St. Joseph's

College of Engineering and Technology, Palai

AUTONOMOUS

Choondacherry P.O., Pala, Kottayam - 686579
Kerala, India

LIST OF APPROVED MOOC COURSES

MINOR

2024 SCHEME

Dept. of **Artificial Intelligence and Data Science**

ST.JOSEPH'S
COLLEGE OF ENGINEERING
AND TECHNOLOGY,
- PALAI -
AUTONOMOUS

SJCET/AD/Subm/05/(01)   13/11/2025

List of approved MOOC Courses for Minor

Offering Department: Artificial Intelligence and Data Science

Name of the Program: B.Tech. (Minor) in Artificial Intelligence and Data Science

Sl. No.	Course Name	Course Code*	Course Type	Duration	Offering Platform	B.Tech. Regulation	Course offering institution	Remarks
1	Artificial Intelligence: Search Methods for Problem Solving	24SJMNADM301	Minor MOOC	12 weeks	Swayam	2024	IIT Madras	Semester 3
	Artificial Intelligence: Concepts and Techniques	24SJMNADM302	Minor MOOC	12 weeks	Swayam	2024	IISc Bangalore	Semester 3
2	Introduction to Machine Learning	24SJMNADM401	Minor MOOC	12 weeks	Swayam	2024	IIT Madras	Semester 4
	Introduction to Machine Learning	24SJMNADM402	Minor MOOC	8 weeks	Swayam	2024	IIT Kharagpur	Semester 4
3	Deep Learning	24SJMNADM501	Minor MOOC	12 weeks	Swayam	2024	IIT Ropar	Semester 5
	Deep Learning for NLP	24SJMNADM502	Minor MOOC	12 weeks	Swayam	2024	IIT Kharagpur	Semester 5
4	Applied Natural Language Processing	24SJMNADM601	Minor MOOC	12 weeks	Swayam	2024	Chennai Mathematical Institute (CMI)	Semester 6
	Natural Language Processing	24SJMNADM602	Minor MOOC	12 weeks	Swayam	2024	IIT Kharagpur	Semester 6

*Course name example- 24SJMNAD**M**30**N** where **M** stands for MOOC course and **N** will be ranging from 1 to 9 depending on the number of MOOC courses offered for the particular minor course.

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List of approved MOOC Courses for Minor

Offering Department: CIVIL ENGINEERING

Name of the Program: CONSTRUCTION TECHNOLOGY

Sl. No.	Course Name	Course Code*	Course Type	Duration	Offering Platform	B. Tech Regulation	Course offering institution	Remarks
1	Basic construction materials	24SJMNCETM301	MOOC	12 WEEKS	NPTEL	2024	IITM	S3
2	Concrete Technology	24SJMNCETM401	MOOC	12 WEEKS	NPTEL	2024	IITD	S4
3	Advanced Structural Analysis	24SJMNCETM501	MOOC	12 WEEKS	NPTEL	2024	IITBBS	S5
4	Introduction to Accounting and Finance for Civil Engineers	24SJMNCETM601	MOOC	8 WEEKS	NPTEL	2024	IITK	S6

List of approved MOOC Courses for Minor

Offering Department : Mechanical Engineering

Name of the Program : Operations Management (Industrial Engineering)

Sl. No.	Course Name	Course Code	Course Type	Duration	Offering Platform	B.Tech Regulation	Course Offering Institution	Remarks
1	Work System Design	24SJMNIEM301	MOOC	12 weeks	NPTEL	2024 Regulation	IIT Roorkee	S3
2	Production and Operation Management	24SJMNIEM401	MOOC	12 weeks	NPTEL	2024 Regulation	IIT Roorkee	S4
3	Operations Management	24SJMNIEM402	MOOC	12 weeks	NPTEL	2024 Regulation	IIT Roorkee	S4
4	Decision Modelling	24SJMNIEM501	MOOC	8 weeks	NPTEL	2024 Regulation	IIT Kharagpur	S5
5	Quality Design and Control	24SJMNIEM601	MOOC	12 weeks	NPTEL	2024 Regulation	IIT Kharagpur	S6

List of approved MOOC Courses for Minor

Offering Department: Electrical and Electronics Engineering

Name of the Program: Minor in Power Engineering

Sl.No.	Course Name	Course Code*	Course Type	Duration	Offering Platform	B.Tech Regulation	Course offering institution	Remarks
1	Power System Engineering	24SJMNEE**M3**01	MOOC	12	NPTEL/ SWAYAM	2024	IIT Khargpur	S3
2	Power System Dynamics, Control and Monitoring	24SJMNEE**M3**02	MOOC	12	NPTEL/ SWAYAM	2024	IIT Khargpur	S3
3	Energy Resources, Economics and Environment	24SJMNEE**M4**01	MOOC	12	NPTEL/ SWAYAM	2024	IIT Bombay	S4
4	Renewable Energy Engineering: Solar, Wind and Biomass Energy Systems	24SJMNEE**M4**02	MOOC	8	NPTEL/ SWAYAM	2024	IIT Guwahati	S4
5	Waste to Energy Conversion	24SJMNEE**M4**03	MOOC	8	NPTEL/ SWAYAM	2024	IIT Roorkee	S4
6	Non-Conventional Energy Resources	24SJMNEE**M5**01	MOOC	12	NPTEL/ SWAYAM	2024	IIT Madras	S5
7	Elements of Solar Energy Conversion	24SJMNEE**M5**02	MOOC	12	NPTEL/ SWAYAM	2024	IIT Kanpur	S5
8	Solar Photovoltaics: Principles, Technologies & Materials	24SJMNEE**M5**03	MOOC	8	NPTEL/ SWAYAM	2024	IIT Kanpur	S5

9	Power Management Integrated Circuits	4SJMNEE**M6**01	MOOC	12	NPTEL/ SWAYAM	2024	IIT Madras	S6
10	Control and Instrumentation Power Systems and Power Electronics	4SJMNEE**M6**02		12	NPTEL/ SWAYAM	2024	IIT Madras	S6

*Course name example- 24SJMNEE**M**30N where **M** stands for MOOC course and **N** will be ranging from 1 to 9 depending on the number of MOOC courses offered for the particular minor course.

List of approved MOOC Courses for Minor

CSE and Allied Branches

Name of the Program: Minor in Software Engineering

Sl.No.	Course Name	Course Code	Course Type	Duration	Offering Platform	B.Tech Regulation	Course offering institution	Remarks
1	Software Engineering	24SJMNCSM301	MOOC	12 Weeks	SWAYAM	2024	IIT Kharagpur/ Prof. Rajib Mall	S3
2	Object Oriented System Development Using UML, Java and Patterns	24SJMNCSM401	MOOC	12 Weeks	SWAYAM	2024	IIT Kharagpur/ Prof. Rajib Mall	S4
3	Software Testing	24SJMNCSM501	MOOC	12 Weeks	SWAYAM	2024	IIIT Bangalore/ Prof. Meenakshi D'souza	S5
4	Software Project Management	24SJMNCSM601	MOOC	12 Weeks	SWAYAM	2024	IIT Kharagpur, NIT Rourkela/ Prof. Rajib Mall, Prof. Durga Prasad Mohapatra	S6

List of approved MOOC Courses for Minor

Offering Department: DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

Name of the Program: Minor in Automation Systems

Sl.No.	Course Name	Course Code*	Course Type	Duration	Offering Platform	B.Tech Regulation	Course offering institution	Remarks
1	Sensors and Actuators	24SJMNECM301	MOOC	12 Weeks	SWAYAM	2024	IISc Bangalore/ Prof. Hardik Jeetendra Pandya	S3
2	Biomedical Instrumentation & Sensors	24SJMNECM302	MOOC	12 Weeks	SWAYAM	2024	Chhattisgarh Swami Vivekanand Technical University, Bhilai/ Dr. Piyush Lotia and Mr. Thaneshwar Kumar Sahu	S3
3	Industrial Hydraulics and Automation	24SJMNECM401	MOOC	12 Weeks	SWAYAM	2024	IIT (ISM) Dhanbad/ Prof. Niranjan Kumar, Prof. Ajit Kumar	S4
4	Automation & Controls	24SJMNECM402	MOOC	12 Weeks	SWAYAM	2024	IIT Delhi/ Dr. S. Jha	S4
5	Industrial Automation and Drives	24SJMNECM501	MOOC	12 Weeks	SWAYAM	2024	Chhattisgarh Swami Vivekanand Technical University, Bhilai/ By Prof. Sanjay Agrawal and Mr Rahul Baghel	S5
6	Industrial Robotics: Theories for Implementation	24SJMNECM502	MOOC	12 Weeks	SWAYAM	2024	IIT-ISM Dhanbad/ Prof. Arun Dayal Udai	S5
7	Automation in Manufacturing	24SJMNECM601	MOOC	12 Weeks	SWAYAM	2024	IIT Guwahati/ Prof. Shrikrishna N. Joshi	S6
8	Automation in Production Systems and Management	24SJMNECM602	MOOC	12 Weeks	SWAYAM	2024	IIT Kharagpur/ Prof. Pradip Kumar Ray	S6

Name of the Program: Minor in Intelligent Systems and Automation

Sl.No.	Course Name	Course Code*	Course Type	Duration	Offering Platform	B.Tech Regulation	Course offering institution	Remarks
1	Sensors and Actuators	24SJMNECM301	MOOC	12 Weeks	SWAYAM	2024	IISc Bangalore/ Prof. Hardik Jeetendra Pandya	S3
2	Biomedical Instrumentation & Sensors	24SJMNECM302	MOOC	12 Weeks	SWAYAM	2024	Chhattisgarh Swami Vivekanand Technical University, Bhilai/ Dr. Piyush Lotia and Mr. Thaneshwar Kumar Sahu	S3
3	Digital Electronic and System design	24SJMNECM411	MOOC	8 Weeks	SWAYAM	2024	Chhattisgarh Swami Vivekanand Technical University (CSVTU)/ Dr. Saji Chako & Dr. Amit Singh Rajput	S4
4	Analog Electronic Circuits	24SJMNECM412	MOOC	12 Weeks	SWAYAM	2024	IIT Kharagpur/Prof. Pradip Mandal	S4
5	Embedded Systems Design	24SJMNECM511	MOOC	12 Weeks	SWAYAM	2024	IIT Kharagpur/ Prof. Anupam Basu	S5
6	Embedded System Design With ARM	24SJMNECM512	MOOC	12 Weeks	SWAYAM	2024	IIT Kharagpur/Prof. Indranil Sengupta & Prof. Kamalika Dutta	S5
7	Introduction to Robotics	24SJMNECM611	MOOC	12 Weeks	SWAYAM	2024	IIT Madras/ Prof. Asokan T, Prof. Balaraman Ravindran, Prof. Krishna Vasudevan	S6
8	Microrobotics	24SJMNECM612	MOOC	12 Weeks	SWAYAM	2024	IIT Indore/ Prof. I. A. Palani	S6

Name of the Program: Minor in Biomedical Technology

Sl.No.	Course Name	Course Code*	Course Type	Duration	Offering Platform	B.Tech Regulation	Course offering institution	Remarks
1	Biomedical Instrumentation	24SJMNECM321	MOOC	12 Weeks	SWAYAM	2024	IIT Madras/ Prof. Varadhan SKM	S3
2	Electrical Measurement and Electronic Instruments	24SJMNECM322	MOOC	12 Weeks	SWAYAM	2024	IIT Kharagpur/ Prof. Avishek Chatterjee	S3
3	Microprocessors And Microcontrollers	24SJMNECM421	MOOC	12 Weeks	SWAYAM	2024	IIT Kharagpur/ Prof. Santanu Chattopadhyay	S4
4	Digital Electronics and Microprocessor	24SJMNECM422	MOOC	12 Weeks	SWAYAM	2024	Dr. V. Jeyalakshmi/ Anna University, Chennai	S4
5	Embedded Systems Design	24SJMNECM521	MOOC	12 Weeks	SWAYAM	2024	IIT Kharagpur/ Prof. Anupam Basu	S5
6	Embedded Sensing, Actuation and Interfacing Systems	24SJMNECM522	MOOC	12 Weeks	SWAYAM	2024	IIT Kharagpur / Prof. Banibrata Mukherjee	S5
7	Health Research Fundamentals	24SJMNECM621	MOOC	8 Weeks	SWAYAM	2024	National Institute of Epidemiology/ By Multi Faculty	S6
8	Industrial Safety and Fire Safety Management	24SJMNECM622	MOOC	12 Weeks	SWAYAM	2024	Chhattisgarh Swami Vivekanand Technical University (CSVTU), Bhilai/ Dr. P.K.Ghosh and Mrs.Annapurna Adiley	S6

*Course name example- 24SJMNAD**M**30**N** where **M** stands for MOOC course and **N** will be ranging from 1 to 9 depending on the number of MOOC courses offered for the particular minor course.

List of approved MOOC Courses for Minor

Offering Department: Electronics & Computer Engineering

Name of the Program: Robotics and Automation

Sl. No.	Course Name	Course Code*	Course Type	Duration	Offering Platform	B.Tech. Regulation	Course offering institution	Remarks
1	Introduction to robotics	24SJMNER**M**301	MOOC	12 Weeks	NPTEL	2024	IIT Madras	S3
2	Robotics: Basics and Selected Advanced Concepts	24SJMNER**M**302	MOOC	12 Weeks	NPTEL	2024	Ahmedabad University	To be offered only if the primary course is discontinued /unavailable. (S3)
3	Collaborative Robots (COBOTS): Theory and Practice	24SJMNER**M**401	MOOC	8 Weeks	NPTEL	2024	IIT-ISM Dhanbad	S4
4	Advanced Robotics Applications	24SJMNER**M**402	MOOC	12 Weeks	NPTEL	2024	IIT Kanpur	To be offered only if the primary course is discontinued /unavailable. (S4)
5	Fundamentals of Artificial Intelligence	24SJMNER**M**501	MOOC	12 Weeks	NPTEL	2024	IIT Guwahati	S5
6	Wheeled Mobile Robots	24SJMNER**M**601	MOOC	8 Weeks	NPTEL	2024	IIT Madras, IIT Palakkad	S6

*Course name example - 24SJMNAD**M**30**N** where **M** stands for MOOC course and **N** will be ranging from 1 to 9 depending on the number of MOOC courses offered for the particular minor course.