



**Autonomy Scheme**  
**Master of Technology**  
**SJCEM : R - 24**

<b>Sr. No.</b>	<b>Heading</b>	<b>Particulars</b>
1	<b>Title of the Course</b>	<b>Computer Engineering</b>
2	<b>Eligibility for Admission</b>	As per the Institute Examination Ordinance
3	<b>Theory Passing Marks (IAE / ESE)</b>	40%
4	<b>Continuous Assessment (CA) / Oral / Practical</b>	50%
5	<b>To be implemented from Academic Year</b>	With effect from Academic Year:2024-2025
6	<b>Total Credits</b>	Maximum 80



## Preface

University Grants Commission vide Letter No. F. 2-10/2023 (AC-Policy) dated 19<sup>th</sup> January 2024 conferred the autonomous status to St. John College of Engineering and Management, Village Vevoor, Manor Road, Palghar (East), 401404 affiliated to University of Mumbai for a period of 10 years from the academic year 2024-2025 to 2033-2034 as per clause 7.5 of the UGC (Conferment of Autonomous Status Upon Colleges and Measures for Maintenance of Standards in Autonomous Colleges) Regulations 2023. Designing the curriculum as an autonomous institution raises challenges pertaining to maintaining quality engineering education.

Systematic approach has been adapted in the design and implementation of curriculum with the intent of ensuring quality education catering to the sensitive needs of a learner, society, and industry. The curriculum is aligned with NEP and UGC guidelines as per Government of Maharashtra guidelines for autonomous institutions Government Resolution dated 4<sup>th</sup> July 2023. Based on recent recommendations of the GR, holistic curriculum for 2024-28, a “H-Tree Model” of Engineering Education is offered. A unique “H-Tree Model” of Engineering Education Curriculum is followed and curriculum is designed to systematically develop IQ (Intelligence Quotient), PQ (Physical Quotient), EQ (Emotional Quotient), and SQ (Spiritual Quotient) of a learner. This curriculum aims at the development of an all-rounded personality with holistic approach to education in which a learner receives 34% teacher-led learning, 15% peer learning, 26% self-learning, and 25% experiential learning. The curriculum model is outcome based that focuses on learning by doing. Curriculum is designed to provide multiple learning opportunities for students to acquire and demonstrate competencies for rewarding careers. It ensures multiple choices to a learner acquiring skills through systematic planning. It has 7 verticals aligned to GR recommendations with strong science and mathematics foundation and program core, sequel of electives, multidisciplinary minor courses, humanities & management courses, and sufficient experiential learning through projects and semester-long industry/research internship along with employable skill-based courses. A learner gets an opportunity to acquire skills through NSDC aligned courses during summer vacations. Additional options of choosing from Honors/Double Minor / Honors with Research are also provided to a learner.

The curriculum balances contact hours and total credits of the entire program. The total credits are 172, wherein focus is not only on providing knowledge but also on building skills, attitude and self-learning. Therefore, in the present curriculum, skill-based laboratories, mini-projects, multi-disciplinary projects, and internships are made mandatory across all disciplines of engineering, which will definitely facilitate self-learning of students. The overall credits and approach of curriculum proposed in the scheme and syllabus are in line with AICTE model curriculum. SJCEM : R - 24 curriculum will be implemented for Computer Engineering from the academic year 2024-25.



## Nomenclature

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
EEMC	Entrepreneurship/Economics/Management Courses

### Credit Specification:

- Theory: 1 credit = 15 hours of teaching
- Lab: 1 Credit = 30 hours of lab work.
- Workshop Based Activities: 1 Credit = 30 hours of hands-on activities related to vocation/professional practice/skill based
- Seminar/Group Discussion: 1 Credit = 15 hours of participation
- Community Engagement Projects: 1 Credit = 30 hours of contact time along with 15 hours of activities preparation, report writing, independent reading etc.

Dr. Manish Rana  
BoS Chairman

Dr. Kamal Shah  
Principal



**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 Technology In Computer Engineering

## Semester – I

SJCEM : R - 24

**Effective from Academic Year 2024-25**



## Program Structure for Master of Technology in Computer Engineering

(With Effect from 2024-2025)

Course Code	Vertical	Course Name	Contact Hrs			Credit Allotted			Total Credits
			Th	Tut	Pr	Th	Tut	Pr	
24MECSPCC101	PCC	Algorithm & Complexity	3	-	-	3	-	-	3
24MECSPCC102	PCC	Advance Computer Network and Design	3	-	-	3	-	-	3
24MECSPEC11X	PEC	Department Level Optional Course-1	3	-	-	3	-	-	3
24MECSPEC12X	PEC	Department Level Optional Course-2	3	-	-	3	-	-	3
24MECSOE10X	OE	Institute Level Optional Course-I	3	-	-	3	-	-	3
24MECSPCL101	-	Computational Laboratory-I	-	-	2	-	-	1	1
24MECSVSE101	VSE	Skill Based Lab-I	-	-	4	-	-	2	2
		<b>Total</b>	<b>15</b>	<b>-</b>	<b>6</b>	<b>15</b>	<b>-</b>	<b>3</b>	<b>18</b>

Course Code	Vertical	Course Name	Evaluation Scheme					Total
			IAE 1	IAE 2	ESE	CA	OR/PR	
24MECSPCC101	PCC	Algorithm & Complexity	20	20	60	-	-	100
24MECSPCC102	PCC	Advance Computer Network and Design	20	20	60	-	-	100
24MECSPEC11X	PEC	Department Level Optional Course-1	20	20	60	-	-	100
24MECSPEC12X	PEC	Department Level Optional Course-2	20	20	60	-	-	100
24MECSOE10X	OE	Institute Level Optional Course-I	20	20	60	-	-	100
24MECSPCL101	-	Computational Laboratory-I	-	-	-	25	25	50
24MECSVSE101	VSE	Skill Based Lab-I	-	-	-	50	50	100
		<b>Total</b>	<b>100</b>	<b>100</b>	<b>300</b>	<b>75</b>	<b>75</b>	<b>650</b>



## Elective Subjects

Course Code	Department Level Optional Course-1	Course Code	Institute Level Optional Course
24MECSPEC1101	Logic & Automated Reasoning	24MECSOE101	Product Life Cycle Management
24MECSPEC1102	Database System: Design and Implementation	24MECSOE102	Reliability Engineering
24MECSPEC1103	Computational Intelligence	24MECSOE103	Management Information System
24MECSPEC1104	Modern Operating System	24MECSOE104	Design of Experiments
	<b>Department Level Optional Course-2</b>	24MECSOE105	Operations Research
24MECSPEC1201	Component Based System Design	24MECSOE106	Cyber Security and Laws
24MECSPEC1202	ICT for Social Cause	24MECSOE107	Disaster Management and Mitigation Measures
24MECSPEC1203	Internet of Everything	24MECSOE108	Energy Audit and Management
24MECSPEC1204	Web Application Security	24MECSOE109	Development Engineering



**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 Technology In Computer Engineering

## Semester – II

SJCEM : R - 24

**Effective from Academic Year 2024-25**



## Program Structure for Master of Technology in Computer Engineering (With Effect from 2024-2025)

### Semester II

Course Code	Vertical	Course Name	Contact Hrs			Credit Allotted			Total Credits
			Th	Tut	Pr	Th	Tut	Pr	
24MECSPCC201	PCC	Cloud Computing and Services	3	-	-	3	-	-	3
24MECSPCC202	PCC	Exploratory Data Analytics and Visualization	3	-	-	3	-	-	3
24MECSPEC2X	PEC	Department Level Optional Course-3	3	-	-	3	-	-	3
24MECSPEC2X	PEC	Department Level Optional Course-4	3	-	-	3	-	-	3
24MECSOEX	OE	Institute Level Optional Course-II	3	-	-	3	-	-	3
24MECSPCL201	-	Computational Laboratory-II	-	-	2	-	-	1	1
24MECSVSE201	VSE	Skill Based Lab-II	-	-	4	-	-	2	2
		<b>Total</b>	<b>15</b>	<b>-</b>	<b>6</b>	<b>15</b>	<b>-</b>	<b>3</b>	<b>18</b>

Course Code	Vertical	Course Name	Evaluation Scheme					Total
			IAE 1	IAE 2	ESE	CA	OR/PR	
24MECSPCC201	PCC	Cloud Computing and Services	20	20	60	-	-	100
24MECSPCC202	PCC	Exploratory Data Analytics and Visualization	20	20	60	-	-	100
24MECSPEC2X	PEC	Department Level Optional Course-3	20	20	60	-	-	100
24MECSPEC2X	PEC	Department Level Optional Course-4	20	20	60	-	-	100
24MECSOEX	OE	Institute Level Optional Course-II	20	20	60	-	-	100
24MECSPCL201	-	Computational Laboratory-II	-	-	-	25	25	50
24MECSVSE201	VSE	Skill Based Lab-II	-	-	-	50	50	100
		<b>Total</b>	<b>100</b>	<b>100</b>	<b>300</b>	<b>75</b>	<b>75</b>	<b>650</b>



## Elective Subjects

Course Code	Department Level Optional Course-3	Course Code	Institute Level Optional Course
24MECSPEC2101	Ethical Hacking & Digital Forensic	24MECSOE201	Project Management
24MECSPEC2102	Data Storage & Retrieval	24MECSOE202	Finance Management
24MECSPEC2103	Advance Soft Computing	24MECSOE203	Entrepreneurship Development and Management
24MECSPEC2104	Semantic Web & Social Network Analysis	24MECSOE204	Human Resource Management
	<b>Department Level Optional Course-4</b>	24MECSOE205	Professional Ethics and CSR
24MECSPEC2201	Blockchain Technology & Applications	24MECSOE206	Research Methodology
24MECSPEC2202	Storage Area Network	24MECSOE207	IPR and Patenting
24MECSPEC2203	Design Thinking	24MECSOE208	Digital Business Management
24MECSPEC2204	Metaverse	24MECSOE209	Environmental Management



**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 Technology In Computer Engineering

## Semester – III

SJCEM : R - 24

**Effective from Academic Year 2024-25**



## Program Structure for Master of Technology in Computer Engineering

(With Effect from 2024-2025)

### Semester III

Course Code	Vertical	Course Name	Contact Hrs			Credit Allotted			Total Credits
			Th	Tut	Pr	Th	Tut	Pr	
24MECSPRJ301	PRJ	Major Project: Dissertation –I	-	-	36	-	-	18	18
24MECSEEM301	EEMC	Online Credit Course- I	-	-	-	-	-	-	3
24MECSEEM302	EEMC	Online Credit Course- II	-	-	-	-	-	-	3
		<b>Total</b>	-	-	<b>36</b>	-	-	<b>18</b>	<b>24</b>

Course Code	Vertical	Course Name	Evaluation Scheme					Total
			IAE 1	IAE 2	ESE	CA	OR/PR	
24MECSPRJ301	PRJ	Major Project: Dissertation –I	-	-	-	100	-	100
24MECSEEM301	EEMC	Online Credit Course- I	-	-	-	25	-	25
24MECSEEM302	EEMC	Online Credit Course- II	-	-	-	25	-	25
		<b>Total</b>	-	-	-	<b>150</b>	-	<b>150</b>



**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 Technology In Computer Engineering

## Semester – IV

SJCEM : R - 24

**Effective from Academic Year 2024-25**



## Program Structure for Master of Technology in Computer Engineering

(With Effect from 2024-2025)

### Semester IV

Course Code	Vertical	Course Name	Contact Hrs			Credit Allotted			Total Credits
			Th	Tut	Pr	Th	Tut	Pr	
24MECSPRJ401	PRJ	Major Project: Dissertation – II	-	-	40	-	-	20	20
		<b>Total</b>	-	-	<b>40</b>	-	-	<b>20</b>	<b>20</b>

Course Code	Vertical	Course Name	Evaluation Scheme					Total
			IAE 1	IAE 2	ESE	CA	OR/PR	
24MECSPRJ401	PRJ	Major Project: Dissertation – II	-	-	-	100	100	200
		<b>Total</b>	-	-	-	<b>100</b>	<b>100</b>	<b>200</b>