



St. John College of Engineering and Management

Autonomous Institute

(A Christian Religious Minority Institution)

Approved by AICTE and DTE, Affiliated to University of Mumbai / MSBTE

DTE Code : 3218 AICTE Permanent ID : 1-4790201



NAAC Accredited with Grade 'A+', Three Programs NBA Accredited

Master of Computer Applications

First Year Semester – I

SJCEM R-24

Effective from Academic Year 2024-25



Nomenclature of the Courses

Abbreviation	Title
BSC	Basic Science Courses
ESC	Engineering Science Courses
PCC	Program Core Courses
PEC	Program Elective Courses
MDM	Multidisciplinary Minor
OE	Open Elective
SC	Skill Courses
LLC	Liberal Learning Courses
VSEC	Vocational and Skill Enhancement Course
VEC	Value Education Course
SEC	Skill Enhancement Courses
AEC	Ability Enhancement Course
IKS	Indian Knowledge System
CC	Co-curricular Courses



Program Structure for Master of Computer Applications

St. John College of Engineering and Management

(Autonomous)

(With Effect from 2024-2025)

Course Code	Vertical	Course Name	Contact Hrs.			Credit Allotted			Total Credits
			Th	Tut	Pr	Th	Tut	Pr	
24MCABSC101	BSC	Linear Algebra for Computer Applications	3	1	-	3	1	-	4
24MCAPCC101	PCC	Data Structures and Applications	3	-	2	3	-	1	4
24MCAPCC102	PCC	Fundamentals of Database Management Systems	3	-	2	3	-	1	4
24MCAPCC103	PCC	Modern Web Technologies and Frameworks	3	-	2	3	-	1	4
24MCAAEC101	AEC	Basic Communication Skills -I	2	1	-	2	1	-	3
24MCAECC101	ECC	Liberal Learning – Yoga and Meditation	-	-	2	-	-	1	1
Total			14	2	8	14	2	4	20

Course Code	Vertical	Course Name	Evaluation Scheme					
			IAE 1	IAE 2	ESE	CA	OR/PR	Total
24MCABSC101	BSC	Linear Algebra for Computer Applications	20	20	60	25	-	125
24MCAPCC101	PCC	Data Structures and Applications	20	20	60	25	25	150
24MCAPCC102	PCC	Fundamentals of Database Management Systems	20	20	60	25	25	150
24MCAPCC103	PCC	Modern Web Technologies and Frameworks	20	20	60	25	25	150
24MCAAEC101	AEC	Basic Communication Skills -I	20	20	60	25	-	125
24MCAECC101	ECC	Liberal Learning – Yoga and Meditation	-	-	-	25	-	25
Total			100	100	300	150	75	725



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Course Code	Vertical	Course Name	Contact Hrs.			Credit Allotted			Total Credits
			Th	Tut	Pr	Th	Tut	Pr	
24MCABSC201	BSC	Probability and Statistics	3	1	-	3	1	-	4
24MCAPCC201	PCC	Java Programming	2	-	2	2	-	1	3
24MCAPCC202	PCC	Design and Analysis of Algorithms	3	-	2	3	-	1	4
24MCAPCC203	PCC	Process Automation	3	-	2	3	-	1	4
24MCAPEC201X	PEC	Program Elective-I	3	-	2	3	-	1	4
24MCASBC202	AEC	Basic Communication Skills -II	-	2	-	-	1	-	1
24MCAHSEX2	IKS	Introduction to IKS	2	-	-	2	-	-	2
		Total	16	3	10	16	2	5	22

Course Code	Vertical	Course Name	Evaluation Scheme					Total
			IAE 1	IAE 2	ESE	CA	OR/PR	
24MCABSC201	BSC	Probability and Statistics	20	20	60	25	-	125
24MCAPCC201	PCC	Java Programming	20	20	60	25	25	150
24MCAPCC202	PCC	Design and Analysis of Algorithms	20	20	60	25	25	150
24MCAPCC203	PCC	Process Automation	20	20	60	25	-	125
24MCAPEC201X	PEC	Program Elective-I	20	20	60	25	25	150
24MCASBC202	AEC	Basic Communication Skills -II	-	-	-	50	-	50
24MCAHSEX2	IKS	Introduction to IKS	-	-	-	25	-	25
		Total	100	100	300	200	75	775



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Second Year Semester – III

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St. John College of Engineering and Management (Autonomous)

(With Effect from 2025-2026)

Course Code	Vertical	Course Name	Contact Hrs.			Credit Allotted			Total Credits
			Th	Tut	Pr	Th	Tut	Pr	
24MCAPCC301	PCC	Data Science using Python	3		2	3		1	4
24MCAPCC302	PCC	Software Architecture & Design Patterns	3	-	2	3	-	1	4
24MCAPEC301X	PEC	Program Elective-II	3	-	2	3	-	1	4
24MCAPEC302X	PEC	Program Elective-III	3	-	2	3	-	1	4
24MCAPRJ301	PRJ	Project-I	-	-	6	-	-	3	3
24MCAVEC301	VEC	Universal Human Values	2	1	-	2	1	-	3
		Total	14	1	14	14	1	7	22

Course Code	Vertical	Course Name	Evaluation Scheme					
			IAE 1	IAE 2	ESE	CA	OR/PR	Total
24MCAPCC301	PCC	Data Science using Python	20	20	60	25	25	150
24MCAPCC302	PCC	Software Architecture & Design Patterns	20	20	60	25	25	100
24MCAPEC301X	PEC	Program Elective-II	20	20	60	25	25	150
24MCAPEC302X	PEC	Program Elective-III	20	20	60	25	25	150
24MCAPRJ301	PRJ	Project-I	-	-	-	100	50	150
24MCAVEC301	VEC	Universal Human Values	10	10	30	25	-	75
		Total	90	90	270	200	125	825



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Master of Computer Applications

First Year Semester – IV

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Program Structure for Master of Computer Applications

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Sem-IV

Course Code	Vertical	Course Name	Contact Hrs.			Credit Allotted			Total Credits
			Th	Tut	Pr	Th	Tut	Pr	
24MCAOE40 1X	OE	Open Elective-II (MOOC)	3	-	-	3	-	-	3
24MCARP40 1	PRJ	Research Paper /Case Study	1	-	-	1	-	-	1
24MCAINT4 02	INT	6-Month Industry Internship/Research Internship	-	-	36	-	-	18	18
Total			4	0	36	4	0	18	22

Course Code	Vertical	Course Name	Evaluation Scheme					Total
			IAE 1	IAE 2	ESE	CA	OR/PR	
24MCAOE40 1X	OE	Open Elective-II (MOOC)	20	20	60	-	-	100
24MCARP40 1	PRJ	Research Paper /Case Study	-	-	-	50	50	100
24MCAINT4 02	INT	6-Month Industry Internship/Research Internship	-	-	-	100	200	300
Total			20	20	60	150	250	500



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PROGRAM ELECTIVES

Semester	PEC	Track 1	Track 2	Track 3
		Cloud Computing	Cyber Security	Web and App Development
III	Programme Elective I	Fundamentals of Cloud Computing and Architecture	Fundamental Concepts of Cyber Security	Internet Programming
IV	Programme Elective II	Cloud Administration	Cyber Security and Ethical Hacking -I	Web X.0
	Programme Elective III	Cloud Security	Security Compliances	Mobile Application Development and Progressive Web App

OPEN ELECTIVES /MOOC

Course Code	Course Name
24MCAOE4011	Management Principles
24MCAOE4012	IPR and Patents
24MCAOE4013	Law for Engineers
24MCAOE4014	Organizational Behavior
24MCAOE4015	Leadership, Innovation and Entrepreneurship
24MCAOE4016	Project Management
24MCAOE4017	Finance for Engineers
24MCAOE4018	Product Lifecycle Management
24MCAOE4019	Reliability Engineering
24MCAOE40110	Management Information System
24MCAOE40111	Design of Experiments
24MCAOE40112	Operation Research
24MCAOE40113	Cyber Security and Laws
24MCAOE40114	Disaster Management and Mitigation Measures
24MCAOE40115	Energy Audit and Management
24MCAOE40116	Development Engineering



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PROGRAM ELECTIVES

Sr. No.	Program	Program Elective I	Program Elective II	Program Elective III
1	Data Science	Machine Learning (24MCAPEC2011)	Deep Learning (24MCAPEC3012)	Data Visualization and Analytics (24MCAPEC3013)
2	Software Testing	Software Testing (24MCAPEC2014)	Quality Assurance (24MCAPEC3015)	Risk Analysis (24MCAPEC3016)
3	Design	Design Thinking** (24MCAPEC2017)	Human Machine Interaction (24MCAPEC3018)	User Experience Design (24MCAPEC3019)
4	Full Stack Development	DevOps (24MCAPEC2020)	React (24MCAPEC3021)	Springboot and Microservices (24MCAPEC3022)
5	Any new program approved by BoS			

****24MCAPEC2017 of 4 credits will be offered with 2 credits for theory and 2 credits for laboratory.**

PROGRAM ELECTIVES / MOOC

24MCAPEC2023	IoT and I2oT
24MCAPEC2024	Cloud Computing
24MCAPEC2025	Artificial Intelligence and Soft Computing
24MCAPEC2026	Cyber Security
24MCAPEC2027	Block Chain Technology
24MCAPEC2028	Data Warehousing and Mining
24MCAPEC2029	Computer Graphics
24MCAPEC2030	Ethical Hacking
	Any other Course approved by the Dean Academics and Principal