



ST. VINCENT PALLOTTI COLLEGE OF ENGINEERING & TECHNOLOGY, NAGPUR

(An autonomous institution affiliated to Rashtrasant Tukadoji Maharaj Nagpur University)

**B. Tech. Scheme of Examination & Syllabus 2026-27
ELECTRONICS AND TELECOMMUNICATION ENGINEERING**

Annexure – I

CREDIT FRAMEWORK STRUCTURE

Semester		I	II	III	IV	V	VI	VII	VIII	Total Credits
Basic Science Course	BSC/ESC	7	7	-	-	-	-	-	-	14
Engineering Science Course		6	6	-	-	-	-	-	-	12
Program Core Course (PCC)	Program Courses	2	2	13	10	7	4	6		44
Program Elective Course (PEC)		-	-	-	-	4	6	6	4	20
Multidisciplinary Minor (MDM)	Multidisciplinary Courses	-	-	2	3	3	3	3	-	14
Open Elective (OE) Other than a particular program		-	-	-	-	2	3	3	-	08
Vocational and Skill Enhancement Course (VSEC)	Skill Courses	-	2	1	1	2	2	-	-	08
Ability Enhancement Course (AEC -01, AEC-02)	Humanities Social Science and Management (HSSM)	1	1	-	-	2	-	-	-	04
Entrepreneurship/Economics/Management Courses		-	-	2	2	-	-	-	-	04
Indian Knowledge System (IKS)		2	-	-	-	-	-	-	-	02
Value Education Course (VEC)		-	-	2	2	-	-	-	-	04
Research Methodology	Experiential Learning Courses	-	-	-	-	-	-	-	4	04
Comm. Engg. Project (CEP)/ Field Project (FP)		-	-	-	2	-	-	-	-	02
Project		-	-	-	-	-	2	2	-	04
Internship/OJT		-	-	-	-	-	-	-	12	12
Co-curricular Courses (CC)	Liberal Learning Courses	2	2	-	-	-	-	-	-	04
Total Credits (Major)		20	20	20	20	20	20	20	20	160

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GROUP II: SEMESTER I

Sr No	Course Category	Course Code	Course Title	Hours per Week			Credits	Maximum Marks				Minimum Passing Marks	No of Hours for ESE
				L	T	P		Mid-Sem Examination	Continual Assessment	End Sem Examination	Total		
1	BSC	26ET101T	Applied Physics	2	-	-	2	10	10	30	50	23	1.5
2	BSC	26ET101P	Applied Physics Lab	-	-	2	1	-	25	25	50	25	-
3	BSC	26ET102T	Linear Algebra and Calculus	3	-	-	3	20	20	60	100	45	3
4	BSC	26ET102P	Linear Algebra and Calculus Lab	-	-	2	1	-	25	25	50	25	-
5	ESC	25ET103T	Digital Electronics	3	-	-	3	20	20	60	100	45	3
6	ESC	26ET103P	Digital Electronics Lab	-	-	2	1	-	25	25	50	25	-
7	ESC	26ET104P	C Programming Lab	-	-	4	2	-	25	25	50	25	-
8	PCC	26ET105T	Fundamentals of Electronics Engineering	2	-	-	2	10	10	30	50	23	1.5
9	AEC	26ET106P	Business Communication Skills – I Lab	-	-	2	1	-	25	25	50	25	-
10	IKS	26ET207T	Design Thinking #	2	-	-	2	10	10	30	50	23	1.5
11	CC	26ET107P	Co-curricular Courses - I	-	-	4	2	-	50	-	50	25	-
Total				12	-	16	20	70	245	335	650	309	

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GROUP II: SEMESTER II

Sr. No	Course Category	Course Code	Course Title	Hours per Week			Credits	Maximum Marks				Minimum Passing Marks	No of Hours for ESE
				L	T	P		Mid-Sem Examination	Continual Assessment	End Semester Examination	Total		
1	BSC	26ET201T	Applied Chemistry	2	-	-	2	10	10	30	50	23	1.5
2	BSC	26ET201P	Applied Chemistry Lab	-	-	2	1	-	25	25	50	25	-
3	BSC	26ET202T	Statistics and Transforms	3	-	-	3	20	20	60	100	45	3
4	BSC	26ET202P	Statistics and Transforms Lab	-	-	2	1	-	25	25	50	25	-
5	ESC	26ET203T	Electrical Network Theory	2	-	-	2	10	10	30	50	23	1.5
6	ESC	26ET204T	Electronic Devices and Circuits	3	-	-	3	20	20	60	100	45	3
7	ESC	26ET204P	Electronic Devices and Circuits Lab	-	-	2	1	-	25	25	50	25	-
8	PCC	26ET205P	Electronic Workshop Lab – I	-	-	4	2	-	25	25	50	25	-
9	AEC	26ET206P	Business Communication Skills – II Lab	-	-	2	1	-	25	25	50	25	-
10	SEC	26ET107T	Indian Knowledge Systems #	2	-	-	2	10	10	30	50	23	1.5
11	CC	26ET207P	Co-curricular Courses – II	-	-	4	2	-	50	-	50	25	-
Total				12	-	16	20	70	245	335	650	309	-

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SEMESTER III

Sr. No	Course Category	Course Code	Course Title	Hours per Week			Credits	Maximum Marks				Minimum Passing Marks	No of Hours for ESE
				L	P	T		Mid-Sem Examination	Continual Assessment	End Semester Examination	Total		
1	PCC	26ET301T	Microprocessors and Interfacing	3	-	-	3	20	20	60	100	45	3
2	PCC	26ET301P	Microprocessors and Interfacing Lab	-	-	2	1	-	25	25	50	25	-
3	PCC	26ET302T	Problem Solving Using Python	3	-	-	3	20	20	60	100	45	3
4	PCC	26ET302P	Problem Solving Using Python Lab	-	-	2	1	-	25	25	50	25	-
5	PCC	26ET303T	Sensors and Actuators	2	-	-	2	10	10	30	50	23	1.5
6	PCC	26ET304T	Signals and Systems	3	-	-	3	20	20	60	100	45	3
7	VEC	26ES401T	Universal Human Values	2	-	-	2	10	10	30	50	23	1.5
8	HSSM	26ES402T	Fundamentals of Economics and Management	2	-	-	2	10	10	30	50	23	1.5
9	SEC	26ET341P	Career Development I	-	-	2	1	-	50	-	50	25	-
10	MDM	26ET331M	MDM – I (Refer MDM basket)	2	-	-	2	10	10	30	50	23	1.5
Total				17	-	6	20	100	200	350	650	302	-

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SEMESTER IV

Sr No	Course Category	Course Code	Course Title	Hours per Week			Credits	Maximum Marks				Minimum Passing Marks	No. of Hrs for ESE
				L	T	P		Mid-Sem Examination	Continual Assessment	End Sem Examination	Total		
1	PCC	26ET401T	Electromagnetic Fields	3	-	-	3	20	20	60	100	45	3
2	PCC	26ET402T	Analog Circuits and Design	3	-	-	3	20	20	60	100	45	3
3	PCC	26ET402P	Analog Circuits and Design Lab	-	-	2	1	-	25	25	50	25	-
4	PCC	26ET403T	Microcontroller and Applications	2	-	-	2	10	10	30	50	23	1.5
5	PCC	26ET403P	Microcontroller and Applications Lab	-	-	2	1	-	25	25	50	25	-
6	VEC	26ES301T	Constitution of India	2	-	-	2	10	10	30	50	23	1.5
7	HSSM	26ES302T	Fundamentals of Entrepreneurship	2	-	-	2	10	10	30	50	23	1.5
8	SEC	26ET441P	Career Development - II	-	-	2	1	-	50	-	50	-	-
9	CEP	26ET404P	Mini Project*	-	-	4	2	-	50	-	50	-	-
10	MDM	26ET431M	MDM-II (Refer MDM basket)	3	-	-	3	20	20	60	100	45	3
Total				15	-	10	20	90	240	320	650	254	-

* Field Project or Community engagement project in the major discipline

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SEMESTER V

Sr No	Course Category	Course Code	Course Title	Hours per Week			Credits	Maximum Marks				Minimum Passing Marks	No of Hours for ESE
				L	T	P		Mid-Sem Examination	Continual Assessment	End Sem Examination	Total		
1	PCC	26ET501T	Analog and Digital Communication	3	-	-	3	20	20	60	100	45	3
2	PCC	26ET501P	Analog and Digital Communication Lab	-	-	2	1	-	25	25	50	25	-
3	PCC	26ET502T	Object Oriented Programming and Data Structure	2	-	-	2	10	10	30	50	23	1.5
4	PCC	26ET502P	Object Oriented Programming and Data Structure Lab	-	-	2	1	-	25	25	50	25	-
5	PEC	26ET503T	Program Elective course -I	3	-	-	3	20	20	60	100	45	3
6	PEC	26ET503P	Program Elective course -I Lab	-	-	2	1	-	25	25	50	25	-
7	VSC	26ET504P	Technical Skill Development - I	-	-	4	2	-	50	-	50	-	-
8	AEC	26ET541P	Digital and Office Tools	-	-	4	2	-	50	-	50	-	-
9	MDM	26ET531M	MDM – III (Refer MDM basket)	3	-	-	3	20	20	60	100	45	3
10	OE	26ET561O	Open Elective – I (Refer OE basket)	2	-	-	2	10	10	30	50	23	1.5
Total				13	-	14	20	80	255	315	650	256	-

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SEMESTER VI

Sr No	Course Category	Course Code	Course Title	Hours per Week			Credits	Maximum Marks				Minimum Passing Marks	No of Hours for ESE
				L	T	P		Mid-Sem Examination	Continual Assessment	End Sem Examination	Total		
1	PCC	26ET601T	Digital Signal Processing	3	-	-	3	20	20	60	100	45	3
2	PCC	26ET601P	Digital Signal Processing Lab	-	-	2	1	-	25	25	50	25	-
3	PEC	26ET602T	Program Elective II	3	-	-	3	20	20	60	100	45	3
4	PEC	26ET602P	Program Elective II Lab	-	-	2	1	-	25	25	50	25	-
5	PEC	26ET603T	Program Elective III	2	-	-	2	10	10	30	50	23	1.5
6	PROJ	26ET605P	Project - I	-	-	4	2	-	50	50	100	50	-
7	VSC	26ET606P	Technical Skill Development - II	-	-	4	2	-	50	-	50	-	-
8	MDM	26ET631M	MDM – IV (Refer MDM basket)	3	-	-	3	20	20	60	100	45	3
9	OE	26ET661O	Open Elective – II (Refer OE basket)	3	-	-	3	20	20	60	100	45	3
Total				14	-	12	20	90	240	370	700	303	-

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SEMESTER VII

Sr No	Course Category	Course Code	Course Title	Hours per Week			Credits	Maximum Marks				Minimum Passing Marks	No of Hours for ESE
				L	T	P		Mid-Sem Examination	Continual Assessment	End Sem Examination	Total		
1	PCC	26ET701T	Microwave Engineering	2	-	-	2	10	10	30	50	23	1.5
2	PCC	26ET701P	Microwave Engineering Lab	-	-	2	1	-	25	25	50	25	-
3	PCC	26ET702T	Embedded Systems	2	-	-	2	10	10	30	50	23	1.5
4	PCC	26ET702P	Embedded Systems Lab	-	-	2	1	-	25	25	50	25	-
5	PEC	26ET703T	Program Elective IV	3	-	-	3	20	20	60	100	45	3
6	PEC	26ET703P	Program Elective IV Lab	-	-	2	1	-	25	25	50	25	-
7	PEC	26ET704T	Program Elective V	2	-	-	2	10	10	30	50	23	1.5
8	PROJ	26ET705P	Project - II	-	-	4	2	-	50	50	100	50	-
9	MDM	26ET731M	MDM – V (Refer MDM basket)	3	-	-	3	20	20	60	100	45	3
10	OE	26ET761O	Open Elective – III (Refer OE basket)	3	-	-	3	20	20	60	100	45	3
Total				15	-	10	20	90	215	395	700	329	-

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SEMESTER VIII

Option A

Sr. No	Course Category	Course Code	Course Title	Hours per Week			Credits	Maximum Marks				Minimum Passing Marks	Duration of ESE (hrs.)
				L	T	P		Mid Sem Examination	Continual Assessment	End Sem Examination	Total		
1.	RM	26ET801T	Research Methodology [#]	2	-	-	2	10	10	30	50	23	1.5
2.	RM	26ET801P	Research Methodology Lab [#]	-	-	4	2	-	25	25	50	25	-
3.	PEC	26ET802T	Program Elective – VII [#]	3	-	-	3	20	20	60	100	45	3
4.	PEC	26ET803P	Program Elective – VIII Lab [#]	-	-	2	1	-	25	25	50	25	-
5.	OJT	26ET04P(i)	Industry/Research Internship*	-	-	24	12	-	200	200	400	200	-
Total				5	0	30	20	30	280	340	650	-	-

Option B

Sr. No	Course Category	Course Code	Course Title	Hours per Week			Credits	Maximum Marks				Minimum Passing Marks	Duration of ESE (hrs.)
				L	T	P		Mid Sem Examination	Continual Assessment	End Sem Examination	Total		
1.	RM	26ET801T	Research Methodology [#]	2	-	-	2	10	10	30	50	23	1.5
2.	RM	26ET801P	Research Methodology Lab [#]	-	-	4	2	-	25	25	50	25	-
3.	PEC	26ET802T	Program Elective – VII [#]	3	-	-	3	20	20	60	100	45	3
4.	PEC	26ET803P	Program Elective – VIII Lab [#]	-	-	2	1	-	25	25	50	25	-
5.	ELC	26ET804P(ii)	Institutional Internship ^{\$} and Project – III	-	-	24	12	-	200	200	400	200	-
Total				5	0	30	20	30	280	340	650	-	1.5

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Option B is available to students only after recommendation of the concerned Head of the department. The project and internship should contribute towards career development plan of the students.

Courses to be mapped with NPTEL/SWAYAM/MOOC offered courses in that semester.

*** One semester internship in any industry/ Research Institute is to be carried out.**

\$ One Semester Internship offered by Institute Level Cells such as TPDC/ IEDC / E-Yantra/ Team Ashwa Riders along with project in the Major Discipline assigned by department to be carried out.

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Basket for Multi-Disciplinary Minor Courses (MDM)

A. Electronics and Telecommunication Engineering

Semester	Course Category	Course Code	Name of Course	Subject Expert Name	Weeks	Credits
III	MDM-I	26ET331M	Fundamentals of Semiconductor Devices by Prof. Digbi Joy N. Nath IISc Bangalore	Dr. Hema Kale	12	2
			Semiconductor Devices and Circuits by Prof. Sanjiv Sambandan IISc Bangalore			
			Introduction to Semiconductor Devices by Prof. Naresh Kumar Emani IIT			
IV	MDM-II	26ET431M	Digital Electronic Circuits by Prof. Goutam Saha IIT Kharagpur	Dr. Kirti Vaidya	12	3
			Digital Circuits by Prof. Santanu Chattopadhyay IIT Kharagpur			
V	MDM-III	26ET531M	Analog Circuits by Prof. Nagendra Krishnapura IIT Madras	Dr. Ashutosh Werulkar	12	3
			Analog Electronic Circuit by Prof. Shouribrata Chatterjee IIT Delhi			
			Analog Circuits by Prof. Jayanta Mukherjee IIT Bombay			
VI	MDM-IV	26ET631M	Microprocessors and Microcontrollers by Prof. Santanu Chattopadhyay IIT	Dr. Deepali Borakhade	12	3
			Microprocessors and Interfacing by Prof. Shaik Rafi Ahamed IIT Guwahati			
VII	MDM-V	26ET731M	Principles of Communication Systems - by Prof. Aditya K Jagannatham IIT Kanpur	Ms. Dakshata Gharode	12	3
			Principles of Digital Communications by Prof. Abhishek Dixit IIT Delhi			
			Principles of Digital Communications by Prof. S. N. Merchant IIT Bombay			
Total Credit						14

Note: Only one course will be offered in each semester based on the availability of the course on the NPTEL platform. If multiple courses from the above list are available on NPTEL in a particular semester, the course teacher will recommend and offer only one course for that semester

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B. Basket for Program Elective Courses (PEC) Electronics and Telecommunication Engineering

Sr.No.	Semester	Course Category	Course Code	Name of Course	Credit
1	V	PEC	26ET503T(i)	Digital System Design	3
2	V	PEC	26ET503P(i)	Digital System Design Lab	2
3	V	PEC	26ET503T(ii)	Internet of Things	3
4	V	PEC	26ET503P(ii)	Internet of Things Lab	2
5	VI	PEC	26ET602T(i)	Digital VLSI Design	3
6	VI	PEC	26ET602P(i)	Digital VLSI Design Lab	2
7	VI	PEC	26ET602T(ii)	Digital Image Processing	3
8	VI	PEC	26ET602P(ii)	Digital Image Processing Lab	2
9	VI	PEC	26ET603T(i)	Antenna Design and Propagation	2
10	VI	PEC	26ET603T(ii)	Mobile Communication	2
11	VII	PEC	26ET703T(i)	Advance Microcontroller	3
12	VII	PEC	26ET703P(i)	Advance Microcontroller Lab	2
13	VII	PEC	26ET703T(ii)	CMOS Design	3
14	VII	PEC	26ET703P(ii)	CMOS Design Lab	2
15	VII	PEC	26ET704T(i)	Biomedical Instrumentation	2
16	VII	PEC	26ET704T(ii)	5G Mobile Communication	2
17	VIII	PEC	26ET802T(i)	Fundamentals of MIMO Wireless Communication	3
18	VIII	PEC	26ET802P(i)	MATLAB for Signal Processing and Communication Systems	2
19	VIII	PEC	26ET802T(ii)	Communication Networks	3
20	VIII	PEC	26ET802T(ii)	MATLAB for Electronics System Design and Simulation	2

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C. Basket for Open Elective Courses (OE)
Electronics and Telecommunication Engineering

Semester	Course Category	Course Code	Name of Course	Credit
V	OE I	26ET561O	Sensor Systems for Engineering Applications	2
VI	OE II	26ET661O	Communication Systems for Engineering Applications	3
VII	OE III	26ET761O	Mobile Communication and Technologies	3

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EXIT OPTIONS

Award of UG Certificate in Major with 40 credits and an additional 8 credits (After First Year)

EXIT COURSES			
S.N.	Course name	Mode of	Credits
1.	Fundamentals of Electronic Device Fabrication	Online / NPTEL	2
2.	Digital Electronics and Microprocessor	Online / NPTEL	3
3.	Microelectronics: Devices to Circuits	Online / NPTEL	3

Award of UG Diploma in Major with 80credits and an additional 8 credits (After Second Year)

EXIT COURSES			
S.N.	Course name	Mode of	Credits
1.	ESim - EDA tool for circuit design, simulation, analysis and PCB design	Online / NPTEL	2
2.	Electronic Systems Design: Hands-on Circuits and PCB Design with CAD	Online / NPTEL	3
3.	C Programming and Assembly Language	Online / NPTEL	3

Award of UG Degree in Major with 120 credits and an additional 8 credits (After Third Year)

EXIT COURSES			
S.N.	Course name	Mode of	Credits
1.	Python 3.4.3	Online / NPTEL	2
2.	Embedded Systems	Online / NPTEL	3
3.	VLSI system design	Online / NPTEL	3

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Scheme of Examination -Minors

ELECTRONICS AND TELECOMMUNICATION

Sr. No	Course Category	Course Code	Course Title	Hours per Week			Credits	Maximum Marks				No of Hours for ESE
				L	T	P		Mid-Sem Examination	Continual Assessment	End Sem Examination	Total	
1.	Minor	26ETM401T	Fundamentals of Semiconductor Devices	-	-	-	3	-	-	-	-	NPTEL/MOOCs
2.	Minor	26ETM402T	Digital Electronic Circuits	-	-	-	3	-	-	-	-	NPTEL/MOOCs
3.	Minor	26ETM501T	Principles of Communication Systems – I	-	-	-	3	-	-	-	-	NPTEL/MOOCs
4.	Minor	26ETM601T	Principles of Digital Communication	-	-	-	3	-	-	-	-	NPTEL/MOOCs
5.	Minor	26ETM701T	Sensors and Actuators	-	-	-	3	-	-	-	-	NPTEL/MOOCs
6.	Minor	26ETM801T	Optical Wireless Communications for Beyond 5G Networks and IoT	-	-	-	3	-	-	-	-	NPTEL/MOOCs
Total				-	-	-	18	-	-	-	-	

Attached Details of NPTEL Courses with Link

Sr. No	Course Code	Course Name	Link
1	26ETM401T	Fundamentals of Semiconductor Devices	https://onlinecourses.nptel.ac.in/noc26_ee14/preview
2	26ETM402T	Digital Electronic Circuits	https://onlinecourses.nptel.ac.in/noc26_ee54/preview
3	26ETM501T	Principles of Communication Systems – I	https://onlinecourses.nptel.ac.in/noc25_ee68/preview
4	26ETM601T	Principles of Digital Communication	https://onlinecourses.nptel.ac.in/noc26_ee25/preview
5	26ETM701T	Sensors and Actuators	https://onlinecourses.nptel.ac.in/noc26_ee13/preview
6	26ETM801T	Optical Wireless Communications for Beyond 5G Networks and IoT	https://onlinecourses.nptel.ac.in/noc26_ee77/preview

		July 2026	NEP 4.0	Applicable for 2026-27
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ST. VINCENT PALLOTTI COLLEGE OF ENGINEERING & TECHNOLOGY, NAGPUR

(An autonomous institution affiliated to Rashtrasant Tukadoji Maharaj Nagpur University)

B. Tech. Scheme of Examination & Syllabus 2026-27 ELECTRONICS AND TELECOMMUNICATION ENGINEERING



Scheme of Examination -Honors

EMBEDDED SYSTEMS

Sr. No	Course Category	Course Code	Course Title	Hours per Week			Credits	Maximum Marks				No of Hours for ESE
				L	T	P		Mid-Sem Examination	Continual Assessment	End Sem Examination	Total	
1.	Honor	26ETH401T	Introduction to Embedded System Design	-	-	-	3	-	-	-	-	NPTEL/MOOCs
2.	Honor	26ETH402T	Embedded System Design with ARM	-	-	-	3	-	-	-	-	NPTEL/MOOCs
3.	Honor	26ETH501T	Embedded Sensing, Actuation and Interfacing Systems	-	-	-	3	-	-	-	-	NPTEL/MOOCs
4.	Honor	26ETH601T	Embedded Systems – Design Verification and Test	-	-	-	3	-	-	-	-	NPTEL/MOOCs
5.	Honor	26ETH701T	Introduction to Industry 4.0 and IIoT	-	-	-	3	-	-	-	-	NPTEL/MOOCs
6.	Honor	26ETH801T	Industrial Automation and Control	-	-	-	3	-	-	-	-	NPTEL/MOOCs
Total				-	-	-	18	-	-	-	-	-

Attached Details of NPTEL Courses with Link

Sr. No	Course Code	Course Name	Link
1	26ETH401T	Introduction to Embedded System Design	https://onlinecourses.nptel.ac.in/noc26_cs22/preview
2	26ETH402T	Embedded System Design with ARM	https://onlinecourses.nptel.ac.in/noc26_cs40/preview
3	26ETH501T	Embedded Sensing, Actuation and Interfacing Systems	https://onlinecourses.nptel.ac.in/noc25_ee31/preview
4	26ETH601T	Embedded Systems – Design Verification and Test	https://onlinecourses.nptel.ac.in/noc25_cs30/preview
5	26ETH701T	Introduction to Industry 4.0 and IIoT	https://onlinecourses.nptel.ac.in/noc26_cs38/preview
6	26ETH801T	Industrial Automation and Control	https://onlinecourses.nptel.ac.in/noc26_ee47/preview

		July 2026	NEP 4.0	Applicable for 2026-27
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