GENERAL INFORMATION ON HONORS AND MINORS

Eligibility and Rules:

- Students can opt for **Honors** (within their parent department) or **Minor Specialization** (in other departments) starting **from the V Semester**.
- **Minimum CGPA** of **7.50** is required at the **end of IV Semester** to register for Honors/Minor.
- For **Honors**, students can only register for courses offered by their **own department**.
- For **Minors**, students can register for programs offered by **departments other than their own**.
- A total of **18 additional credits** must be earned, consisting of **6 courses** (or **5 courses + 1 mini project** worth 3 credits).
- Students must complete all courses for Honors/Minor **by the end of VIII Semester**.
- Enrollment in any **Minor course is capped at 30 students**, and selection is **based on CGPA**.
- If a student's CGPA **falls below 7.50**, they will not be allowed to continue in the Honors/Minor program. They may resume if their CGPA later improves to **7.50 or above**.
- Students should be prepared for **more than one exam in a day** if needed.

Degree Award:

- After successful completion of the **Honors program**, the degree will be **B.Tech in [Discipline] with Honors**.
- After successful completion of the **Minor program**, the degree will be **B.Tech in [Discipline] with Minor Specialization in [Minor Field]**.

MINOR SPECIALIZATION IN ELECTRONICS AND COMMUNICATION ENGINEERING

Students have to complete any 6 of the following courses:

- Analog Communication (Semester V)
- Digital Logic Design (Semester V) — 3 credits, 3-0-0
- Signals and Systems (Semester VI) — 3 credits, 3-0-0
- Electronic Devices and Circuits (Semester VI) — 3 credits, 3-0-0
- Linear Integrated Circuits (Semester VII*) — 3 credits, 3-0-0
- Wireless and 5G Communication (Semester VII*) — 3 credits, 3-0-0
- Digital Communication Systems (Semester VIII*) — 3 credits, 3-0-0
- Embedded Systems (Semester VIII*) — 3 credits, 3-0-0

(*Courses with asterisk can be taken in either VII or VIII semester considering provision for one semester industrial internship.)

HONORS OFFERED BY ECE DEPARTMENT

Each Honors track requires 6 courses (or 5 + 1 mini project). Some courses can be taken in either VII or VIII semester depending on internship scheduling.

HONORS IN MACHINE LEARNING AND SIGNAL PROCESSING

Courses offered:

- Modeling, Optimization and Transforms (Semester V) — 3 credits, 3-0-0
- Multirate Signal Processing (Semester V) — 3 credits, 3-0-0
- Medical Engineering and Systems (Semester VI) — 3 credits, 3-0-0
- Computer Vision (Semester VI) — 3 credits, 3-0-0
- Reduced Order Modeling, Optimization and Machine Intelligence (Semester VII*) — 3 credits, 3-0-0
- VLSI Signal Processing Architecture (Semester VII*) — 3 credits, 3-0-0
- Mini Project on Machine Learning and Signal Processing (Semester VII*) — 3 credits, 0-0-6
- Adaptive Signal Processing (Semester VIII*) — 3 credits, 3-0-0
- Advanced Digital Signal and Image Processing (Semester VIII*) — 3 credits, 3-0-0
- Pattern Recognition and Machine Learning (Semester VIII*) — 3 credits, 3-0-0
- Mini Project on Machine Learning and Signal Processing (Semester VIII*) — 3 credits, 0-0-6

HONORS IN VLSI DESIGN

Courses offered:

- CAD Algorithms for VLSI Physical Design (Semester V) — 3 credits, 3-0-0
- CAD Algorithms for Synthesis of VLSI Systems (Semester V) — 3 credits, 3-0-0
- Digital System Design & FPGA (Semester VI) — 3 credits, 3-0-0
- Formal Verification of Digital Hardware & Embedded Software (Semester VI) — 3 credits, 3-0-0
- Micro & Nano-electro-mechanical Systems (MEMS & NEMS) (Semester VII*) — 3 credits, 3-0-0

- Mixed Signal IC Design (Semester VII*) — 3 credits, 3-0-0
- Nanotechnology & Emerging Applications (Semester VII*) — 3 credits, 3-0-0
- System Level Design & Modelling (Semester VIII*) — 3 credits, 3-0-0
- VLSI Signal Processing Architectures (Semester VIII*) — 3 credits, 3-0-0
- VLSI Technology (Semester VIII*) — 3 credits, 3-0-0
- Quantum Computing (Semester VIII*) — 3 credits, 3-0-0
- Mini Project on VLSI Design (Semester VIII*) — 3 credits, 0-0-6

HONORS IN EMBEDDED & INTELLIGENT SYSTEMS

Courses offered:

- Advanced Embedded Software Design (Semester V) — 3 credits, 3-0-0
- Advanced Microcomputer Systems & Interfacing (Semester V) — 3 credits, 3-0-0
- CAD Algorithms for Synthesis of VLSI Systems (Semester VI) — 3 credits, 3-0-0
- Computer Vision (Semester VI) — 3 credits, 3-0-0
- Formal Verification of Digital Hardware & Embedded Software (Semester VII*) — 3 credits, 3-0-0
- Pattern Analysis & Machine Intelligence (Semester VII*) — 3 credits, 3-0-0
- Reduced Order Modeling, Optimization & Machine Intelligence (Semester VII*) — 3 credits, 3-0-0
- Embedded SoC Design (Semester VIII*) — 3 credits, 3-0-0
- Quantum Computing (Semester VIII*) — 3 credits, 3-0-0
- Internet of Things & IoT (Semester VIII*) — 3 credits, 3-0-0
- Mini Project on Embedded Systems (Semester VIII*) — 3 credits, 0-0-6

HONORS IN ADVANCED COMMUNICATION ENGINEERING

Courses offered:

- Mathematical Modeling and Simulation for Communication Engineering Systems (Semester V) — 3 credits, 3-0-0
- Advanced Digital Communication Systems (Semester V) — 3 credits, 3-0-0
- Advanced Antenna Engineering (Semester VI) — 3 credits, 3-0-0
- Advanced Mobile and Wireless Networking (Semester VI) — 3 credits, 3-0-0
- Advanced Microwave Engineering (Semester VII*) — 3 credits, 3-0-0

- Advanced Optical Communication Systems (Semester VII*) — 3 credits, 3-0-0
- Advanced Error Control Codes (Semester VIII*) — 3 credits, 3-0-0
- Computational Electromagnetics (Semester VIII*) — 3 credits, 3-0-0
- Mini Project on Communication Engineering (Semester VIII*) — 3 credits, 0-0-6

EXIT OPTIONS

1. Diploma Certificate:

- Eligible after completing all courses from I to IV semesters, or
- If the student has earned at least **100 credits** through graded courses.

2. B.Sc. (Engineering) Degree:

- Eligible after completing all courses from I to VI semesters, or
- If the student has earned at least **142 credits** through graded courses.

3. B.Tech. Degree:

- Awarded after successful completion of **all courses from I to VIII semesters**.

Duration Limits:

- Maximum time to complete a UG program without exit option: **6 years (12 semesters)** excluding withdrawals.
- With exit option exercised: **8 years (16 semesters)** maximum from initial registration.