Dear All,

Sub: NPTEL MOOCs courses for ECE, VTU (2018 batch) for July – Dec 2020 enrollment

SWAYAM (online education portal of Gov. of India) has announced the list of upcoming (enrollment open) certifiable courses for the July – December 2020 session on its portal. The BoS (ECE) has selected / finalized the appropriate courses from this course catalog (https://swayam.gov.in/explorer) 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 sem ECE students (2018 batch) to register in the upcoming session - July 2020 and take up the proctored exams in Sep/Oct 2020. The **proposed list** includes currently certifiable interdepartmental NPTEL courses corresponding to recent cutting-edge technologies, Environmental, economics and others that kindles 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 (such as Android app using Kotlin, CIT-003: Web Based Technologies and Multimedia Applications by Prof. P. V. Suresh, etc.).

* 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.

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

Sl. No.	Name of the Subject & Instructor	Duration	Start Date	Exam Dates	Intended Audience
1	Applied Electromagnetics for Engineers By Prof. Pradeep Kumar	12 weeks	20 Jul 2020	18 Oct 2020	UG 3rd Year
2	Basics of software defined Radios and Practical Applications By Prof. Meenakshi Rawat	4 weeks	20 Jul 2020	27 Sep 2020	Both UG/PG
3	Deep Learning for Visual Computing By Prof. Debdoot Sheet	12 weeks	20 Jul 2020	18 Oct 2020	Electrical Electronics Computer Sciences
4	Digital VLSI Testing By Prof. Santanu Chattopadhyay	12 weeks	20 Jul 2020	18 Oct 2020	Any interested learners
5	Fabrication Techniques for MEMs-based sensors: clinical perspective By Prof. Hardik Jeetendra Pandya	12 weeks	20 Jul 2020	18 Oct 2020	Engineering Students
6	Information Theory By Prof. Himanshu Tyagi	12 weeks	20 Jul 2020	18 Oct 2020	Senior undergraduate
7	Introduction to Embedded System Design By Prof. Dhananjay V. Gadre, Prof. Badri Subudhi	12 weeks	20 Jul 2020	18 Oct 2020	Undergraduate students in engineering and science
8	Introductory Neuroscience & Neuro-Instrumentation By Prof. Mahesh Jayachandra	12 weeks	20 Jul 2020	18 Oct 2020	Engineering Students
9	Linear System Theory By Prof. Ramkrishna Pasumarthy	12 weeks	20 Jul 2020	17 Oct 2020	Students from Electrical/ Mechanical/ Aerospace / Chemical Engineering
10	Microelectronics: Devices To Circuits By Prof. Sudeb Dasgupta	12 weeks	20 Jul 2020	18 Oct 2020	Any Interested Learners
11	Op-Amp Practical Applications: Design, Simulation and Implementation By Prof. Hardik Jeetendra Pandya	12 weeks	20 Jul 2020	18 Oct 2020	Any Engineering Student
12	Power Electronics By Prof. G.Bhuvaneshwari	12 weeks	20 Jul 2020	18 Oct 2020	UG students
13	Semiconductor Devices and Circuits By Prof. Sanjiv Sambandan	12 weeks	20 Jul 2020	17 Oct 2020	UG Students pursuing studies in Electronics Engineering, etc

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	Start Date	Exam Dates	Intended Audience
1	Introduction to Smart Grid By Prof. N. P. Padhy, Prof. Premalata Jena	8 Weeks	20 Jul 2020	27 Sep 2020	UG/PG/PhD students

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	Start Date	Exam Dates	Intended Audience
1	Applied Natural Language Processing By Prof. Ramaseshan	12 weeks	20 Jul 2020	17 Oct 2020	Any interested learners
2	Artificial Intelligence Search Methods For Problem Solving By Prof. Deepak Khemani	12 weeks	20 Jul 2020	17 Oct 2020	UG and PG students
3	C Programming and Assembly Language By Prof. Janakiraman	4 weeks	20 Jul 2020	27 Sep 2020	Any interested learners
4	Data Science for Engineers By Prof. Ragunathan Rengasamy, Prof. Shankar Narasimhan	8 weeks	20 Jul 2020	27 Sep 2020	Any interested learners
5	Data Structure and algorithms using Java By Prof. Debasis Samanta	12 weeks	20 Jul 2020	18 Oct 2020	UG students
6	Hardware modeling using verilog By Prof. Indranil Sengupta	8 weeks	17 Aug 2020	17 Oct 2020	CSE, ECE, EEE
7	Introduction to Machine Learning By Prof. Balaraman Ravindran	12 weeks	20 Jul 2020	18 Oct 2020	senior UG/PG students
8	Introduction to internet of things By Prof. Sudip Misra	12 weeks	20 Jul 2020	18 Oct 2020	CSE, IT, ECE, EE, EIE, etc.
9	Practical Machine Learning with Tensorflow By Prof. Ashish Tendulkar, Prof. Balaraman Ravindran	8 weeks	17 Aug 2020	18 Oct 2020	Any Interested Candidates
10	Python for Data Science By Prof. Ragunathan Rengasamy	4 weeks	20 Jul 2020	27 Sep 2020	Undergraduates
11	The Joy of Computing using Python By Prof. Sudarshan Iyengar, Prof. Yayati Gupta	12 weeks	20 Jul 2020	17 Oct 2020	Any Interested Candidates

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	Start Date	Exam Dates	Intended Audience
1	Foundations of Cognitive Robotics By Prof. Bishakh Bhattacharya	4 weeks	20 Jul 2020	27 Sep 2020	None
2	Robotics By Prof. Dilip Kumar Pratihar	8 weeks	20 Jul 2020	27 Sep 2020	Students belonging to all disciplines of Engineering

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	Start Date	Exam Dates	Intended Audience
1	Entrepreneurship and IP strategy By Prof. Gouri Gargate	8 weeks	17 Aug 2020	18 Oct 2020	Any discipline
2	Ethics in Engineering Practice By Prof. Susmita Mukhopadhyay	8 weeks	17 Aug 2020	18 Oct 2020	Any interested student
3	Gender justice and workplace security By Prof. Dipa Dube	4 weeks	17 Aug 2020	17 Oct 2020	all students including Engineering and Science
4	Knowledge Management By Prof. KBL Srivastava	8 weeks	20 Jul 2020	27 Sep 2020	Undergraduate
5	Leadership By Prof. Kalyan Chakravarti,	4 weeks	20 Jul 2020	27 Sep 2020	Students, etc.
6	Management Information System By Prof. Kunal Kanti Ghosh, Prof. Saini Das, Prof. Surojit Mukherjee	12 weeks	20 Jul 2020	17 Oct 2020	Management
7	Managerial Economics By Prof. Trupti Mishra	12 weeks	20 Jul 2020	17 Oct 2020	Engineering, Social Sciences, etc.
8	Technologies For Clean And Renewable Energy Production By Prof. P. Mondal	8 weeks	20 Jul 2020	27 Sep 2020	Any interested Students
9	Body language: Key to professional Success By Prof. Rashmi Gaur	4 weeks	20 Jul 2020	27 Sep 2020	Any interested learners
10	Developing Soft Skills and Personality By Prof. T. Ravichandran	8 weeks	17 Aug 2020	18 Oct 2020	Students, Teachers, etc.
11	Patent Drafting for Beginners	4 weeks	20 Jul 2020	27 Sep 2020	Anyone

	By Prof. Feroz Ali				interested in patent drafting
12	Patent Search for Engineers and Lawyers By Prof. M. Padmavati, Prof. Shreya Matilal	8 weeks	17 Aug 2020	17 Oct 2020	Engineering and Science streams
13	Soft skills By Prof. Binod Mishra	12 weeks	20 Jul 2020	18 Oct 2020	BE/B.Sc/B.A, ME, M.Sc./ M.A, Ph.D, etc.
14	Technical English for Engineers By Prof. Aysha Iqbal	8 weeks	20 Jul 2020	27 Sep 2020	Any interested learners
15	Integral Transforms and their Applications By Prof. Sarthok Sircar	12 weeks	20 Jul 2020	18 Oct 2020	Any interested learners
16	Introduction to Fuzzy Set Theory, Arithmetic and Logic By Prof. Niladri Chatterjee	12 weeks	20 Jul 2020	17 Oct 2020	Any interested learners
17	Operations Research By Prof. Kusumdeep	8 weeks	20 Jul 2020	27 Sep 2020	Any student who wants to learn the basic concepts of Operations Research
18	Scientific Computing using Matlab By Prof. Mani Mehra, Prof. Vivek K. Aggarwal	12 weeks	20 Jul 2020	17 Oct 2020	UG/PG students
19	Solar Energy Engineering and Technology By Prof. Pankaj Kalita	12 weeks	20 Jul 2020	17 Oct 2020	UG, PG and Doctorate students
20	Solid State Physics By Prof. Amal Kumar Das	12 weeks	20 Jul 2020	18 Oct 2020	B.E in Electronics

Table 6. List of courses not approved for earning the extra credits by VTU ECE Students in July 2020
Ref: SWAYAM PORTAL under Course catalog with Category: Engineering and Technology ; Sub-category: Electrical, Electronics and Communications Engineering

Sl. No.	Name of the Subject & Instructor
1	Advances in UHV Transmission and Distribution By Prof. Subbba Reddy B
2	An Introduction to Coding Theory By Prof. Adrish Banerjee
3	Analog Electronic Circuit By Prof. Shouribrata chatterjee
4	Analog communication By Prof. Goutam Das
5	Applied Optimization for Wireless, Machine Learning, Big Data By Prof. Aditya K. Jagannatham
6	Arduino By Prof Kannan Moudgalya
7	Basic Electrical Circuits By Prof. Nagendra Krishnapura
8	Computer Aided Power System Analysis By Prof. Biswarup Das
9	Control engineering By Prof. Ramkrishna Pasumarthy
10	Control systems By Prof. C. S. Shankar Ram
11	DC Microgrid and Control System By Prof. Avik Bhattacharya
12	Design of photovoltaic systems By Prof. L Umanand
13	Digital Circuits By Prof. Santanu Chattopadhyay
14	ESim - EDA tool for circuit design, simulation, analysis and PCB design By Prof Kannan Moudgalya
15	Electrical Distribution System Analysis By Prof. G. B. Kumbhar
16	Electrical Equipment and Machines: Finite Element Analysis By Prof. Shrikrishna V. Kulkarni
17	Electrical Machines – I By Prof. Tapas Kumar Bhattacharya
18	Fiber Optic Communication Technology By Prof. Deepa Venkitesh
19	Fundamentals of Electrical Engineering By Prof. Debapriya Das
20	Image Signal Processing By Prof. A.N. Rajagopalan
21	Introduction to Wireless and Cellular Communications By Prof. R. David Koilpillai
22	Linux AWK By Prof Kannan Moudgalya
23	Linux BASH (shell scripting) By Prof Kannan Moudgalya
24	Linux Operating System By Prof Kannan Moudgalya
25	Linux for Sys-Ads By Prof Kannan Moudgalya
26	Microwave Engineering By Prof. Ratnajit Bhattacharjee
27	Microwave Theory and Techniques By Prof. Girish Kumar
28	Millimeter Wave Technology By Prof. Mrinal Kanti Mandal
29	Peer To Peer Networks By Prof. Y. N. Singh
30	Power System Protection By Prof. Ashok Kumar Pradhan
31	Power System Protection and Switchgear By Prof. Bhaveshkumar R. Bhalja
32	Power system analysis By Prof. Debapriya Das
33	Principles of Signal Estimation for MIMO/ OFDM Wireless Communication By Prof. Aditya K. Jagannatham
34	Probability Foundations for Electrical Engineers By Prof. Krishna Jagannathan