MASTER OF COMPUTER APPLICATIONS (M.C.A)
COURSE STRUCTURE AND SCHEME OF VALUATION W.E.F. 2016-17

I SEMESTER

Code	Name of the subject	Periods/week		Max. Marks		Total	Credits
		Theory	Lab	Ext.	Int.		
MCA 1.1	Information Technology & Applications	4	--	70	30	100	4
MCA 1.2	Data Structures and Algorithms	4	--	70	30	100	4
MCA 1.3	Discrete Mathematical Structures	4	--	70	30	100	4
MCA 1.4	Computer Organization	4	--	70	30	100	4
MCA 1.5	Information Systems & Organizational Behavior	4	--	70	30	100	4
MCA 1.6	Data Structures & Programming Lab	--	3	50	50	100	2
MCA 1.7	Computer Organization Lab	--	3	50	50	100	2
	Total	20	6	450	250	700	24

II SEMESTER

Code	Name of the subject	Periods/week		Max. Marks		Total	Credits
		Theory	Lab	Ext.	Int.		
MCA 2.1	Probability, Statistics & Queuing Theory	4	--	70	30	100	4
MCA 2.2	Data Base Management Systems	4	--	70	30	100	4
MCA 2.3	Object Oriented Programming With JAVA	4	--	70	30	100	4
MCA 2.4	Elective-I	4	--	70	30	100	4
MCA 2.5	Management Accountancy	4	--	70	30	100	4
MCA 2.6	Object Oriented Programming Lab	--	3	50	50	100	2
MCA 2.7	Data Base Management Systems Lab	--	3	50	50	100	2
	Total	20	6	450	250	700	24

Elective-I: Formal Languages & Automata Theory/ File structures/ Computer Graphics

III SEMESTER

Code	Name of the subject	Periods/week		Max. Marks		Total	Credits
		Theory	Lab	Ext.	Int.		
MCA 3.1	Operating Systems	4	--	70	30	100	4
MCA 3.2	Computer Networks	4	--	70	30	100	4
MCA 3.3	Web Technologies	4	--	70	30	100	4
MCA 3.4	Operations Research	4	--	70	30	100	4
MCA 3.5	Elective-II	4	--	70	30	100	4
MCA 3.6	Web Technologies Lab	--	3	50	50	100	2
MCA 3.7	Operating Systems Lab	--	3	50	50	100	2
	Total	20	6	450	250	700	24

Elective-II : Artificial Intelligence/ Compiler Design/ Image Processing/ Microprocessors/ Embedded Systems

IV SEMESTER

Code	Name of the subject	Periods/week		Max. Marks		Total	Credits
		Theory	Lab	Ext.	Int.		
MCA 4.1	Network Security & Cryptography	4	--	70	30	100	4
MCA 4.2	Software Engineering	4	--	70	30	100	4
MCA 4.3	Data Warehousing & Data Mining	4	--	70	30	100	4
MCA 4.4	Elective III	4	--	70	30	100	4
MCA 4.5	MOOCS-I	4	--	70	30	100	2
MCA 4.6	Software Engineering Lab	--	3	50	50	100	2
MCA 4.7	Advanced Programming with R Lab	--	3	50	50	100	2
	Total	20	6	450	250	700	22

Elective III :   Distributed Systems/ Mobile Computing/ Design and Analysis of Algorithms

MOOCS :

Each student should learn any one of the following topics by registering for courses through Online instruction from standard e-learning portals like nptel, coursera, etc. and write the examination conducted as per the university norms.

List of topics for MOOCS-1:

Data Visualization using Tableau, Internet of Things, Recommender systems, Mobile Application Development, Social Network Analysis, DevOps.

V SEMESTER

Code	Name of the subject	Periods/week		Max. Marks		Total	Credits
		Theory	Lab	Ext.	Int.		
MCA 5.1	Wireless Ad-hoc Networks	4	--	70	30	100	4
MCA 5.2	Big Data Analytics	4	--	70	30	100	4
MCA 5.3	Elective IV	4	--	70	30	100	4
MCA 5.4	Cyber Security and Digital Forensics	4	--	70	30	100	4
MCA 5.5	MOOCS-II	--	--	--	--	100	4
MCA 5.6	Data Analytics Lab	--	3	50	50	100	2
MCA 5.7	Mini Project Using DBMS & OOSE Concepts	--	3	50	50	100	2
	Total	16	6	450	220	700	24

Elective IV: Cloud Computing / Soft Computing/ Bio-Informatics/ E-Commerce
List of topics for MOOCS-II:

Python programming, Machine Learning, Agile Methods for Software Development, problem solving using Matlab, Programming in Rasberry Pi Platform, Mongo DB for Developers

V SEMESTER

Code	Name of the subject	Periods/week		Max. Marks		Total	Credits
		Theory	Lab	Ext.	Int.		
MCA 6.1	Project Work	--	--	50	50	100	14

1.Three Stages in Project adjudication:
   a) Presentation of Concept Note & Problem Approval by Guide
   b) Progress Approval by System Demonstration with results Internal -50 Marks
   c) Final Presentation with Documentation: External Project Viva-Voce Exam - 50 Marks

2. Candidates can do their thesis work within the department or in any industry for 6th semester. In case of thesis done in industry/research organization, one advisor (Guide) should be from the department and one advisor(CO-Guide) should be from the industry/research organization.

Code	Name of the subject			Max. Marks		Total	Credits
		Theory	Lab	Ext.	Int.		
Total	**(Complete Course)**	96	30	2230	1270	3600	132