

**APJ Abdul Kalam Technological University
Thiruvananthapuram**

Abstract

APJAKTU - Additional list of MOOC Courses - Approved - Orders issued.

ACADEMIC SECTION

U.O.No. 1229/2020/KTU

Thiruvananthapuram, Dated: 03.09.2020

*Read:-*1. U.O. No. 419/2019/KTU Dated 24.10.2019

2. Approved list of MOOC Courses, forwarded by different Curriculum Committees, after verifying the Syllabus and duration of the courses.

ORDER

Vide University Order Read (1) above list of 47 NPTEL MOOC Courses offered by various National Institutes were approved to earn credits to students registered for B.Tech (Honours)

Vide reference read (2), various curriculum committees, after verifying the syllabus and duration of the courses, has recommended to approve a list of 172 MOOC courses, in addition to the existing approved list of MOOC courses.

Considering the urgency, sanction has been accorded by the Vice Chancellor to approve the list of 172 NPTEL MOOC Courses offered by reputed Institutions / Organisations that can be registered by the students of B.Tech (Honours) Programme to earn credits, as appended herewith, subject to reporting and ratification of the matter in the Academic Council .

Orders are issued accordingly.

Sd/-

Bijukumar R *
Director(Academic)

Copy to:-

1. Principals of all affiliated colleges.
2. JD(IT), to be published in the website and s/w updation.
3. PS to VC / PVC, CE, Dean(Acad).
4. SF / FC

* This is a computer system (Digital File) generated letter. Hence there is no need for a physical signature.



Sl.	Discipline	Course Name	Institute	Course Duration
AERONAUTICAL ENGINEERING				
1	Aerospace Engineering	Introduction to Air-Breathing propulsion	IIT Kanpur	12 Weeks
2	Aerospace Engineering	Introduction to CFD	IIT Kharagpur	12 Weeks
APPLIED ELECTRONICS & INSTRUMENTATION				
1	Applied Electronics & Instrumentation	Introduction to Internet of Things	IIT Kharagpur	12 weeks
2	Applied Electronics and Instrumentation	Deep Learning	IIT Kharagpur	12 weeks
3	Applied Electronics and Instrumentation	Fuzzy Sets, Logic and Systems and Applications	IIT Kanpur	12 weeks
4	Applied Electronics and Instrumentation	Introduction to Machine Learning	IIT Madras	12 weeks
5	Applied Electronics and Instrumentation	Semiconductor devices and Circuits	IISc Bangalore	12 weeks
BIOMEDICAL ENGINEERING				
1	Biomedical Engineering	Introduction to Biomedical Imaging	The university of Queensland,	12 weeks
2	Biomedical Engineering	Biomedical Signal processing	IIT Kharagpur	12 weeks
3	Biomedical Engineering	Electronic Systems for Cancer Diagnosis	IISC	12 weeks
4	Biomedical Engineering	Bio-Informatics: Algorithms and Applications	IIT Madras	12 weeks
5	Biomedical Engineering	Computational Systems Biology	IIT Madras	12 weeks
6	Biomedical Engineering	Thermodynamics for Biological Systems: Classical and Statistical Aspects	IIT Madras	12 weeks
7	Biomedical Engineering	Neuroscience of Human Movements	IIT Madras	12 weeks
	Biomedical Engineering	Optical Spectroscopy and Microscopy: Fundamentals of optical measurements and instrumentation	IISC	12 weeks



9	Biomedical Engineering	Applied Ergonomics	IIT Kanpur	12 weeks
10	Biomedical Engineering	Introduction to Internet of things	IIT Kharagpur	12 weeks

CHEMICAL ENGINEERING

1	Aerospace Engineering	Introduction to CFD	IIT KGP	12 Weeks
2	Agriculture Engineering	Fundamentals of Food Process Engineering	IIT KGP	12 Weeks
3	Agriculture Engineering	Dairy and Food process and products technology	IIT KGP	12 Weeks
4	Agriculture Engineering	Thermal Operations in Food Process Engineering: Theory and Applications	IIT KGP	12 Weeks
5	Agriculture Engineering	Thermal Processing of Foods	IITG	12 Weeks
6	Biotechnology & Bioengineering	Industrial Biotechnology	IIT KGP	12 Weeks
7	Biotechnology & Bioengineering	Drug Delivery: Principles and Engineering	IISc	12 Weeks
8	Biotechnology & Bioengineering	Principles Of Downstream Techniques In Bioprocess	IITM	12 Weeks
9	Chemical Engineering	Chemical Process Intensification	IIT Guwahati	12 Weeks
10	Chemical Engineering	Fluidization Engineering	IIT Guwahati	12 Weeks
11	Chemical Engineering	Polymers: concepts, properties, uses and sustainability	IITM	12 Weeks
12	Chemical Engineering	Technologies For Clean And Renewable Energy Production	IITR	13 Weeks
13	Civil Engineering	Wastewater Treatment and Recycling	IIT KGP	12 Weeks
14	Civil Engineering	Municipal Solid Waste Management	IITG	12 Weeks
15	Mathematics	Scientific Computing using Matlab	IITD	12 Weeks
	Mechanical Engineering	Basics of Materials Engineering	IITM	12 Weeks



17	Mechanical Engineering	Introduction to Composites	IITK	12 Weeks
18	Metallurgical and Materials Engineering	Advanced Materials and Processes	IIT KGP	12 Weeks
19	Multidisciplinary	Numerical Methods for Engineers	IITM	12 Weeks
20	Biotechnology and Bioengineering	Material and Energy Balances	IITM	12 Weeks
21	Chemical Engineering	Optimization in Chemical Engineering	IIT KGP	12 Weeks
22	Chemical Engineering	Process Control - Design, Analysis and Assessment	IITM	12 Weeks
23	Chemical Engineering	Computational Fluid Dynamics	IITM	12 Weeks
24	Metallurgical and Materials Engineering	Material Characterization	IITM	12 Weeks
25	Metallurgical and Materials Engineering	Carbon Materials and Manufacturing	IIT Mandi	12 Weeks
26	Multidisciplinary	Non-Conventional Energy Resources	IITM	12 Weeks
27	Chemical Engineering	LNG UPSTREAM TECHNOLOGY	IITKGP	12 Weeks
28	Chemical Engineering	Process Optimization in Chemical Engineering	IIT Kharagpur	12 Weeks

CIVIL ENGINEERING

1	Civil Engineering	Environmental Remediation of Contaminated Sites	IIT Delhi	12 weeks
2	Civil Engineering	Maintenance and Repair of Concrete Structures	IIT Madras	12 weeks
3	Civil Engineering	Environmental Geomechanics	IIT Bombay	12 weeks
4	Civil Engineering	Hydraulic Engineering	IIT Kharagpur	12 weeks
	Civil Engineering	Glass Processing Technology	IIT Roorkee	12 weeks

TRONICS AND BIOMEDICAL ENGINEERING



1	Electronics and Biomedical Engineering	Analog Electronic Circuits	IIT Kharagpur	12 weeks
2	Electronics and Biomedical Engineering	Biomedical Signal Processing	IIT Kharagpur	12 weeks
3	Electronics and Biomedical Engineering	Bio- Informatics:Algorithms and Applications	IIT Madras	12 weeks
4	Electronics and Biomedical Engineering	Computational Systems Biology	IIT Madras	12 weeks
5	Electronics and Biomedical Engineering	Thermodynamics for Biological Systems: Classical and Statistical Aspects	IIT Madras	12 weeks
6	Electronics and Biomedical Engineering	An Introduction To Programming Through C++	IIT Bombay	12 weeks
7	Electronics and Biomedical Engineering	Biomolecules: Structure, Function in Health and Disease	All India Institute of Medical Sciences,	15 weeks
8	Electronics and Biomedical Engineering	Machine Learning for Engineering and Science Applications	IIT Madras	12 Weeks
9	Electronics and Biomedical Engineering	Neuroscience of Human Movements	IIT Madras	12 weeks
10	Electronics and Biomedical Engineering	Fabrication Techniques for MEMs- based sensors: clinical Perspective	IISc	12 weeks
11	Electronics and Biomedical Engineering	Fundamentals of micro and nanofabrication	IISc	12 weeks
12	Electronics and Biomedical Engineering	Physics of Biological Systems	IIT Bombay	12 weeks
13	Electronics and Biomedical Engineering	Integrated Circuits MOSFETs OP-Amps and their Applications	IISc Bangalore	12 weeks
14	Electronics and Biomedical Engineering	Introduction to Machine Learning	IIT Madras	12 weeks
15	Electronics and Biomedical Engineering	The Joy of computing Using Python	IIT Ropar	12 weeks
16	Electronics and Biomedical Engineering	Physics of Biological Systems	IIT Bombay	12 weeks
17	Electronics and Biomedical Engineering	Numerical Linear Algebra	IIT Roorkee	12 weeks
18	Electronics and Biomedical Engineering	Programming in Java	IIT Kharagpur	12 weeks
	Electronics and Biomedical Engineering	Integrated Circuits MOSFETs OP-Amps and their Applications	IISc Bangalore	12 weeks



ELECTRICAL AND ELECTRONICS ENGINEERING

1	Electrical and Electronics Engineering	AI Programming with Python	Udacity	3 Months
2	Electrical and Electronics Engineering	System Design for Sustainability	IIT Guwahatti	12 Weeks
3	Electrical and Electronics Engineering	Human Resource Development	IIT Kharagpur	12 Weeks
4	Electrical Engineering	DC Power Transmission Systems	IIT Madras	12 weeks
5	Electrical Engineering	Sensors and Actuators	IISc	12 Weeks
6	Electrical Engineering	Digital Image Processing	IITKGP	12 Weeks
7	Electrical Engineering	Mapping Signal Processing Algorithms to Architectures	IITM	12 Weeks
8	Electrical Engineering	Introduction to Computer Vision	IITD	12 Weeks
9	Electrical Engineering	Op-Amp Practical Applications: Design, Simulation and Implementation	IISc	12 Weeks
10	Electrical Engineering	Fabrication Techniques for MEMS- based sensors: clinical Perspective	IISc	12 Weeks
11	Electrical Engineering	Introduction to Wireless and Cellular Communications	IITM	12 Weeks
12	Electrical Engineering	Neural Networks for Signal Processing – I	IISc	12 Weeks
13	Electrical Engineering	Microelectronics: Devices To Circuits	IITR	12 Weeks
14	Electrical Engineering	Pattern Recognition and Application	IITKGP	12 Weeks
15	Electrical Engineering	Microwave Theory and Techniques	IITB	12 Weeks
16	Electrical Engineering	Principles and Techniques of Modern Radar Systems	IITKGP	12 Weeks
17	Electrical Engineering	Computational Electromagnetics	IITM	12 Weeks
	Electrical Engineering	Fiber-Optic Communication Systems and Techniques	IITK	12 Weeks



19	Electrical Engineering	Microwave Engineering	IITG	12 Weeks
20	Electrical Engineering	Fuzzy sets logic & Systems and applications	IIT Kanpur	12 weeks

ELECTRONICS AND COMMUNICATION ENGINEERING

1	Electronics & Communication	AI:Knowledge Representation and Reasoning	IITM	12 weeks
2	Electronics & Communication	Blockchain Architecture Design and Use Cases	IITKGP	12 weeks
3	Electronics & Communication	Introduction to Machine Learning	IITM	12 weeks
4	Electronics & Communication	Solar Photovoltaics-Fundamentals, and Applications	IIT Roorkee	12 weeks
5	Electronics & Communication	Deep Learning For Visual Computing	IITKGP	12 weeks
6	Electronics & Communication	Rheology of Complex Materials	IITM	12 weeks
7	Electronics & Communication	Virtual Reality Engineering	IITM	12 weeks
8	Electronics & Communication	Semiconductor Optoelectronics	IITD	12 weeks
9	Electronics & Communication	Business Analytics For Management Decision	IITKGP	12 weeks
10	Electronics & Communication	Business analysis and data mining Modeling using R	IITR	12 weeks
11	Electronics & Communication	Financial Statement Analysis and Reporting	IITR	12 weeks
12	Electronics & Communication	Six Sigma	IITKGP	12 weeks
13	Electronics & Communication	Joy of Computing using Python	IITRopar	12 weeks
14	Electronics & Communication	Developing Android Apps with App Inventor	HKUST	12 weeks
15	Electronics & Communication	Product Design and Manufacturing	IITK	12 weeks
	Electronics & Communication	A Brief introduction to micro sensors	IITB	12 weeks



17	Electronics & Communication	VLSI Signal processing	IIT Kharagpur	12 weeks
18	Electronics & Communication	Foundations to Computer systems Design	IIT Madras	12 weeks

MECHANICAL ENGINEERING

1	Mechanical Engineering	Aircraft Design	IIT Kanpur	12 weeks
2	Mechanical Engineering	Fundamentals of Automotive Systems	IIT Madras	12 weeks
3	Mechanical Engineering	E-Business	IIT Kharagpur	12 Weeks

NAVAL ARCHITECTURE & SHIP BUILDING

1	Ocean Engineering	Offshore Structures under Special Environmental Loads including Fire Resistance	IIT Madras	12 Weeks
2	Ocean Engineering	Dynamics of Offshore Structures	IIT Madras	12 Weeks
3	Ocean Engineering	Computer Methods of Structural Analysis of Offshore Structures	IIT Madras	12 Weeks
4	Mechanical Engineering	Finite Element Method: Variational methods to Computer Programming	IIT Kharagpur	12 Weeks
5	Mechanical Engineering	Advanced Fluid Mechanics	IIT Kharagpur	12 Weeks
6	Civil Engineering	Design of Steel Structures	IIT Kharagpur	12 Weeks
7	Metallurgy	Aqueous Corrosion and its Control	IIT Bombay	12 Weeks
8	Chemical Engineering	Numerical Methods for Engineers	IIT Madras	12 Weeks
9	Aerospace Engineering	Introduction to CFD	IIT Kharagpur	12 Weeks

PRODUCTION ENGINEERING

1	Production Engineering	Fundamentals of Artificial Intelligence	IIT Guwahati	12 weeks
	Production Engineering	Operations And Supply Chain Management	IIT Madras	12 weeks



3	Production Engineering	Management Of Inventory Systems	IIT Kharagpur	12 weeks
4	Production Engineering	Advanced Green Manufacturing Systems	IIT Kanpur	12 weeks
5	Production Engineering	Six Sigma	IIT Kharagpur	12 weeks
6	Production Engineering	Product Design And Manufacturing	IIT Kanpur	12 week



Sl. No.	Discipline	Course Name	Institute	Course Duration	Remarks
ELECTRONICS AND COMMUNICATION ENGINEERING					
1	Electronics & Communication	Embedded Systems Design	IITKGP	12 weeks	ONLY IF THE STUDENT HAS NOT CHOSEN ELECTIVE
2	Electronics & Communication	VLSI Physical Design	IITKGP	12 weeks	
3	Electronics & Communication	Mathematical Methods and Techniques in Signal Processing	IISc bangalore	12 weeks	
4	Electronics & Communication	Soft Skills For Business Negotiations And Marketing Strategies	IITKGP	12 weeks	
5	Electronics & Communication	Fiber-optic communication systems and techniques	IITK	12 weeks	ONLY IF THE STUDENT HAS NOT CHOSEN ELECTIVE
6	Electronics & Communication	Introduction to Information theory, coding and Cryptography	IITD	12 weeks	ONLY IF THE STUDENT HAS NOT CHOSEN ELECTIVE
7	Electronics & Communication	Advanced power electronics and control	IIT Roorkee	12 weeks	ONLY IF THE STUDENT HAS NOT CHOSEN ELECTIVE
8	Electronics & Communication	Transmission lines and Electromagnetic waves	IIT Madras	12 weeks	
ELECTRICAL AND ELECTRONICS ENGINEERING					
1	Electrical and Electronics	Project management for managers	IITR	12 Weeks	
2	Electrical and Electronics	Training Of Trainers	IITR	12 Weeks	
3	Electrical and Electronics	Management Accounting	IITR	12 Weeks	
4	Electrical and Electronics	Human Resource Development	IITKGP	12 Weeks	
5	Electrical and Electronics	Introduction to Environmental Engineering and Science - Fundamental and Sustainability Concepts	IITKGP	12 Weeks	



6	Electrical and Electronics	Numerical Methods for Engineers	IITM	12 Weeks	
7	Mathematics	Mathematical Finance	IITG	12 weeks	
8	Mathematics	Stochastic Processes	IITD	12 weeks	
9	Mathematics	Introduction to Fuzzy Set Theory, Arithmetic and Logic	IITD	12 weeks	
MECHATRONICS					
1	Mechatronics	Programming in Java	IIT Kharagpur	12 weeks	
2	Mechatronics	Joy of computing using Python	IIT Ropar	12 weeks	
3	Mechatronics	Introduction to Internet of Things	IIT Kharagpur	12 weeks	Individual student can do any one of these two courses
4	Mechatronics	Introduction to Industry 4.0 and Industrial Internet of Things	IIT Kharagpur	12 weeks	
5	Mechatronics	Machine Learning for Engineering and Science Applications	IIT Madras	12 weeks	
6	Mechatronics	Social Networks	IIT Ropar	12 weeks	
7	Mechatronics	Embedded Systems Design	IIT Kharagpur	12 weeks	
8	Mechatronics	Introduction to Machine Learning	IIT Madras	12 weeks	
9	Mechatronics	Industrial Automation And Control	IIT Kharagpur	12 weeks	
10	Mechatronics	Advanced Concepts in Fluid Mechanics	IIT Kharagpur	12 weeks	
11	Mechatronics	Non-Conventional Energy Resources	IIT Madras	12 weeks	



12	Mechatronics	Patent Law For Engineers And Scientists	IIT Madras	12 weeks	
13	Mechatronics	Virtual Reality Engineering	IIT Madras	12 weeks	
14	Mechatronics	Developing Android Apps with App Inventor	HONG KONG UNIVERSITY OF	12 weeks	
15	Mechatronics	IC Engines and Gas turbines	IIT Guwahati	12 weeks	

MECHANICAL ENGINEERING

1	Mechanical Engineering	Manufacturing Systems Technology I and II	IIT Kanpur	12 weeks	
2	Mechanical Engineering	Fundamental of Automotive Systems	IIT Madras	12 weeks	



Sl. No.	Discipline	Course Name	Institute	Course Duration
BIOMEDICAL ENGINEERING				
1	Biological Sciences & Bioengineering	Immunology	IIT KGP	12 Weeks
ELECTRONICS AND COMMUNICATION ENGINEERING				
1	Electronics & Communication	Applied optimization for Wireless, Machine learning, Big data	IIT Kanpur	12 weeks
ELECTRICAL AND ELECTRONICS ENGINEERING				
1	Electrical and Electronics Engineering	Fundamentals of Micro and Nanofabrication	IISC Bangalore	12 weeks
FOOD TECHNOLOGY				
1	Agriculture Engineering	Fundamentals of Food Process Engineering	IIT KGP	12 Weeks
2	Agriculture Engineering	Dairy and Food process and products technology	IIT KGP	12 Weeks
3	Agriculture Engineering	Thermal Operations in Food Process Engineering: Theory and Applications	IIT KGP	12 Weeks
4	Agriculture Engineering	Thermal Processing of Foods	IITG	12 Weeks
5	Agriculture and Food Engineering	Food Laws and Standards	IGNOU	16 weeks
6	Agriculture and Food Engineering	Post Harvest Management of Fruits and Vegetables	Food Safety Administration, Department of Health, Government of Manipur	12 Weeks
7	Chemical Engineering	Membrane Technology	IIT Guwahati	12 Weeks
8	Biotechnology & Bioengineering	Principles Of Downstream Techniques In Bioprocess	IIT Madras	12 weeks
9	Biotechnology & Bioengineering	Industrial Biotechnology	IIT KGP	12 Weeks
	Chemical Engineering	Heat Transfer	IIT KGP	12 Weeks

