



**JECRC<sup>TM</sup>**  
**UNIVERSITY**  
BUILD YOUR WORLD

**School of Computer Applications**

**Scheme & Syllabus**

**Master of Computer Applications (MCA)**

**Academic Programme**

**July 2024-26**

## MCA

Semester wise Credit				Total Credits	Minimum Credits Required for Degree
I	II	III	IV		
21	22	21	16	80	80

❖ F- Foundation, ID- Interdisciplinary, S- Specialization (Skill Enhance Courses)  
L- Lecture, T- Tutorial, P- Practical

## Semester- I

Course Code	Course name	Lecture Credits (Hrs.)	Tutorial Credits (Hrs.)	Practical Credits (Hrs.)	Total Credits (Hrs.)	Course Category
<b>MCA125B</b>	Competitive Programming (UsingC++)	3	0	0	3	<b>CORE</b>
<b>MCA129B</b>	Competitive Programming (UsingC++) Lab	0	0	4	2	<b>CORE</b>
<b>MCA023B</b>	Advance Computer Networks	4	0	0	4	<b>CORE</b>
<b>MCA121B</b>	Advance Data Structures and Algorithms	4	0	0	4	<b>CORE</b>
<b>MCA201B</b>	Advance Operating Systems	4	0	0	4	<b>CORE</b>
<b>MCA203A</b>	Data Structures Lab	0	0	2	1	<b>CORE</b>
<b>MCA131B</b>	Software Engineering	3	0	0	3	<b>CORE</b>
<b>Total Credits</b>		<b>18</b>	<b>0</b>	<b>06</b>	<b>21</b>	

## Semester –II

Course Code	Course name	Lecture Credits (Hrs.)	Tutorial Credits (Hrs.)	Practical Credits (Hrs.)	Total Credits (Hrs.)	Course Category
MCA144B	Programming in Python	3	0	0	3	CORE
MCA118A	Advance Database Management System	3	0	0	3	CORE
MCA147C	Project Lab in Python	0	0	4	2	CORE
MCA124C	Project Lab in Advance Database Management Systems	0	0	4	2	CORE
MCA130B	Advance Java	3	0	0	3	CORE
MCA202A	Advance Java Lab	0	0	4	2	CORE
MCA600A	Technical Research Paper Writing	0	0	4	2	CORE
	Departmental Elective – I	3	0	0	3	E
	Departmental Elective – II	3	0	2	4	E
<b>Total Credits</b>		<b>15</b>	<b>0</b>	<b>18</b>	<b>24</b>	

### Semester –III

Course Code	Course name	Lecture Credits (Hrs.)	Tutorial Credits (Hrs.)	Practical Credits (Hrs.)	Total Credits (Hrs.)	Course Category
MCA312A	Web Technology	3	0	0	3	CORE
MCA313A	Web Technology Lab	0	0	4	2	CORE
MCA314B/B	Information Security and Hacking	3	0	2	4	CORE
MCA316A	Capstone Project	0	0	4	2	CORE
	Departmental Elective – III	4	0	0	4	E
	Departmental Elective – IV	3	0	2	4	E
Total Credits		13	0	12	19	

### Semester –IV

Course Code	Course name	Lecture Credits (Hrs.)	Tutorial Credits (Hrs.)	Practical Credits (Hrs.)	Total Credits (Hrs.)	Course Category
MCA175A	Industrial Training/Internship/Dissertation Capstone Project Presentation	0	0	0	16	CORE

# Departmental Electives

<b>Specialization (Web Development)</b>	
<b>Course Code</b>	<b>Course name</b>
MCA139A	Programming in ASP.Net
MCA162A	Professional Java
MCA188A	Introduction to Fullstack Development
MCA189A	Programming Using Ruby On Rails
MCA143A	Programming in ASP.Net Lab
MCA165A	Professional Java Lab
MCA190A	Introduction to Fullstack Development Lab
MCA191A	Programming Using Ruby On Rails Lab
MCA192A	Software Capstone Project Management
MCA183A	Agile Software Development
MCA243A	Google Cloud Foundation (GCF)
MCA187A	Google Cloud Readiness (GCR)
<b>Specialization (Data Science and Analytics)</b>	
<b>Course Code</b>	<b>Course name</b>
MCA141A	Data Science and Analytics using Python
MCA140A	Programming in R
BCA171A	Big Data Analytics
MCA142A	Programming in R Lab
MCA193A	Big Data Analytics Lab
MCA194A	Data Science and Analytics using Python lab
MCA144B	Programming in Python
MCA147B	Project Labin Python
<b>Specialization ( Cyber Security)</b>	
<b>Course Code</b>	<b>Course name</b>
MCA319A	Network Security Analysis
MCA320A	Cyber Security Management
MCA 604A	Ethical Hacking Programming
MCA605A	Cyber Crime Digital Forensic

<b>Specialization (Mathematical Computing &amp; Algorithms)</b>	
<b>Course Code</b>	<b>Course name</b>
MCA158A	Distributed Computing
MCA170A	Compiler Design
MCA123A	Advance Computer Network
MCA601A	Discrete Mathematics
MCA602A	Statistical Analysis and Methods
MCA603A	Applied Mathematics

<b>Specialization (Cloud Computing, Process automation and Blockchain)</b>	
<b>Course Code</b>	<b>Course name</b>
MCA197A	Introduction to AI & Machine Learning
MCA157B	Cloud Computing
MCA159A	Introduction to Salesforce
MCA186A	Robotics Process Automation
MCA126A	Machine Learning Lab
MCA199A	Introduction to Blockchain