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## Master of Science with Major in Computer Engineering

The non-thesis option for this degree requires a minimum of 30 credits. The thesis option requires a minimum of 30 credits, including 6 credits of thesis. ~~All students must take at least one course from each of the three groups listed in Option A.~~

~~With approval of the advisor, substitution can sometimes be made among similar courses. See the Department of Electrical Engineering and Computer Science [website](#) for updates.~~

### Admission Requirements

Applications for admission to the master's program are approved by the University upon the recommendation of the department. All applicants must submit with their applications the official transcripts from previous institutions attended and have official GRE scores forwarded to the University. Applications for admission are evaluated on an individual basis. As a minimum, applicants are expected to meet the following requirements. ~~Students with non-engineering bachelor's degrees, click [here](#) for additional requirements.~~

~~1. A baccalaureate degree in Engineering or a related field. (Students who do not have a computer engineering background will be expected to take additional courses; see link above); Students are expected to have a bachelor's degree in engineering or a related field. Applicants with a different background are encouraged to apply. Students are expected to have taken calculus 2 and a statistics course, to be proficient in programming, and to be knowledgeable in the topics of microprocessor systems, computer architecture or CAD-based computer design, electronics or VLSI, data structures and algorithm analysis. The admission committee will evaluate the application holistically to determine applicant suitability using several factors such as academic performance, GPA, GRE scores, background and experience. The admission committee may assign remedial courses on a case-by-case basis. In some cases, prerequisite courses may be taken after admission to the graduate program;~~

2. At least a 3.0 (of a 4.0 maximum) GPA in the last 60 credits attempted prior to graduation;

3. Submission of the Graduate Record Examination (GRE) score is required. GRE scores more than five years old are normally not acceptable. The GRE requirement is waived for any student who has a baccalaureate degree from FAU's Department of Electrical Engineering and Computer Science with a GPA of at least 3.25 (out of a possible 4.0) in the last 60 credits attempted prior to graduation;

4. International students from non-English-speaking countries must be proficient in written and spoken English as evidenced by a score of at least 500 (paper-based test) or 213 (computer-based test) or 79 (Internet-based test) on the Test of English as a Foreign Language (TOEFL) or a score of at least 6.0 on the International English Language Testing System (IELTS).

~~Applicants are expected to have taken the following prerequisite courses (or equivalents) before pursuing a master's degree. In some cases, prerequisite courses may be taken after admission to the graduate program. Equivalent FAU courses follow.~~

Introduction to Microprocessor Systems	CDA 3331C
Computer Architecture	CDA 4102 <del>or</del>
CAD-Based Computer Design	CDA 4204
Electronics 1	EEE 3300 <del>or</del>
Introduction to VLSI	CDA 4210
Data Structures and Algorithm Analysis	COP 3530
Calculus with Analytic Geometry 1	MAC 2311
Calculus with Analytic Geometry 2	MAC 2312
Stochastic Models for Computer Science	STA 4821 <del>or</del>
Stochastic Processes and Random Signals	EEE 4541

### Submission of Plan of Study

Students are required to submit a Plan of Study when they have completed between 9 and 15 credits of coursework

with a minimum cumulative GPA of 3.0. All courses must be approved by the student's advisor. A student may not register for thesis credits prior to submitting a Plan of Study.



### **Degree Requirements**

Students must satisfy all of the University graduate requirements. In addition, the following specific degree requirements apply, depending on the choice of degree programs.

#### **Master of Science with Major in Computer Engineering, Thesis Option (30 credits)**

1. Requires 6 credits of orally defended written thesis. The M.S. committee is chaired by the student's thesis advisor. The chair of the committee must be a graduate faculty member from the Department of Electrical Engineering and Computer Science.

2. Requires 24 credits of approved coursework with the following constraints:

a. ~~A minimum of 3 credits must be selected from each of the three groups listed in Option A. A minimum of 3 credits from Computer Architecture and Design (graduate course prefix CDA), a minimum of 3 credits from Software and Programming (graduate course prefix COP or CEN), and a minimum 3 credits from Systems and Applications (graduate course prefix CAP, CIS, CNT, or EEL).~~

b. A minimum of 12 credits in Computer Engineering, Computer Science and Electrical Engineering courses.

c. No more than 3 credits of directed independent study may be taken

d. No course can be counted toward the degree that is more than 10 years old at the time the degree is awarded.

e. No 4000-level course is allowed toward the degree. Courses taken to make up for the deficiencies will not be counted toward the degree.

3. At least one-half of the credits must be at the 6000 level or above.

4. Must have a GPA of 3.0 (out of 4.0) or better.

5. All courses in the degree program must be completed with a grade of "C" or better.

6. Must complete one semester of CGS 5937, Graduate Seminar (0 credits) with grade of Satisfactory ("S").

#### **Master of Science with Major in Computer Engineering, Non-Thesis Option (30 credits)**

1. Requires 30 credits of approved coursework with the following constraints:

a. ~~A minimum of 3 credits must be selected from each of the three groups listed in Option A. A minimum of 3 credits from Computer Architecture and Design (graduate course prefix CDA), a minimum of 3 credits from Software and Programming (graduate course prefix COP or CEN), and a minimum 3 credits from Systems and Applications (graduate course prefix CAP, CIS, CNT, or EEL).~~

b. A minimum of 18 credits in Computer Engineering, Computer Science and Electrical Engineering courses.

c. No more than 3 credits of directed independent study may be taken.

d. No course can be counted toward the degree that is more than 10 years old at the time the degree is awarded.

e. No 4000-level course is allowed toward the degree. Courses taken to make up for the deficiencies will not be counted toward the degree.

2. At least one-half of the credits must be at the 6000 level or above.
3. Must have a GPA of 3.0 (out of 4.0) or better.
4. All courses in the degree program must be completed with a grade of "C" or better.
5. Must complete one semester of CGS 5937, Graduate Seminar (0 credits) with grade of Satisfactory ("S").

### Transfer Credits

Any transfer credits toward the requirements for a master's degree in Computer Engineering must be approved by the department, the College and the University. The transfer credits must correspond to equivalent requirements and performance levels expected for the degree. Normally, no more than 6 credits of coursework (that have not been applied to a degree) can be transferred from another institution.

### Option-A

<b>Group 1: Computer Architecture and Design</b>	
Advanced Computer Architecture	CDA-6155
Embedded System Design-1	CDA-6316
Multiprocessor Architecture	CDA-6132
Structured VLSI Design	CDA-6214
Embedded Networked Sensor Systems	CNT-6108

<b>Group 2: Software Development</b>	
Multimedia Programming	CAP-6018
Software Engineering	CEN-5035
Software Maintenance and Evolution	CEN-6027
Software Requirements Engineering	CEN-6075
Software Testing	CEN-6076
Software Architecture and Patterns	CEN-6085
Object-Oriented Software Design	GOP-5339

<b>Group 3: Computer Systems</b>	
Computer Performance Modeling	CEN-6405
Computer Data Security	CIS-6370
Theory and Implementation of Database Systems	GOP-6731
Mobile Computing	CNT-6517
Data Mining and Machine Learning	CAP-6673
Multimedia Systems	CAP-6010
Evaluation of Parallel and Distributed Systems	CDA-6122
Introduction to Neural Networks	CAP-5615
Wireless Networks	EEL-6591

Advanced Data Mining and Machine Learning	CAP 6778
Video Communication	CNT 6885
Foundations of Vision	CAP 6411
Advanced Computer Networking	CNT 6516
Vehicular Networks	CNT 6528

Appropriate course substitutions can be made with approval of the student's graduate program advisor.