Program Name : M.Tech in VLSI and Computer Engineering

About the Program:

This is an interdisciplinary graduate program that helps shaping the future leaders of VLSI industry. The program emphasizes on the interface between VLSI Design and Computer Engineering and focuses on the application of VLSI Design to Computer Systems Design and Development and also on the algorithmic approach to computer engineering as extended to the area of VLSI design. With recent and rapid upsurge in the area of hardware software codesign for the development of embedded systems, the course is designed to cater to the needs in producing engineers trained in both hardware and software areas bridging the gap between the two communities.

Objectives:

1. To develop engineers trained in both hardware and software ready to develop embedded systems including hardware-software codesign

2. To disseminate VLSI design in an approach of encompassing within its folds both the high level algorithmic details and low level circuit details

Advantages (for the student):

The student gets the advantage of being trained in software/hardware interfacing aspects along with complete knowledge of VLSI Circuits and Layouts preparing them for Industries and Academia.

Curriculum (Semester-wise):

Semester -1

Course Code	Course Name	Credits
CS 3000	Advance problem solving	4-0-4-6
MA 3201	Direct Maths and algorithms	4-2-0-6
CS 3301	Operating Systems	3-1-0-4
ECE325	Embedded Systems	3-1-0-4

Semester -2

Course Code	Course Name	Credits
ECE361	Introduction to VLSI Design	3-1-0-4
ET5650	Architectural Design with ICs	3-1-0-4
	Elective 1	3-1-0-4
	Elective 2	3-1-0-4

Semester -3

Course Code	Course Name	Credits
	Elective 3	3-1-0-4
	Elective 4	3-1-0-4

	Elective 4	3-1-0-4
	Elective 5	3-1-0-4
	Project	4 credits

Semester -4

Course Code	Course Name	Credits
	Project	12
	Elective 6	4

ELECTIVES:
Electives in VLSI Stream

1) Mobile Robotics 3-1-0-4
2) VLSI Algorithm 3-1-0-4
3) RFIC Design 3-1-0-4
4) Photonics 3-1-0-4
5) Design for Testability 3-1-0-4
6) Analog & Mixed Signal Design 3-1-0-4
7) Biomedical Embedded Systems 3-1-0-4
8) Advanced Analog VLSI Circuits & Systems 3-1-0-4
9) Computer Architecture* 3-0-1-4

Electives in Computer Engineering Stream
1) Compilers 3-1-0-4
2) Parallel Computing 3-1-0-4
3) Concurrent Data Structures 3-1-0-4
4) Advanced Compilers 3-1-0-4
5) Mobile Robotics 3-1-0-4
6) VLSI Algorithm 3-1-0-4
7) Distributed Systems 3-1-0-4
8) Principles of information security 3-1-0-4
9) Computer Architecture* 3-0-1-4

* Compulsory elective for both streams

Academic Regulations (Highlights)

Breadth/Depth Requirements:

A student should take the basic courses in both the stream areas and at least one advanced course in 2 stream areas to qualify for the Masters.

Credit Requirements:

- Minimum credits required for graduation is 68. Each semester, every student must register for at least 16 credits and at most 20 credits.
- Electives Regulations are as follows
  - A student has to take minimum of 3 Electives in the stream in which he/she wants to specialize.
  - A student has to take one elective compulsory from the other stream.
  - A student can take one elective from any of the two streams.
  - A student has to take Computer Architecture as one elective.

For example:-

If a student wants to specialize in VLSI Stream, then 6 electives should be taken as follows:

1. Three electives from VLSI Stream
2. One elective from CE stream
3. One elective can be taken from either of the VLSI or CE stream
4. One elective should be Computer Architecture course

Project Work:
A student has to do a 16 credit hour project under a faculty member in III & IV semesters. Students are expected to be here in Summer.

Academic Performance:
A student should complete the requirements with a minimum CGPA of 6.5 to receive the M.Tech. degree.

Residency Requirements:
Full-time students: Minimum of 4 semesters and maximum of 6 semesters.
Part-time students: Minimum of 4 semesters and maximum of 8 semesters.

Fees:

The student has to pay full-time post-graduate fees for the first 4 semesters of study. The fees will be pro-rated to the number of credits registered for thereafter according to the institute's policies.

Admission procedure:

Visit http://www.iiit.ac.in/admissions/pgee

Faculty:

http://www.iiit.ac.in/people/faculty

Research Centers:

http://web2py.iiit.ac.in/research_centres/default/view_area/9