

Sub: NPTEL MOOCs courses for ECE, VTU (2018 batch) for July – Dec 2021 enrollment

Dear All,

SWAYAM (online education portal of Gov. of India) has announced the list of upcoming (enrollment open) certifiable courses for the July – December 2021 session on its portal. The BoS (ECE) has selected / finalized the appropriate courses from this course catalog (<https://swayam.gov.in/explorer>)(and listed at https://docs.google.com/spreadsheets/d/e/2PACX-1vRkvBe5ot20hzrsdO6ZhvtsAyoaZEY-2rvi7eaa09ps8gFgeNnES5Zmi2j_Tv0EP3jk4dSG-3FdRO96/pubhtml?urp=gmail_link) with reference to guidelines laid down by the Joint BoS for the award of BE/B.Tech (Honours) Degree by VTU for the 2018 batch onwards.*

In this regard, kindly find below the list of approved NPTEL MOOCs courses for 5th/ 6thsem ECE students (2018 batch) to register in the upcoming session - July 2021 and take up the proctored exams in Sep/Oct 2021. The **proposed list** includes currently certifiable interdepartmental NPTEL courses corresponding to recent cutting-edge technologies, Environmental, economics and others that kindle Research activities, start-ups, entrepreneurial activities, etc.

Please note the following:

1. Also kindly note the list of **courses not approved for earning the extra credits**, as more than 50% contents of these courses exist in the 2018 VTU ECE syllabus. The **list is suggestive** but not exhaustive.
2. The students and faculty – mentor, HoD, etc. can further discuss the **appropriateness** of the courses to be taken up.
3. Kindly **avoid courses** whose subject material maps to already existing VTU syllabus, which the student might have studied in lower semesters or is going to study in higher semesters as a core/ elective, etc.
4. Also, too **far-fetched courses** such as poetry, etc. with little or no relevance to the COs & POs of the Program are to be avoided.
5. **Advanced Courses under inter-disciplinary stream** for which the students may not have the basics are also to be avoided.
6. Courses which **do not have proctored exams** are not listed.

* Note 1: Students have to earn additional 18 or more credits through NPTEL MOOCs courses for the award of BE/B. Tech (Honours) Degree.

Note 2: Equivalent Credits earned after passing the certifiable course: 12 weeks course – 3 credits, 8 -weeks course – 2 credits & 4- weeks course – 1 credit.

Submission of Bouquet of MOOCs Courses

Period: July – December 2021

Table 1. List of certifiable courses approved for earning the extra credits under core ECE Stream

Sl. No.	Name of the Subject & Instructor	Duration in Weeks	Start Date	Exam Dates	Enrolment End	Intended Audience
1	Integrated Photonics Devices and Circuits Prof. Bijoy Krishna Das, IITM	12	July 26, 2021	October 24, 2021	August 02, 2021	All
2	Stochastic Modeling and the Theory of Queues Prof. Krishna Jagannathan, IITM	12	July 26, 2021	October 24, 2021	August 02, 2021	Electrical, Electronics & Communications Engg.
3	Fabrication Techniques for MEMs-based sensors : clinical perspective Prof. Hardik Jeetendra Pandya IISc	12	July 26, 2021	October 24, 2021	August 02, 2021	Electrical, Electronics & Communications Engg.
4	Enclosure design of electronics equipment Prof. N. V Chalapathi Rao, IISc	12	July 26, 2021	October 24, 2021	August 02, 2021	Electrical, Electronics & Communications Engg.
5	Basics of software defined Radios and Practical Applications Prof. Meenakshi Rawat, IITR	4	July 26, 2021	September 26, 2021	August 02, 2021	Electrical, Electronics & Communications Engg.
6	Integrated Photonics Devices and Circuits Prof. Bijoy Krishna Das, IITM	12	July 26, 2021	October 24, 2021	August 02, 2021	Electrical, Electronics & Communications Engg.
7	Introductory Neuroscience & Neuro-Instrumentation Prof. Mahesh Jayachandra, IISc	12	July 26, 2021	October 24, 2021	August 02, 2021	Electrical, Electronics & Communications Engg.
8	Signal Processing for mm Wave communication for 5G and beyond Prof. Amit Kumar Dutta, IITKGP	12	July 26, 2021	October 24, 2021	August 02, 2021	Electrical, Electronics & Communications Engg.
9	Mathematical Aspects of Biomedical Electronic System Design Prof. Chandramani Singh, IISc	12	July 26, 2021	October 23, 2021	August 02, 2021	Electrical, Electronics & Communications Engg.

10	Concentration inequalities Prof. Himanshu tyagi, Prof. Aditya Gopalan, IISc	8	August 23, 2021	October 24, 2021	August 02, 2021	Electrical, Electronics & Communications Engg.
11	Advanced Microwave Guided-Structures and Analysis Prof. Bratin Ghosh, IITKGP	12	July 26, 2021	October 24, 2021	August 02, 2021	Electrical, Electronics & Communications Engg.
12	Design for internet of things Prof. T V Prabhakar, IISc	8	July 26, 2021	September 26, 2021	August 02, 2021	Electrical, Electronics & Communications Engg.

Table 2. List of certifiable courses approved for earning the extra credits by ECE Students under **EEE Discipline (Interdisciplinary)**

Sl. No.	Name of the Subject & Instructor	Duration in Weeks	Start Date	Exam Dates	Enrolment End	Intended Audience
1	Control and Tuning Methods in Switched Mode Power Converters Prof. Santanu Kapat, IITKGP	12	July 26, 2021	October 24, 2021	August 02, 2021	Electrical, Electronics & Communications Engg.
2	Power Quality Prof. Bhim Singh, IITD	12	July 26, 2021	October 24, 2021	August 02, 2021	Electrical, Electronics & Communications Engg.

Table 3. List of certifiable courses approved for earning the extra credits by ECE Students under **CSE Discipline (Interdisciplinary)**

Sl. No.	Name of the Subject & Instructor	Duration in Weeks	Start Date	Exam Dates	Enrolment End	Intended Audience
1	Introduction to Biomedical Imaging Systems Prof. Arun K. Thittai, IITM	12	July 26, 2021	October 23, 2021	August 02, 2021	All
2	Cloud computing Prof. Soumya Kanti Ghosh, IITKGP	8	August 23, 2021	October 23, 2021	August 23, 2021	All (Rerun)
3	Introduction to Industry 4.0 and Industrial Internet of Things Prof. Sudip Misra, IITKGP	12	July 26, 2021	October 23, 2021	August 02, 2021	All (Rerun)

4	Artificial Intelligence Search Methods For Problem Solving Prof. Deepak Khemani, IITM	12	July 26, 2021	October 23, 2021	August 02, 2021	All
5	Introduction to Quantum Computing: Quantum Algorithms and Qiskit Prof. Prabha Mandayam Prof. Anupama Ray Prof. Sheshashayee Raghunathan, IBM and IITM	4	August 23, 2021	October 23, 2021	August 23, 2021	All
6	Programming in Java Prof. Debasis Samanta, IITKGP	12	July 26, 2021	October 23, 2021	August 02, 2021	All (Rerun)
7	Deep learning Prof. Sudarshan Iyengar Prof. Padmavati, IIT Ropar	12	July 26, 2021	October 23, 2021	August 02, 2021	All (Rerun)
8	C-Based VLSI Design Prof. Chandan Karfa, IITG	12	July 26, 2021	October 24, 2021	August 02, 2021	All
9	Software Testing Prof. Meenakshi D'souza, IIITB	12	July 26, 2021	October 24, 2021	August 02, 2021	All
10	Design and analysis of algorithms Prof. Madhavan Mukund, IITM	8	August 23, 2021	October 24, 2021	August 23, 2021	All (Rerun)
11	Data Science for Engineers Prof. Ragunathan Rengasamy Prof. Shankar Narasimhan, IITM	8	July 26, 2021	September 26, 2021	August 02, 2021	All (Rerun)
12	Python for Data Science Prof. Ragunathan Rengasamy, IITM	4	July 26, 2021	September 26, 2021	August 02, 2021	All (Rerun)

Table 4. List of certifiable courses approved for earning the extra credits by ECE Students under **Mechanical Discipline(Interdisciplinary)**

Sl. No.	Name of the Subject & Instructor	Duration in Weeks	Start Date	Exam Dates	Enrolment End	Intended Audience
1	Robotics Prof. DK Pratihari, IITKGP	8	July 26, 2021	September 26, 2021	August 02, 2021	All
2	Mechanics and Control of Robotic Manipulators Prof. Santhakumar Mohan, IIT Palakkad	8	August 23, 2021	October 23, 2021	August 23, 2021	All

3	Introduction To Composites Prof. Nachiketa Tiwari, IITK	12	July 26, 2021	October 24, 2021	August 02, 2021	All
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Table 5. List of certifiable courses approved for earning the extra credits by ECE Students under cutting edge technologies, environmental, economics and others that kindles research activities, start-ups, entrepreneurial activities etc.

Sl. No.	Name of the Subject & Instructor	Duration in Weeks	Start Date	Exam Dates	Enrolment End	Intended Audience
1	Developing Soft Skills and Personality Prof. T. Ravichandran, IITK	8	August 23, 2021	October 24, 2021	August 23, 2021	All (Rerun)
2	Entrepreneurship and IP Strategy Prof. Gouri Gargate, IITKGP	8	July 26, 2021	September 26, 2021	August 02, 2021	All
3	Patent Drafting for Beginners Prof. Feroz Ali, IITM	4	July 26, 2021	September 26, 2021	August 02, 2021	All
4	Patent Law for Engineers and Scientists Prof. Feroz Ali, IITM	12	July 26, 2021	October 24, 2021	August 02, 2021	All
5	Soft skills Prof. Binod Mishra, IITR	12	July 26, 2021	October 24, 2021	August 02, 2021	All

**All → Students belonging to all disciplines of Engineering