketing Management		
Subject Ref. No.	:	MANB413	**No. of Credits** :	4
			No. of Periods / Week :	4
			Assignments / Sessionals :	20
			Semester Examination :	80

Course Objective : The purpose of this course is to develop and understanding of the underlying concepts, strategies and issues involved in the marketing of products and services.

Pre Requisite : The student should have basic knowledge of Management.

Unit – I : Nature and scope of marketing, corporate orientations towards the marketplace. The marketing environment and Environment scanning, Integrating Marketing with other Functions, Marketing information system and Marketing research,

Unit – II : Understanding consumer and Industrial markets, Market segmentation, Targeting and positioning; Product decisions-product mix, product life cycle, new product development, branding and packaging decisions,

Unit – III : Pricing methods and strategies, Promotion decisions-promotion mix, advertising, sales promotion, publicity and personal selling;

Unit – IV : Channel management-selection co-operation and conflict management, vertical marketing implementation and systems, Organizing and implementing marketing in the organization; Evaluation and control of marketing efforts;

Unit – V : New issues in marketing-Globalization Consumerism, Green marketing, Internet Marketing, Rural Marketing – Rural Marketing Environment & Strategy.
Customer Relationship Management – Components of CRM, Measuring Customer Satisfaction,
Marketing of Services – Growth of Services in India, social networking, Bluetooth marketing and
Retailing – Nature & Scope.

Text Books : 1. Kotler, Philip, *Marketing Management, Analysis, Planning, Implementation and Control*, New Delhi, Prentice Hall of India.
2. Ramaswamy, V S and Namakumari, S. *Marketing Management; Planning Control,* New Delhi, Macmillan.

Additional Reference Books : 1. Enis, B M *Marketing Classics: A Selection of Influential Articles*, New York, McGraw Hill.
2. Station William, J. *Fundamentals of Marketing*, New York, McGraw Hill.
3. Nelamegham, S. *Marketing In India: Cases and Readings*, New Delhi, Vikas.
Shah "Advertising and Promotion", Tata McGraw Hill.

Subject Title	:	Production and Operations Management		
Subject Ref. No.	:	MANB414	**No. of Credits**	:	4
			No. of Periods / Week	:	4
			Assignments / Sessionals	:	20
			Semester Examination	:	80

Course Objective : The Course is designed to acquaint the students with decision making in: Planning, scheduling and control of Production and Operation function in both manufacturing and services; Productivity improvement in operations through layout engineering and quality management etc.; Effective and efficient flow, replenishment and control of material with reference to both manufacturing and services organizations.

Pre Requisite : NA

Unit – I : Nature and Scope of Production and Operations Management; Types of Manufacturing Systems & Layouts; Layout Planning and Analysis; Make-or-Buy Analysis

Unit – II : Facility Location; factors influencing facility location; Capacity Planning; Types of capacity;

Unit – III : Materials Management – Overview of Materials Management, Materials planning, Budgeting, Inventory control, JIT, MRP, Purchase Mgt., Stores Mgt; Vendor Evaluation;
Materials Handling- Principles ;Equipments; 5-S. Kaizen; Kanban; Poka-Yoke; Toyota Production Systems; Line Balancing-Problems;

Unit – IV : Scheduling; Production Planning and Control-In Mass Production-In Batch/ Job Order Manufacturing;
Work Design- Work study, method study, work measurement- work sampling

Unit – V : Quality Management System- Quality Assurance- statistical process control - acceptance sampling; TQM-ISO 9000;
Maintenance Mgt concepts- Maintenance Mgt; Work environment; Safety management;

Text Books : 1. Production and operations Management by Kaniska Bedi
2. Production and operations Management by K. Ashwathappa and K. Shridhara Bhat
3. Operations Management by E. Buffa
4. Production and Operations Management 6th ed., by Adam, E E & Ebert, RJ.;

Subject Title	:	Business Legislation		
Subject Ref. No.	:	MANB415	**No. of Credits**	:	4
			No. of Periods / Week	:	4
			Assignments / Sessionals	:	20
			Semester Examination	:	80

Course Objective : The Course bears the onus of developing technical insights in students about the legislative framework of Indian Business Scene.

Pre Requisite	:	The students are required to refer Bare Acts, Law Codes & Supreme Court Precedents on the topics to be discussed in the lecture beforehand.

Unit – I : **The Indian Contract Act, 1872 (Section 1 – 100)**

Fundamentals & Conceptualization, Essentials of a Valid Contract, Void-Voidable Contracts, Performance & Breach of Contracts, Remedies on Breach of Contract & Quasi Contracts.

Unit – II : **The Company Act, 1956**

Concept, Nature & Types of Companies, Formation of Company, Memorandum of Association & Articles of Association, Prospectus, Allotment of Shares, Director & its Qualifications, Shares & Share Capital, Membership, Borrowing Powers, Management & Meetings, Winding-up of a Company.

Unit – III : **The Sale of Goods Act, 1930**

Concept, Definitions, Solemnization of a Sale of Goods Contract, Paid & Unpaid Seller, Rights of an Unpaid Seller, Remedies on breach of Contract,

Unit – IV : **The Negotiable Instruments Act, 1881**

Types & Nature of Instruments, Negotiation & Assignment, Holder-in-due Course, Dishonor & Discharge of Negotiable Instruments, Arbitration.

 & Consumer Protection Act

Unit – V : **Information Technology Act & Cyber Laws**

Text Books : Bare Acts & Code Books

Additional
:
Reference Books
Supreme Court Journals, Supreme Court Reports & other Reference Journals

Subject Title	:	Soft Skills Development			
Subject Ref. No.	:	MANB416	**No. of Credits**	:	2
			No. of Periods / Week	:	2
			Assignments / Sessionals	:	50
			Semester Examination	:	--
Course Objective	:	The subject aims at developing a more confident psychological self, while working on the finishing & externalities of a personality.			
Pre Requisite	:	The students are expected to put the day-to-day learning into actionable-processes & practice.			
Unit – I	:	**Personality:**			

Elements of a Personality, Types of a Personality, Identify your Personality, Assets vs. Challenges of each Personality Type, MBTI Personality Type & Tests, Ways to beautify ones Personality, Identify 'my' Learning Style.
Emotional Intelligence & Inter-personal Relationships.

Unit – II	:	**Goal Setting:**
		Unity of Goal, Me vs. My Goal, Goal Achievement – Way & the War, Ways to Achieve Goal, Game Plan & Achievement.
Unit – III	:	**Written Communication:**
		Elements of Formal Drafting, Basics of Drafting, Drafting Business Letters & Reports,
Unit – IV	:	**Making of a Corporate Professional**

     i) Team Enrichment – Group Dynamics, Stages of Group Development, Diversity Tolerance & Appreciation, Difference between a Team & a Group, How to manage 'me' in a Team, Team Building

     ii) Leadership – Essence of Leadership, Leader with a Title & without a Title, Habits of a Leader, Qualities of a Leader, Accommodating Diversity.

Unit – V	:	**Change Management**
		Concept, Sources of Change, Change & Business Professional, Leadership & Change Management.
		How to accommodate Change in the Corporate World. Decision Making in event of uncertainty.

Text Books	:	1. Monippally, Matthukutty. M. 2001. *Business Communication Strategies*. 11th Reprint. Tata McGraw-Hill. New Delhi
		2. The Goal – Eliyahu Goldratt
		3. The Fish
		4. Who Moved my Cheese
		5. Think & Grow Rich – Napolean Hill
		6. 7 Habits of Highly Effective People – Dale Carnegie
		7. 6 Thinking Hats
Additional Reference Books	:	1. The Art of Thinking Big
		2. The Monk who sold His Ferrari

Subject Title	:	Employability Skills		
Subject Ref. No.	:	MANB-417	**No. of Credits** : 2
			No. of Periods / Week : 2
			Assignments / Sessionals : 50
			Semester Examination : --
Course Objective	:	The objective of the course is to train the students with the essential skills required for enhancing his or her employability prospects in the Job Market.
Pre Requisite	:	**NA**
Unit – I	:	Pre-Interview skills

    ∑ Writing a CV or Resume
    ∑ Applying for a Job.
    ∑ Writing a covering Letter.
    ∑ Writing an effective linkdin Profile.

| Unit – II | : | Interview skills |

    ∑ Presentations in Interview.

∑   Presentations to Large groups and conferences

Unit – III   :   Group Discussions and Debates.

Unit – IV   :   ∑   Preparation for Aptitude Test
                     :   ∑   Assessment- Psychometric Testing

Unit – V   :   Appearance.

Subject Title   :   **Corporate Governance**

Subject Ref. No.	: MANB421		
		No. of Credits :	2
		No. of Periods / Week :	2
		Assignments / Sessionals :	10
		Semester Examination :	40

Unit I   Fundamentals & Conceptualization

Unit II   Corporate Governance: Concept, Overview, Significance in Indian Context,

Issues in Corporate Governance, Historical Perspective – Kautilya's

Arthashastra.

Unit III   Practice of Corporate Governance: Corporate Governance Mechanisms,

Indian Model of Governance, Characteristics of Good Corporate Governance.

Indian Corporate Governance Committee – CII Committee, Kumaramangalam

Birla Committee, Naresh Chandra Committee, Narayanan Murthy Committee

& J.J.Irani Committee etc.

Unit IV   Legislative & Regulatory Framework: Indian Companies Act, 2013 relevant

to Corporate Governance, Clause- 49 of Listing Agreement & Whistle Blower

Policies & Legislations. SEBI & its role in Corporate Governance

Unit V   ---

Reference Books   1. A.C. Fernando, Corporate Governance, Pearson Education, 2nd Edition.
2. C.V.Baxi, Corporate Governance, Excel Books, 2007.

Subject Title	:	**International Business Environment**		
Subject Ref. No.	:	MANB422	**No. of Credits** :	2
			No. of Periods / Week :	2
			Assignments / Sessionals :	10
			Semester Examination :	40

Course Objective : The objective of the course is to provide the student with a background of various environment factors that have major repercussions on business and sharpen their mind to watch and update the changes that occur constantly in this sphere.

Pre Requisite : **NA**

Unit – I : International business – An overview of international business, International business environment – Economic, Socio – cultural, Political, Natural environment. Theories of International Business, Strategies of International Business, Modes of entering International Business, Advantages and Disadvantages of International Business,

Unit – II : Globalization – Introduction, Meaning, and Defination, Features, Stages of Globalization, Gobalizaton of Markets, Globalization of Production, Globalization of Investments and Technology. Advantages and Disadvantages of Globalizations

Unit – III : World Trade Organization(WTO), Tariff and non Tariff barriers, General Agreement on Trade and Tariff(GATT),Establishment of World Trade Organization., Uruguay round Package., Organization structure of the WTO,WTO –Anti Dumping Measures.

Unit – IV : Regional Economic Integration, Global monetary system, Foreign Exchange Market, Global Capital Market.

Unit – V : International Marketing, Global HRM, Global Production, Corporate Social Responsibility.
,.

Text Books : Francis Cherunilam: Business Environment: Text and Cases, 17/e, Himalaya, 2007.
- K.Aswathappa, Essentials of Business Environment, 9/e Himalaya, 2007.
- P. Subbarao : International Business, Himalaya Publishing.
- Charles Hill, International Business – Tata Mc. Graw Hill,

Subject Title	:	Ethics in Management			
Subject Ref. No.	**:**	**MANB423**	**No. of Credits**	**:**	**2**
			No. of Periods / Week	**:**	**2**
			Assignments / Sessionals	**:**	**10**
			Semester Examination	**:**	**40**

Unit I	Fundamentals & Conceptualization: Morals – Ethics – Values, Indian Heritage on Ethics, Fundamental principles of Ethics-Values in Business, Need for values in Global change, Professional Ethics of a Manager, Indian Leaders on Business Ethics.
Unit II	Societal Aspect of Ethics & Corporate Governance: Corporate Social Responsibility & corporate Governance, Corporate Global Citizenship.
Reference Books	1. Mishra "Business Ethics", Tata McGraw Hill 2. Chakraborty, S.K.: Foundation of Managerial work-Contribution from Indian Thought, Himalaya Publishing House Delhi 1998. 3. Biswanath Ghose, Indian Ethos & Values, Vikas Publishing,2008. 4.S.A. Sherlekar, Global Dharimic Management, Himalaya Publication House, 2nd Edition 2005. 5. CVS Murthy, Business Ethics, Himalaya Publishing House, 2006 6. N.M. Khandelwal, Indian Ethnos & values for Manager, Himalaya

Subject Title	: Creativity and Innovations		
Subject Ref. No.	: MANB424	**No. of Credits** :	2
		No. of Periods / Week :	2
		Assignments / Sessionals :	10
		Semester Examination :	40

Unit I	Basic concepts of Thinking, Creativity and Innovations
Unit II	Lateral Thinking
Unit III	Mind Mapping
Unit IV	Innovations
Unit V	Case Studies
	1. "Lateral Thinking" by Edward de Bono
Reference Books	2. "Mind Mapping" by Tony Buzan
	3. "Innovation Engine" by Tina Seelig

REGULATIONS SPECIFIC TO

M.B.A. PROGRAMME (Part Time)

IN

UNIVERSITY DEPARTMENT OF MANAGEMENT

SCIENCE

Dr. Babasaheb Ambedkar Marathwada University, Aurangabad.

(With Effect from Academic Year 2016-17)

REGULATIONS
Specific to
M.B.A. Programme (Part Time)

1. ELIGIBILITY FOR ADMISSION:
Master of Business Administration

a) Candidates shall have passed any Bachelor's degree examination of any recognized University with not less than 50% (45% for SC/ST category) in any discipline recognized by the Association of Indian Universities.

b) A limited number of admissions is offered to Foreign Nationals and Indians Living Abroad in accordance with the rules applicable for such admission, issued from time to time, by Dr. BAMU.

c) If, at any time after admission, it is found that candidate had not in fact fulfilled all the requirements stipulated in the offer of admission, in any form whatsoever, including possible misinformation etc., this matter shall be reported to the respective committee, recommending revoking the admission of the candidate.

d) The institute reserves the right to cancel the admissions of any student and ask him to discontinue his studies at any stage of his career on the grounds of unsatisfactory academic performance, indiscipline or any misconduct.

2. DURATION

The duration of study shall be a minimum of 3 years and maximum of 6 years.

3. ADMISSION/PROMOTION CRITERIA

If candidate gets selected for UDMS MBA Part Time course through due admission process, he/she have to apply on the application form of the University provided with the prospectus. Once the candidate is admitted to the MBA Part Time course, the Student will be promoted to next Semester with full carry on, Subject to the registration of candidate in every consecutive semester. Dropout student will be allowed to register for respective semester as and when the concerned courses are offered by the Department, subject to the condition that his/her tenure should not exceed more than twice the duration of MBA course from the date of first registration at UDMS. The admission of respective student will automatically get cancelled if he/she fails to complete the course in maximum period. (Six years/Twelve Semesters)

4. MEDIUM OF INSTRUCTION:

The medium of instruction shall be in English.

5. CREDITS AND DEGREES

i. A candidate who has successfully completed all the FoundationCore, Elective courses and Project work as prescribed for MBA (PT) Programme approved by the University with prescribed CGPA shall be eligible to receive the degree.

ii. One Credit shall mean one teaching period of one hour per week for one semester (of 15 weeks) for theory courses.

6.   COURSES

The MBA Part Time programme comprises of

i.   Foundat ion Course: It may be of two kinds Compulsory Foundat ion Course for Knowledge Enhancement and Elective Foundat ion Course for value based education.

ii.   Core Course: A core course is course that a candidate admitted to particular P.G. programme must successfully complete to receive the degree.

iii.   Elective Course: Elective courses identified by the Departmental Committee of the department offering the programme. Means these courses given to the candidate as optional from which he/she have to opt for specialization.

iv.   Each course shall include lectures/tutorials/laboratory /field work/ seminar/practical training/assignments /mid-term and term end examinations/paper/report writing or review of literature and any other innovative practice etc, to meet effective teaching and learning needs.

v.   Each course shall have a unique alphanumerical code.
For eg.
MANB402   Statistical Methods
Here,
   MAN means Management Science
   B means MBA course
   402 means Subject Code

vi.   The departmental committee shall design the core and elective courses including the detailed syllabus for this MBA Part Time programme offered by the department. The department committee shall have the freedom to introduce new courses and / or to modify / redesign existing courses and replace any existing course with a new course to facilitate better exposure and training for the candidates.

vii.   **Attendance:** A student must have 50% of attendance in each Core and Elective Course for appearing the examination. In the event of Non-Compliance of Attendance criteria(50%), students will have to seek admission next year so as to complete the course. However Student having 40% attendance with Medical Certificate can apply to the H.O.D. for condonation of attendance.

7. DEPARTMENTAL COMMITTEE

As an autonomous department, MBA Part Time course is monitored by Departmental Committee. The Committee consists of H.O.D. (Director) as Chairman and some/all Respective Faculty of the Department as its members..

8. GRIEVANCE REDRESSAL SCHEME

The University shall form a Grievance Redressal Committee for this course in UDMS with the course teacher and HOD, which shall solve all grievances relating to the Assessment of the student.

9. GRADE AWARDS

i.   In order to pass the examination following credit based grading system will be followed. Ten point rating scale shall be used for evaluation of performance of the student to provide Letter Grade for each course and overall grade for this course. Grade points are

based on the total number of marks obtained by him / her in all the heads of the examination of the course. These grade points and their equivalent range of the marks are shown separately in following:

Table – I: Ten Point grades and grade description

Sr. No.	Equivalent Percentage	Grade points for SGPA and CGPA	Grade	Grade Description
1.	90 – 100	9.00 – 10	O	Outstanding
2.	80 – 89.99	8.00 – 8.99	A++	Excellent
3.	70 – 79.99	7.00 – 7.99	A+	Exceptional
4.	60 – 69.99	6.00 – 6.99	A	Very Good
5.	55 – 59.99	5.50 – 5.99	B+	Good
6.	50 – 54.99	5.00 – 5.49	B	Fair
7.	45 – 49.99	4.50 – 4.99	C+	Average
8.	40.01 – 44.99	**4.01** – 4.49	C	Below Average
9.	40	4.00	D	Pass
10.	Below 40	0.00	F	Fail

ii. **Table – II: Classification for the degree is given as follows**

Classification	Overall letter grade
First Class with distinction	*A+ and above*
First Class	*A*
Higher Second Class	*B+*
Second Class	*B*
Pass	*C+ to D*
Fail	*F*

iii. In the event of student registered for the examination (i.e. Internal Tests/End Semester Examination/Practical/Seminar/Project Viva-voce), non-appearance shall be treated as the student deemed to be absent in the respective course.

iv. Minimum D grade shall be the limit to clear /pass the course/subject. A student with F grade will be considered as 'failed' in the concerned course and he/she has to clear the course by reappearing in the next successive semester examinations. There will be no revaluation or recounting scheme under this system.

v. Using table – I, Semester Grade Point Average (SGPA) and then Cumulative Grade Point Average (CGPA) shall be computed. Results will be announced at the end of each semester and Cumulative Grade Card with CGPA will be given on completion of the course.

10. COMPUTATION OF SGPA (SEMESTER GRADE POINT AVERAGE) & CGPA (CUMULATIVE GRADE POINT AVERAGE)

The computation of SGPA and CGPA will be as below:

i. Semester Grade Point Average (**SGPA**) is the weighted average of points obtained by a student in a semester and will be computed as follows:

$$SGPA= \frac{Sum(Course\ Credit * Number\ of\ Points\ in\ concern\ course\ gained\ by\ the\ student)}{Sum\ (Course\ Credit)}$$

The SGPA for all the six semesters will be mentioned at the end of every semester.

ii.   The Cumulative Grade Point Average (**CGPA**) will be used to describe the overall performance of a student in all semesters of the course and will be computed as follows:

$$CGPA= \frac{Sum(All\ Six\ semester\ SGPA)}{Total\ number\ of\ semesters}$$

The SGPA and CGPA shall be rounded off to the second place of decimal.

11. EVALUATION SCHEME

i. Each theory course will be of 100 Marks and be divided in to Internal Examination (Sessional) of 20 Marks and Semester End Examination of 50 Marks. (ie. 20+80=100) & In case of 50 Marks paper, Internals will be of 10 Marks & Semester End Examination will be of 40 Marks.

ii. There shall be Separate Passing Head for the Internal and External Examination.

    a) For Theory Course

        i. **Internal Evaluation Scheme**

        The Internal Evaluation shall be done on the basis of Monthly exams, assignments, fieldwork, seminars, review writing etc.

        ii. **Semester End Examination Evaluation Scheme**

          ∑ English shall be the medium of instruction and examination.

          ∑ Examination shall be conducted at the end of each semester as per the academic calendar notified by department itself.

          • The Semester End Examination theory question paper will have two parts **(20 + 60 = 80)** Marks for 100 marks paper and **(10+ 30 = 40)** Marks for 50 marks paper.

        ∑ For Inplant Training Report Evaluation (MANB 551) out of 100 marks, 20 marks are based on Synopsis submission, Periodic Reviews etc & 80 marks are for Semester End Assessment.

        ∑ For Final Project Evaluation (MANB553),out of 200 marks, 40 marks are based on Synopsis submission, Periodic Reviews, Report writing etc & 160 Marks are for External Assessment

    b) **For Implant Training and Project Work:**

      i. At the end of Fourth semester, all students will have to undergo Summer Training (MANB-551) of 6-8 weeks with an industrial, business or service organization. The condition of successfully completing the programme shall not be deemed to have been satisfied unless a student undergoes summer training under the supervision of the department in organization as approved by the Departmental/Faculty from time to time. Each student will be required to submit the implant training report to the Department/faculty for the work undertaken during this period within three weeks of the commencement of the third semester for the purpose of evaluation in the third semester. Also during Third Semester, in consultation with respective Project Guide the Topic based on selected elective, for Fourth Semester Project would be finalized (MANB 552) and subsequently Final Synopsis for the same would be submitted by the student.

      ii. The final project study (MANB-553) shall commence from third semester and the report should be submitted towards the end of the fourth semester. The project   report

should cover the theoretical background, field study and comparative analysis. Alternatively the students may take up the problems from the industry and construct a case study. The case studies can also be submitted as project reports.

iii. The project topic should be in the area of specialization and should necessarily include field work and library work.

iv. The student will be expected to make a presentation/viva-voce of the project work towards the end of the last semesters.

v. Out of aggregate 200 marks assigned to the project report. 100 Marks are assigned to the concerned guide from the industry and 100 Marks are assigned to the Departmental Examination. Further the project report, presentation and viva-voce will be evaluated jointly by the internal and external examiner.

vi. Two typed copies of Project Report shall be submitted by the candidate to the concerned teacher for Evaluation.

c) At the end of each semester the Committee of Department shall assign grades to the students and will prepare the result. Also, the Department will display the grade points and grades for the notice of students.

d) Every student shall have the right to scrutinize answer sheets of mid semester/semester end examinations and seek clarifications from the teacher regarding evaluation of the sheets as per Grievance Schedule.

12. RULE FOR OFFERING ELECTIVES

The number of students required for offering an Elective /Specialization shall be a batch of minimum of 10 students.

13. ADMISSION FOR PURSUIING OPTIONAL FOREIGN LANGUAGE COURSE

A student can opt for foreign language course offered by department concurrently with the regular course subject to following terms:

1. The number of students required for offering an optional foreign language course shall be a batch of minimum of 10 and maximum of 60 students.
2. Also the course will be offered subject to availability of faculty/experts.

14. GRADE CARD

The University shall issue at the beginning of each semester a grade card for the student, containing the grades obtained by the student in the previous semester and his Semester Grade Point Average (SGPA)

The grade card shall list:

(a) The title of the courses along with code taken by the student
(b) The credits associated with the course,
(c) The grade and grade points secured by the student,
(d) The total credits earned by the student in that semester.
(e) The SGPA of the student,
(f) The total credits earned by the students till that semester and
(g) The CGPA of the student (On Successful Completion of the Programme).

(h) Cumulative Grade Card
The grade card issued on completion of the programme shall contain the name of the programme, the department / school offered the programme, the titles of the courses

taken, the credits associated with each course, grades awarded, the total credits earned by the student, the CGPA and the class in which the student is placed.

15. GENERAL CLAUSE

It may be noted that beside the above specified rules and regulations all the other rules and regulations in force and applicable to semester system in Post-Graduate courses in Dr. Babasaheb Ambedkar Marathwada University will be applicable as amended from time to time by the University. The students shall abide by all such Rules and Regulations.

17. Structure of MBA Part Time Programme under CBC&GS

Sem	Course	Ref. No	Subject Title	Credit	No. of Hrs. per Sem/Minm Assessment/ Tutorial	Exam Hrs.	Marks		Total
							Internal	End Sem Exam	
I	Generic Foundation Course	MANB401	Management Practices and Organizational Behavior	4	60 -02	3	20	80	100
		MANB402	Statistical Methods	4	60 -02	3	20	80	100
		MANB403	Managerial Economics	4	60 -02	3	20	80	100
		MANB404	Research Methodology	4	60 -02	3	20	80	100
		IC001	Constitution of India	2	30	1.5	10	40	50
	Skill Based Foundation Course	MANB407	Computer Applications	2	30 -02	1.5	10	40	50
		MANB408	English Language Proficiency	2	30 -02	1.5	10	40	50
		MANB451	Community Service – I	2	30 -03	--	50	--	50
	Core Course	MANB452	Project	2	30	--	50	--	50
			Total	**26**	**390**		**210**	**440**	**650**

Sem	Course	Ref. No	Subject Title	Credit	No. of Hrs. per Sem/Minm Assessment/ Tutorial	Exam Hrs.	Marks		Total
							Internal	End Sem Exam	
II	Generic Foundation Course	MANB405	Accounting for Managers	2	30 -02	1.5	10	40	50
		MANB406	Environment Management	2	30 -02	1.5	10	40	50
		MANB407	Computer Applications	2	30	1.5	10	40	50
		MANB409	Optimization Techniques	4	60 -02	3	20	80	100
	Skill Based Foundation Course	MANB415	Soft Skill Development	2	30 -02	--	50	--	50
		MANB416	Employability Skills	2	30 -02	--	50	--	50
		MANB453	Community Service – II	2	30	--	50	--	50
	Core Course	MANB452	Project	2	30	--	50	--	50

	Open Elective Course	MANB42X	Elective I	2	30 -02	1.5	10	40	50
				Total	**20**	**300**		**260**	**240**	**500**

Elective-I

	Ref. No	Subject Title						
Open Elective Course	MANB421	Corporate Governance	2	30 -02	1.5	10	40	50
	MANB422	International Business Environment	2	30 -02	1.5	10	40	50
	MANB423	Ethics in Management	2	30 -02	1.5	10	40	50
	MANB424	Creativity and Innovations	2	30 -02	1.5	10	40	50

Sem	Course	Ref. No	Subject Title	Credit	No. of Hrs. per Sem/Minm Assessment/ Tutorial	Exam Hrs.	Marks		Total
							Internal	End Sem Exam	
III	Generic Foundation Course	MANB410	Human Resource Management	4	60 -02	3	20	80	100
		MANB411	Financial Management	4	60 -02	3	20	80	100
		MANB412	Marketing Management	4	60 -02	3	20	80	100
		MANB413	Production and Operation Management	4	60 -02	3	20	80	100
		MANB414	Business Legislation	4	60 -02	3	20	80	100
	Core Course	MANB454	Project	2	30	--	50	--	50
			Total	**22**	**330**		**150**	**400**	**550**

Sem	Course	Ref. No	Subject Title	Credit	No. of Hrs. per Sem/Minm Assessment/ Tutorial	Exam Hrs.	Marks		Total
							Internal	End Sem Exam	
IV	Core Course	MANB501	Business Policies and Strategic Analysis	4	60 -02	3	20	80	100
		MANB502	DSS and MIS	2	30 -02	1.5	10	40	50
	Compulsory Course	MANB551	Inplant Training Report	4	60	--	20	80	100
		MANB552	Project	2	30	--	50	--	50
			Total	**10**	**150**		**100**	**200**	**300**

Sem	Course	Ref. No	Subject Title	Credit	No. of Hrs. per Sem/Minm Assessment/ Tutorial	Exam Hrs.	Marks		Total
							Internal	End Sem Exam	
V	Specialization- **Finance/Marketing/Human Resource Mgmt/Production and Operations/IT**								

	Core Course as per specializati on	*Given in following table	Subject I	4	60 -02	3	20	80	100
			Subject II	4	60 -02	3	20	80	100
			Subject III	4	60 -02	3	20	80	100
			Subject IV	4	60 -02	3	20	80	100
			Subject V	4	60 -02	3	20	80	100
			Subject VI	4	60 -02	3	20	80	100
			Total	**24**	**360**		**120**	**480**	**600**

*Table showing Electives as per specialization.

Specialization- **Finance**

Sem	Course	Ref. No	Subject Title	Credit	No. of Hrs. per Sem/Minm Assessment/ Tutorial	Exam Hrs.	Marks		Total
							Internal	End Sem Exam	
V	Core Course (Finance)	MANB503F	Money, Banking & Finance	4	60 -02	3	20	80	100
		MANB504F	Working Capital Management	4	60 -02	3	20	80	100
		MANB505F	Corporate Taxation	4	60 -02	3	20	80	100
		MANB506F	Investment Management	4	60 -02	3	20	80	100
		MANB507F	Financial Decision Analysis	4	60 -02	3	20	80	100
		MANB508F	Management of Financial Institutions	4	60 -02	3	20	80	100

Specialization- **Marketing**

Sem	Course	Ref. No	Subject Title	Credit	No. of Hrs. per Sem/Minm Assessment/ Tutorial	Exam Hrs.	Marks		Total
							Internal	End Sem Exam	
V	Core Course (Marketing)	MANB503M	Consumer Behavior	4	60 -02	3	20	80	100
		MANB504M	Advertising Management	4	60 -02	3	20	80	100
		MANB505M	Industrial Marketing	4	60 -02	3	20	80	100
		MANB506M	Brand Management	4	60 -02	3	20	80	100
		MANB507M	Sales & Distribution Management	4	60 -02	3	20	80	100
		MANB508M	Digital Marketing	4	60 -02	3	20	80	100

Specialization- **Human Resource Management**

Sem	Course	Ref. No	Subject Title	Credit	No. of Hrs. per Sem/Minm Assessment/ Tutorial	Exam Hrs.	Marks		Total
							Internal	End Sem Exam	
V	Core Course (HRM)	MANB503H	Management of Industrial Relations	4	60 -02	3	20	80	100
		MANB504H	Human Resource Planning and Development	4	60 -02	3	20	80	100
		MANB505H	Training and Development	4	60 -02	3	20	80	100
		MANB506H	Performance Management Systems	4	60 -02	3	20	80	100
		MANB507H	HRD – Strategies and Systems	4	60 -02	3	20	80	100
		MANB508H	Cross Culture and Global HRM	4	60 -02	3	20	80	100

Specialization- **Production & Operations**

Sem	Course	Ref. No	Subject Title	Credit	No. of Hrs. per Sem/Minm Assessment/ Tutorial	Exam Hrs.	Marks		Total
							Internal	End Sem Exam	
V	Core Course (P&O)	MANB503P	Production Planning & Control	4	60 -02	3	20	80	100
		MANB504P	Purchasing and Materials Management	4	60 -02	3	20	80	100
		MANB505P	Service Operations Management	4	60 -02	3	20	80	100
		MANB506P	Applied Operation Research	4	60 -02	3	20	80	100
		MANB507P	Logistics Management	4	60 -02	3	20	80	100
		MANB508P	World Class Manufacturing	4	60 -02	3	20	80	100

Specialization- **Information Technology**

Sem	Course	Ref. No	Subject Title	Credit	No. of Hrs. per Sem/Minm Assessment/ Tutorial	Exam Hrs.	Marks		Total
							Internal	End Sem Exam	
V	Core Course (IT)	MANB503I	Strategic Management & IT	4	60 -02	3	20	80	100
		MANB504I	System Analysis and Design	4	60 -02	3	20	80	100
		MANB505I	Database Management System	4	60 -02	3	20	80	100
		MANB506I	Internet Programming for E-Commerce	4	60 -02	3	20	80	100
		MANB507I	RDBMS and SQL Concepts	4	60 -02	3	20	80	100
		MANB508I	Application Development Using Oracle	4	60 -02	3	20	80	100

Sem	Course	Ref. No	Subject Title	Credit	No. of Hrs. per Sem/Minm Assessment/ Tutorial	Exam Hrs.	Marks		Total
							Internal	End Sem Exam	
VI	Core Course	MANB509	Entrepreneurship Development	4	60 -02	3	20	80	100
		MANB510	Quality Management	4	60 -02	3	20	80	100
		MANB511	Indian Economy	4	60 -02	3	20	80	100
		MANB553	Major Project	8	120	--	40	160	200
			Total	**20**	**300**		**100**	**400**	**500**

| | | | **Grand Total** | **108** | **1620** | | **620** | **2080** | **2700** |

REGULATIONS SPECIFIC TO

M.C.A. PROGRAMME

IN

UNIVERSITY DEPARTMENT OF MANAGEMENT

SCIENCE

Dr. BabasahebAmbedkarMarathwada University, Aurangabad.

(With Effect from Academic Year 2016-17)

Department of Management Science,

Master of Computer Applications
(Choice Based Credit & Grade System)
OBJECTIVE OF MCA COURSE

M.C.A program prepares students to take up positions as systems analysts, system designers, programme rs and managers in any field related to information technology. The program, therefore, aims at imparting comprehens ive knowledge with equal emphas is on theory and practice. The
M.C.A. students are encouraged to spend a full semeste r working in the indust ry in the institute giving them insight into the workings of the IT world.

Rules and Regulations

1. **Eligibility and Selection Criteria**
   a) "A candidate seeking admission to Maste r of Compute r Application (MCA) should have passed Bachelor's Degree examination of any faculty with at least 50% of marks, of Dr. Babasaheb Ambedkar Marathwada University or any other degree equivalent thereto and have Mathemat ics / Statistics as one of the subject at Degree level or HSC level. However in case of students belonging to Backward Classes, a relaxation of 5% shall be available for admission."

OR

Appea red at the final year examination of a post 10+2 course of minimum three years duration leading to an award of Bachelor's Degree, in any discipline by the Association of Indian Universities or has passed with minimum 50% of marks in the aggregate (45% in case of candidate who is domiciled in Maharasht ra and belongs to the reserved categories) or appeared at an examination considered equivalent there to would be treated as eligible. Also the candidate must have passed mathemat ics / Business Mathemat ics & Statistics paper for 10+2 or graduat ion Level.

AND

Passed the CET conducted by Director of Technical Education Maharashtra State with nonzero score for that year.

   b) The Department reserves the right to cancel the admissions of any student and ask him to discontinue his stud ies at any stage of his / her carrier on the grounds of unsat isfactory academic performance, indiscipline or any misconduct.

2. **Duration**

Duration of the MCA programme shall be a minimum of 3 years / 6 semeste rs and maximum of 6 years from date of admission. The entire period of the sixth semeste r shall be devoted for the Major Project work.

3. **Admission/Promotion Criteria**

If candidate gets selected for UDMS MCA course through DTE admission process, he / she have to apply on the application form of the University provided with the prospectus. Once the candidate is admitted to the MCA course, he / she will be promoted to next semeste r with full carryon; subject to the registration of candidate in every consecutive semeste r. Dropout candidate will be allowed to registe r for respective semeste r in which he / she has failed, subject to the condition that his / her tenu re should not exceed more than twice the duration of MCA course from the date of first registration at UDMS. The admission of concern candidate will automat ically get cancelled if he / she fails to complete the course in maximum period. (Six years)

4. **Credits and Degrees**

 iii. A candidate who has successfully completed all the Foundat ion, Core, Elective courses and Project Work as prescribed for the MCA Course and Service courses as app roved by the University with prescribed CGPA shall be eligible to receive the degree.

 iv. One Credit shall mean one teaching period of one hour per week for one semeste r (of 15 weeks) for theory courses and two hours / week of practical for one semeste r.

5. **Courses**

The MCA programme comprises of

 viii. Foundat ion Course: It may be of two kinds Compulsory Foundat ion Course for Knowledge Enhancement and Elective Foundation Course for value based education.

 ix. Core Course: A core course is course that a candidate admitted to particular P.G. programme must successfully complete to receive the degree. Elective Course: Elective courses identified by the Departmenta l Committee of the depa rtment offering the programme. Means these courses given to the candidate as optional from which he / she has to opt for specialization. Whereas no elective course shall be offered unless a minimum of 10 students are registe red.

 x. Service Course: There shall be one/ two service courses, one amongst the department of the School of Professional Studies and one amongst all university depa rtments . The service courses will be offered in third and fourth semeste rs only.

 xi. Each course shall include lectures / tutorials / laboratory of field work/ seminar / practical training/ assignments / mid-term and term end examinations / pape r / report writing or review of literatu re and any other innovative practice etc., to meet effective teaching and learning needs.

 xii. Each course shall have a unique alphanumerical code.

  For eg.

  MANC401 Compute r Organization

  Here, **MAN**   means Management Science

       C   means MCA course

       401   means Subject Code

 xiii. The depa rtmenta l committee shall design the course structure including the detailed syllabus for this MCA programme offered by the depa rtment . The depa rtment committee shall have the freedom to introduce new courses and / or to modify / redesign existing courses and replace any existing course with a new course to facilitate bette r exposure and training for the candidates.

 xiv. **Attendance:** A student must have 75% of mandat ory attendan ce in each Course for appea ring in the examination. In the event of Non-Compliance of Attendan ce criteria(75%) , students will have to seek admission next year so as to complete the course. However Student having 65% attendan ces with medical certificate can apply to the H.O.D. for condonation of attendan ce.

6. **Registration for Service Course**

 i. The Student has to complete at least one service course of four credits in either Semeste r – III or Semeste r – IV and at a time student will be allowed to appea r for only one service course.

 ii. The student will registe r the service course of his interest after the sta rt of semeste r in the concerned depa rtment on official registration form. The teacher incharge of the respective course will keep the record of the students registe red. Maximum 15 days period will be given from the date of admission for completion of registration

procedure. The departmental committee shall follow a selection procedure to avoid overcrowding to particular course(s)

iii. No student shall be permitted to register for more than one service course in semester.

iv. University shall prescribe the maximum number of students in each course taking into account the teachers and physical facilities available in the department.

v. The University may make available to all students a listing of all the courses offered in every semester specifying the credits, the prerequisites, a brief description or list of topics the course intends to cover, the instructor who is giving the courses, the time and place of the classes for the course. This information shall be made available on the University Website.

vi. Normally no service course shall be offered unless a minimum of 10 students are registered.

vii. The Student shall have to pay the prescribed fee per course per semester / year for the registration as decided by the University.

7. Departmental Committee

As an autonomous department, MCA course is monitored by Departmental Committee. The Committee consists of H.O.D. (Director) as Chairman and some / all Respective Faculty of the Department as its members.

8. Grievance Redressal Scheme

The University shall form a Grievance Redressal Committee for this course in UDMS with the course teacher and HOD, which shall solve all grievances relating to the Assessment of the student.

9. Grade Awards

vi. In order to pass the examination following choice based credit and grading system (CBC&GS) will be followed. Ten point rating scale shall be used for evaluation of performance of the student to provide Letter Grade for each course and overall grade for this course. Grade points are based on the total number of marks obtained by him / her in all the heads of the examination of the course. These grade points and their equivalent range of the marks are shown separately in following:

Table – I: Ten Point grades and grade description

Sr.No.	Equivalent Percentage	Grade points for SGPA and CGPA	Grade	Grade Description
11.	90 – 100	9.00 – 10	O	Outstanding
12.	80 – 89.99	8.00 – 8.99	A++	Excellent
13.	70 – 79.99	7.00 – 7.99	A+	Exceptional
14.	60 – 69.99	6.00 – 6.99	A	Very Good
15.	55 – 59.99	5.50 – 5.99	B+	Good
16.	50 – 54.99	5.00 – 5.49	B	Fair
17.	45 – 49.99	4.50 – 4.99	C+	Average
18.	**40.01 – 44.99**	**4.01 – 4.49**	C	Below Average

19.	40	4.00	D	Pass
20.	Below 40	0.00	F	Fail

vii. **Table – II: Classification for the degree is given as follows**

Classification	Overall letter grade
First Class with distinction	*A+ and above*
First Class	*A*
Higher Second Class	*B+*
Second Class	*B*
Pass	*C+ to D*
Fail	*F*

viii.   In the event of student registe red for the examination (i.e. Internal Tests / End Semeste r Examination / Practical / Seminar / Project Viva-voce), non-appea rance shall be treated as the student deemed to be absent in the respective course.

ix.   Minimum D grade shall be the limit to clear / pass the course / subject. A student with F grade will be considered as 'failed' in the concerned course and he / she has to clear the course by reappea ring in the next successive semeste r examinations. There will be no revaluation or recounting scheme unde r this system.

x.   Using table – I, Semeste r Grade Point Average (SGPA) and then Cumulative Grade Point Average (CGPA) shall be computed . Results will be announ ced at the end of each semeste r and Cumulative Grade Card with CGPA will be given on completion of the course.

10.   Computation of SGPA (Semester Grade Point Average) & CGPA (Cumulative Grade Point Average)

The computat ion of SGPA and CGPA will be as below:

iii.   Semeste r Grade Point Average (**SGPA**) is the weighted average of points obtained by a student in a semeste r and will be computed as follows:

$$SGPA = \frac{Sum(Course\ Credit * Number\ of\ Points\ in\ concern\ course\ gained\ by\ the\ student)}{Sum\ (Course\ Credit)}$$

The SGPA for all the six semeste rs will be mentioned at the end of every semeste r.

iv.   The Cumulative Grade Point Average (**CGPA**) will be used to describe the overall performance of a student in all semeste rs of the course and will be computed as follows:

$$CGPA = \frac{Sum(All\ Six\ semester\ SGPA)}{Total\ number\ of\ semesters}$$

The SGPA and CGPA shall be rounded off to the second place of decimal.

11.   Evaluation Scheme

Each theory course will be of 100 Marks and be divided in to Internal Examination (Sessional) of 20 Marks and Semest er End Examination of 80 Marks. (20+80=100)
Each Practical Course will be of 50 Marks (Internal + External) = (10 + 40=50).
Project Work from Sem – I, II, and IV will be 100 marks (Internal + External) = (20+80=100).
Project Work from Sem – III and V will be 50 marks (Internal + External) = (10+40=50).
As well as In-plant Training Project from Sem – III and V will be 50 marks (Internal). Major
Project in the Sem –VI will be of 350 marks (Internal + External) = (70+280=350).

e) For Theory Course

i. **Internal Evaluation Scheme**

There shall be weekly assessment in the form of Test / Assignment / Tutorials / seminars / Presentations / laboratory work/ Field work/Project Work throughout the semester. Aggregation of these marks will be considered for the internal evaluation of 20 marks.

ii. **Semester End Examination Evaluation Scheme**

∑ English shall be the medium of instruction and examination.

∑ Examination shall be conducted at the end of each semester as per the academic calendar notified by department itself.

∑ The Semester End Examination theory question paper will have two parts **(20 + 60 = 80)** Marks

PART A will carry short question (fill in the blanks / multiple choice questions / match the columns / state true or false / answer in one sentence) as comp ulsory ques tions and it should cover entire syllabus (20 Marks).

PART B will carry 7 questions out of which there shall be at least one question from each unit, student will have to answer any 5 questions out of 7.

f) For Practical Course

i. **Internal Evaluation Scheme**

A student should complete lab assignments practically given by course teacher. However, in addition teacher can allot a mini project to students for better evaluation but assignments are compulsory. Internal evaluation for the practical will be considered for 10 Marks.

ii. **External Evaluation Scheme**

Under this roof, a student has to face practical examinations in which he / she has to complete the task on computer system (It may computer program or testing) given by External Examiner. Also student has to present seminar or viva-voce in front of External Examiner. External evaluation for the practical will be considered for 40 Marks.

g) For In-plant Training Project–

a) At the end of second& Fourth semester, all students will have to unde rgo Summer Training (MANC554 & MANC756) of 6-8 weeks with an industrial, business, service organization or depa rtment . The condition of successfully completing the programme shall not be deemed to have been satisfied unless a student unde rgoes summer training unde r the supe rvision of the depa rtment in organization as app roved by the Departmenta l / Faculty from time to time. Each student will be required to submit the implant training report to the Department / faculty for the work unde rtaken during this period within three weeks of the commencement of the third& Fifth semester respectively for the purpose of evaluation in the third & Fifth semester respectively.

b) A candidate shall not be allowed to appea r for III semester & V semester Examination of Full Time 3 years Course unless he / she completes the Inplant Training and submit the reports to the concerned teacher.

c) **Internal Evaluation** –

Internal Evaluation for the Inplant Training Project will be of 50 marks that will be evaluated by the respective faculty/ guide depending upon

presentat ion / review / performance during project / report writing/ field

work/ seminars etc.

h) For Project –

    i. **Internal Evaluation** –

All the students are divided among different teams & work under the guidance of the Faculty/ guide. Internal Evaluation for the project will be of 20% marks that will be evaluated by the respective faculty/ guide depending upon presentation / review / performance during project / report writing/ field work/ seminars etc.

    ii. External Evaluation Scheme

Student has to present seminar / viva-voce / demonstration of project in front of External Examiner. External evaluation for the project will be considered for 80% Marks.

i) At the end of each semester the Committee of Department shall assign grades to the students and will prepare the result. Also, the Department will display the grade points and grades for the notice of students .

j) Every student shall have the right to scrutinize answer sheets of mid semester / semester end examinations and seek clarifications from the teacher regarding evaluation of the sheets as per Grievance Schedule.

k) Sixth Semester Project Evaluation Scheme

The Major project work should be carried out over the entire period of the final semester in an Industry. If the project is carried out in an Industry organization outside the campus , then a co-guide shall be there from Industry. Every student should do the Major Project individually. However students can opt for project in groups based on merits / requirements of the project and in consultation with the project guide. A guide will review the project periodically. At the end of the semester the candidate shall submit the Project report (two bound copies) duly approved by the guide and H.O.D. of the department . The department will appoint external examiner for assessment of the project. The project will be assessed by the external examiner and the guide separately on the basis of the following criteria tentatively.

$\sum$ Innovative Idea	15%
$\sum$ Content	15%
$\sum$ Preparation of Project Report	30%
$\sum$ Presentation / Viva- voce	40%

If student failed to complete the project within scheduled time then he / she has to reappear and register freshly with new project topic after paying required fees for that semester.

12. Grade Card

The university under its seal shall issue to the students a grade card on completion of each semester.

Grade card shall contain the following:

      a. Title of the courses along with code taken by the student .

      b. The credits associated with and grades awarded for each course.

        c. The numbe r of grade and grade point secured by the student .

      d. The total credits earned by the student in that semeste r.

      e. The SGPA of the student .

      f. The total credits earned by the student till that semeste r.

      g. The CGPA of the student (At the end of the VIth semeste r).

Cumulative Grade Card

The grade card issued on completion of the programme shall contain the name of the programme, the depa rtment / school offered the programme, the titles of the courses taken, the credits associated with each course, grades awarded, the total credits earned by the student , the CGPA and the class in which the student is placed.

13. General Clause

It may be noted that beside the above specified rules and regulations all the other rules and regulations in force and applicable to semeste r system in Post-Graduate courses in Dr. Babasaheb Ambedkar Marathwada University will be applicable as amended from time to time by the University. The student s shall abide by all such Rules and Regulations.

MCA Course Structure

Sem	Course	Ref. No	Subject Title	Credit	No. of Hrs. per Sem/Minm Assessment/ Tutorial	Exam Hrs.	Internal	End Sem Exam	Total
I	Generic Foundation Course	MANC401	Computer Organization & Architecture	4	60 - 05	3	20	80	100
		MANC402	Information System Analysis & Design Methodology	4	60 - 05	3	20	80	100
		MANC403	Mathematics – I	4	60 - 05	3	20	80	100
		MANC404	Basic of Web technology	4	60 – 05	3	20	80	100
		MANC405	Constitution of India	2	30	1.5	10	40	50
		MANC406	Research Methodology	2	30	1.5	10	40	50
	Skill Based Foundation Course	MANC451	Practical Based on MANC404	2	30	1.5	10	40	50
	Core Course	MANC407	Object Oriented Programming using C++	4	60 – 05	3	20	80	100
		MANC452	Practical Based on MANC407	2	30	1.5	10	40	50
		MANC453	Project	4	60	--	20	80	100
			Total	**32**	**480**		**160**	**640**	**800**

Sem	Course	Ref. No	Subject Title	Credit	No. of Hrs. per Sem/Minm Assessment/ Tutorial	Exam Hrs.	Internal	End Sem Exam	Total

Sem	Course	Ref. No	Subject Title	Credit	No. of Hrs. per Sem/Minm Assessment/ Tutorial	Exam Hrs.	Internal	End Sem Exam	Total
	Generic Foundation Course	MANC408	Operating System	4	60 – 05	3	20	80	100
		MANC409	Database Management System	4	60 – 05	3	20	80	100
		MANC410	Mathematics – II	4	60 – 05	3	20	80	100
	Skill Based Foundation Course	MANC454	Practical Based on MANC409	2	30	1.5	10	40	50
II		MANC411	Software Engineering	4	60 – 05	3	20	80	100
		MANC412	Data Structure Using C++	4	60 – 05	3	20	80	100
		MANC413	ASP.NET	4	60 - 05	3	20	80	100
	Core Course	MANC455	Practical Based on MANC412	2	30	1.5	10	40	50
		MANC456	Practical Based on MANC413	2	30	1.5	10	40	50
		MANC457	Project	4	60	--	20	80	100
			Total	**34**	**510**		**170**	**680**	**850**

Sem	Course	Ref. No	Subject Title	Credit	No. of Hrs. per Sem/Minm Assessment/ Tutorial	Exam Hrs.	Internal	End Sem Exam	Total
III	Core Course	MANC501	Entrepreneurship Development	4	60 – 05	3	20	80	100
		MANC502	Artificial Intelligence	4	60 – 05	3	20	80	100
		MANC503	Java Programming	4	60 – 05	3	20	80	100
		MANC504	Design and Analysis of Algorithms	4	60 – 05	3	20	80	100
		MANC505	Advance Database Management System	4	60 – 05	3	20	80	100
		MANC551	Practical Based on MANC503	2	30	1.5	10	40	50
		MANC552	Practical Based on MANC504	2	30	1.5	10	40	50
		MANC553	Practical Based on MANC505	2	30	1.5	10	40	50
		MANC554	In-plant Training Project	2	30	--	50	-	50
		MANC555	Project	2	30	--	10	40	50
	Open Elective Course	MANC52X	Group A	4	60 – 05	3	20	80	100
			Total	**34**	**510**		**210**	**640**	**850**

Open Elective Course: Group A

Course	Ref. No	Subject Title	Credit	No. of Hrs.	Exam Hrs.	Internal	End Sem Exam	Total
Elective Course	MANC521	Cloud Computing	4	60 – 05	3	20	80	100
	MANC522	Emerging Trends in Information Technology						
	MANC523	Cyber Laws						

Sem	Course	Ref. No	Subject Title	Credit	No. of Hrs. per Sem/Minm Assessment/ Tutorial	Exam Hrs.	Internal	End Sem Exam	Total
IV	Skill Based Foundation Course	MANC506	Verbal & Non- Verbal	4	60 – 05	3	20	80	100

			Aptitude						
		MANC507	Software Testing and Quality Assurance	4	60 – 05	3	20	80	100
		MANC508	Advanced Data Communication and Networks	4	60 – 05	3	20	80	100
	Core Course	MANC509	Object Oriented Analysis and Design	4	60 – 05	3	20	80	100
		MANC510	Linux Administration and Server Configuration	4	60 – 05	3	20	80	100
		MANC556	Practical Based on MANC509	2	30	1.5	10	40	50
		MANC557	Practical Based on MANC510	2	30	1.5	10	40	50
		MANC561	Project	4	60	--	20	80	100
	Open Elective Course	MANC52X	Group B	4	60 – 05	3	20	80	100
		MANC55X	Practical Based on Group B	2	30	1.5	10	40	50
			Total	**34**	**510**		**170**	**680**	**850**

Open Elective Course: Group B

		MANC524	Advanced JAVA	4	60 – 05	3	20	80	100
		MANC558	Practical Based on MANC524	2	30	1.5	10	40	50
	Elective Course	MANC525	C Sharp	4	60 – 05	3	20	80	100
		MANC559	Practical Based on MANC525	2	30	1.5	10	40	50
		MANC526	Data Mining	4	60 – 05	3	20	80	100
		MANC560	Practical Based on MANC526	2	30	1.5	10	40	50

Sem	Course	Ref. No	Subject Title	Credit	No. of Hrs. per Sem/Minm Assessment/ Tutorial	Exam Hrs.	Marks		Total
							Internal	End Sem Exam	
	Generic Foundation Course	MANC701	Software Project Management	4	60 - 05	3	20	80	100
	Skill Based Foundation Course	MANC702	Quantitative Aptitude	4	60 - 05	3	20	80	100
		MANC703	Ethical Hacking	4	60 - 05	3	20	80	100
		MANC704	Web Development using PHP	4	60 - 05	3	20	80	100
V		MANC751	Practical Based on MANC704	2	30	1.5	10	40	50
	Core Course	MANC705	JSP	4	60 - 05	3	20	80	100
		MANC752	Practical Based on MANC705	2	30	1.5	10	40	50
		MANC756	In-plant Training project	2	30	--	50	-	50
		MANC757	Project	2	30	--	10	40	50
	Open Elective Course	MANC72X	Group C	4	60 – 05	3	20	80	100
		MANC75X	Practical Based on Group C	2	30	1.5	10	40	50
			Total	**34**	**510**		**210**	**640**	**850**

Open Elective Course: Group C

		MANC721	Android Development	4	60 – 05	3	20	80	100
		MANC753	Practical Based on MANC721	2	30	1.5	10	40	50
	Elective Course	MANC722	Image Processing	4	60 – 05	3	20	80	100
		MANC754	Practical Based on MANC722	2	30	1.5	10	40	50
		MANC723	Hadoop	4	60 – 05	3	20	80	100

Sem	Course	Ref. No	Subject Title	Credit	No. of Hrs. per Sem/Minm Assessment/ Tutorial	Exam Hrs.	Marks		Total
							Internal	End Sem Exam	
	MANC755	Practical Based on MANC723	2	30	1.5	10	40	50
VI	Core Course	MANC758	**Major Project**	14	210	--	70	280	350

				Credit	Hrs	Exam	Internal	End Sem	Total
			Course Total	**182**	**2730**	**--**	**990**	**3560**	**4550**
			Service Course	**4**	**60**	**--**	**20**	**80**	**100**
			Grand Total	**186**	**2790**	**--**	**1010**	**3640**	**4650**

<p align="center" style="color:red">MCA – I SEM</p>

Subject Title	Computer Organization And Architecture		
Subject Ref. No.	MANC401	**No. of Credits**	4
		No. of Periods / Week	4
		Assignments / Sessional	20
		Semester Examination	80

Course Objective   It aims at introducing basic digital concepts and then uses them to explain details of computer organization. It covers topics such as basic digital electronics, cache hierarchies, memory systems, storage and IO systems etc.

Pre Requisite   Internal Components of the CPU, Logic design and Boolean algebra

Unit – I   **Introduction to Digital Computer**
Functions and Block Diagram of Computer
Types of Software – System software / Application software / Utility Software. Compilers, Interpreters, Assemblers, Linker, Loader
Number System and Boolean Algebra
Binary, Octal, HEX and their inter-conversion
1's and 2's complement, Logic Gates, Binary Arithmetic, Number Systems – BCD, EBCDIC, ASCII, De-Morgan's Theorem, Duality Theorem, Algebra Rules, Logic Circuits.

Unit – II   **Combinational Circuits**
Karnaugh Map Techniques, Half / Full Adder – Subtractor, Multiplexer / Demultiplexer, Digital Comparator, ALU

Unit – III   **Sequential Circuits**
Flip Flops - SR, D, JK, Master – Slave, Shift Register, Introduction to Counter

Unit – IV   **Memory System**
Memory Hierarchy, Primary Memory – DRAM, SDRAM, DDR, RDRAM. ROM, PROM, EPROM, EEPROM, Concepts of Auxiliary, Associative, Cache and Virtual Memory, DMA

Unit – V   **CPU Organization**
CPU Building Blocks, CPU Registers and BUS Characteristics, Addressing Modes, Interrupts, Instruction sets and Execution cycle, Assembly Programming, Pipelining – Data Path, Time Space Diagram.
Processor Architecture
Components of Microprocessor, I/O Ports, 16-Bit (80286) Architecture,
32-Bit (80486) Architecture, Super scalar Architecture in Pentium Processors,
64-Bit (Pentium Dual-Core) Architecture

Text Books   1. R P Jain, "Modern Digital Electronics", Tata McGraw Hill 3rd Edition
2. Mano Morris, "Computer System and Architecture", Pearson, 3rd Edition
3. Ramesh Gaonkar, "Microprocessor Architecture, Programming, and Applications", Prentice Hall 5th Edition

Additional Reference Books   1. JP Hayes, "**Computer Architecture and Organization**, McGraw Hill 2nd Ed

2. Govindarajalu, B, " IBM PC AND CLONES: Hardware, Troubleshooting and Maintenance", McGraw-Hill 2 Edition

Subject Title	Information System Analysis And Design Methodologies		
Subject Ref. No.	MANC - 402	**No. of Credits**	4
		No. of Periods / Week	4
		Assignments / Sessional	20
		Semester Examination	80

Objective : The objective of the course is to familiarize the participants with the Information System Analysis and design, security of information.

Prerequisite : The students should have basic knowledge of Information, software.

Unit –I : **Overview of systems Analysis and design System concepts :**
1) Types of systems: Information System
2) System Development Life cycle
3) Role & Skills of system Analyst
Models:
1) Waterfall
2) Prototyping
3) Spiral (including WIN-WIN Spiral)
4) RAD
5) Group Based Approach: JAD
6) Object Oriented methodology

Unit –II: **Activities in Requirements Determination**
    a) Requirements Anticipation
    b) Requirements Investigation
    c) Requirements Specifications
Software requirement Specification (SRS)
1] Structure and contents of the requirements specification analysis
modeling, types of requirements - functional and non-functional , Quality criteria, requirements definition ,SRS format, Fundamental problems in defining requirements
2] Structure and standards followed for SRS
3] characteristics of good SRS –
    Unambiguous , complete , verifiable , consistent , modifiable ,   traceable , usable during maintenance

Unit –III: **Evaluation :**
1) Feasibility Study : economical,operational,social,technical
2) Evaluating Proposed Solution
3) Developing a System proposal
4) Software Acquisition

Unit –IV: **Systems Design:**
Elements of Design
1) Design of input & Control, Objectives of Input Design Data Capture Guidelines ,Design of Source Document ,Input Validations
2) Design of output, Objectives of Output Design, Types Of Output
3) Design of File , Basic File Terminology , Data Structure Diagrams
Types of Files ,Methods of File Organizations
4) Design of Procedure
5) Design of program Specification
User Interface design:
Elements of good design , design issues ,features of modern GUI , Menus , Scroll bars, windows , buttons, icons ,panels , error messages etc.
Case studies should be covered on the topic

Unit –V :	**Introduction to Information Security :** Definition of Information Security ,Computer Crimes and virus, Internal Control , Need for IS , Types of Security – Physical Security Logical Security
Text Books :	1. Analysis & Design of Information System – V. Rajaraman 2. Software Engineering by Pressman
Reference Books :	1. Analysis & Design of Information System – James Senn 2. Software Engineering – Pressman 3. System Analysis & Design – Hawryszkiewycz 4. Software Engineering - Jawadekar 5. System Analysis & Design methods – Whiten, Bentley 6. System Analysis & Design – Elias Awad 7. Computer Security for Dummies 8. Internet Security by Derek Atkins et al. 9. Computer Viruses – From an Annoyance to a Serious Threat White Paper September 2001
Web References :	1. http://en.wikipedia.org 2. http://www.tutorialspoint.com 3. http://www.chris-kimble.com/Courses/World_Med_MBA/Types-of-Information-System.html 4. http://www.freetutes.com/systemanalysis/sa2-object-oriented-methodology.html 5. http://www.biometricsinstitute.org/pages/types-of-biometrics.html

Subject Title	Mathematics - I		
Subject Ref. No.	MANC403	No. of Credits	4
		No. of Periods / Week	4
		Assignments / Sessional	20
		Semester Examination	80

Course Objective	In this subject student will learn Logic, Relations and Functions, Algebraic Functions, Graph Theory and Trees will be introduced in this course.
Pre Requisite	Basic knowledge of mathematics like set theory.
Unit – I	**Mathematical logic:** Propositions (Statements) Logical connectivities, N, A ,V, Compound statements form, truth tables, tantology , implications and equivalence of statements forms logical identities Normal forms : disjunctive normal form and simplification. Conjunctive normal form, logical implications, valid arguments, methods of proof. Theory of inference of statement calculus, predicate calculus, qualifiers free and bound variables, theory of inference of predicate calculus.
Unit – II	**Relations and Functions:** Relation defined as ordered n-tuple Unary , binary , ternary , n-ary Restrict to binary relations Complement of a relation , converse relation , compositions , matrix representation and its properties Graphical representation of relation – Digraphs Properties of binary relation – reflexive , irreflexive , symmetric , asymmetric , transitive equivalence , equivalence classes , partitions covering , compatible relation maximal compatibility block , transitive closure – Warshall's algorithm. Partial ordering relation – Hesse diagram, Chains and antichains. Lattice , maximal and minimal elements , upper bound , lower bound, , definitions Functions – definitions : Partial function , hashing functions , characteristic functions , floor functions , ceiling functions , subjective control , injective (one-to-one) Inverse functions, left reverse , right inverse Bijection and cardinality of finite set Infinite sets and compatibility, Properties of countable sets Non-denumerable sets.
Unit – III	**Algebraic Structures:** Operations on sets -unary , binary , ternary definitions of algebraic systems (restrict to binary operations) Properties – closure , idempotent , associative , communicative , associative, commutative , identity , inverse, Semigroup , subsemigroupMonoid , submonoid group , abelian group , permutation group,multiplicatibeabelian group , cyclic group Subgroups : Cosets , right cosets , left cosets , normal subgroups , quotient groups , isomorphism , homomorphism , automorphism
	Group codes: Weight and Hamming distance , minimum distance of code , generation of codes using parity checks – even parity , odd parity , parity check matrix – Hamming code, for detection and correction errors , formation of encoding function, decoding Application of residue –arithmetic to computers group codes
Unit – IV	**Graph theory & Trees:** Basic terminology , simple and weighted graph , adjacency and incidence , handshaking lemma , underlying graph of a digraph , complete graph , regular graph , bipartrite graph , complete bipartrite Isomorphism, complement of graph , connected graphs , paths-simple , elementary, circuit – simple , elementary Edge connectivity , vertex connectivity Eulesian path and eulesian circuit , planner graph – regions Euler's formula Trees : Definition – leaf , root , branch node , internal node, Rooted and binary trees , regular m-ary tree
Unit – V	**Permutations & Combinations:** Addition principle, multiplication principle, Bijection principle, r-permutations of n elements, r-combination of n elements, binomial coefficients, circular permutations, permutations with repetitions, Multinomial theorem, combinations with repetitions, Distribution of objects- Distinct objects in distinct cells, Indistinguishable objects in distinct cells, Distinct objects in, indistinguishable cells, Indistinguishable objects in distinguishable cells.
	Probability: Sample space, events, different approaches, conditional probability, Baye's rule, Random variables, univariate& bivariate Discrete Distributions Binomial, Poisson, Negative Binomial, Geometric, hyper geometric, zeta distributions Continuous Distributions Uniform, normal, Erlanggamma, exponential, Ray Leigh laplace, cauchy, marginal & conditional distributions For the above discrete distribution definition of r.v and derivation of its p.m.f. is expected. For the continuous distributions p.d.f. should be defined. 6 Special properties of the distribution (if any)should be tested.
	Generating Functions and Recurrence Relations: Principle of Inclusion &Exclusion,Formula Derangement- restrictions on relative positions Generating functions for discrete numeric functions, for combinations, Homogeneous, non-homogeneous,Pigeonhole principle

Text Books	1. Swapan Kumar Sarkar, "A text book of Discrete Mathematics", S. Chand Publication
	2. Discrete Mathematical Structures for Computer S Science by Kolman B and Bushy R , Prentice – Hall of India 1998
	3. S.C. Gupta and V K Kapoor, "Mathematical Statistics", Publication Sultan chand and sons 2002
Additional **:**	1. Discrete Mathematics by C L Liu- Tata McGraw Hill Publishing house 2000
Reference Books	2. Discrete Mathematical Structures with applications to Computer Science by Tremblay and Manohar, Prentice – Hall of India 1997
	3. S P Gupta, "Statistical Methods", Publications sultan chand and sons 2008
	4. Elhance D.N. , ElhanceVeena , Agrawal B.M. Fundamentals of Statistics 2012

Subject Title	**Basics of Web Technology**

Subject Ref. No.	MANC404	No. of Credits	4
		No. of Periods / Week	4
		Assignments / Sessional	20
		Semester Examination	80

Course Objective

This course assumes that students are aware of basic programming structure. In this course student will learn web programming languages such as HTML, JavaScript and VBScript
After complication of this course students can write good application based on basic web technology using HTML, JavaScript and VBScript. Students can develop their own web sites.

Prerequisites

Student should know the basic programming concepts.

Unit I

HTML & Forms
Introduction To HTML, WWW, W3C, web publishing, Common HTML, Tags Physical & Logical, Some basic tags like <body> , changing background color of page, text color etc., Text formatting tags, <p>
, <hr> tags, Ordered & Unordered Lists Tags, Inserting image, Links: text, image links, image mapping , Tables , Frames, Form Introduction with text box, text area, buttons, List box, radio, checkbox etc.

Unit II

CSS
Introduction To Style sheet, types of style sheets- Inline, External, Embedded CSS, text formatting properties, CSS Border, margin properties, Positioning Use of classes in CSS, color properties, use of <div>&<span>

Unit III :

JavaScript
Intro to script, types, intro of JavaScript, JavaScript identifiers, operators, control & Looping structure, Intro of Array, Array with methods, Math, String, Date Objects with methods User defined & Predefined functions, DOM objects, Window Navigator, History, Location.

Unit IV :

Event handling & Validations on Forms – JavaScript
Handling Events on Button, Textbox, radio button, checkbox, drop down box, text area etc.
Form Validation – numeric, alphanumeric, alphabets and any combination of these.
Disabling the keys on the keyboard, regular expression

Unit V

VBScript
Introduction to VBScript, Variables, Data types, Control Structures & Loops, Functions in VBScript, Client side web scripting, validating forms, DOM, Handling errors

Text Books
1. HTML, DHTML, JavaScript, Perl & CGI Ivan Bayross
2. HTML & CSS : The Complete reference, Fifth Edition By Thomas Powell

Reference books
1. Html, Xhtml, And Css Bible (English) 5th Edition (paperback) by Schafer, Steven
2. HEAD FIRST HTML AND CSS, 2/ED (UPDATED FOR HTML) by ROBSON
3. Beginning HTML and CSS (English) (Paperback) by Rob Larsen
4. Learn to Code HTML and CSS (English) (Paperback) by Howe
5. Javascript Bible (English) 7th Edition by Danny Goodman Michael Morrison Paul Novitski Tia GustaffRayl
6. Javascript Programming: Pushing the Limits (English) 1st Edition By (2013)Jon Raasch
7. Head First JavaScript (2007) By michael Morrison
8. JavaScript: The Definitive Guide (2011) by Flanagan, David
9. VBScript Programmers reference wrox Press
10. VBScript in a Nutshell (English) (Paperback) by Petrusha, Childs, Lomax

Web References
1. www.w3school.com
2. www.tutorialpoint.com

Subject Title	:	Practical Based on MANC404		
Subject Ref. No.	:	MANC451	No. of Credits	:	2
			No. of Periods / Week	:	2
			Internal	:	10
			External	:	40

Course Objective	:	Students will be in a position to design the website.		
Content	:	Assignment based on the HTML,JAVASCRIPT, VBSCRIPT will be covered.		
Subject Title	:	Constitution of India		
Subject Ref. No.	:	MANC405	No. of Credits	:	2
			No. of Periods / Week	:	2
			Internal	:	10
			External	:	40

Syllabus will be provided by the authorities.

Subject Title	Research Methodology		
Subject Ref. No.	MANC406	**No. of Credits** :	2
		No. of Periods / Week :	2
		Assignments / Sessional :	10
		Semester Examination :	40

Course Objective To equip the students with the basic understanding of the research methodology and to provide an insight into the application of modern analytical tools and techniques for the purpose of management decision making.

Pre Requisite NA.

Unit – I Nature and Scope of Research Methodology; Research Problem identification; Types of Problems; Problem solving process; Problem Formulation and Statement of Research Objectives; Research Applications.

Unit – II Research process; Research designs-exploratory, descriptive & experimental research designs

Unit – III Methods of Data Collection – Observational and Survey methods; Questionnaire Design; Attitude measurement Techniques; Motivational Research Techniques; Administration of Surveys;

Unit – IV Sample Design; Selecting an Appropriate Statistical Technique; Field Work and Tabulation of Data;

Unit – V Analysis of Data-; Use of SPSS and other Statistical Software Packages; Advanced Techniques for Data Analysis – ANOVA, Discriminant Analysis, Factor Analysis, Conjoint Analysis, Multidimensional Scaling and Clustering Methods; Organization structure of research; Research Proposal; Purpose and types of Research Proposal.

Text Books Research methodology methods & techniques by C.R. kothari
Statistical methods: Dr.S.P. Gupta-sultan Chand & sons New Delhi.
Research methodology by gupta
Research methodology in social science by Giridhari
Management Research Methodology by K.N. Krishnaswamy, AppaIyersivakumar and M. Mathirajan.
Management Research by Andrews, F.M. and S.B. WitheySocial Indicators of Well Being. Plenum Press. NY, Bennet, Roger
Survey Methods by Fowler, Floyd J.Jr.,
Exploring Research by Salkind, Neil J.,

Subject Title	:	Object Oriented Programming using C++		
Subject Ref. No.	:	MANC407	**No. of Credits** :	4
			No. of Periods / Week :	4
			Assignments / Sessional :	20
			Semester Examination :	80

Course Objective : This subject helps to clarify the OOPs concept of Programming languages. This subject covers all the basic techniques of OOPs programming, structure of C++ programming, basic statements , logical statement , graphics and file handing concepts using C++ programming, Exception Handling, Template , JST Library and Namespace.

Pre Requisite : Basics of Computer Fundamentals , OS and C programming

Unit – I	:	**An Overview of C**

A Brief History of C, C is middle-level Language, C is a Structured Language, Complier Vs Interpreters, The Form of a C Program, Library & Linking, Compilation & Execution of C. Program on, Dos & Unix, **Variables, Data Types, Operator & Expression,** Character Set, C Token, Identifier & Keyword, Constant, Integer, Floating Point, Character, String, Enumeration , Data Types in C, Data Declaration & Definition, Operator & Expression, Arithmetic, Relational, Logical, Increment &Decrement, Bitwise, Assignment, Conditional ,2.8 Precedence & Associativity of Operators.**Console I/O**
Introduction, Character input & Output, String Input & Output, Formatted Input/Output (scanf/printf) sprintf&sscan. **Control Statement :**Introduction, Selection Statements If, Nested if, if-else-if, The? Alternative, The Conditional Expression, switch, Nested switch, Iteration Statements , for loop, while loop, do-while loop , Jump Statements goto& label, break & continue, exit() function**Command Line Arguments :**
Storage Class & Scope : Meaning of Terms, Scope - Block scope & file scope, Storage Classes, Automatic Storage, Extern Storage, Static, Storage, Register Storage,
Bitwise Operator : Introduction, Applications Masking, Internal Representation of Date, Bit Fields

Unit – II	:	**Principle of OOP's:** Introduction Procedural Vs Object Oriented Programming Classes, Object, Data Abstraction, Encapsulation, Inheritance, Polymorphism Dynamic Binding, Message Passing Object Oriented Languages Object Based languages **Array & String :** Single Dimension Arrays , Accessing array elements, Initializing an array, Multidimensional Arrays, Initializing the arrays, Memory Representation Accessing array elements, Passing Single Dimension array to Function, Array & Pointer, Array of Pointer, String Manipulation Functions. **Pointers :** Introduction, Memory Organization, The basics of Pointer, The Pointer operator, Application of Pointer, Pointer Expression Declaration of Pointer, Initializing Pointer, De-referencing Pointer, void Pointer, Pointer Arithmetic, Precedence of & , * operators, Pointer to Pointer, Constant Pointer . **Function :**Introduction, Arguments & local variables, Returning Function Results by reference & Call by value, Recursion. **Structure, Union, Enumeration &typedef :**Structures Declaration and Initializing Structure, Accessing Structure members, Structure Assignments, Arrays of Structure, Passing Structure to function, Structure Pointer, Unions

Unit – III		**Classes & Object:** A Sample C++ Program with class Defining Member Functions Making an Outside Function Inline Nesting of Member Functions Private Member Functions Arrays within a Class Memory Allocation for Objects Static Data Members, Static Member Functions, Arrays of Objects Object as Function Arguments Friendly Functions, Returning Objects, Const member functions Pointer to Members, Local Classes
		Constructor & Destructor: Constructor, Parameterized Constructor, Multiple Constructor in a Class Constructors with Default Arguments, Dynamic Initialization of Objects ,Copy Constructor
		O**perator Overloading & Type Conversion:** Defining operator Overloading ,Overloading Unary Operator, Overloading Binary Operator , Type Conversion , Rules for Overloading Operators
	:	**C++ Preprocessor :** Introduction, Preprocessor Directive Macro Substitution, File Inclusion directive, Conditional Compilation
		File handling: Introduction, Defining & Opening a File, Closing a File, Input/Output Operations on Files, Error Handling During I/O Operation, Random Access To Files, Command Line Arguments.
		Graphics In C : Introduction, Drawing Object in C Line, Circle, Rectangle, Ellipse, Changing Foreground & Background, Filling Object by Color

Unit – IV	:	**Inheritance:** Defining Derived Classes ,Single Inheritance, Making a Private Member Inheritable, Multilevel Inheritance, Hierarchical Inheritance ,Multiple Inheritance, Hybrid Inheritance, Virtual Base Classes, Abstract Classes, Constructor in Derived Classes, Nesting of Classes
		Virtual Function; Virtual Function, Pure Virtual Function, Early Vs Late Binding, concept of pointers, Pointer to Object, This pointer
		Introduction to exception handling and working with files.

Unit – V	:	Exception Handling, Namespace in C++ , Template in C++
Text Books	:	1. C : The Complete Reference : Herbert Schildt ,
		2. OOPs Using C++ : Balgurusamy,
		3. Graphics under C : YashwantKanetkar ,
		4. Let us C : YashwantKanetkar
		5. Let us C++ : YashwantKanetkar
Additional	:	1. Programming with C : Bryon Gottfried, Graphics Under C : Y. Kanetkar
Reference Books		2. Let us C Solutions : Y.P. Kanetkar, 3. Spirit Of "C" : MoolishKooper.
		3. The Complete Reference C++ by Herbert Schildt
		4. C++ and Active learning approach by Randal Albert, Todd Bredlove
		5. Advanced C primal ++ by Stephen prata

Subject Title	:	Practical Based on MANC407

Subject Ref. No.	:	MANC452	No. of Credits	:	2
			No. of Periods / Week	:	2
			Internal	:	10
			External	:	40

Course Objective	:	Students will be in a position to write program using C & C++.
Content	:	Assignment based on the Object Oriented programming will be covered.
	:	A mini project based of website designing can be covered.

Subject Title	:	Project			
Subject Ref. No.	:	MANC453	No. of Credits	:	4
			No. of Periods / Week	:	4
			Internal	:	20
			External	:	80

A Collaborative approach is taken in which all the students of MCA – I, II & III year are divided into several teams. Social requirement will be fulfilled by these teams using different technologies under the guidance of faculty or guide.

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MCA – II SEM

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Subject Title	:	Operating System			
Subject Ref. No.	:	MANC408	No. of Credits	:	4
			No. of Periods / Week	:	4
			Assignments Sessional	:	20
			Semester Examination	:	80

Course Objective	:	The objectives of this course are to understand fundamental concepts of operating system, to understand recognizing operating systems features and issues. .And sufficient understanding of operating system design and how it impacts application systems design and performance
Pre Requisite	:	Fundamentals of Computer System Fundamentals of C programming
Unit – I	:	**Introduction**: Logical View, User View System Calls, Concept of Virtual Machine, Interrupt Concept
Unit – II	:	**ProcessManagement:** Process Concept, Process Control Block, Process Schedule , Process operations, Inter-process Communication, Communication in Client-Server **CPUScheduling:** Scheduling Concept, Scheduling Criteria, Scheduling algorithms, Scheduling Evaluation, Simulation Concept
Unit – III	:	**ProcessSynchronization&Deadlock:** Synchronization concept, Synchronization Requirement,

Critical Section Problem, Monitors, Deadlock concepts, Deadlock prevention & avoidance, Deadlock Detection, Deadlock Recovery

Unit – IV	:	**Memory Management:** Memory Management Techniques, Contiguous & Non Contiguous allocation, Logical & Physical Memory, Conversion of Logical to Physical address, Paging, Segmentation, Segment with paging Virtual Memory Concept, Demand paging, Page Replacement algorithm, Allocation of Frames, Page fault.
		File management: File Structure, Protection, FILE system Implementation, Directory structure, Free Space Management, Allocation Methods, Efficiency & Performance, and Recovery.
Unit – V	:	**DiskManagement:** Disk Structure, Disk Scheduling algorithm, Disk management, Swap Space concept and Management, Disk performance issues
		Android OS structure &ios structure
		DistributedOperatingSystem: Difference Between Distributed & Centralized OS ,Advantages of Distributed OS, Types of Distributed OS, Concept of Global OS, NOS Architecture.
Text Books	:	1. Silberschatz , Galvin, and Gagne "Operating System Concepts", John Wiley, 8th Ed., 2009.
		2. D. M. DhamdhereOperating Systems--A Concept Based Apparoach, McGraw-Hill, 2008
Additional Reference Books	:	1. Tannenbaum, "Operating Systems", PHI, 4th Ed., 2000.
		2. William Stallings, "Operating Systems Internals & Design Principles", Pearson Education, 6th Ed., 2009.

Subject Title	:	Database Management System			
Subject Ref. No.	:	MANC409	**No. of Credits**	:	4
			No. of Periods / Week	:	4
			Assignments Sessional	:	20
			Semester Examination	:	80
Course Objective	:	The course introduces the basic concepts of database systems and also gives the in depth knowledge of various principles of DBMS.			
Pre Requisite	:	NA			
Unit – I	:	**Basic concepts:** Database and Need for DBMS : ,Characteristics of DBMS, Database Users, 3-tier architecture of DBMS (its advantages over 2-tier), Data Models, Views of data- schemas and instances, Data Independence,Conventional data models & systems, NDM & HDM Expressing relationships, DBTG set			
		Entities: Relationships, Representation of entities, attributes, relationship attributes, relationship set , Generalization, aggregation,Structure of relational Database and different types of keys,Expressing M:N relation			
Unit – II	:	**Relational Model and Relational Database design**			
		Codd's rules, Relational data model & relational algebra, Relational model concept, Relational model constraints, Relational Algebra, Relational database language Data definition in SQL, Views and Queries in SQL, Specifying constraints and Indexes in SQL, Specifying constraints management systems, Oracle , Ingres			
		Database Design – ER to Relational Functional dependencies, Normalization Normal forms based on primary keys , (1 NF, 2 NF, 3 NF, BCNF, 4 NF, 5 NF), Loss less joins and dependency preserving decomposition			
Unit – III	:	**Storage and File Structure :** Overview of physical storage media : Magnetic disk, RAID, Tertiary storage, Storage access, File organization, Organization of records in files,			

Data dictionary storage

Unit – IV : **Transaction And Concurrency control :** Concept of transaction, ACID properties , Serializibility, States of transaction, Concurrency control, Locking techniques , Time stamp based protocols, Granularity of data items, Deadlock

Unit – V : **Crash Recovery and Backup :** Failure classifications, storage structure, Recovery & atomicity, Log base recovery, Recovery with concurrent transactions, Failure with loss of Non-Volatile storage, Database backup & recovery from catastrophic failure, Remote Backup System

Security and privacy : Database security issues, Discretionary access control based on grant & revoking privilege, Mandatory access control and role based access control for multilevel security, Encryption & public key infrastructures

Text Books : 1. Database system concept Korth
2. Fundamentals of Database SysemsElmasriNavathe
3. Database Management Systems Bipin Desai

Additional : 1. Introduction to database systems C.J.Date
Reference Books 2. Principles of Database Management James Martin
3. Computer Database organization James Martin
4. Database system practical Approach to design, implementation & management Connoly&Begg
5. Database Management systems Ramakrishnan&Gehrke

Subject Name	:	Practical Based on MANC409
Subject ref. No.	:	MANC454

No. of credits	:	2

No. of periods per week	:	2
Internal	:	10
External	:	40

Course Objectives	:	The objective of the course is to make student equipped with the latest DBMS software.
Pre Requisite	:	Knowledge of MS-Access will be preferred.
Software Used	:	Oracle 9i/Oracle 10g/ Oracle 11g
Assignment I	:	1 Overview of RDBMS, Oracle introduction

Introduction of SQL DDL, DML, DTL Basic Data Types Char, varchar/varchar2, long, number, Fixed & floating point Date, CLOB, BLOB
3   Table Constraint definition Commands to create table

Assignment II	:	1 Commands for table handling Alter table, Drop table, Insert records

Commands for record handling Update, Delete Select with operators like arithmetic, comparison, logical Query Expression operators Ordering the records with orderby Grouping the records
SQL functions : Date, Numeric, Character, conversion Group functions avg, max, min, sum, count

Assignment III	:	7 Set operations Union, Union all, intersect, minus
		8 Join concept Simple, equi, non equi, self, outer join
		9 Query & sub queries
Assignment IV	:	Synonym introduction, object type Create, synonym as alias for table & view, drop
		11 Sequence : Introduction, alter sequence, drop
		12 View : Intro, create, update, drop

Assignment V	:	13 Index : Introduction, create
		14 Primary introduction to DBA

                User create, granting privileges
                (Grant, Revoke, Commit, Rollback, Savepoint)
Report writer using SQL Title, Btitle, skip, pause, column, SQL, Break on, computer sum

Assignment VI	:	16 Introduction of PL/SQL Advantages of PL/SQL Support of SQL

                Executing PL/SQL
PL/SQL character set & Data Types Character, row, rowed, Boolean, binary integer, number Variable, constant

Assignment VII	:	18 PL/SQL blocks

Attribute % type, %rowtype, operators, function comparison
numeric, character, date Control structure Condition – if
Interactive- loop, for, while Sequential – goto

19   Composite data types Record- declaration, refer, record assignmentTable- Declaration, table attributes (Count, delete, exists, first, last, next, prior)

Assignment VIII	:	Database Triggers Definition, syntax, parts of triggers Types of triggers, enabling & disabling triggers

Assignment IX	:	21 Sub programs : Definition Features Cursors

Assignment X	:	22 Procedures : Definition, creating, Parameter
		23 Function Definition & implementation

Assignment XI	:	Exercise1

1. Create table Salespeople with fields snum, sname, city, commission
2. Orders table with fields onum, odate, snum, amt
3. Customers table with fields cnum, cname, city, rating, snum

Assignment XII	:	Exercise 2

1. Add at least 10 records
2. Display all the records with all sales people's information.
3. Display the details of fields sname, commission
4. Display the odate, snum, onum, amt from orders table.

5. Display snum from orders table without duplications.
6. Display name & city of salesman where city is "Pune
7. Display all details of customer where rating is 100.
8. Display all details from customer table where salespersons number is 1001.
9. Display the numbers of sales persons, with orders currently in the ordersTable without any repeats.
10. Display all customers where rating is more than 200

Assignment XIII	:	Exercise 3 (cont.)

11. Display all customers where city is 'Mumbai' rating is more than 100.
12. Display all customers where city is either 'Pune' or 'Mumbai'
13. List all customers not having city 'Pune' or rating more than 100
14. List all orders between order dates 10/03/05 to 30/3/05
15. Display all orders more that 1000 amt.
16. Display names & cities of all salespeople in 'Pune' with a commission above10.
17. Display all customers excluding those, with rating less than equal to 100,unless they are located in 'Nagar'
18. Display all sales persons names starting with character 'G'
19. Display all sales persons names starting with character 'G', the 4th characteris 'A' & the rest of characters will be any.
20. Find all records from customers table where city is not known i.e. NULL.
21. Display all the customersnames begin with a letter A to G.
22. Assume each salesperson has a 12% commission on order amt. Displayorderno, snum, commission for that order.

Assignment XIV	:	Exercise 3

1. Display all the customers' records, arranged on name.
2. Display all customers records arranged on rating in desc. Order.
3. Display all sales persons records arranged on snum
4. Display the count for total number of customers in customers table.
5. Display the count of snum in order table without duplication of snum.
6. Display the counts of all orders for Feb05
7. Display the count of different non-NULL city values in the customers table.
8. Display the maximum outstanding amount as blnc+amt
9. Display the minimum rating within customers table.
10. Display average of amt.
11. Display sales persons number wise maximum amt from order table.
12. Display the largest order taken by each salesperson on each date.
13. Display the details of maximum orders above 3000.
14. Display details of orders order number & date wise
15. Display customers highest ratings in each city.
16. Write a query that totals the orders for each day & places the results indescending order.

Assignment XV	:	Exercise 4

1. Add a column curr_bal in orders table for current balance
2. Increase commission of all sales persons by 200.
3. Delete all orders where odate is less than 5-2-05

Assignment XVI	:	Exercise 5

1. Display names of all customers matched with the salespeople serving them.
2. Find all orders by customers not located in same cities as their salespersons.
3. Display each order number followed by the name of customer who made it.
4. Calculate the amount of salespersons commissions on each order by acustomer with a rating above 100.
5. Display the pairs of salespeople who are living in the same city. Excludecombinations of sales people with themselves as well as duplicate rowswith the order reversed.
6. Display the names & cities of all customers with same rating as Hoffman.

Assignment XVII	:	Exercise 6

1. Write a query that uses a sub-query to obtain all orders for the customer named 'Gopal'. Assume you do not know the customer number.
2. Write a query that produces the names & ratings of all customers who haveabove-average orders.
3. Write a query that selects the total amt in orders for each salesperson forwhom this total is greater than the amount of the largest order in table.

Assignment XVIII	:	Exercise 7

1. Create a union of two queries that shows the names, cities 7 ratings of allcustomers. Those with a rating of 200 or greater will also have ratings "highrating", while the others will have the words "low rating".
2. Write a command that produces the name & number of each salesperson& each customer with more than one current order. Put
results in alphabetical order.

Assignment XIX	:	Exercise 8

1. Create an index that would permit each salesperson to retrieve his or herorders grouped by date quickly.
2. Create a view that shows all of the customers who have highest ratings.
3. Create a view that shows number of salespeople in each city.

Assignment XX	:	Exercise 9

1. Write a PL/SQL block of code that first inserts a record in an 'emp' table.Update the salary by Rs. 2000. then check to see that the total salary doesnot exceed 20000. if so, undo the updates made to the salaries.
2. HRD manager has decided to raise the salary of employees by 0.15. Writea PL/SQL block to accept the employee number & update the salary of thatemp. Display message based on the existence of record in employee table.
3. When any such raise in salary, a record for the same is maintained in
emp_raise table. It includes the employee no, the date of raise & the
actual raise.
4. Create a stored function to perform item_id check operation. Which
accepts a item_id& returns a flag as per the id exist or not.
5. Application using database triggers –
Create a transparent audit system for a table Client_master. The system
must keep track of the records that are being deleted or updated. When therecord is deleted
or modified the original record details & date of operation
are stored in audit table & then the delete & update is allowed to go.

Text Books	:	1. SQL, PL/SQL the programming language of Oracle Ivan Bayross
Additional Reference Books	:	1. Understanding ORACLE Perry J. & Later J. 2. Understanding SQL Martin Gruber, BPB publication 3. SQL Scott Urman 4. ORACLE PL/SQL Programming Scott Urman

Subject Title	:	Mathematics-II		
Subject Ref. No.	:	MANC410	**No. of Credits** : 4	
			No. of Periods / Week : 4	
			Assignments / Sessional : 20	
			Semester Examination : 80	
Course Objective	:	The main objective of this course to learn research methodologies, defining hypothesis and its analytical methods. The content also help to solve many real-time problems of operation research such as assignment, transportation, queuing, Linear programming and network problems also.		
Pre Requisite	:	Statistical Basic, discrete Mathematics and Data Structure		
Unit – I	:	Statistical Tools for Research Methodology, Measures of Central Tendency or Average, Measures of Dispersion, Correlation Analysis. Regression Analysis, Statistical Inference – Test of Significance		

Unit – II	**:**	Linear Programming

Various definitions, statements of basic theorems and properties, Advantages, Limitations and Application areas of Linear Programming Linear Programming – The Graphical method – Graphical Solution methods of Linear Programming problem, Maximization Linear Programming problem, Maximization Problem. Linear Programming – Simplex Method – Phase I and Phase II of the Simplex Method, The Revised Simplex method, Primal and Dual Simplex Method, Simplex Algorithm for maximization case, Simplex Algorithm for minimization case – Two phase method and the Big –M method. Transportation Problem and its solution, Assignment Problem and its solutions by Hungarian Method

Unit – III PERT & CPM

Basic differences between PERT and CPM. , Arrow Networks, time estimates, earliest, expected time, latest – allowable, occurrences time, Forward Pass Computation, Backward Pass Computation, Representation in Tabular Form Critical Path, Probability of meeting scheduled date of completion, Calculation on CPM network. Various floats for activities, Critical path updating projects. Operation time cost tradeoff Curve project, Time cost – tradeoff Curve- Selection of schedule based on Cost Analysis, Crashing the network

	:	
Unit – IV	**:**	**Integer Programming,** Gomory Cutting Plan Methods – Branch and Bound , Queuing Theory.
Unit – V	**:**	Replacement of items that deteriorates. Replacement of items that fails suddenly, Individuals and Group Replacement- Policy, **INVENTORY THEORY: Inventory** Model Building, Single item deterministic Model, Inventory Control Models without strategies and Inventory, Control Models with shortages.
Text Books	**:**	1. Research Methodology methods and Techniques by C.R. Kothari 2. Operation Research J.K. Sharma 3. Operations Research KantiSwarup, Gupta P.K. and ManMohan.
Additional **Reference Books**	**:**	Comprehensive Statistical Methods, P.N. Arora, SummetArora, S. Arora Operation Research , A.M. Nataranjan , P. BalaSubramani, A. Tamilaraji

Subject Title :	Software Engineering

Subject Ref. No.	MANC411	**No. of Credits**	:	04
		No. of Periods/Week	:	04
		Assignments/Sessional	:	20
		Semester Exam.	:	80

Course Objective	The purpose of this course is to understand the Software Engineering process, DFD, ERD, Software Inspection process, different design methods, maintenance, CASE TOOLS.
Prerequisite :	Emergence of Software Engineering, Different software life cycle models.
Unit –I :	**1A) Current trends in Software Engineering** 1.1 Software Engineering for projects & products. 1.2 Introduction to Web Engineering and Agile process **1B) Information requirement Analysis:** 1) Decision Analysis Tools: Decision Tree, Decision Table, Structured English

2) Functional Decomposition Diagram
3) Process modeling with physical and logical Data Flow Diagrams
4) Entity Relationship Diagram : Identify Entity &Relationships
4) Data Dictionary
Case Studies on Decision analysis tools FDDs, DFDs should be covered

Unit –II :   Software Inspection
Inspection team, members, process, steps, documents, checklist, defect recording and recommendation format, evaluation of inspection process, benefits.

Unit –III: **Design Methods:**
Data design
Architectural Design
Procedural Design
Interface Design
Code design

Unit – IV: **Maintenance**
Types of Maintenance
Maintenance Cost
Reverse Engineering
Introduction to legacy systems
    Documentation
Types
Role of documentation in maintenance

Unit – V :   **CASE TOOLS**
CASE tools , types – project management, analysis , designing , programming ,prototyping , maintenance , advantages of using CASE tools , I-CASE , future of CASE

Text Books: 1. Software Engineering by Pressman
2. DBMS Concepts – Korth

Reference Books :   1. System Analysis and Design by Jalote
2. Software Engineering by Sommerville
3. Software Engineering - W S Jawadekar
4. System Analysis & Design methods – Whiten, Bentley
5. System Analysis & Design – Elias Awad
6. Object Oriented Modeling& Design – James Rumbaugh
7. Analysis & Design of Information System – James Senn
8. Analysis & Design of Information System – V. Rajaraman
9. Software Engineering Concepts-Richard Fairley

Subject Title	:	Data Structure using C ++		
Subject Ref. No.	:	MANC412	**No. of Credits**	: 4
			No. of Periods / Week	: 4
			Assignments / Sessional	: 20
			Semester Examination	: 80

Course Objective : This subject helps to clarify the concepts of data structure which help to enhance programming techniques in procedure oriented and object oriented languages. This subject covers all the techniques of stack, queue , tree and graph theory and its implementation in normal programming languages i.e. in c or c++

Pre Requisite : C& C++ programming knowledge

Unit – I : **Introduction To Data Structure :** Introduction, Data Definition, Data Object, Data Types, Built-in Data Type, Derived Data Type, Data Structure, Implementation of Data Structure

  Array : Array as Data Structure, Storage Representation of Arrays, Applications of Arrays, Polynomial Representation Using Arrays, Addition of Two Polynomial, Multiplication of Two Polynomial, Sparse Matrices, Addition of Sparse Matrices, Transpose of a Sparse Matrix

  Stack : Introduction, Definition, Operation on Stack, Static & Dynamic Implementation of a Stack, Application of Stack, Recursion, Infix, Prefix & Postfix expression, Matching Parentheses in an expression

  Queue: Introduction, Definition of a Queue, Operation on a Queue, Static & Dynamic Implementation of Queue, Types of Queue, Circular Queue, Priority Queue, DEQueue, Application of Queue, Job Scheduling, Reversing Stack using Queue

Unit – II	:	**Linked List :** Introduction, Drawback of Sequential Storage, Concept of Linked List, Implementation of Linked List, Operation of Linked List, Creating a List, Displaying a List, Inserting an element in the List, Deleting an element, Other Operation & Applications, Reversing a Linked List, Concatenation of Two Lists, Representation of Polynomial, Circular Linked List & Operation, Doubly Linked List & Operation, Doubly Circular Linked List & Operation, Difference between an array and Linked list, Generalized Linked List, Header Linked List
Unit – III	:	**Tree :** Tree Terminology, Binary Tree, Binary Tree Representation, Binary Search Tree (BST), Creating a BST, Binary Search Tree Traversal, Preorder Traversal, Inorder Traversal, Postorder Traversal **Binary Threaded Tree :** AVL tree, B tree, introduction to B tree, insertion in B tree, deletion from B tree, introduction to B+, B* tree, Expression Tree, Threaded Binary Tree
Unit – IV	:	**Graph :** Introduction, Graph Representation, Adjacency Matrix, Adjacency List, Graph Traversals, Depth First Search, Breadth First Search, Applications of Graph
Unit – V	:	**Searching and Sorting** Insertion Sorting , Selection Sorting , Bubble Sorting , Shell Sorting , Merge Sorting, Quick Sorting , Divide and Conquer Sorting, Radix sorting , Heap Sorting , Binary Tree Sort. Binary Search, Hashing and Rehashing , Extendible Hashing, Storage Management, Garbage Collection, Dynamic memory Management, Method to select free block, Freeing Memory, Boundary Tag Method, Budy Systems

Text Books	:	1. C & Data Structure Balagurusamy, 2. Data Structure through C in depth Shrivastava&Shrivastava , 3. Data Structure through C Y.P. Kanetkar
Additional Reference Books	:	1. Data Structure Seymour Liptsuz, Data Structure Tannebaum , 2. Data structure and program design in c R.L.Kruse

Subject Title	:	Practical Based on MANC412		
Subject Ref. No.	:	MANC455	**No. of Credits** : 2	
			No. of Periods / Week : 2	
			Internal : 10	
			External : 40	

Assignments based on the concepts of data structure by using C++.

Subject Title	:	Advanced Web technology Using ASP.NET		
Subject Ref. No.	:	MANC413	**No. of Credits** : 4	
			No. of Periods / Week : 4	
			Assignments / Sessional : 20	
			Semester Examination : 80	
Course Objective	:	This course is intended for beginning Web developers who have knowledge of the Hypertext Markup Language (HTML) or dynamic HTML (DHTML), along with some knowledge of a scripting language, such as Visual Basic Scripting This course is also appropriate for Visual Basic 6.0 developers wanting to learn ASP.NET.		
Pre Requisite	:	Before attending this course, students must have: The ability to create HTML or DHTML, including:		

      ∑   Tables
      ∑   Images
      ∑   Forms
Programming experience using Visual Basic .NET, including:

		∑ Declaring variables
		∑ Using loops
		∑ Using conditional statements

Unit – I : Overview of the Microsoft .NET Framework, Using Microsoft Visual Studio .NET, Introduction to the .NET Framework, Overview of ASP.NET, Creating a Microsoft ASP.NET Web Form, Adding Code to a Microsoft ASP.NET Web Form Using Code-Behind Pages, Adding Event Procedures to Web Server Controls

Unit – II : Validating User Input Overview of User Input Validation, Using Validation Controls, Page Validation Creating User Controls Adding User Controls to an ASP.NET Web Form, Creating User Controls

Unit – III : Accessing Relational Data Using Microsoft Visual, Studio .NET Overview of ADO.NET, Creating a Connection to the Database, Displaying a DataSet in a List-Bound Control Accessing Data with Microsoft ADO.NET
Introduction to Using ADO.NET, Connecting to a Database, Accessing Data with DataSets, Using Multiple Tables, Accessing Data with DataReaders

Unit – IV : Calling Stored Procedures with Microsoft ADO.NET, Overview of Stored Procedures, Calling Stored Procedures, Reading and Writing XML Data Overview of XML Architecture in ASP.NET, XML and the DataSet Object, Working with XML Data, Using the XML Web Server Control

Unit – V : Securing a Microsoft ASP.NET Web Application,
Web Application Security Overview
Working with Windows-Based Authentication
Working with Forms-Based Authentication
Overview of Microsoft Passport Authentication

Text Books :
1. Programming ASP.NET By Jesse Liberty, Dan Hurwitz, Publisher: O'Reilly Media
2. ASP. NET: a beginner's guide By Dave Mercer,
Publisher McGraw-Hill Companies

Subject Title	:	Practical Based on MANC413			
Subject Ref. No.	:	MANC456	**No. of Credits**	:	2
			No. of Periods / Week	:	2
			Assignments / Sessional	:	10
			Semester Examination	:	40

Course Objective : Hands on training course that will teach students how to create a simple ASP.NET application that delivers dynamic content to the web. The course is applicable for those using VB.NET with ASP.NET.

Pre Requisite : HTML and VB.net

Assignment No.1 : **Simple application using web controls**
A Finding factorial Value
B Money Conversion
C Quadratic Equation
D Temperature Conversion
E Login control

Assignment No.2 : States of ASP.NET Pages

Assignment No.3 : Adrotator Control

Assignment No.4 **Calendar Control**
A Display messages in a calendar control
B Display vacation in a calendar control
C Selected day in a calendar control using style
D Difference between two calendar dates

Assignment No.5 **Treeview control**

		A Treeview control and datalist
		B Treeview operations
Assignment No.6		Validation controls
Assignment No.7		Query textbox and Displaying records
Assignment No.8		Display records by using database
Assignment No.9		Datalist link control
Assignment No.10		Databinding using dropdownlist control
Assignment No.11		Inserting record into a database
Assignment No.12		Deleting record into a database
Assignment No.13		Databinding using datalist control
Assignment No.14		Datalist control templates
Assignment No.15		Databinding using datagrid
Assignment No.16		Datagrid control template
		Datagrid hyperlink
Assignment No.17		Datagrid button column
		Datalist event
Assignment No.18	:	Datagrid paging
		Creating own table format using datagrid

Text Books :

1. Programming ASP.NET By Jesse Liberty, Dan Hurwitz, Publisher: O'Reilly Media

2. Visual Basic .NET Programming Black Book By Steven Holzner Publisher: Dreamtech Press

3. ASP. NET: a beginner's guide By Dave Mercer, Publisher McGraw-Hill Companies

Subject Title	:	Project
Subject Ref. No.	:	MANC457

No. of Credits	:	4
No. of Periods / Week	:	4
Internal	:	10
External	:	40

A Collaborative approach is taken in which all the students of MCA – I, II & III year are divided into several teams. Social requirement will be fulfilled by these teams using different technologies under the guidance of faculty or guide.