



JECRCTM
UNIVERSITY
BUILD YOUR WORLD

School of Computer Applications

Scheme & Syllabus

Master of Computer Applications (MCA)

Cloud Computing

(In Association with Microsoft)

Academic Programme

July 2024-26

MCA

| Semester wise Credit | | | | Total Credits | Minimum Credits Required for Degree |
|----------------------|----|-----|----|---------------|-------------------------------------|
| I | II | III | IV | | |
| 19 | 24 | 21 | 16 | 80 | 80 |

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

| Cloud Computing (Microsoft) Specializations Subjects (MCA) | | | | | | | |
|---|---|---|------------|------------|------------|---------|------|
| Semester | Code | Course Name | L (Hr.) | T (Hr.) | P (Hr.) | Credits | Type |
| I | MCA228A | Microsoft Certified: Azure Fundamentals | 2 | 0 | 0 | 2 | S |
| I | MCA230A | Microsoft Certified: Azure Data Fundamentals | 4 | 0 | 0 | 4 | S |
| II | MCA232A | Azure Database Administrator Associate (DP-300) | 2 | 0 | 0 | 2 | S |
| II | MCA231A (2 credit) MCA233A(2 Credit | Microsoft Dynamics 365 (ERP) Fundamentals & Developing Solutions for Microsoft Azure (AZ-204) | 3 | 0 | 2 | 4 | S |
| III | MCA229A | Microsoft Certified: Azure AI Fundamentals | 3 | 0 | 2 | 4 | S |
| III | MCA234A | Microsoft Azure Administrator (AZ-104) | 4 | 0 | 0 | 4 | S |
| | | | 18 | 0 | 4 | 20 | |

Semester –I

| Course Code | Course name | Lecture Credits (Hrs.) | Tutorial Credits (Hrs.) | Practical Credits (Hrs.) | Total Credits (Hrs.) | Course Category |
|----------------------|---|------------------------|-------------------------|--------------------------|----------------------|-----------------|
| MCA125B | Competitive Programming (Using C++) | 3 | 0 | 0 | 3 | CORE |
| MCA129B | Competitive Programming (Using C++) Lab | 0 | 0 | 4 | 2 | CORE |
| MCA228A | Microsoft Certified: Azure Fundamentals | 2 | 0 | 0 | 2 | S |
| MCA121B | Advance Data Structures and Algorithms | 3 | 0 | 0 | 3 | CORE |
| MCA230A | Microsoft Certified: Azure Data Fundamentals | 4 | 0 | 0 | 4 | S |
| MCA203A | Data Structures Lab | 0 | 0 | 4 | 2 | CORE |
| MCA131B | Software Engineering | 3 | 0 | 0 | 3 | CORE |
| Total Credits | | 15 | 0 | 08 | 19 | |

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 |
| MCA232A | Azure Database Administrator Associate (DP-300) | 3 | 0 | 0 | 3 | S |
| 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 |
| MCA231A (2 credit) MCA233A(2 Credit) | Microsoft Dynamics 365 (ERP) Fundamentals & Developing Solutions for Microsoft Azure (AZ-204) | 3 | 0 | 2 | 4 | S |
| | Departmental Elective – II | 3 | 0 | 2 | 4 | E |
| Total Credits | | 18 | 0 | 12 | 24 | |

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/ 315A | Information Security and Hacking | 3 | 0 | 2 | 4 | CORE |
| MCA229A | Microsoft Certified: Azure AI Fundamentals | 3 | 0 | 2 | 4 | S |
| MCA316A | Capstone Project | 0 | 0 | 4 | 2 | core |
| MCA234A | Microsoft Azure Administrator (AZ-104) | 4 | 0 | 0 | 4 | S |
| MCA600A | Technical Research Paper Writing | 0 | 0 | 4 | 2 | CORE |
| Total Credits | | 13 | 0 | 16 | 21 | |

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

| Specialization (Web Development) | |
|--|---|
| Course Code | Course name |
| 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) |
| Specialization (Data Science and Analytics) | |
| Course Code | Course name |
| 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 |
| Specialization (Cyber Security) | |
| Course Code | Course name |
| MCA319A | Network Security Analysis |
| MCA320A | Cyber Security Management |
| MCA 604A | Ethical Hacking Programming |
| MCA605A | Cyber Crime Digital Forensic |

| Specialization (Mathematical Computing & Algorithms) | |
|---|----------------------------------|
| Course Code | Course name |
| MCA158A | Distributed Computing |
| MCA170A | Compiler Design |
| MCA123A | Advance Computer Network |
| MCA601A | Discrete Mathematics |
| MCA602A | Statistical Analysis and Methods |
| MCA603A | Applied Mathematics |

| Specialization (Cloud Computing, Process automation and Blockchain) | |
|--|---------------------------------------|
| Course Code | Course name |
| 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 |