

## SCHEME OF MBA PROGRAM

1. The Master of Business Administration (MBA) is 4 semesters program. The Program structure and credits for MBA have been taken as per AICTE guidelines and model Scheme based on the stakeholders needs and general structure of the program.
2. Minimum number of classroom contact teaching credits for MBA is 96 credits and field work/ internship of 06 credits, thus the minimum number of credits for award of MBA course is 102 credits. Out of 96 credits, 54 credits are allotted for core courses and rest 42 credits for electives including laboratory work.
3. The following shall be the scheme for teaching and examination of MBA Course for academic session 2020-21. The teaching scheme is given in terms of number of sessions for a course/lab work. Each session is of 90 minutes. There will be 5 days teaching in a week.

### SECOND SEMESTER MBA TEACHING SCHEME

SN	Course Type	Paper Code	Paper Title	No of Sessions		Credits	Internal/ Minimum Marks	External/ Minimum Marks	Total
				Per Semester	Per Week				
1	PCC	M-201	Legal and Business Environment	24	2	3	30	70	100
2	PCC	M-202	Corporate Strategy	24	2	3	30	70	100
3	PCC	M-203	Quantitative Techniques	24	2	3	30	70	100
4	PCC	M-204	Financial Management	24	2	3	30	70	100
5	PCC	M-205	Human Resource Management	24	2	3	30	70	100
6	PCC	M-206	Marketing Research	24	2	3	30	70	100
7	PCC	M-207	Operations Management- II	24	2	3	30	70	100
8	PCC	M-208	New Enterprise and Innovation Management	24	2	3	30	70	100
9	MCC		AUDIT COURSE	12	1	0	30	70	100*
10	REW	M-209	Mini-Project	24	2	1	60	40	100
11	PCC	M-210	Business Ethics Lab.	24	2	1	60	40	100
12	PCC	M-211	Managerial Computing Lab.	24	2	1	60	40	100
13	SODECA		Social Outreach, Discipline & Extra Curriculum Activities	-			-	100	100
<b>Total for II Semester</b>				<b>276</b>	<b>23</b>	<b>27</b>	<b>420</b>	<b>780</b>	<b>1200</b>

\*Note: Marks of audit course will not be considered for credit purpose

## M-203: QUANTITATIVE TECHNIQUES

- OBJECTIVES**
1. To give an exposure to operations research techniques to support business decisions.
  2. To understand simulation and its application in decision making
- LEARNING**
1. Apply quantitative tools in managerial decision making.
- OUTCOMES:**
2. Apply decision theory for business decisions.
  3. Effectively use simulation tool in relevant application areas.

SECTION-A		
UNIT	COURSE DESCRIPTION	SESSIONS
I	Introduction to Quantitative Approaches to decision making, Classification of models, general method of solving quantitative models, Quantitative models in practice	2
II	<b>Linear Programming:</b> Structure of LP model, Assumption, Advantages, Limitations, General Structure of LPP, Model Formulation, of LP model, graphical method, simplex method. Application to production, marketing, agriculture etc., Introduction to Duality.	4
III	<b>Transportation and Assignment models:</b> Transportation problem, General structure of transportation problem, methods of finding initial basic feasible solution (NWCM, LCM & VAM), test for optimality (MODI Method), degeneracy, Assignment problems, Introduction, General structure, Hungarian method of solution, variations of assignment problems: minimization, maximization, unbalanced cases and restrictions	4
IV	<b>Decision Theory:</b> Decision-making under uncertainty- Maximin, Maximax, Laplace and Hurwicz criteria; decision-making under Risk- Expected Value (EMV, EOL, EVPI), decision tree analysis	3
V	<b>Game Theory:</b> Theory of games- formulation of game models, Two person Zero sum games & their solution, 2 x N and M x 2 games, pure strategies with saddle point, rule of dominance, solution methods for games without saddle point: Mixed strategies (Algebraic, Arithmetic, Graphical method only), Limitations of game theory.	3
VI	<b>Replacement Theory:</b> Replacement Problems: Replacement of items that deteriorate with time; Replacement of items that fail completely; staffing problem.	2
VII	<b>Queuing Theory:</b> Characteristics of Single Server Queueing model, Application of Poisson and Exponential distribution in estimating arrival rate and service rate; Applications of Queue model for better service to the customers. (No derivation, only application aspects)	3
VIII	<b>Simulation:</b> Simulation, process of simulation, types of simulation, steps in simulation process, Monte Carlo simulation, application in queuing, inventory, finance, marketing and HR areas, Advantages & Disadvantages.	3

### SECTION B

At least one Case Study from each unit. Questions will be case/inferences/application based

#### PRACTICAL COMPONENTS:

- Solving and analyzing theoretical problems
- Application of problems by using excel
- Application of Techniques for real life problems
- Conducting data analysis using TORA and MS-Project
- Solving a real business problem using quantitative technique

#### BOOKS RECOMMENDED:

1. Frederick S. Hillier, Gerald J. Lieberman, Introduction to Operations Research - 9/e, Tata McGraw-Hill, 2011.
2. Sharma S. D, Operations Research: Theory, Methods and Applications, Kedar Nath, Ram Nath & Co.
3. Vohra N. D, Operations Research - 4/e, TMH, 2010
4. Taha H. A, Operations Research: An Introduction - 9/e, PHI
5. Gupta, P. K., and Hira, D. S., Operations Research, S. Chand & Company
6. Ravindran, A., et al., Operations Research, John Wiley & Sons.
7. Kapoor, V. K., Operation Research: Quantitative Techniques for Management, Sultan Chand, 2011

#### LIST OF JOURNALS/PERIODICALS/MAGAZINES/ARTICLES:

1. International Journal of Operations Research
2. Operations Research Perspectives-Journal-Elsevier
3. Journal of the Operational Research Society
4. Journal of Operations Management
5. International Journal of Production Research