

**JAYPEE INSTITUTE OF INFORMATION TECHNOLOGY  
DEPARTMENT OF COMPUTER APPLICATIONS**

**Credit Breakup in 2 year MCA Degree Curriculum 2024-26**

S. No	Course Work -Subject Area	Break Down of Credits
1	Humanities and Social Sciences (HS), Including Management	<b>5</b>
2	Professional Subjects-Core (PC) Relevant to chosen branch	<b>44</b>
3	Major Projects	<b>20</b>
4	Professional Subjects -Electives (PE) Relevant to chosen specialization/ Branch;	<b>12</b>
	<b>Total Credits</b>	<b>81</b>

**Curriculum of 2 year MCA Degree Course 2024-26**

First Semester								
S. No.	Course Code	Course Title	Contact Hours				Credits	Contact Hours
			L	T	P			
1	24M11CA111	Data Structure Using C	3	0	0	3	3	
2	24M11CA112	Data Base Management Systems	3	0	0	3	3	
3	24M11CA113	Object Oriented Programming using JAVA	3	0	0	3	3	
4	24M11CA114	Machine Learning	3	0	0	3	3	
5	24M11CA115	Computer System Architecture	3	0	0	3	3	
6	24M15CA111	Data Structure Using C Lab	0	0	4	2	4	
7	24M15CA112	Data Base Management Systems Lab	0	0	2	1	2	
8	24M15CA113	Object Oriented Programming using JAVA Lab	0	0	2	1	2	
9	24M15CA114	Machine Learning lab	0	0	2	1	2	
<b>Total credits</b>						<b>20</b>	<b>25</b>	

Second Semester								
S. No.	Course Code	Course Title	Contact Hours				Credits	Contact Hours
			L	T	P			
1	24M11CA116	Design and Analysis of Algorithms	3	0	0	3	3	
2	24M11CA117	Computer Networks	3	0	0	3	3	
3	24M11CA118	Operating System	3	0	0	3	3	

4	24M11CA119	Information Security	3	0	0	3	3
5	24M31HS111	Professional Communication	2	0	1	3	3
6		Elective-I	3	0	0	3	3

7	24M15CA116	Design and Analysis of Algorithms Lab	0	0	2	1	2
8	24M15CA117	Computer Networks Lab	0	0	2	1	2
9	24M15CA118	Operating System Lab	0	0	2	1	2
10	24M15CA119	Information Security Lab	0	0	2	1	2
11		Summer Internship (Audit)	0	0	0	0	0
<b>Total credits</b>						<b>22</b>	<b>26</b>

### Third Semester

S. No.	Course Code	Course Title	Contact Hours				Credits	Contact Hours
			L	T	P			
1	24M11CA211	Software Engineering	3	0	0	3	3	
2	24M11CA212	Web Technology	2	0	0	2	2	
3	25M31HS2111	Advance Professional Communication	2	0	0	2	2	
4	24XXXXXXXX	Elective-II	3	0	0	3	3	
5	24XXXXXXXX	Elective-III	3	0	0	3	3	
6	24XXXXXXXX	Elective-IV	3	0	0	3	3	
7	24M15CA211	Software Engineering Lab	0	0	2	1	2	
8	24M15CA212	Web Technology (Full-Stack Development) Lab	0	0	4	2	4	
<b>Total credits</b>						<b>19</b>	<b>25</b>	

### Fourth Semester

S. No.	Course Code	Course Title	Contact Hours				Credits	Contact Hours
			L	T	P			
1	24M17CA211	Project Work – (Major)	0	0	40	20	40	
<b>Total credits</b>						<b>20</b>	<b>40</b>	

**Overall Total Credits in Programme**

**81**

## **Proposed Elective Basket and Courses**

### **Elective Baskets**

#### **ML and AI:**

Artificial Intelligence  
Mathematical Foundations of Machine Learning  
Neural Networks and Deep Learning  
Natural Language Processing (NLP)  
Digital Image Processing  
Computer Vision  
Reinforcement Learning Applications  
Big Data Analytics

Cloud Computing  
Data analyst  
Social Network Analysis

#### **Cyber Security:**

Cyber Security Essentials  
Introduction to Forensic Science and Cyber Law  
Digital Forensics & Cyber Law  
Ethical Hacking and AI Security  
Security Analysis and Reporting  
Application and Network Security  
Malware Analysis and Reverse Engineering  
Threat Hunting and Scripting

#### **Full Stack Development Electives:**

Web Development with Spring Boot  
Frontend Frameworks (e.g., React, Angular, or Vue.js)  
RESTful API Design and Implementation  
Cloud Computing and Deployment  
Microservices Architecture  
DevOps Practices and Tools

#### **Java Electives:**

Advanced Java Programming

Java Enterprise Edition (Java EE)  
JavaFX for Desktop Applications  
Java Performance Tuning  
Spring Framework Advanced Topics  
Hibernate for Data Persistence

**Mobile Application Electives:**

Android App Development with Java  
iOS App Development with Swift  
Cross-Platform Mobile Development  
Mobile UI/UX Design  
Mobile Security and Privacy  
Mobile App Testing and Debugging

**Generic Electives:**

Design Thinking and Innovation  
  
Project Management on JIRA  
Internet Technology & Applications  
Optimization Techniques & Statistical Methods  
Internet of Things (IoT) Programming and Applications  
Emotional Intelligence  
Internet of Things (IoT) Programming and Applications  
Soft Computing  
Data Analytics and Business Intelligence  
Serverless Architecture  
Data Mining & Applications  
Blockchain Technology  
Big Data Technologies