

**Shri G.S. Institute of Technology & Science, Indore**  
**Electronics & Instrumentation Engineering Department**  
**B.Tech (Applicable to 2023-24 Enrolled Students)**

Batch : 2023-27  
Academic Year 2023-24

**Semester - A**

S. No.	Subject Category	Subject Code	Subject Name	Hours per Week			Credits		Maximum Marks				
				L	T	P	Th	Pr	Theory		Practical		Total
									Th.	CW	SW	Pr.	
1	BSC	MA 10001	Mathematics - I	3	1	0	4	0	70	30	0	0	100
2	BSC	PH10017	Physics	3	-	-	3	-	70	30	-	-	100
3	ESC	EE10015	Fundamentals of Electrical Engineering	2	1	-	3	0	70	30	0	0	100
4	ESC	CE10013	Fundamentals of Civil Engineering & Applied Mechanics	2	1	-	3	0	70	30	0	0	100
5	ESC	ME10049	Engineering Graphics	2	-	-	2	-	70	30	-	-	100
6	BSC (LC)	PH10151	Applied Physics Lab	-	-	2	-	1	-	-	20	30	50
7	ESC (LC)	EE10152	Electrical Engineering Lab	-	-	2	-	1	-	-	20	30	50
8	ESC (LC)	ME10153	Engineering Graphics Lab	-	-	4	-	2	-	-	40	60	100
9	HSMC	HU10191	Extra /Co curricular Activity	-	-	2	-	1	-	-	50	0	50
10	MC		Induction program & Universal Human Values	2-3 weeks in the beginning of I Year & 1 hour per week during semester									
<b>TOTAL</b>				<b>12</b>	<b>3</b>	<b>10</b>	<b>15</b>	<b>5</b>	<b>350</b>	<b>150</b>	<b>130</b>	<b>120</b>	<b>750</b>

**Semester - B**

S. No.	Subject Category	Subject Code	Subject Name	Hours per Week			Credits		Maximum Marks				
				L	T	P	Th	Pr	Theory		Practical		Total
									Th.	CW	SW	Pr.	
1	BSC	MA 10501	Mathematics – II	3	1	-	4	-	70	30	0	0	100
2	BSC	CH10516	Chemistry	3	-	-	3	-	70	30	-	-	100
3	HSMC	HU10551	Technical English	2	-	-	2	-	70	30	0	0	100
4	ESC	CO10507	Programming for Problem Solving	2	1	-	3	-	70	30	0	0	100
5	ESC	EC10508	Basic Electronics Engineering	2	-	-	2	-	70	30	0	0	100
6	BSC (LC)	CH10656	Chemistry Lab	-	-	2	-	1	-	-	20	30	50
7	HSMC (LC)	HU10653	Language Lab	-	-	2	-	1	-	-	20	30	50
8	ESC (LC)	CO10654	Computer Programming Lab	-	-	2	-	1	-	-	20	30	50
9	ESC (LC)	IP10655	Manufacturing Practices	-	-	4	-	2	-	-	40	60	100
10	HSMC	HU10691	Extra /Co curricular Activity	-	-	2	-	1	-	-	50	-	50
11	MC		Induction program & Universal Human Values	2-3 weeks in the beginning of I Year & 1 hour per week during semester									
<b>TOTAL</b>				<b>12</b>	<b>2</b>	<b>12</b>	<b>14</b>	<b>6</b>	<b>350</b>	<b>150</b>	<b>150</b>	<b>150</b>	<b>800</b>

Engineering Certificate shall be awarded after acquiring additional 10 credits out of which 6 credits as 2 Months industrial training within five years

**Shri G.S. Institute of Technology & Science, Indore**  
**Electronics & Instrumentation Engineering Department**  
**B.Tech (Applicable to 2023-24 Enrolled Students)**

Batch 2023-2027(NEP-20)  
Acadmic Year :2024-25

**II Year / Semester-III**

S.No.	Subject Category	Subject Code	Subject Name	Hours per Week			Credits		Maximum Marks				
				L	T	P	Th	Pr	Theory		Practical		Total
									Th.	CW	SW	Pr.	
1	BSC	MA-27014	Mathematics-III	3	1	-	4	-	70	30	-	-	100
2	PCC	EI-27001	Circuit Analysis & Synthesis	3	-	-	3	-	70	30	-	-	100
3	PCC	EI-27006	Digital Electronics	3	-	-	3	-	70	30	-	-	100
4	PCC	EI-27003	Electronics Devices & Circuits	3	-	-	3	-	70	30	-	-	100
5	ESC	EI-27002	Fundamentals of Measurement	3	-	-	3	-	70	30	-	-	100
6	LC(EI)	EI-27001	Circuit Analysis & Synthesis	-	-	2	-	1	-	-	40	60	100
7	LC(EI)	EI-27006	Digital Electronics	-	-	2	-	1	-	-	40	60	100
8	LC(EI)	EI-27003	Electronics Devices & Circuits	-	-	2	-	1	-	-	40	60	100
9	LC(EI)	EI-27002	Fundamentals of Measurement	-	-	2	-	1	-	-	40	60	100
10	LC(EI)	EI-27498	Electronics Workshop Lab	-	-	2	-	1	-	-	40	60	100
11	MC	CHM-2002	Environmental Science*	2	-	-	-	-	-	50	-	-	50
<b>Total</b>				<b>17</b>	<b>1</b>	<b>10</b>	<b>16</b>	<b>5</b>	<b>350</b>	<b>200</b>	<b>200</b>	<b>300</b>	<b>1050</b>

\*Non-credit mandatory subject

**II Year / Semester-IV**

S.No.	Subject Category	Subject Code	Subject Name	Hours per Week			Credits		Maximum Marks				
				L	T	P	Th	Pr	Theory		Practical		Total
									Th.	CW	SW	Pr.	
1	HSMC	HU-27005	Economics for Engineers	3	-	-	3	-	70	30	-	-	100
2	PCC	EI-27501	Analog Electronics	3	-	-	3	-	70	30	-	-	100
3	PCC	EI-27551	Sensors & Transducers	3	-	-	3	-	70	30	-	-	100
4	BSC	MA-27563	Mathematics – IV	3	1	-	4	-	70	30	-	-	100
5	PCC	EI-27504	Circuit Design using HDLs	3	-	-	3	-	70	30	-	-	100
6	LC (EI)	EI-27501	Analog Electronics (Lab)	-	-	2	-	1	-	-	40	60	100
7	LC (EI)	EI-27551	Sensors & Transducers (Lab)	-	-	2	-	1	-	-	40	60	100
8	LC (EI)	EI-27504	Circuit Design using HDLs (Lab)	-	-	2	-	1	-	-	40	60	100
9	LC (EI)	EI-27882	Software workshop	-	-	2	-	1	-	-	40	60	100
10	MC	HU-27881	Values, Humanity and Professional Ethics	2	-	-	2	-	-	100	-	-	100
12	PROJ	Internship-1	4-6 weeks-during vacation. Evaluation & Credit in V Semester										
<b>TOTAL</b>				<b>17</b>	<b>1</b>	<b>8</b>	<b>18</b>	<b>4</b>	<b>350</b>	<b>250</b>	<b>160</b>	<b>240</b>	<b>1000</b>

\*Non-credit mandatory subject

Diploma in Electronics & Instrumentation Engg. will be awarded after acquiring additional 10 credits out of which 6 credits as 3 months industrial training within 5 years.

**Shri G.S. Institute of Technology & Science, Indore**  
**Electronics & Instrumentation Engineering Department**  
**B.Tech (Applicable to 2023-24 Enrolled Students)**

Tentative scheme (Subjected to be approved by Academic Council)

Batch 2023-2027(NEP-20)

Academic Year :2025-26

**III Year / Semester-V**

S.No.	Subject Category	Subject Code	Subject Name	Hours per Week			Credits		Maximum Marks				
				L	T	P	Th	Pr	Theory		Practical		Total
									Th.	CW	SW	Pr.	
1	PCC	IT	Data Structure	3	-	-	3	-	70	30	-	-	100
2	PCC	EI37006	Microprocessor Systems	3	-	-	3	-	70	30	-	-	100
3	PCC	EI37xxx	VLSI Design	3	-	-	3	-	70	30	-	-	100
4	PEC	EI	Program Elective Course-I	3	-	-	3	-	70	30	-	-	100
5	OEC		Open Elective Course-I	3	-	-	3	-	70	30	-	-	100
6	LC(IT)	IT	Data Structure (Lab)	-	-	2	-	1	-	-	40	60	100
7	LC(EI)	EI37006	Microprocessor Systems (Lab)	-	-	2	-	1	-	-	40	60	100
8	LC(EI)	EI37xxx	VLSI Design (Lab)	-	-	2	-	1	-	-	40	60	100
9	LC(EI)	EI37481	Test & Calibration	-	-	4	-	2	-	-	40	60	100
10	PROJ	EI37482	Internship-I (Evaluation)	-	-	-	-	2	-	-	50		50
11	HSMC	HU	Constitution of India*	2	-	-	-	-	-	50			50
<b>Total</b>				<b>17</b>	<b>0</b>	<b>10</b>	<b>15</b>	<b>7</b>	<b>350</b>	<b>200</b>	<b>210</b>	<b>240</b>	<b>1000</b>

\*Non-credit mandatory subject

**III Year/ Semester-VI**

S.No.	Subject Category	Subject Code	Subject Name	Hours per Week			Credits		Maximum Marks				
				L	T	P	Th	Pr	Theory		Practical		Total
									Th.	CW	SW	Pr.	
1	PCC	EI37511	Filter Design & Simulation	3	-	-	3	-	70	30	-	-	100
2	PCC	EI37513	High Frequency Engineering	3	-	-	3	-	70	30	-	-	100
3	PCC	EE	Control Systems	3	-	-	3	-	70	30	-	-	100
4	PEC	EI	Program Elective Course-II	3	-	-	3	-	70	30	-	-	100
5	OEC		Open Elective Course-II	3	-	-	3	-	70	30	-	-	100
6	LC (EI)	EI37511	Filter Design & Simulation (Lab)	-	-	2	-	1	-	-	40	60	100
7	LC (EE)	EE	Control Systems (Lab)	-	-	2	-	1	-	-	40	60	100
8	PEC-LC (EI)	EI	Program Elective Course-II (Lab)	-	-	2	-	1	-	-	40	60	100
9	PROJ	EI	Major Project Phase-I	-	-	6	-	3	-	-	40	60	100
10	HSMC	HU	Essence of Indian Knowledge Tradition*	2	-	-	-	-	-	50	-	-	50
11	PROJ	Internship-II	4-6 weeks-during vacation. Evaluation & Credit in VII Semester										
<b>TOTAL</b>				<b>17</b>	<b>0</b>	<b>12</b>	<b>15</b>	<b>6</b>	<b>350</b>	<b>200</b>	<b>160</b>	<b>240</b>	<b>950</b>

\*Non-credit mandatory subject

Vocational Degree in Electronics & Instrumentation Engg. will be awarded after acquiring additional 10 credits out of which 6 credits as 3 months industrial training within 5 years.

**Shri G.S. Institute of Technology & Science, Indore**  
**Electronics & Instrumentation Engineering Department**  
**B.Tech (Applicable to 2023-24 Enrolled Students)**

Tentative scheme (Subjected to be approved by Academic Council)

Batch 2023-2027(NEP-20)

Acadmic Year :2026-27

**IV Year / Semester-VII**

S.No.	Subject Category	Subject Code	Subject Name	Hours per Week			Credits		Maximum Marks				
				L	T	P	Th	Pr	Theory		Practical		Total
									Th.	CW	SW	Pr.	
1	PCC	EI47053	Process Instrumentation	3	-	-	3	-	70	30	-	-	100
2	PCC	BM	Medical Instrumentation	3	-	-	3	-	70	30	-	-	100
3	PCC	EI	Fiber Optics & Photonics	3	-	-	3	-	70	30	-	-	100
4	PEC	EI	Program Elective Course-III	3	-	-	3	-	70	30	-	-	100
5	PEC	EI	Program Elective Course-IV	3	-	-	3	-	70	30	-	-	100
6	LC(EI)	EI47053	Process Instrumentation	-	-	2	-	1	-	-	40	60	100
7	LC(BM)	BM	Medical Instrumentation	-	-	2	-	1	-	-	40	60	100
8	LC(EI)	EI	Fiber Optics & Photonics	-	-	2	-	1	-	-	40	60	100
9	PROJ	EI	Internship-II (Evaluation)	-	-	-	-	2	-	-	50	-	50
10	PROJ	EI	Major Project Phase-II	-	-	10	-	5	-	-	40	60	100
<b>Total</b>				15	0	12	15	8	350	150	210	240	950

**IV Year / Semester-VIII**

S.No.	Subject Category	Subject Code	Subject Name	Hours per Week			Credits		Maximum Marks				
				L	T	P	Th	Pr	Theory		Practical		Total
									Th.	CW	SW	Pr.	
1	PEC	EI	Program Elective Course-V	3	-	-	3	-	70	30	-	-	100
2	PEC	EI	Program Elective Course-VI	3	-	-	3	-	70	30	-	-	100
3	PROJ	EI	Industrial Training/Internship	-	-	16	-	8	-	-	100	-	100
4	PROJ	EI	Research work	-	-	12	-	6	-	-	40	60	100
5	MC	EI	Research Paper*	2	-	-	-	-	-	50	-	-	50
<b>TOTAL</b>				8	0	28	6	14	140	110	140	60	450

\* Minimum one research paper in the year should be submitted for publication in reputed Confernce/Journal (For degree -"B.Tech with Research")

All Evaluation will be done on Basis of Rubrics prepared for that purpose.

Duration of Internship is minimum 20\* Practical hours (E.g. 20\*16 hrs= 320 hours = 40 working days for 8 hours per day)

Minor certificate will be awarded if addition 20 credits are earbed in a particular area of specialization

**List of Electives from V to VIII Semester**

<b>Semester VII</b>		
<b>Program Elective-III</b>		
1	EIxxx	VLSI Technology
2	EIxxx	Mechatronics
3	xxxx	Digital Signal Processing
4	xxxx	NPTEL/ SWAYAM MOOC courses
<b>Program Elective-IV</b>		
1	EExxx	Power Electronics
2	xxxx	Radio Frequency Integrated Circuits
3	xxxx	Advance Control Systems
4	xxxx	NPTEL/ SWAYAM MOOC courses

<b>Program Elective-I</b>		
1	EIxxx	Analog & Digital Communication
2	EIxxx	Smart Sensors
3	CO37253	Artificial Intelligence

<b>Open Elective-I</b>		
1	CSxxxx	Cloud Computing
2	ITxxxx	Machine Learning
3	ECxxxx	
4	EExxxx	

<b>Semester VIII</b>		
<b>Program Elective-V</b>		
1	xxxx	Internet on Things
2	xxxx	Computer Networks
3	xxxx	Digital Image Processing
4	xxxx	NPTEL/ SWAYAM MOOC courses
<b>Program Elective-VI</b>		
1	EI47776	Automation in Instrumentation
2	xxxx	Process Control
3	xxxx	Intelligent Instrumentation
4	xxxx	NPTEL/ SWAYAM MOOC courses

<b>Program Elective-II</b>		
1	EI37701	Microcontroller & Embedded System
2	EI37xxx	Analog Integrated Circuits
3	EI37xxx	Analytical Instrumentation

<b>Open Elective-II</b>		
1	ITxxxx	Web Engineering
2	ECxxxx	Mobile Communication
3	CSxxx	
4	EExxx	

**Exit Clause subjects (As per NEP-2020)**

**1-year (Engineering Certificate)**

S. No.	Subject code	Subject Name	Hours per week			Credits	
			L	T	P	T	P
1	EI27003	Electronics Divices & Circuits	2	-	-	2	0
2	EI27498	Electronics Workshop	-	-	4	-	2
3	EI27XXX	Internship/Industrial Training	-	-	12	-	6

**II-Year (Diploma in Electronics & Instrumentation Engg.)**

S. No.	Subject code	Subject Name	Hours per week			Credits	
			L	T	P	T	P
1	EI37006	Microprocessor System	2	-	-	2	0
2	EI37991	Mini Project	-	-	4	-	2
3	EI37XXX	Industrial Training	-	-	12	-	6

**III-Year (Vocational degree in Electronics & Instrumentation Engg.)**

S. No.	Subject code	Subject Name	Hours per week			Credits	
			L	T	P	T	P
1	EI47053	Process Instrumentation	2	-	-	2	0
2	EI47999	Major Project	-	-	4	-	2
3	EI47XXX	Industrial Training	-	-	12	-	6

\*L=Lecture, T=Tutorial, P=Practical