

**Revised UG Course Curriculum**

**20-25<sup>th</sup> April, 2022**

### First Year, First Semester

Sl. No.	Subject Code	Subject Name	Category	Type	Contact L-T-P	Credit	Marks
1.	BS/MTH/T111	Mathematics I	BS	B	3-1-0	4	
2.	ES/BE/T102B	Basic Electronics	ES	B	3-1-0	4	
3.	ES/EE/T101A	Basic Electrical Engineering	ES	B	3-1-0	4	
4.	ES/CM/TP104A	Computer Prog. & Numerical Methods	ES	B	4-0-3	5.5	
5.	ES/EL/P105B	Electrical & Electronics Laboratory	ES	B	0-0-3	1.5	
6.	ES/ED/P106A	Engineering Drawing	ES	B	0-0-4	2	
<b>TOTAL:</b>					<b>13-3-10</b>	<b>21</b>	

### First Year, Second Semester

Sl. No.	Subject Code	Subject Name	Category	Type	Contact L-T-P	Credit	Marks
1.	BS/MTH/T122	Mathematics II	BS	B	3-1-0	4	
2.	ES/EM/T103A	Engineering Mechanics	ES	B	3-1-0	4	
3.	BS/PH/TP104	Physics	BS	B	3-0-2	4	
4.	BS/CH/TP103	Chemistry	BS	B	3-0-2	4	
5.	HSMC/HS/T101	Humanities & Sociology	HS	B	3-0-0	3	
6.	MC/TS/P101	Technical English	MC	B	3-0-0	0	
7.	ES/WS/P107A	Workshop	ES	B	0-0-3	1.5	
<b>TOTAL:</b>					<b>18-2-7</b>	<b>20.5</b>	

### Second Year, First Semester

Sl. No.	Subject Code	Subject Name	Category	Type	Contact L-T-P	Credit	Marks
1.	IEE/BS/B/Math/T/211	Mathematics III	BS	B	3-1-0	4	100
2.	IEE/PC/B/T/212	Circuit Theory	PC	B	3-1-0	4	100
3.	IEE/PC/B/T/213	Fundamentals of Instrumentation	PC	B	3-0-0	3	100
4.	IEE/PC/B/T/214	Electronic Circuits	PC	B	3-1-0	4	100
5.	IEE/PC/B/T/215	Digital Electronics	PC	B	3-0-0	3	100
6.	IEE/ES/B/T/216	Applied Fluid Mechanics	ES	B	3-0-0	3	100
7.	IEE/PC/B/S/211	Digital Circuits Lab	PC	B	0-0-3	1.5	100
8.	IEE/PC/B/S/212	Electronic & Instrument Workshop	PC	B	0-0-3	1.5	100
9.	IEE/PS/B/S/213	Seminar	PS	B	0-0-3	1.5	100
<b>TOTAL:</b>					<b>18-3-9</b>	<b>25.5</b>	<b>900</b>

### Second Year, Second Semester

Sl. No.	Subject Code	Subject Name	Category	Type	Contact L-T-P	Credit	Marks
1.	IEE/PC/B/IT/T/221	Data Structure, Algorithms & OOPs	PC	B	3-0-0	3	100
2.	IEE/PC/B/T/222	Analog Integrated Circuit	PC	B	3-1-0	4	100
3.	IEE/PC/B/T/223	Industrial Instrumentation	PC	B	3-1-0	4	100
4.	IEE/PC/B/T/224	Linear Control Systems	PC	B	3-1-0	4	100
5.	IEE/PC/B/T/225	Signal Transmission & Communication Systems	PC	B	3-0-0	3	100
6.	IEE/PC/B/T/226	Measurements & Electronic Instrumentation	PC	B	3-0-0	3	100
7.	IEE/PC/B/S/221	Analog Electronics Laboratory	PC	B	0-0-3	1.5	100
8.	IEE/PC/B/S/222	Computing Software Laboratory	PC	B	0-0-3	1.5	100
<b>TOTAL:</b>					<b>18-3-6</b>	<b>24</b>	<b>800</b>

### Third Year, First Semester

Sl. No.	Subject Code	Subject Name	Category	Type	Contact L-T-P	Credit	Marks
1.	IEE/PC/B/ T/311	Digital Signal Processing	PC	B	3-0-0	3	100
2.	IEE/PC/B/ T/312	Microcontrollers	PC	B	3-0-0	3	100
3.	IEE/PC/B/T/313	Process Dynamics and Control	PC	B	3-0-0	3	100
4.	IEE/PC/B/T/314	Process Instrumentation	PC	B	3-0-0	3	100
5.& 6.	<b>Program Elective Course 1<sup>(1)</sup>. Students to opt for any one of the courses listed below.</b>						
	IEE/PE/B/T/315A	Power Plant Instrumentation	PE	B	3-0-0	3	100
	IEE/PE/B/T/315B	Analog MOS Circuit Design	PE	B	3-0-0	3	100
	IEE/PE/B/T/MOOC /315C	NPTEL MOOC-1 <sup>(2)</sup> (of 12 week duration)	PE	B		3	100
	<b>Program Elective Course 2<sup>(1)</sup>.Students to opt for any one of the courses listed below.</b>						
	IEE/PE/B/T/316A	VLSI Design	PE	B	3-0-0	3	100
	IEE/PE/B/T/316B	Analytical Instrumentation	PE	B	3-0-0	3	100
	IEE/PE/B/T/MOOC /316C	NPTEL MOOC-2 <sup>(2)</sup> (of 12 week duration)	PE	B		3	100
7.	IEE/PC/B/S/311	Control Systems Laboratory	PC	B	0-0-3	1.5	100
8.	IEE/PC/B/S/312	Sensor & Signal Conditioning Laboratory	PC	B	0-0-3	1.5	100
9.	IEE/PS/B/S/313	Mini Project (Electronic Design Laboratory)	PS	B	0-0-3	1.5	100
<b>TOTAL:</b>					<b>18-0-9</b>	<b>22.5</b>	<b>900</b>

- (1) The department shall offer at least one internally conducted course for each Program Elective. The number and the courses offered could vary depending on resource availability. The names of the courses offered shall be declared at the start of each session.
- (2) Approval of the department is needed. Only courses that are relevant to the curriculum, can be opted for. NPTEL online courses that are similar in content to any course offered by the department cannot be opted for.

**Third Year, Second Semester**

Sl. No.	Subject Code	Subject Name	Category	Type	Contact L-T-P	Credit	Marks
1.	IEE/HS/B/Prod/T/321	Industrial Management	HS	B	3-0-0	3	100
2.	IEE/PC/B/IT/T/322	Comp Organization, Architecture & Networking	PC	B	3-0-0	3	100
3. & 4.	<b>Program Elective Course 3<sup>(1)</sup>. Students to opt for any one of the courses listed below.</b>						
	IEE/PE/B/T/323A	Bio Medical Instrumentation	PE	B	3-0-0	3	100
	IEE/PE/B/T/MOOC/323B	NPTEL MOOC-3 <sup>(2)</sup> (of 12 week duration)	PE	B		3	100
	<b>Program Elective Course 4<sup>(1)</sup>. Students to opt for any one of the courses listed below.</b>						
	IEE/PE/B/T/324A	Digital Image Processing	PE	B	3-0-0	3	100
	IEE/PE/B/T/MOOC/324B	NPTEL MOOC-4 <sup>(2)</sup> (of 12 week duration)	PE	B		3	100
5.	IEE/PC/B/S/321	Digital Signal Processing Laboratory	PC	B	0-0-3	1.5	100
6.	IEE/PC/B/S/322	Process Control Laboratory	PC	B	0-0-3	1.5	100
7.	IEE/PS/B/S/323	Mini Project (Microcontroller Laboratory)	PS	B	0-0-3	1.5	100
8.	IEE/PS/B/S/324	Mini Project (Automation Laboratory)	PS	B	0-0-6	3	200
9.	IEE/PS/B/S/325	Mini Project (FPGA Laboratory)	PS	B	0-0-3	1.5	100
<b>TOTAL:</b>					<b>12-0-18</b>	<b>21</b>	<b>1000</b>

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**Fourth Year, First Semester**

Sl. No.	Subject Code	Subject Name	Category	Type	Contact L-T-P	Credit	Marks
1.	IEE/PC/H/ T/411	Telemetry and Remote Control	PC	H	3-1-0	4	100
2.	IEE/PC/H/T/412	Power Electronics	PC	H	3-1-0	4	100
3.	IEE/PC/H/T/413	Embedded Systems	PC	H	3-1-0	4	100
4.		Open Elective Course 1	OE	B	3-0-0	3	100
5.	IEE/PC/H/S/411	Power Electronics Laboratory	PC	H	0-0-4	2	100
6.	IEE/PC/H/S/412	Telemetry & Remote-Control Laboratory	PC	H	0-0-4	2	100
7.	IEE/PS/B/S/413	Project I (for those who haven't opted for an extended Internship)	PS	B	0-0-6	3	200
		<b>OR</b> Internship (extended, up to 6 months) – students to submit a detailed report and make a presentation based on which they will be evaluated.	PS	B		3	200
<b>TOTAL:</b>					<b>12-4-14</b>	<b>23</b>	<b>800</b>

**Fourth Year, Second Semester**

Sl. No.	Subject Code	Subject Name	Category	Type	Contact L-T-P	Credit	Marks	
<b>Program Elective Course 5<sup>(1)</sup>. Students to opt for any one of the courses listed below.</b>								
1. & 2.	IEE/PE/B/T/421A	Instrumentation in Space Technology.	PE	B	3-0-0	3	100	
	IEE/PE/B/T/MOOC/421B	NPTEL MOOC-5 <sup>(2)</sup> (of 12 week duration)	PE	B		3	100	
	<b>Program Elective Course 6<sup>(1)</sup>. Students to opt for any one of the courses listed below.</b>							
	IEE/PE/B/T/422A	Electronic Olfaction & Taste Sensing	PE	B	3-0-0	3	100	
	IEE/PE/B/T/MOOC/422B	NPTEL MOOC-6 <sup>(2)</sup> (of 12 week duration)	PE	B		3	100	
3.	IEE/PC/H/ T/423	Advanced Process Control	PC	H	3-1-0	4	100	
4.		Open Elective Course 2	OE	B	3-0-0	3	100	
5.		Open Elective Course 3	OE	B	3-0-0	3	100	
6.	IEE/HS/B/Eco/T/421	Economics	HS	B	3-0-0	3	100	
7.	IEE/PC/B/S/421	Project II	PS	B	0-0-9	4.5	300	
<b>TOTAL:</b>					<b>18-0-9</b>	<b>22.5</b>	<b>900</b>	

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### Credit Summary

Year	Basic							Honours	Total
	HS	BS	ES	PC	PE	PS	OE		
1 <sup>st</sup> Year, 1 <sup>st</sup> Semester	--	4	17	--	--	--	--	--	21
1 <sup>st</sup> Year, 2 <sup>nd</sup> Semester	3	12	5.5	--	--	--	--	--	20.5
2 <sup>nd</sup> Year, 1 <sup>st</sup> Semester	--	4	3	17	--	1.5	--	--	25.5
2 <sup>nd</sup> Year, 2 <sup>nd</sup> Semester	--	--	--	24	--	--	--	--	24
3 <sup>rd</sup> Year, 1 <sup>st</sup> Semester				15	6	1.5	--	--	22.5
3 <sup>rd</sup> Year, 2 <sup>nd</sup> Semester	3			6	6	6	--	--	21
4 <sup>th</sup> Year, 1 <sup>st</sup> Semester	--			--	--	3	3	16	22
4 <sup>th</sup> Year, 2 <sup>nd</sup> Semester	3				6	4.5	6	4	23.5
<b>Total</b>	<b>9</b>	<b>20</b>	<b>25.5</b>	<b>62</b>	<b>18</b>	<b>16.5</b>	<b>9</b>	<b>20</b>	<b>(160 + 20) =180</b>