

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)
Academic 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-27xxx | Mathematics-III | 3 | 1 | - | 4 | - | 70 | 30 | - | - | 100 |
| 2 | PCC | EI-27xxx | Circuit Analysis & Synthesis | 3 | - | - | 3 | - | 70 | 30 | - | - | 100 |
| 3 | PCC | EI-27xxx | Digital Electronics | 3 | - | - | 3 | - | 70 | 30 | - | - | 100 |
| 4 | PCC | EI-27xxx | Electronics Devices & Circuits | 3 | - | - | 3 | - | 70 | 30 | - | - | 100 |
| 5 | ESC | EI-27xxx | Fundamentals of Measurement | 3 | - | - | 3 | - | 70 | 30 | - | - | 100 |
| 6 | LC(EI) | EI-27xxx | Circuit Analysis & Synthesis | - | - | 2 | - | 1 | - | - | 40 | 60 | 100 |
| 7 | LC(EI) | EI-27xxx | Digital Electronics | - | - | 2 | - | 1 | - | - | 40 | 60 | 100 |
| 8 | LC(EI) | EI-27xxx | Electronics Devices & Circuits | - | - | 2 | - | 1 | - | - | 40 | 60 | 100 |
| 9 | LC(EI) | EI-27xxx | Fundamentals of Measurement | - | - | 2 | - | 1 | - | - | 40 | 60 | 100 |
| 10 | LC(EI) | EI-27xxx | Electronics Workshop Lab | - | - | 2 | - | 1 | - | - | 40 | 60 | 100 |
| 11 | MC | CHM-27xxx | 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 | HU-27xxx | Economics for Engineers | 3 | - | - | 3 | - | 70 | 30 | - | - | 100 |
| 2 | PCC | EI-27xxx | Analog Electronics | 3 | - | - | 3 | - | 70 | 30 | - | - | 100 |
| 3 | PCC | EI-27xxx | Sensors & Transducers | 3 | - | - | 3 | - | 70 | 30 | - | - | 100 |
| 4 | BSC | MA-27xxx | Mathematics – IV | 3 | 1 | - | 4 | - | 70 | 30 | - | - | 100 |
| 5 | PCC | EI-27xxx | Digital Circuit Design using HDLs | 3 | - | - | 3 | - | 70 | 30 | - | - | 100 |
| 6 | LC (EI) | EI-27xxx | Analog Electronics (Lab) | - | - | 2 | - | 1 | - | - | 40 | 60 | 100 |
| 7 | LC (EI) | EI-27xxx | Sensors & Transducers (Lab) | - | - | 2 | - | 1 | - | - | 40 | 60 | 100 |
| 8 | LC (EI) | EI-27xxx | Digital Circuit Design using HDLs (Lab) | - | - | 2 | - | 1 | - | - | 40 | 60 | 100 |
| 9 | LC (EI) | EI-27xxx | Software workshop | - | - | 2 | - | 1 | - | - | 40 | 60 | 100 |
| 10 | MC | HU-27xxx | 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 industrial training within 5 years.

Shri G.S. Institute of Technology & Science, Indore
Electronics & Instrumentation Engineering Department
B.Tech (Applicable to 2022-23 Enrolled Students)

Tentative scheme (Subjected to be approved by Academic Council)

Batch : 2022-2026

Academic Year 2024-25

III Year/ V Sem

| S.no. | Category | Subject Code | Subject Name | Period/Week | | | Maximum Marks | | | | Credits | | Total | Total Marks |
|--------------|----------|--------------|---------------------------|-------------|----------|-----------|---------------|------------|------------|------------|-----------|----------|-----------|-------------|
| | | | | L | T | P | Theory | | Practical | | T | P | | |
| | | | | | | | End Sem | CW | End Sem | SW | | | | |
| 1 | DC-8 | IT37005 | Data Structure | 3 | | 2 | 70 | 30 | 60 | 40 | 3 | 1 | 4 | 200 |
| 2 | DC-9 | EI37006 | Microprocessor Systems | 3 | | 2 | 70 | 30 | 60 | 40 | 3 | 1 | 4 | 200 |
| 3 | DC-9 | EI37xxx | CMOS VLSI Design | 3 | | 2 | 70 | 30 | 60 | 40 | 3 | 1 | 4 | 200 |
| 4 | OEC-I | | Open Elective-1 | 3 | | | 70 | 30 | | | 3 | | 3 | 100 |
| 5 | PEC-1 | | Program Elective -I | 3 | | | 70 | 30 | | | 3 | | 3 | 100 |
| 6 | DLC-3 | EI37481 | Test & Calibration | | | 4 | | | 60 | 40 | | 2 | 2 | 100 |
| 7 | MC-3 | HU | Constitution of India | 2 | | | | 50 | | | | | | 50 |
| 8 | DLC-4 | EI37482 | Internship-1 (Evaluation) | | | | | | | 50 | | 2 | 2 | 50 |
| Total | | | | 17 | 0 | 10 | 350 | 200 | 240 | 210 | 15 | 7 | 22 | 1000 |

III Year/ VI Sem

| S.no. | Category | Subject Code | Subject Name | Period/Week | | | Maximum Marks | | | | Credits | | Total | Total Marks |
|--------------|----------|--------------|-----------------------------------|-------------|----------|-----------|---------------|------------|------------|------------|-----------|----------|-----------|-------------|
| | | | | L | T | P | Theory | | Practical | | T | P | | |
| | | | | | | | End Sem | CW | End Sem | SW | | | | |
| 1 | DC-10 | EI37511 | Filter Design & Simulation | 3 | | 2 | 70 | 30 | 60 | 40 | 3 | 1 | 4 | 200 |
| 2 | DC-11 | EI37xxx | Microcontroller & Embedded System | 3 | | 2 | 70 | 30 | 60 | 40 | 3 | 1 | 4 | 200 |
| 3 | DC-12 | EExxx | Control System | 3 | | 2 | 70 | 30 | 60 | 40 | 3 | 1 | 4 | 200 |
| 4 | OEC-II | | Open Elective-II | 3 | | | 70 | 30 | | | 3 | | 3 | 100 |
| 5 | PEC-II | | Program Elective-II | 3 | | 2 | 70 | 30 | 60 | 40 | 3 | 1 | 4 | 200 |
| 6 | DLC-5 | EI37991 | Mini Project | | | 4 | | | 60 | 40 | | 2 | 2 | 100 |
| Total | | | | 15 | 0 | 12 | 350 | 150 | 300 | 200 | 15 | 6 | 21 | 1000 |

Internship-II To be completed any time during V/VI semester. Its evaluation/credits to be added in Semester VII(Minimum 4 Weeks Duration)

List of Electives for 5th & 6th Semester

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

| Open Elective-I | | |
|-----------------|---------------------|---|
| 1 | IP37251 | Industrial Engineering & Management |
| 2 | CO37253/2 A & 2B | Artificial Intelligence/ NPTEL NPTEL Courses: 2A. Fundamentals of Artificial Intelligence 2B. Artificial Intelligence -"Search Methods for Problem Solving" |

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

| Open Elective-II | | |
|------------------|----------|---------------------------|
| 1 | IT 37xxx | Web Engineering |
| 2 | EC 37xxx | Mobile Communication |
| 3 | EC37xxx | Digital Signal Processing |

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B.Tech (Applicable to 2021-22 Enrolled Students)

Batch : 2021-2025

Academic Year 2024-25

IV Year/ VII Sem

| S.no. | Category | Subject Code | Subject Name | Period/Week | | | Maximum Marks | | | | Total | Total Marks | | |
|------------------------------|------------|--------------|----------------------------|-------------|----------|-----------|---------------|------------|------------|------------|-----------|-------------|-----------|------------|
| | | | | L | T | P | Theory | | Practical | | | | Credits | |
| | | | | | | | End Sem | CW | End Sem | SW | | | T | P |
| 1 | DC-15 | EI47053 | Process Instrumentation | 3 | 1 | 2 | 70 | 30 | 60 | 40 | 4 | 1 | 5 | 200 |
| 2 | DC-16 | EE47002 | Power Electronics | 3 | | 2 | 70 | 30 | 60 | 40 | 3 | 1 | 4 | 200 |
| 3 | DC-17 | EI47055 | VLSI Design | 3 | | 2 | 70 | 30 | 60 | 40 | 3 | 1 | 4 | 200 |
| 4 | PEC | | Elective -III | 3 | | | 70 | 30 | | | 3 | | 3 | 100 |
| 5 | PEC | | Elective -IV | 3 | | | 70 | 30 | | | 3 | | 3 | 100 |
| 6 | Internship | | Internship-II (Evaluation) | | | 4 | | 50 | | | | 2 | | 50 |
| 7 | DLC-7 | EI47499 | Major Project-I(AB Group) | | | 6 | | | 60 | 40 | | 3 | 3 | 100 |
| | DLC-8 | EI47999 | Major Project-II(BA Group) | | | 10 | | | 60 | 40 | | 5 | 5 | 100 |
| Total (With AB Group) | | | | 15 | 1 | 16 | 350 | 200 | 240 | 160 | 16 | 8 | 24 | 950 |
| Total (With BA Group) | | | | 15 | 1 | 20 | 350 | 200 | 240 | 160 | 16 | 10 | 26 | 950 |

IV Year/ VIII Sem

| S.no. | Category | Subject Code | Subject Name | Period/Week | | | Maximum Marks | | | | Total | Total Marks | | |
|------------------------------|------------|--------------|--|-------------|----------|-----------|---------------|-----------|-----------|------------|----------|-------------|-----------|------------|
| | | | | L | T | P | Theory | | Practical | | | | Credits | |
| | | | | | | | End Sem | CW | End Sem | SW | | | T | P |
| 1 | DC-18 | | Elective-V | 3 | | | 70 | 30 | | | 3 | | 3 | 100 |
| 2 | DC-19 | | Elective -VI | 3 | | | 70 | 30 | | | 3 | | 3 | 100 |
| 3 | Internship | EI47881 | Industrial Training/ Internship (min 6 week/seminar with report) | | | | | | | 100 | | 8 | 8 | 100 |
| 4 | DLC-8 | EI47999 | Major Project-II(AB Group) | | | 10 | | | 60 | 40 | | 5 | 5 | 100 |
| 5 | DLC-7 | EI47499 | Major Project-I(BA Group) | | | 6 | | | 60 | 40 | | 3 | 3 | 100 |
| Total (With AB Group) | | | | 6 | 0 | 10 | 140 | 60 | 60 | 140 | 6 | 13 | 19 | 400 |
| Total (With BA Group) | | | | 6 | 0 | 6 | 140 | 60 | 60 | 140 | 6 | 11 | 17 | 400 |

| Semester VII | | |
|---------------------|---------|-----------------------------|
| Elective-III | | |
| 1 | EI47257 | Fiber Optics and Photonics |
| 2 | XX47201 | Data structure |
| Elective-IV | | |
| 1 | EI47322 | VLSI Technology |
| 2 | EI47301 | Intelligent Instrumentation |

| Semester VIII | | |
|----------------------|---------|-------------------------------------|
| Elective-V | | |
| 1 | BM47613 | Medical Instrumentation/NPTEL |
| 2 | EI47611 | Digital Image Processing |
| 3 | EI47612 | Computer Network |
| Elective-VI | | |
| 1 | EI47776 | Automation in Instrumentation/NPTEL |
| 2 | EI47701 | Data Acquisition Systems |