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									
TOTAL				**12**	**3**	**10**	**15**	**5**	**350**	**150**	**130**	**120**	**750**

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									
TOTAL				**12**	**2**	**12**	**14**	**6**	**350**	**150**	**150**	**150**	**800**

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-2020)

II Year / Semester-III **Acadmic Year :2024-25**

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	MA27014	Mathematics-III	3	1	-	4	-	70	30	-	-	100
2	PCC	EI27011	Circuit Analysis & Synthesis	3	-	-	3	-	70	30	-	-	100
3	PCC	EI27016	Digital Electronics	3	-	-	3	-	70	30	-	-	100
4	PCC	EI27013	Electronics Devices & Circuits	3	-	-	3	-	70	30	-	-	100
5	ESC	EI27012	Fundamentals of Measurement	3	-	-	3	-	70	30	-	-	100
6	LC(EI)	EI27401	Circuit Analysis & Synthesis	-	-	2	-	1	-	-	40	60	100
7	LC(EI)	EI27404	Digital Electronics	-	-	2	-	1	-	-	40	60	100
8	LC(EI)	EI27403	Electronics Devices & Circuits	-	-	2	-	1	-	-	40	60	100
9	LC(EI)	EI27402	Fundamentals of Measurement	-	-	2	-	1	-	-	40	60	100
10	LC(EI)	EI27498	Electronics Workshop Lab	-	-	2	-	1	-	-	40	60	100
11	MC	EIM2002	Environmental Science*	2	-	-		-	-	50			50
Total				17	1	10	16	5	350	200	200	300	1050

*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	HU27506	Economics for Engineers	3	-	-	3	-	70	30	-	-	100
2	PCC	EI27511	Analog Electronics	3	-	-	3	-	70	30	-	-	100
3	PCC	EI27521	Sensors & Transducers	3	-	-	3	-	70	30	-	-	100
4	BSC	MA27563	Mathematics – IV	3	1	-	4	-	70	30	-	-	100
5	PCC	EI27514	Digital Circuit Design using HDL	3	-	-	3	-	70	30	-	-	100
6	LC (EI)	EI27801	Analog Electronics (Lab)	-	-	2	-	1	-	-	40	60	100
7	LC (EI)	EI27802	Sensors & Transducers (Lab)	-	-	2	-	1	-	-	40	60	100
8	LC (EI)	EI27803	Digital Circuit Design using HDL (Lab)	-	-	2	-	1	-	-	40	60	100
9	LC (EI)	EI27882	Software workshop	-	-	2	-	1	-	-	40	60	100
10	MC	HU27881	Values, Humanity and Professional Ethics	2	-	-	2	-	-	100	-	-	100
12	PROJ	Internship-1		4-6 weeks-during vacation. Evaluation & Credit in V Semester									
			TOTAL	17	1	8	18	4	350	250	160	240	1000

*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(8-12 WEEKS) 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)

w.e.f July 2025 **Batch 2023-2027(NEP-2020)**

III Year / Semester-V **Acadmic Year :2025-26**

S.No.	Subject Category	Subject Code	Subject Name	Hours per Week			Credits		Maximum Marks				
				L	T	P	Th	Pr	Theory		Practical		Total
									End sen	CW	Pr	SW	
1	PCC	IT37005	Data Structure	3		-	3	-	70	30	-	-	100
2	PCC	EI37006	Microprocessor Systems	3	-	-	3	-	70	30	-	-	100
3	PCC	EI37007	CMOS VLSI Design	3	-	-	3	-	70	30	-	-	100
4	PEC		Program Elective Course-I	3	-	-	3	-	70	30	-	-	100
5	OEC		Open Elective Course-I	3	-	-	3	-	70	30	-	-	100
6	LC(IT)	IT37xxx	Data Structure (Lab)	-	-	2	-	1	-	-	60	40	100
7	LC(EI)	EI37xxx	Microprocessor Systems (Lab)	-	-	2	-	1	-	-	60	40	100
8	LC(EI)	EI37xxx	CMOS VLSI Design (Lab)	-	-	2	-	1	-	-	60	40	100
9	LC(EI)	EI37481	Test & Calibration (Lab)	-	-	2	-	1	-	-	60	40	100
10	PROJ	EI37482	Internship-I (Evaluation)	-	-	2	-	1	-	-	-	50	50
11	HSMC	HUM3702	Constitution of India*	2	-	-	-	-	-	50	-	-	50
Total				17	0	10	15	5	350	200	240	210	1000

***Non-credit mandatory subject**

III Year/ Semster-VI

S.No.	Subject Category	Subject Code	Subject Name	Hours per Week			Credits		Maximum Marks				
				L	T	P	Th	Pr	Theory		Practical		Total
									End sen	CW	Pr	SW	
1	PCC	EI37xxx	Digital Signal Processing	3	-	-	3	-	70	30	-	-	100
2	PCC	EI37504	Microcontroller & Embedded System	3	-	-	3	-	70	30	-	-	100
3	PCC	EE37505	Control Systems	3	-	-	3	-	70	30	-	-	100
4	PEC		Program Elective Course-II	3	-	-	3	-	70	30	-	-	100
5	OEC		Open Elective Course-II	3	-	-	3	-	70	30	-	-	100
6	LC (EI)	EI37xxx	Digital Signal Processing (Lab)	-	-	2	-	1	-	-	60	40	100
7	LC (EE)	EExxx	Control Systems (Lab)	-	-	2	-	1	-	-	60	40	100
8	PEC-LC (EI)	EIxxx	Microcontroller & Embedded System (Lab)	-	-	2	-	1	-	-	60	40	100
9	PROJ	EIxxx	Major Project Phase-I	-	-	4	-	2	-	-	60	40	100
10	HSMC	HUMxxx	Essence of Indian Knowledge Tradition*	2	-	-	-	-	-	50	-	-	50
11	PROJ	Internship-II		Minimum 4-6 weeks-during vacation. Evaluation & Credit in VII Semester									
TOTAL				17	0	10	15	5	350	200	240	160	950

***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.

List of Electives for 5th & 6th Semester

Program Elective-I		
1	EC37254	Analog & Digital Communication
2	EI37255	Smart Sensors
3	EIxxx	Peripherals & Interfacing

Program Elective-II		
1	EI37703	High Frequency Engineering
2	EI37xxx	Analog Integrated Circuits
3	EI37704	Analytical Instrumentation

Open Elective-I		
1	IP37251	Industrial Engineering & Management
2	CO37253	Artificial Intelligence
	EI3N001	(NPTEL) Fundamentals of Artificial Intelligence
	EI3N002	(NPTEL)Artificial Intelligence -"Search Methods for Problem Solving"
3	BMxxx	**For opting Open Elective-I, students may refer to corresponding departments**
4	EC xxx	
5	IT xxx	
6	EE xxx	
7	ME xxx	
8	CE xxx	

Open Elective-II		
1	IT 37xxx	Web Engineering
2	EC 37726	Mobile Communication
3	BMxxx	**For opting Open Elective-II, students may refer to corresponding departments**
4	CS xxx	
5	IPE xxx	
6	EE xxx	
7	ME xxx	
8	CE xxx	

The Department will offer following Open Electives

Open Elective-I (V Semester)		
1	EI37xxx	Digital Design Using HDLs

Open Elective-II (VI Semester)		
1	EI xxx	Filter Design & Simulation

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 BoS/ Academic Council)

Batch 2023-2027(NEP-2020)
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	Pr.	SW	
1	PCC	EI47053	Process Instrumentation	3		-	3	-	70	30	-	-	100
2	PCC	BMxxx	Medical Instrumentation	3	-	-	3	-	70	30	-	-	100
3	PCC	EI xxx	Fiber Optics & Photonics	3	-	-	3	-	70	30	-	-	100
4	PEC		Program Elective Course-III	3	-	-	3	-	70	30	-	-	100
5	PEC		Program Elective Course-IV	3	-	-	3	-	70	30	-	-	100
6	LC(EI)	EI47xxx	Process Instrumentation (Lab)	-	-	2	-	1	-	-	60	40	100
7	LC(BM)	BMxxx	Medical Instrumentation (Lab)	-	-	2	-	1	-	-	60	40	100
8	LC(EI)	EIxxx	Fiber Optics & Photonics (Lab)	-	-	2	-	1	-	-	60	40	100
9	PROJ	EIxxx	Internship-II (Evaluation)	-	-	2	-	1	-	-		50	50
10	PROJ	EIxxx	Major Project Phase-II	-	-	8	-	4	-	-	60	40	100
Total				**15**	**0**	**16**	**15**	**8**	**350**	**150**	**240**	**210**	**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	Pr.	SW	
1	PROJ	EI47881	Industrial Training/Internship (Min. 10-12 weeks)	-	-	20	-	10	-	-	60	40	100
2	PROJ	EIxxx	Research work -Research Paper/Poster Presentation//Seminar	-	-	8	-	4	-	-	60	40	100
TOTAL				**-**	**-**	**28**	**-**	**14**	**-**	**-**	**120**	**80**	**200**

*** Minimum one research paper in the year should be submitted for publication in reputed Confernce/Journal**

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

Duration of Internship is minimum 400 working hours (40 working hours/week for 8 hours per day(8 hrsx5 days))

List of Electives for VII semester

Semester VII		
Program Elective-III		
1	EI 47322	VLSI Technology
	EI 47xxx	Fabrication Techniques for MEMS Based Sensors(NPTEL).
2	EE 47xxx	Power Electronics
	EE 47xxx	Power Electronics with wide band Gap devices(NPTEL)
3	EI 47xxx	Radio Frequency Integrated Circuits*
	EI 47xxx	Radio Frequency Integrated Circuits(NPTEL)

*** Pre-requisite for the subject is Analog IC design**

Semester VII		
Program Elective-IV		
1	EI 47xxx	Internet of Things
	EI 47xxx	Introduction to IoT(NPTEL)
2	EI 47776	Automation in Instrumentation
	EI 47xxx	Automation in Manufacturing(NPTEL)
3	EI 47xxx	Advance Control Systems