



**NEW/CHANGE PROGRAM REQUEST**  
**Graduate Programs**

UGPC Approval \_\_\_\_\_  
UFS Approval \_\_\_\_\_  
Banner Posted \_\_\_\_\_  
Catalog \_\_\_\_\_

**FLORIDA  
ATLANTIC  
UNIVERSITY**

**Department** CEECS  
**College** Engineering and Computer Science

**Program Name**

PhD in Computer Science, PhD in Computer Engineering, and PhD in Electrical Engineering

**New Program**  
 **Change Program**

**Effective Date**  
(TERM & YEAR)  
Spring 2020

**Please explain the requested change(s) and offer rationale below or on an attachment**

This proposal requests changing the minimum number of credits of the PhD program from 84 to 72. Students entering the PhD program with a master's degree (which counts as 30 credits) will be required to take a minimum of 18 credits of graduate course work (reduced from 21 credits) and a minimum of 24 dissertation credits (reduced from 33 credits). This reduction in the number of credits will not impact the quality of the PhD program, while reducing the student cost.

**Faculty Contact/Email/Phone**

Dr. Waseem Asghar, wasghar@fau.edu, 561.297.3728

**Consult and list departments that may be affected by the change(s) and attach documentation**

None

**Approved by**

Department Chair Hanqi Zhuang  
College Curriculum Chair [Signature]  
College Dean [Signature]  
UGPC Chair \_\_\_\_\_  
UGC Chair \_\_\_\_\_  
Graduate College Dean \_\_\_\_\_  
UFS President \_\_\_\_\_  
Provost \_\_\_\_\_

**Date**

\_\_\_\_\_  
10/1/2019  
10/1/2019  
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Email this form and attachments to [UGPC@fau.edu](mailto:UGPC@fau.edu) one week before the UGPC meeting so that materials may be viewed on the UGPC website prior to the meeting.

# Computer Science and Computer Engineering

## DOCTORAL PROGRAMS

### Doctor of Philosophy with Major in Computer Engineering or in Computer Science

#### Degree Requirements

A minimum of ~~84~~ 72 graduate credits (~~including a minimum of 33 dissertation credits~~) is required beyond a bachelor's degree. ~~No 4000-level courses may be counted in the Ph.D. degree.~~ A master's degree in a related field is considered equivalent to 30 credits. A minimum of ~~24~~ 18 credits of coursework is required beyond a master's degree. All courses must be approved by the student's advisor. Students lacking proper background may have to take additional courses to make up for the deficiencies. In addition to meeting the course requirement, a doctoral student must pass the Qualifying Examination, complete the dissertation under the supervision of the student's advisor and dissertation committee and pass the oral dissertation examination. Also a written dissertation proposal must be accepted by the dissertation committee at least six months prior to the oral dissertation examination. A doctoral candidate is expected to have at least one research paper published or accepted for publication in a fully refereed conference or journal prior to graduation.

The following rules apply to the courses taken (beyond the master's degree):

1. Of the ~~24~~ 18-credit minimum of coursework, a minimum of ~~15~~ 12 credits must be in Computer Science and Engineering courses (excluding directed independent study credits) and a minimum of ~~15~~ 9 credits of 6000-level courses must be completed.
2. No more than 3 credits of directed independent study may be used to satisfy the minimum of ~~24~~ 18 credits. In that case, the subject matter may not overlap the student's dissertation.
3. A course that is more than 10 years old at the time the degree is awarded cannot be counted toward the degree. This rule does not apply to the courses transferred from the master's degree.
4. No 4000-level course may be counted toward the degree. Courses taken to make up for deficiencies will not be counted toward the degree.
5. Students must register for a minimum of ~~33~~ 24 credits of dissertation.
6. Students must have a GPA of 3.0 (out of 4.0 maximum) or better.
7. All courses in the degree programs must be completed with a grade of "C" or better.
8. Must complete two semesters of CGS 5937, Graduate Seminar (0 credits) with grades of Satisfactory ("S").

<b>Graduate Coursework — <del>24</del> <u>18</u> credits</b> (for students entering with a master's degree)	
Minimum of <del>15</del> <u>12</u> credits from Computer Science and Computer Engineering courses at the 5000, 6000 or 7000 levels ( <u>excluding DIS</u> ). Minimum of <del>15</del> <u>9</u> credits at the 6000 level. Maximum of 3 credits of Directed Independent Study.	
Directed Independent Study-Computer Science	COT 6900 or
Directed Independent Study-Computer Engineering	COT 6905
<b>Dissertation — 24 credits</b>	
Dissertation — Computer Science (taken over multiple terms)	COT 7980 or
Dissertation — Computer Engineering (taken over multiple terms)	ECM 7980

<del>Graduate Coursework – 54 credits (for s Students entering with a bachelor's degree →) see B.S. to Ph.D. programs earlier in the College of Engineering and Computer Science section of the catalog</del>	
<del>Minimum of 45 credits from Computer Science and Computer Engineering courses at the 5000, 6000 or 7000 levels. Minimum of 33 credits at the 6000 level. Maximum of 9 credits of Directed Independent Study.</del>	
<del>Directed Independent Study Computer Science</del>	<del>COT 6900 or</del>
<del>Directed Independent Study Computer Engineering</del>	<del>COT 6905</del>
<del>Dissertation – 33 credits</del>	
<del>Dissertation Computer Engineering (taken over multiple terms)</del>	<del>ECM 7980</del>

## Electrical Engineering

### DOCTORAL PROGRAM

#### Doctor of Philosophy with Major in Electrical Engineering

##### Degree Requirements

~~1. A minimum total of 84.72 credits, including 33 dissertation credits, is required beyond the bachelor's degree level. A master's degree in a related field is considered equivalent to 30 credits. Students must take a minimum of 18 graduate credits of coursework beyond the master's degree and a minimum of 24 credits of dissertation. These must include at least 21 credits of coursework beyond the master's degree. At least 12 of these credits should be taken in the Electrical Engineering program at FAU.~~

~~2. Of the 18-credit minimum of coursework, a minimum of 12 credits must be Electrical Engineering courses (excluding directed independent study credits) and a minimum of 9 credits of 6000-level courses must be completed.~~

~~3. No more than 3 credits of directed independent study may be used to satisfy the minimum of 18 credits. In that case, the subject matter may not overlap the student's dissertation.~~

~~4.2. No 4000-level course may be counted toward the degree. Courses taken to make up for deficiencies will not be counted toward the degree.~~

~~3. At least 21 credits above the master's program requirement should be at the 5000 and 6000 levels.~~

~~4.5. Specific Focus Area coursework will be required. At least 12 of these credits should be taken in the Electrical Engineering program at FAU.~~

~~5.6. At least 6 credits in courses with math prefix are required as part of coursework beyond the bachelor's degree. These may include EEL 5613, Modern Control; EEE 5502, Digital Processing of Signals; EEL 6482, Electromagnetic Theory 1; EOC 5172, Mathematical Methods in Ocean Engineering 1.~~

~~6.7. Must complete two semesters of CGS 5937, Graduate Seminar (0 credits) with grades of Satisfactory ("S").~~

~~7.8. A written dissertation proposal must be accepted by the dissertation committee, at least six months prior to defending the dissertation.~~

~~8.9. When the candidate submits the Application for Graduation, he/she must indicate the following as a check list: (a) Date of QE taken and candidacy filed; (b) Date of dissertation proposal presented and approved by the Ph.D. Committee and (c) Status of the Plan of Study.~~

~~9.10. Draft copy of the dissertation must be submitted for review by the Ph.D. Committee at least 15 days prior to the date of defending the dissertation. And the dissertation must be completed and orally defended.~~

It is expected that all doctoral candidates have at least one research paper published or accepted for publication in a fully refereed conference or journal prior to graduation. A patent relevant to the Ph.D. research topic/dissertation as approved by the U.S. Patent Office with an assigned number can substitute for the journal or conference publication requirement.

**Transfer Credits**

Any transfer credit toward requirements for the Ph.D. program must be approved by the department and the University. A maximum of 30 credits (which may include credits taken toward the master's degree with no more than 6 credits for the M.S. thesis) can be transferred into the student's program of study.

**Residency Requirements**

A student must spend at least two consecutive semesters as a full-time student at Florida Atlantic University registered for a minimum of 9 credits each semester.

**Time Limitation**

A Ph.D. student who enters the program with a master's degree has no more than 10 years to complete all requirements for the Ph.D. degree.

**Dissertation Committee**

Students are encouraged to interact with faculty members of the department to select a dissertation advisor and research area/topic for their dissertation. After a student has passed both parts of the qualifying exam, a dissertation committee shall be formed to supervise the student's research work. The committee should consist of at least four faculty members who are familiar with the research area, three of whom are regular faculty members of the department. At least one member of the committee must be from outside the department (could be from another institution or industry), and this member should have an academic or professional level compatible with the rest of the committee. The committee is chaired by the student's dissertation advisor. The chair of the committee must be a faculty member from the CEECS department. Students are expected to work in close cooperation with their dissertation committee and keep the committee members informed about their progress on a regular basis. The dissertation committee should meet with the student at least once a semester to review the progress of the research work.

**Dissertation and Oral Defense**

The dissertation must be written in the format specified by the Graduate College. A copy of the dissertation must be submitted to the Graduate College for approval of the dissertation format. Dissertations must be defended orally. A dissertation should be submitted to the members of the dissertation committee for their review at least two weeks before the oral defense. After an oral defense, the members of the committee vote on acceptance or rejection of the dissertation. The committee may also suggest that the student do additional work to make the dissertation acceptable. The decision of the dissertation committee is reported in the form of a satisfactory/unsatisfactory grade for dissertation credits.

<b>Graduate Coursework -- 24.18 credits</b> (for students entering with a master's degree)	
Select 24.18 credits at the 5000, 6000 or 7000 levels. Minimum of 12 credits in Electrical Engineering (excluding DIS). Maximum of 3 credits of Directed Independent Study.	
Directed Independent Study	EEL 6905
<b>Dissertation -- 33.24 credits</b>	
Dissertation (taken over multiple terms)	EEL 7980
<b>Graduate Coursework -- 42 credits</b> (for students entering with a bachelor's degree) Students entering with a bachelor's degree -- see B.S. to Ph.D. programs earlier in the College of Engineering and Computer Science section of the catalog	
Select 42 credits at the 5000, 6000 or 7000 levels. Minimum of 28 credits at the 6000 level. Minimum of 28 credits in Electrical Engineering. Maximum of 6 credits of Directed Independent Study.	
Directed Independent Study	EEL 6905
<b>Math Requirement - 3.6 credits</b>	

<i>Select one course from the following</i>		
Digital Processing of Signals	EEE 5502	3
Modern Control	EEL 5613	3
Control Systems 2	EEL 5654	3
Electromagnetic Theory 1	EEL 6482	3
Detection Theory	EEL 6537	3
Special Topics in Electrical Engineering	EEL 6935	1-4
Mathematical Methods in Ocean Engineering 1	EOC 5172	3
Queueing Theory	MAP 6264	3
<b>Dissertation—33 credits</b>	-	-
<b>Dissertation (taken over multiple terms)</b>	<b>EEL 7080</b>	

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