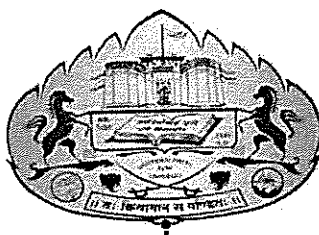


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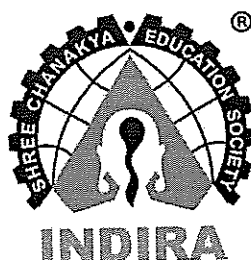
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Parandwadi, Pune – 410506, Ph. 02114 661500, www.indiraicem.ac.in



Approved by AICTE & Government of Maharashtra, Accredited by NAAC

Department of Master of Computer Applications



FY & SY MCA (Batch 2025-27)

National Education Policy (NEP)-2020 Compliant Curriculum

Structure and Syllabus

Prepared by: - Board of Studies in MCA

Approved by: - Academic Council, ICEM, Pune

(Pattern 2025)

MCA Syllabus Structure

2025-27

Semester-I										
Course Code	Course Type	Course	Teaching Scheme				TOTAL Credits	Evaluation Scheme		
			L	P	T	TOTAL HRS		CIA	ESE	Total
MCA101	CM	JAVA Programming	3	0	0	3	3	50	50	100
MCA102	CM	Data Structure & Algorithms	3	0	0	3	3	50	50	100
MCA103	CM	Object Oriented Software Engineering	3	0	0	3	3	50	50	100
MCA104	CM	Operating Systems and Shell Programming	3	0	0	3	3	50	50	100
MCA105	CM	Mathematics and Business Statistics	2	0	0	2	2	50	0	50
MCA101L	SEC	JAVA Programming Lab	0	4	0	4	2	50	0	50
MCA102L	SEC	Data Structure & Algorithms Lab	0	4	0	4	2	50	0	50
MCA106	ME	(Major Elective 1) Elective 1.1: Fundamentals of Cloud Computing & Networking Elective 1.2: Web Technologies Elective 1.3: Data Science	3	0	0	3	3	50	50	100
MCA106L	ME	Elective1 Subject Lab	0	2	0	2	1	50	0	50
MCA107	PROJ	Capstone Project	0	4	0	4	2	50	0	50
MCA108	CM	Soft Skills & Business Communication	1	0	0	1	1	25	0	25
MCA109	IKS	Yoga	1	0	0	1	1	25	0	25
		Noncredit course (Bridge course)								
			19	14	0	33	26	550	300	850

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BoS Member

Dr. Darshana Desai
HOD-MCA, BoS Chairman

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Dean-Academics

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Principal, ICEM



Semester II										
			Teaching Scheme					Evaluation Scheme		
Course Code	Course Type	Course	L	P	T	TOTAL HRS	TOTAL Credits	CIA	ESE	Total
MCA201	CM	Python Programming	3	0	0	3	3	50	50	100
MCA202	CM	Advanced Database Management System	3	0	0	3	3	50	50	100
MCA203	CM	Software Testing & Tools	3	0	0	3	3	50	50	100
MCA204	RM	Research Methodology	3	0	1	4	4	50	50	100
MCA201L	CM	Python Programming Lab	0	4	0	4	2	50	0	50
MCA205	PROJ	Mini Project	0	4	0	4	2	50	0	50
MCA206	ME	(Major Elective 2) Elective 2.1: Cloud Computing Management and Network Security Elective 2.2: Advance Web Technologies Elective 2.3: Artificial Intelligence & Machine Learning	3	0	0	3	3	50	50	100
MCA206L	ME	Elective2 Subject Lab	0	2	0	2	1	50	0	50
MCA207	ME	(Major Elective 3) Elective 3.1: IOT Elective 3.2: Blockchain Elective 3.3: Power BI	3	0	0	3	3	50	50	100
MCA207L	ME	Elective3 Subject Lab	0	2	0	2	1	50	0	50
MCA208	IKS	Vedic Mathematics	1	0	0	1	1	50	0	50
			19	12	1	32	26	550	300	850

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HOD-MCA, BoS Chairman

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Semester III										
			Teaching Scheme					Evaluation Scheme		
Course Code	Course Type	Course	L	P	T	TOTAL HRS	TOTAL Credits	CIA	ESE	Total
MCA301	CM	Mobile Application Development	3	0	0	3	3	50	50	100
MCA302	CM	Software Project Management & DevOps	3	0	0	3	3	50	50	100
MCA301L	CM	Mobile Application Development Lab	0	4	0	4	2	50	0	50
MCA303	ME	(Major Elective 4) Elective 4.1 Cloud Migration and Management Elective 4.2 MERN Stack Development Elective 4.3 Deep Learning	3	0	0	3	3	50	50	100
MCA303L	ME	Elective4 Subject Lab	0	2	0	2	1	50	0	50
MCA304	ME	(Major Electives 5) Elective 5.1 Cloud API & Services Elective 5.2 UI-UX Design Elective 5.3 Tableau	3	0	0	3	3	50	50	100
MCA304L	ME	Elective5 Subject Lab	0	2	0	2	1	50	0	50
MCA305	ME	(Major Electives 6) Elective 6.1 Cyber Security and Ethical Hacking Elective 6.2 E commerce & Digital Marketing Elective 6.3 Generative AI Prompt Engineering	3	0	0	3	3	50	50	100
MCA305L	ME	Elective6 Subject Lab	0	2	0	2	1	50	0	50
MCA306	RP	Research Project	0	12	0	12	6	200	0	200
			15	22	0	37	26	650	250	900

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HOD-MCA, BoS Chairman

Dr. Saurabh Gupta
Dean-Academics

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Principal, ICEM



Semester IV										
Course Code	Course Type	Course	Teaching Scheme				TOTAL Credits	Evaluation Scheme		
			L	P	T	TOTAL HRS		CIA	ESE	Total
MCA401	MOOC	Self-Learning Course/ MOOC-1	3	0	0	3	3	50	50	100
MCA402	MOOC	Self-Learning Course/ MOOC-2	3	0	0	3	3	50	50	100
MCA403	MOOC	Self-Learning Course/ MOOC-3	2	0	0	2	2	0	50	50
MCA404	OJT	Industrial Internship/On Job Training	0	24	0	24	12	250	200	450
			8	24	0	32	20	350	350	700
		Total:	61	72	1	134	98	2100	1200	3300

Abbreviations	Course Full Name
CM	Major/Core Mandatory
ME	Major Elective
RM	Research Methodology
OJT	Industrial Internship/On Job Training
RP	Research Project
MOOC	MOOC Course
CIA	Continuous Internal Assessment/Evaluation

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No.	MOOC-1 (3 Credits)	Platform	MOOC-2 (3 Credits)	Platform	MOOC-3 (2 Credits)	Platform
1	IBM AI Engineering Professional Certificate	Coursera	Certified Kubernetes Security Specialist (CKS)	Linux Foundation	AWS Certified Developer - Associate	AWS Training
2	Google Cloud Security Engineer	Google Cloud	Certified Blockchain Developer (Hyperledger)	Linux Foundation	Microsoft Certified: Azure Security Engineer Associate	Microsoft
3	UiPath RPA Developer Foundation	UiPath Academy	Automation Anywhere RPA Certification	Automation Anywhere University	Blue Prism RPA Developer Certification	Blue Prism University
4	Microsoft Power Platform Developer Associate (PL-400)	Microsoft	IBM Data Science Professional Certificate	Coursera	Salesforce Administrator Certification	Salesforce
5	JIRA Software Fundamentals	Atlassian University	Agile with JIRA	Coursera (Atlassian)	JIRA Administration Certification	Atlassian
6	Certified DevSecOps Professional (CDP)	Practical DevSecOps	AWS Certified Solutions Architect - Associate	AWS Training	Google Associate Cloud Engineer	Google Cloud
7	Software Testing with Selenium & JUnit	Udemy	ISTQB Certified Tester (CTFL)	ISTQB	Appium Mobile Automation Testing	Udemy
8	AWS Certified Advanced Networking - Specialty	AWS Training	Microsoft Certified: DevOps Engineer Expert (AZ-400)	Microsoft	Certified Ethical Hacker (CEH)	EC-Council
9	LoadRunner Performance Testing	Micro Focus	JMeter Performance Testing	Udemy	Postman API Testing	Postman Academy
10	AI for IT Operations (AIOps) Certification	Coursera (IBM)	DevOps with GitHub Actions & Docker	Udemy	Python for Automation Testing	Udemy

Note: These are tentative MOOC Courses, Student can change with the approval from authorities.


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