

## Master of Science in Computer Engineering

### Program Information

Computer Engineering Department is one among various departments in Computing College. It was established in 1424 H. Computer engineering field is one of the most important fields. The department has graduated hundreds of students from its BS programs.

**Degree Name:** [Master of Science in Computer Engineering](#)

### Program Mission Statement

To provide quality education in different advanced Computer Engineering fields by exposing students to both theoretical and practical experiences. Preparing them to contribute significantly to the research and advancement of new and emerging technology in computing, and fostering perception and awareness of their leading role in the development of their community.

### Degree Requirement:

1. Project Track (42 credit hours)
  - Successful completion of a minimum of 36 credit hours of graduate courses.
  - Completion and successful defense of a research project of 6 credit hours.
2. Thesis Track (42 credit hours)
  - Successful completion of a minimum of 30 credit hours of graduate courses.
  - Completion and successful defense of a research project of 12 credit hours.

### Admission

FBSU invites students with a sound academic record, good personal character, strong interest to serve their communities and eagerness to serve as professionals in allied fields. Students with the most promising overall profile will be selected to join the “Master Degree Program” in Computer Engineering.

Applicants to FBSU must satisfy the following eligibility requirements:

1. A four-year Bachelor’s (B.S.) Degree in computer engineering, computer science or any relevance degree from a recognized institution with a major in the proposed field or evidence of suitable background for entering the proposed field.
2. Prospective students having with Bachelor Degree other than computer engineering and computer science may be considered for placing the application for the

admission. Admission committee will decide for the applicant's admission depending upon his suitability.

3. A Grade-Point Average (GPA) of 3.75 or higher on a scale of 5.00 or 3.0 or higher on a scale of 4.00 (i.e. 3.75/5 or 3/4).
4. In case of having 3 years and onwards of industrial experience in the computer engineering or computer science industry then 3.00 GPA may be considered after the admission committee's recommendation.
5. English language requirement (e.g. Completion of TOEFL or IELTS with a minimum score) set by the admission committee.
6. General Graduate Record Examination (GRE) score will be the advantageous at the time of admission.
7. At least three letters of recommendation from the faculty who taught the applicant undergraduate courses. [Sealed and signed]
8. Satisfactorily meeting any additional departmental or university admission requirements. Present a "No-Objection" letter from the employer, if applicable.
9. Should not have been dismissed from any academic institution.
10. Fulfill program requirements.
11. Fulfill other University requirements.

A student who satisfies the above criteria except English language requirement then English language test may be taken at FBSU.

### Program structure

The Master of Computer Engineering curriculum is a two-year program designed to grant students the Master of Science in Computer Engineering upon the successful completion of the requirements. In the first year; the student study the required core courses, then in the second year students are allowed to determine which electives they prefer along with writing project or thesis distributed in the last two terms of the program.

### Program Structure (Project Track):

----	8 Required Courses	24 cr.
----	6 Elective Courses	18 cr.
<b>Total</b>		<b>42 cr.</b>

Semester no	Semester 1	Semester 2	Semester 3	Semester 4
Core courses	4	2	1	1
Elective courses		2	3	1
Total Courses	4	4	4	2

### Required Courses:

CEN 531	Advanced Computer Networks	3 cr.
CEN 517	Selected Topics in Computer Engineering	3 cr.

CEN 543	Digital Signal Processing	3 cr.
CEN 570	Simulation and Modelling	3 cr.
CEN 576	Advanced Embedded Systems	3 cr.
CEN 580	Programmable System-on-Chip	3 cr.
CEN 598	Project I	3 cr.
CEN 599	Project II	3 cr.
<b>Total</b>		<b>24 Cr.</b>

### Elective Courses:

The student must choose only six elective courses:

CEN 523	Distributed Systems	3 cr.
CEN 532	Mobile Computing and Wireless Networks	3 cr.
CEN 533	Performance Analysis of Computer Networks	3 cr.
CEN 536	Internet Protocols and TCP/IP	3 cr.
CEN 537	LAN Protocols and Performance	3 cr.
CEN 538	Wireless LAN & MAN Networks	3 cr.
CEN 539	Network Security	3 cr.
CEN 585	Computer and network Security	3 cr.
CEN 638	Wireless LAN & MAN Networks	3 cr.

### Curriculum Study Plan Table

Year	Course Code	Course Title	Required or Elective	Credit Hours	College or Department
<b>1st Year</b>					
Semester 1	CEN 531	Advanced Computer Networks	R	3	CEN
	CEN 543	Digital Signal Processing	R	3	CEN
	CEN 576	Advanced Embedded Systems	R	3	CEN
	CEN 580	Programmable System-on-Chip	R	3	CEN
	Total			12	
<b>1st Year</b>					
Semester 2	MSC 517	Selected Topics in Computer Engineering	R	3	CEN
	CEN 570	Simulation and Modelling	R	3	CEN
		Elective course 1	E	3	CEN
		Elective course 2	E	3	CEN
	Total			12	
<b>2nd Year</b>					
Semester 1		Elective course 3	E	3	CEN
		Elective course 4	E	3	CEN
		Elective course 5	E	3	CEN
	CEN 598	Project-1	R	3	CEN
	Total			12	
<b>2nd Year</b>					
Semester 2		Elective course 6	E	3	CEN
	CEN 599	Project-2	R	3	CEN
	Total			6	

### Program Structure (Thesis track):

----	5 Required Courses	15 cr.
----	5 Elective Courses	15 cr.
CEN 600	Thesis	12 cr.
<b>Total</b>		<b>42 cr.</b>

Semester no	Semester 1	Semester 2	Semester 3	Semester 4
Core courses	4	1	0	0
Elective courses	0	3	2	0
Thesis	0	0	1	1
Total Courses	4	4	3	1

### Required Courses:

CEN 576	Advanced Embedded Systems	3 cr.
CEN 531	Advanced Computer Networks	3 cr.
CEN 543	Digital Signal Processing	3 cr.
CEN 592	Research methodology	3 cr.
CEN 570	Simulation and Modeling	3 cr.
<b>Total</b>		<b>15 Cr.</b>

### Elective Courses:

The student must choose only five elective courses:

CEN 517	Selected Topics in Computer Engineering	3 cr.
CEN 523	Distributed Systems	3 cr.
CEN 532	Mobile Computing and Wireless Networks	3 cr.
CEN 533	Performance Analysis of Computer Networks	3 cr.
CEN 536	Internet Protocols and TCP/IP	3 cr.
CEN 537	LAN Protocols and Performance	3 cr.
CEN 538	Wireless LAN & MAN Networks	3 cr.
CEN 539	Network Security	3 cr.
CEN 585	Computer and network Security	3 cr.
CEN 638	Wireless LAN & MAN Networks	3 cr.

**Curriculum Study Plan Table (Thesis track)**

<b>Year</b>	<b>Course Code</b>	<b>Course Title</b>	<b>Required or Elective</b>	<b>Credit Hours</b>	<b>College or Department</b>
<b>1st Year</b>					
<b>Semester 1</b>	CEN 531	Advanced Computer Networks	R	3	CEN
	CEN 543	Digital Signal Processing	R	3	CEN
	CEN 576	Advanced Embedded Systems	R	3	CEN
	CEN 570	Simulation and Modeling	R	3	CEN
	<b>Total</b>			<b>12</b>	
<b>1st Year</b>					
<b>Semester 2</b>					
		Elective course 1	E	3	CEN
		Elective course 2	E	3	CEN
		Elective course 3	E	3	CEN
	CEN 592	Research methodology	R	3	CEN
	<b>Total</b>			<b>12</b>	
<b>2nd Year</b>					
<b>Semester 1</b>					
		Elective course 4	E	3	CEN
		Elective course 5	E	3	CEN
		Thesis (A,B)	R	6	CEN
<b>2nd Year</b>	<b>Total</b>			<b>12</b>	
<b>Semester 2</b>					
	CEN 600	Thesis (C,D)	R	6	CEN
	<b>Total</b>			<b>42</b>	