VIT®

Vellore Institute of Technology

(Deemed to be University under section 3 of UGC Act, 1956)

SCHOOL OF ELECTRONICS ENGINEERING

B. Tech in Electronics Engineering (VLSI Design and Technology)

Curriculum

(***2025-26*** *admitted students*)

VISION STATEMENT OF VELLORE INSTITUTE OF TECHNOLOGY

- Transforming life through excellence in education and research.

MISSION STATEMENT OF VELLORE INSTITUTE OF TECHNOLOGY

- **World class Education**: Excellence in education, grounded in ethics and critical thinking, for improvement of life.
- **Cutting edge Research**: An innovation ecosystem to extend knowledge and solve critical problems.
- **Impactful People**: Happy, accountable, caring and effective workforce and students.
- **Rewarding Co-creations**: Active collaboration with national & international industries & universities for productivity and economic development.
- **Service to Society**: Service to the region and world through knowledge and compassion.

VISION STATEMENT OF THE SCHOOL OF ELECTRONICS ENGINEERING

- To be a leader in imparting in-depth and futuristic knowledge of electronics engineering and allied domains that cater to the needs of industry, research, and society.

MISSION STATEMENT OF THE SCHOOL OF ELECTRONICS ENGINEERING

- To create and maintain an environment of excellence in teaching, learning and applied research in the fields of electronics, communication engineering and allied disciplines.
- To collaborate with industries and universities in associated disciplines to pioneer in innovations and technology transfer.
- To equip students with the necessary knowledge and research skills enabling them to be lifelong learners in solving real-life problems, thereby improving the quality of human life and values.

B. Tech in Electronics Engineering (VLSI Design and Technology)

PROGRAMME EDUCATIONAL OBJECTIVES (PEOs)

The **Program Educational Objectives (PEOs)** of B. Tech in Electronics Engineering (VLSI Design and Technology) program are as follows:

PEO1: Graduates will have a good knowledge on the fundamentals of mathematics, science, and electronics enabling them to analyse, design and test integrated circuits and systems.

PEO2: Graduates will enhance their capability to expand horizons beyond engineering for academia, research, innovation and entrepreneurship.

PEO3: Graduates will demonstrate their professional and ethical responsibilities with team spirit and engage in life-long learning.

B. Tech in Electronics Engineering (VLSI Design and Technology)

PROGRAMME SPECIFIC OUTCOMES (PSOs)

Upon completion of the B.Tech in Electronics Engineering (VLSI Design and Technology), the graduates will be able to:

PSO1: Develop electronic circuits and systems with electronic materials to contribute for the global semiconductor ecosystem.

PSO2: Design, implement and test analog and digital integrated circuits and systems.

PSO3: Apply and develop the state-of-the-art industry standard Electronic Design Automation for societal needs.

Bachelor of Technology in Electronics Engineering (VLSI Design and Technology)

School of Electronics Engineering

Programme Credit Structure	**Credits**
University Core Courses	60
Professional Core Courses	60
Programme Core	40
Concentration	20
Open Elective Courses	40
Total Graded Credit Requirement	160

University Core Courses **60**

		L	T	P	C
BAPHY100	Physics*				4
BACHY100	Chemistry*				4
BAMAT101	Multivariable Calculus and Differential Equations	3	0	2	4
BAMAT200	Mathematics II*				4
BAEEE101	Basic Engineering	3	0	2	4
BACSE101	Problem Solving Using Python	0	0	4	2
BACSE102	Problem Solving Using Java	0	0	4	2
BAENG101	Technical English Communication	3	0	2	4
BASTS101	Qualitative and Quantitative Skills Practice I	3	0	0	1
BASTS102	Qualitative and Quantitative Skills Practice II	3	0	0	1
BAFLC100	Foreign Language	1	0	2	2
BAHSM100	Humanities, Social Science and Management	3	0	0	3
BAHUM101	India Studies	1	0	0	1
BACHY101	Environmental Sciences	2	0	0	2
BAHUM100	Ethics and Values*				2
BAMGT101	Entrepreneurship	3	0	0	3
BAECE191	Basic Multidisciplinary Project	0	0	4	2
BAECE291	Innovative Design Project	0	0	4	2
BAECE391	Research / Design Project	0	0	6	3
BAECE491	Technical Answers for Real World Problems	1	0	4	3
BAECE399	Internship I	0	0	2	1
BAECE499	Internship II / Capstone Project	0	0	12	6
BAENG100	Effective English Communication (NCC)	0	0	4	2
BAEXC100	Extracurricular Activities (NCCM)	0	0	4	2

***-Basket Details**

BAPHY108	Semiconductor Physics	3	0	2	4
BACHY107	Applied Chemistry for Electronics Engineering	3	0	2	4
BAMAT201	Complex Variables and Linear Algebra	3	1	0	4
BAHUM103	Ethics and Values	2	0	0	2

Programme Core Courses **40**

BAECE103	Network Theory	3	1	0	4
BAEVD101	Electronic Devices	3	0	2	4
BAEVD102	Digital System Design	3	0	2	4
BAECE202	Engineering Electromagnetics	3	1	0	4
BAECE204	Microcontrollers and Embedded C Programming	3	0	2	4
BAECE205	Control Systems	3	1	0	4
BAEVD201	Electronic Circuits	3	0	2	4
BAEVD202	Computer Architecture	3	1	0	4
BAEVD203	Communication Systems	3	1	0	4
BAEVD204	Signal Processing	3	0	2	4

Concentration

VLSI Design and Technology **20**

BAEVD205	VLSI Circuit Design	3	0	2	4
BAEVD301	Verification Methodologies	3	0	2	4
BAEVD302	CMOS Analog IC Design	3	0	2	4
BAEVD303	ASIC Design	3	0	2	4
BAEVD304	VLSI Technology	3	0	2	4

Open Elective Courses **40**

Engineering | Sciences | Humanities | Social Sciences | Liberal Arts | Economics | Finance | Management

Ancillary (20 credits) - Students can opt for “Ancillary" in other disciplines by earning 20 credits from the courses listed in the Ancillary options under Open Elective. Ancillary details will be mentioned only on the transcript.

Additional Concentration (20 credits) - Students can opt for “Additional Concentrations" in their own discipline by earning 20 credits from the courses listed in the Concentration options under Open Elective. Concentration details will be mentioned only on the transcript.

Minor (additional 20 credits) - Students can opt for a "Minor Degree" in other disciplines 20 credits in addition to the minimum credit requirement of the Undergraduate Degree from the courses listed in the Minor options

Second Major (additional 40 credits) - Students can opt for a “Second Major" in other disciplines by earning 40 credits in addition to the minimum credit requirement of the Undergraduate Degree from the courses listed in the Second Major options.