Bachelor of Science with Major in Computer Science (Changes effective fall 2016.)

Admission Requirements
All students must meet the minimum admission requirements of the University. Please refer to the Admissions section of this catalog.

All students must meet the preprofessional requirements, MAC 1147 and COP 2220, with grades of "C" or higher in order to be accepted into the Computer Science program. MAC 1114 and MAC 1140 may be substituted for MAC 1147.

Prerequisite Coursework for Transfer Students
Students transferring to Florida Atlantic University must complete both lower-division requirements (including the requirements of the Intellectual Foundations Program) and requirements for the college and major. Lower-division requirements may be completed through the A.A. degree from any Florida public college, university or community college or through equivalent coursework at another regionally accredited institution. Before transferring and to ensure timely progress toward the baccalaureate degree, students must also complete the prerequisite courses for their major as outlined in the *Transfer Student Manual*.

All courses not listed with the Florida Statewide Course Numbering System that will be used to satisfy requirements will be evaluated individually on the basis of content and will require a catalog course description and a copy of the syllabus for assessment.

Degree Requirements
The minimum number of credits required for the Bachelor of Science degree with major in Computer Science is 120 credits. This degree will be awarded to students who satisfy all admission and degree requirements for the department. Items below are referenced in the table following the list.

(1)~~2. Meet all University general requirements for the Bachelor of Science degree. This includes the completion of the Foreign Language Graduation Requirement, which usually requires students to take two semesters of a college-level foreign language or equivalent;~~ Students entering FAU with fewer than 30 credits must satisfy the course requirements specified in the catalog section, Degree Requirements. Students entering FAU with more than 30 credits (transfer students) must see the undergraduate advisor for an evaluation of courses taken at another school. The general education requirements are normally satisfied if a student has an Associate of Arts (A.A.) degree from a Florida community or state college.

(2)~~3.~~ Complete all the computer science core courses ~~described below with at least a 2.5 GPA and earn~~ with a grade of "C" or better. ~~in COP 3014 and COP 3530.~~

(3)~~4.~~ Complete physics, calculus I and II, and discrete mathematics ~~electives~~ with a grade of "C" or better in each of the courses.

~~5. Earn a grade of "C" or better in Introduction to Programming in C (COP 2220), Foundations of Computer Science (COP 3014) and Data Structures (COP 3530);~~

(4) See adviser for approved courses.

~~5. 6. Complete the requirements for Computer Science electives and other electives as described below.~~

Pass/Fail Grades: Note that while the University may offer some courses with the pass/fail option, Computer Science students may not use this option.

Specific Degree Requirements

General Education (1)	
Foundations of Written Communication	6
Foundations of Society and Human Behavior	6
Foundations of Global Citizenship	6
Foundations of Humanities	6
Subtotal	**24**

Mathematics and Science (1) (Lower Division)		
Calculus with Analytic Geometry 1 (3)	MAC 2311	4
Calculus with Analytic Geometry 2 (3)	MAC 2312	4
General Physics for Engineers 1 (3)	PHY 2048	3
General Physics Lab 1 (3)	PHY 2048L	1
Physics for Engineers 2 (3)	PHY 2044	3
General Physics Lab 2 (3)	PHY 2049L	1
Discrete Mathematics (3)	MAD 2104	3
Science (4) ~~#~~		~~3~~ 4
~~Science or Elective #~~		~~3~~
Additional Math Elective (3)		3 ~~4~~
Subtotal		**26 ~~28~~ ~~29~~**

~~Other Lower Division Requirements (2)~~		
~~Foreign Language 1~~		~~4~~
~~Foreign Language 2~~		~~4~~
~~Public Speaking~~	~~SPC 2608~~	~~3~~
~~Subtotal~~		**~~11~~**

~~(1)2. Meet all University general requirements for the Bachelor of Science degree. This includes the completion of the Foreign Language Graduation Requirement, which usually requires students to take two semesters of a college-level foreign language or equivalent;~~

~~(2)3. Complete all the computer science core courses described below with at least a 2.5 GPA and earn a grade of "C" or better in each of the courses in COP 3014 and COP 3530. Either Physics 1, Physics 2, or the math elective must be a 4 credit lecture.~~

~~(3)4. Complete physics, calculus I and II, and discrete mathematics electives with a grade of "C" or better in each of the courses.~~

~~5. Earn a grade of "C" or better in Introduction to Programming in C (COP 2220), Foundations of Computer Science (COP 3014) and Data Structures (COP 3530);~~

~~(4) In general, a technical elective is defined as an upper-division course with significant technical disciplinary content. A maximum of 3 credits in Cooperative Education (EEL 4949) can be used as a technical elective.~~

~~(5) See adviser for approved courses.~~

~~**Pass/Fail Grades:** Note that while the University may offer some courses with the pass/fail option, Computer Science students may not use this option.~~

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Core Courses
All students must take the following core courses, which total ~~40~~ 43 credits:

Computer Science Core ~~(5)~~ (2)		
Introduction to Programming in C	COP 2220	3
Foundations of Computer Science	COP 3014	3
~~Foundations of Computer Science Lab~~	~~COP 3014L~~	~~1~~
Introduction to Logic Design	CDA 3201C	4
Data Structures and Algorithm Analysis~~*~~	COP 3530	3
Introduction to Internet Computing	COP 3813	3
Computer Operating Systems	COP 4610	3
Stochastic Models for Computer Science	STA 4821	3
Introduction to Database Structures	COP 3540	3
Introduction to Microprocessor Systems	CDA 3331C	~~4~~ 3
Formal Languages and Automata Theory	COT 4420	3
Design and Analysis of Algorithms	COT 4400	3
Principles of Software Engineering	CEN 4010	3
Engineering Design 1	EGN 4950C	~~2~~ 3
Engineering Design 2	EGN 4952C	3
~~Senior Seminar~~	~~COT 4935~~	~~1~~
Subtotal		**~~43~~ ~~40~~**

~~* A grade of "C" or better is required.~~

Computer Science Electives ~~(6)~~ (4)	21 ~~19~~ ~~9~~
Free Electives ~~(6)~~ ~~(7)~~ (4)	6 ~~8~~
Total	**120 ~~121~~**

Computer Science Electives (Changes effective fall 2016.)
To satisfy the computer science (CS) elective requirement, all students must take 21 credits chosen from Computer Science and Computer Engineering upper-division courses that are not in the above CS core (students can take EGN 4040 and ISM 4133 for CS elective credit). In order to provide advanced content, as well as programming experience in a language other than C/C++, one of these elective courses must be: COP 4020, COP 4593, COP 4703 or CAP 4630. Students seeking a specialty may consider concentrating on one of the following groups of courses; additional courses from these groups may be taken as other electives (note that 5000-level or 6000-level CS courses can be taken as CS electives).

Internet Technology		
Introduction to Data Communications	CNT 4104	3
Introduction to Data and Network Security	CNT 4403	3
Component Program with .NET	COP 4593	3
Applied Database Systems	COP 4703	3
Web Services	COP 4814	3

Applications		
Introduction to Artificial Intelligence	CAP 4630	3
Computer Animation	CAP 4034	3
~~Computer Graphics Methods~~ (Course no longer offered effective summer 2016.)	~~CAP 4730~~	~~3~~

Software Engineering		
Software Engineering Project	CEN 4910	3
Object-Oriented Design and Programming	COP 4331	3

Advanced Systems Analysis and Design	ISM 4133	3

System Performance		
Introduction to Queueing Theory	MAP 4260	3
Modeling and Simulation of Systems	CAP 4833	3
Introduction to Computer Systems Performance Evaluation	CEN 4400	3

System Programming		
Programming Languages	COP 4020	3
UNIX System Programming	COP 4604	3

Computer Architecture		
Structured Computer Architecture	CDA 4102	3
Introduction to VLSI	CDA 4210	3
CAD-Based Computer Design	CDA 4204	3

The following courses may be taken as computer science electives. The group classification will be designated when offered:

Topics in Computer Science	COT 4930	1-3
Topics in Computer Science	COT 5930	1-3
Directed Independent Study	COT 4900	1-3

Special permission is required to count more than 3 credits of directed independent study. Up to 3 computer science elective credits can be earned by taking Cooperative Education - Computer Science (COT 3949), with each one-semester period of COT 3949 contributing 1 credit.

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~~Other~~ Additional Math Elective (Changes effective fall 2016.)
One of the following mathematics courses must be taken and must be passed with a grade of "C" or better:

Calculus with Analytic Geometry 3	MAC 2313	4
Numerical Methods	MAD 3400	3
Differential Equations 1	MAP 2302	3 **or**
Engineering Math 1	MAP 3305	3
Introduction to Queueing Theory*	MAP 4260	3
Matrix Theory	MAS 2103	3
Modern Algebra	MAS 4301	3

* Cannot be used as a Computer Science elective if used to satisfy the mathematics requirement.

~~Three of the remaining credits must be used to take SPC 2601, Public Speaking.~~ Elective courses cannot include COP 2220, ~~COP 2224,~~ COP 2510 or STA 4032. Also, students must make sure that they have the necessary minimum of 120 credits for graduation.

~~Sample Four-Year Program of Study for Bachelor of Science in Computer Science~~

First Year, Fall (13 credits)		
College Writing 1*	ENC 1101	3
Calculus with Analytical Geometry 1	MAC 2311	4
Foundations of Society and Human Behavior		3
Foundations of Global Citizenship		3

First Year, Spring (13 credits)		
Calculus with Analytical Geometry 2	MAC 2312	4
Foundations of Society and Human Behavior		3
Foundations of Humanities		3
Foundations of Written Expression		3

Second Year, Fall (14 credits)		
General Physics for Engineers 1	PHY 2048	3
General Physics Lab 1	PHY 2048L	1
Foreign Language 1		4
Science #		3
Foundations of Humanities		3

Second Year, Spring (14 credits)		
Physics for Engineers 2	PHY 2044	3
General Physics Lab 2	PHY 2049L	1
Foreign Language 2		4
Introduction to Programming in C	COP 2220	3
Public Speaking	SPC 2608	3

Third Year, Fall (14 credits)		
Foundations of Computer Science	COP 3014	3
Foundations/Computer Science Lab	COP 3014L	1
Introduction to Logic Design	CDA 3201C	4
Discrete Mathematics	MAD 2104	3
Science or Elective #		3

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Third Year, Spring (16 credits)		
Data Structures and Algorithm Analysis	COP 3530	3
Introduction to Internet Computing	COP 3813	3
Stochastic Models/Comp. Science	STA 4821	3
Introduction to Microprocessor Systems	CDA 3331C	4
Free Elective (one course)		3

Third Year, Summer (9 credits)		
CS Elective @		3
Formal Languages and Automata Theory	COT 4420	3
Foundations of Global Citizenship		3

Fourth Year, Fall (15 credits)

Principles of Software Engineering	CEN 4010	3
Introduction to Database Structures	COP 3540	3
CS Elective @		3
Free Elective (one course)		3
Additional Math Elective		3-4

Fourth Year, Spring (12 credits)		
Design and Analysis of Algorithms	COT 4400	3
Computer Operating Systems	COP 4610	3
Computer Science Elective @		3
Senior Seminar	COT 4935	1
Free Elective		2
Total		**120**

* Must be passed with a grade of "C" or better.

Science: Students must take one or two additional science courses that are designed for science majors to bring physics and science to at least 12 credits total. Consult an advisor to check a specific course. These must be passed with a grade of "C" or better.

@ Computer Science Elective: Consult an advisor for a list of appropriate courses.

Sample Four-Year Program of Study

For the sample four-year program of study for the Bachelor of Science in Computer Engineering, refer to the Curriculum Sheets and Flight Plans by major.

Second Bachelor's Degree

Individuals seeking a second bachelor's degree must satisfy all admission and degree requirements of a first bachelor's degree, except for free electives, general education and foreign language. The minimum number of FAU credits needed to earn a second bachelor's degree in Computer Science is 30 credits at the 3000 level or higher, but for most students the number of credits required to meet the degree requirements will be considerably larger.

Cooperative Education

Students in the Computer Science and Computer Engineering programs are encouraged to consider gaining practical experience through participation in Cooperative Education. Three, one-semester periods of Cooperative Education (COT 3949) may be substituted for one program technical elective. For information, contact the FAU Career Center, 561-297-3533 or visit its website at www.fau.edu/career/

Directed Independent Study

Students in the Computer Science and Computer Engineering programs must earn a minimum of 9 credits in core courses for their major before being eligible to register for directed independent study. Students are allowed to take no more than the equivalent of one course (3 credits) to satisfy degree requirements. If a student needs more than 3 credits of independent study, written approval must be obtained from the chair of the department prior to enrolling in the additional credits.

Undergraduate Transfer Students

Prior to the academic advising session, course descriptions and syllabi need to be submitted to the Undergraduate Academic Advisor for evaluation of possible transfer credits. Course descriptions can be provided by submitting an undergraduate catalog from the post-secondary institution attended, submitting course descriptions from an online catalog (requires that the post-secondary institution web address be at the bottom of each page) or by providing course syllabi. The Academic Advisor evaluation needs to be performed even if a student has an evaluation by an approved agency.

Computer Science Minor

The minor in Computer Science is available to all FAU undergraduates who are not majoring in Computer Science or Computer Engineering. This minor can be attained ~~earned~~ by successfully completing the following requirements and earning a grade of "C" or better in ~~Computer Science~~ the courses listed below. ~~with a minimum 2.5 grade point average:~~

Calculus with Analytical Geometry **or**	MAC 2311	4 **or**
Methods of Calculus	MAC 2233	3
Discrete Mathematics	MAD 2104	3
Introduction to Programming in C	COP 2220	3
Foundations of Computer Science	COP 3014	3
~~Foundations/Computer Science Lab~~	~~COP 3014L~~	~~1~~
Data Structures and Algorithm Analysis	COP 3530	3
Introduction to Internet Computing	COP 3813	3
~~Additional computer science and engineering upper division courses~~ Computer Science electives or 4000 level Computer Science core courses not including STA 4821		~~9~~ 6
Total*		**~~25-26~~ 24 - 25**

* At least 75 percent of credits earned must be from FAU.

Acknowledgment of a minor in Computer Science is official upon successful completion of an FAU degree program.

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Bachelor of Science in Computer Engineering

Admission Requirements
All students must meet the minimum admission requirements of the University. Please refer to the Admissions section of this catalog.

All students must meet the pre-professional requirements listed above in order to be accepted into the Computer Engineering program.

Prerequisite Coursework for Transfer Students
Students transferring to Florida Atlantic University must complete both lower-division requirements (including the requirements of the Intellectual Foundations Program) and requirements for the college and major. Lower-division requirements may be completed through the A.A. degree from any Florida public college, university or community college or through equivalent coursework at another regionally accredited institution. Before transferring and to ensure timely progress toward the baccalaureate degree, students must also complete the prerequisite courses for their major as outlined in the *Transfer Student Manual* and below.

All courses not approved by the Florida Statewide Course Numbering System that will be used to satisfy requirements will be evaluated individually on the basis of content and will require a catalog course description and a copy of the syllabus for assessment.

General Degree Requirements (Changes below effective fall 2016.)
The Bachelor of Science in Computer Engineering degree will be awarded to students who meet all admission and degree requirements of the department and University. Items below are referred to in the table following the list.

~~2. Complete the following specific degree requirements of the Computer Engineering program.~~

(1) Students entering FAU with fewer than 30 credits must satisfy the course requirements specified in the catalog section, Degree Requirements. Students entering FAU with more than 30 credits (transfer students) must see the undergraduate advisor for an evaluation of courses taken at another school. The general education requirements are normally satisfied if a student has an Associate of Arts (A.A.) degree from a Florida community or state college.

~~(2) Pre-engineering A.A. programs allow students to satisfy most or all of these required courses.~~

(2) ~~Fundamentals of Engineering is the preferred course; however, this course may not be available at all institutions. In certain instances, substitutions for this course may be allowed provided that the credits are a part of an approved pre-engineering A.A. degree program. Students are expected to take Fundamentals of Engineering during their freshman year. Students who enter the program with at least 30 credits and have not taken Fundamentals of Engineering or an equivalent course can instead elect to take Software-Hardware Codesign (CEN 4214) an upper division elective.~~

(3) Grade of "C" or better is required.

(4) A "C" or better is in all Computer Engineering core courses.

(5) All Technical electives must be approved by the undergraduate advisor. In general, a technical elective is defined as an upper-division course with significant technical disciplinary content.

(6) See adviser for approved courses.

Specific Degree Requirements	
General Education (1)	
Foundations of Written Communication	6
Foundations of Society and Human Behavior	6
Foundations of Global Citizenship	6
Foundations of Humanities	6
Subtotal	**24**

Mathematics and Science ~~(2)~~ (Lower Division)		
Calculus with Analytic Geometry 1 (3)	MAC 2311	4
Calculus with Analytic Geometry 2 (3)	MAC 2312	4
Calculus with Analytic Geometry 3 (3)	MAC 2313	4
Engineering Mathematics 1	MAP 3305	3
General Physics for Engineers 1 (3)	PHY 2048	3
General Physics Lab 1 (3)	PHY 2048L	1
Physics for Engineers 2 (3)	PHY 2044	3
General Physics Lab 2 (3)	PHY 2049L	1
~~General Chemistry 1~~	~~CHM 2045~~	~~3~~
~~General Chemistry 1 Lab~~	~~CHM 2045L~~	~~1~~
Science (6)	-	4
Subtotal		**27**

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Computer Engineering Core Courses (4)		
Foundations of Computer Science	COP 3014	3
~~Foundations of Computer Science Lab~~	~~COP 3014L~~	~~1~~
Introduction to Logic Design	CDA 3201C	4
Introduction to Microprocessor Systems	CDA 3331C	~~4~~ 3
Introduction to Programming in C	COP 2220	3
Data Structures and Algorithm Analysis	COP 3530	3
Computer Operating Systems	COP 4610	3
Principles of Software Engineering	CEN 4010	3
~~Senior Seminar~~	~~COT 4935~~	~~1~~
Engineering Design 1	EGN 4950C	~~2~~ 3
Engineering Design 2	EGN 4952C	3
Discrete Mathematics	MAD 2104	3
Stochastic Models for Computer Science	STA 4821	3
Subtotal		**34 ~~37~~**

Computer Engineering Electives ~~Semi-Core Courses~~ (4) *(select four of the following)*		
Structured Computer Architecture	CDA 4102	3
Introduction to Computer Systems Performance Evaluation	CEN 4400	3
Introduction to Embedded System Design	CDA 4630	3
Introduction to VLSI	CDA 4210	3
Introduction to Data Communications	CNT 4104	3
Computer Network Projects	CNT 4713	3
~~Introduction to Java and Concurrency~~ (Course no longer offered effective summer 2016.)	~~COP 4633~~	~~3~~
CAD-Based Computer Design	CDA 4204	3
Subtotal		**12**

Other Engineering (4)		
Fundamentals of Engineering (2)	EGN 1002	3
Circuits 1	EEL 3111	3
Electronics 1	EEE 3300	4
Electronics Laboratory 1	EEL 3118L	2
Subtotal		**12**

Technical Electives (as approved by advisor) (4), (5)	**15 ~~12~~**
Total	**124**

~~Notes:~~

~~(1) Students entering FAU with fewer than 30 credits must satisfy the course requirements specified in the catalog section, Degree Requirements. Students entering FAU with more than 30 credits (transfer students) must see the undergraduate advisor for an evaluation of courses taken at another school. The general education requirements are normally satisfied if a student has an Associate of Arts (A.A.) degree from a Florida community or state college.~~

~~(2) Pre-engineering A.A. programs allow students to satisfy most or all of these required courses.~~

~~(3) Fundamentals of Engineering is the preferred course; however, this course may not be available at all institutions. In certain instances, substitutions for this course may be allowed provided that the credits are a part of an approved pre-engineering A.A. degree program. Students are expected to take Fundamentals of Engineering during their freshman year. Students who enter the program with at least 30 credits and have not taken Fundamentals of Engineering or an equivalent course can instead elect to take Software-Hardware Codesign (CEN 4214).~~

~~(4) Grade of "C" or better is required.~~

~~(5) A "C" or better is in all Computer Engineering core courses.~~

~~(6) All Technical electives must be approved by the undergraduate advisor. In general, a technical elective is defined as an upper-division course with significant technical disciplinary content.~~

Sample Four-Year Program of Study
For the sample four-year program of study for the Bachelor of Science in Computer Engineering, refer to the Curriculum Sheets and Flight Plans by major.

Second Bachelor's Degree
Individuals seeking a second bachelor's degree must satisfy all admission and degree requirements of a first bachelor's degree. The minimum number of FAU credits (beyond those used for the first degree) needed to earn a Bachelor of Science in Computer Engineering is 30 credits at the 3000 level or higher.

Cooperative Education
Students in the Computer Science and Computer Engineering ~~and Information Engineering Technology~~ programs are encouraged to consider gaining practical experience through participation in Cooperative Education. Three, one-semester periods of Cooperative Education (COT 3949) may be substituted for one program technical elective. For information, contact the FAU Career Center, 561-297-3533 or visit its website at ~~www.fau.edu/cdc.~~ www.fau.edu/career/

Directed Independent Study
Students in the Computer Science and Computer Engineering ~~and Information Engineering Technology~~ programs must earn a minimum of 9 credits in core courses for their major before being eligible to register for directed independent study. Students are allowed to take no more than the equivalent of one course (3 credits) to satisfy degree requirements. If a student needs more than 3 credits of independent study, written approval must be obtained from the chair of the department prior to enrolling in the additional credits.

Undergraduate Transfer Students
Prior to the academic advising session, course descriptions and syllabi need to be submitted to the Undergraduate Academic Advisor for evaluation of possible transfer credits. Course descriptions can be provided by submitting an undergraduate catalog from the post-secondary institution attended, submitting course descriptions from an online catalog (requires that the post-secondary institution web address be at the bottom of each page) or by providing course syllabi. The Academic Advisor evaluation needs to be performed even if a student has an evaluation by an approved agency.

Bachelor of Science in Electrical Engineering

Admission Requirements
All students must meet the minimum admission requirements of the University. Please refer to the Admissions section of this catalog.

All students must meet the pre-professional requirements listed above in order to be accepted into the Electrical Engineering program.

Prerequisite Coursework for Transfer Students
Students transferring to Florida Atlantic University must complete both lower-division requirements (including the requirements of the Intellectual Foundations Program) and requirements for the college and major. Lower-division requirements may be completed through the A.A. degree from any Florida public college, university or community college or through equivalent coursework at another regionally accredited institution. Before transferring and to ensure timely progress toward the baccalaureate degree, students must also complete the prerequisite courses for their major as outlined in the *Transfer Student Manual*.

All courses not approved by the Florida Statewide Course Numbering System that will be used to satisfy requirements will be evaluated individually on the basis of content and will require a catalog course description and a copy of the syllabus for assessment.

General Degree Requirements
The Bachelor of Science in Electrical Engineering degree will be awarded to students who meet all admission and degree requirements of the department and University. Items below are referenced in the table following the list.

(1) Students entering FAU with less than 30 credits must satisfy the course requirements specified in the catalog section, Degree Requirements. Students entering FAU with more than 30 credits (transfer students) must see the undergraduate advisor for an evaluation of courses taken at another school. The general education requirements are normally satisfied if a student has an Associate of Arts (A.A.) degree from a Florida community or state college.

~~(2) Pre-engineering A.A. programs allow students to satisfy most or all of these required courses.~~

(2) Fundamentals of Engineering is the preferred course; however, this course may not be available at all institutions. In certain instances, substitutions for this course may be allowed provided that the credits are a part of an approved pre-engineering A.A. degree program.

(3) ~~4.~~ Complete physics, calculus, mathematics, and math elective courses with a grade of "C" or better in each of the courses;

~~5. Earn a grade of "C" or better in Introduction to Programming in C (COP 2220), Foundations of Computer Science (COP 3014) and Data Structures (COP 3530);~~

~~(4) Grade of "C" or better is required.~~

(4) ~~Need a "C" or better in all EE core courses.~~ Receive a "C" or better in all EE core courses.

(5) All EE electives must be approved by the undergraduate advisor.

(6) In general, a technical elective is defined as an upper-division course with significant technical disciplinary content. A maximum of 3 credits in Cooperative Education (EEL 4949) can be used as a technical elective.

(7) See adviser for approved courses.

Specific Degree Requirements	
General Education (1)	
Foundations of Written Communication	6
Foundations of Society and Human Behavior	6
Foundations of Global Citizenship	6
Foundations of Creative Expressions	6
Subtotal	**24**

Mathematics and Science (2) (Lower Division)		
Fundamentals of Engineering (2)	EGN 1002	3
Calculus with Analytic Geometry 1 (3)	MAC 2311	4

Calculus with Analytic Geometry 2 (3)	MAC 2312	4
Calculus with Analytic Geometry 3 (3)	MAC 2313	4
Engineering Mathematics 1	MAP 3305	3
~~C for Engineers~~ Introduction to Programming in C	~~EEL 2161~~ COP 2220	3
General Physics for Engineers 1 (3)	PHY 2048	3
General Physics Lab 1 (3)	PHY 2048L	1
Physics for Engineers 2 (3)	PHY 2044	3
General Physics Lab 2 (3)	PHY 2049L	1
~~General Chemistry 1~~	~~CHM 2045~~	~~3~~
~~General Chemistry 1 Lab~~	~~CHM 2045L~~	~~1~~
Science (7)		4
Subtotal		**33**

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(Changes below effective fall 2016.)

Electrical Engineering Core (4)		
Circuits 1	EEL 3111	3
Circuits 2	EEL 3112	2
Introduction to Logic Design	CDA 3201C	4
Electronics 1	EEE 3300	4
Analysis of Linear Systems	EEL 4656	3
~~Stochastic Processes and Random Signal~~	~~EEE 4541~~	~~3~~
Stochastic Models for Computer Science	STA 4821	3
Electronics Laboratory 1	EEL 3118L	2
Electronics 2	EEE 4361	3
~~Electrical Engineering Practice~~	~~EEL 3012~~	~~1~~
Electromagnetic Fields and Waves	EEL 3470	4
~~Introduction to Microcontrollers~~	~~EEL 4746~~	~~3~~
~~Microcontroller Lab~~	~~EEL 4746L~~	~~1~~
Intro to Microprocessor Systems	CDA 3331C	~~4~~ 3
Electronics Laboratory 2	EEL 4119L	3
Engineering Design 1	EGN 4950C	~~2~~ ~~3~~
Engineering Design 2	EGN 4952C	3
Communication Systems 1	EEL 4512	3
Control Systems 1	EEL 4652	3
Control Systems Lab	EEL 4652L	**or**
Communication Systems Lab	EEL 4512L	1
Introduction to Digital Signal Processing	EEE 4510	3
Subtotal		**50** ~~**53**~~

Electrical Engineering Electives (5)	**12** ~~9~~
Electrical Engineering or Technical Electives (5) (6)	6
Mathematics Elective (5)	3
Total	**128**

Notes:
(1) Students entering FAU with less than 30 credits must satisfy the course requirements specified in the catalog section, Degree Requirements. Students entering FAU with more than 30 credits (transfer students) must see the undergraduate advisor for an evaluation of courses taken at another school. The general education requirements are normally satisfied if a student has an Associate of Arts (A.A.) degree from a Florida community or state college.

(2) Pre-engineering A.A. programs allow students to satisfy most or all of these required courses.

(3) Fundamentals of Engineering is the preferred course; however, this course may not be available at all institutions. In certain instances, substitutions for this course may be allowed provided that the credits are a part of an approved pre-engineering A.A. degree program.

4. Complete physics, calculus, mathematics, and math elective courses with a grade of "C" or better in each of the courses;

5. Earn a grade of "C" or better in Introduction to Programming in C (COP 2220), Foundations of Computer Science (COP 3014) and Data Structures (COP 3530);

(5)5. 6. Complete the requirements for Computer Science electives and other electives as described below.

(4) Grade of "C" or better is required.

(5) Need a "C" or better in all EE core courses.

(6) All EE electives must be approved by the undergraduate advisor.

(7) In general, a technical elective is defined as an upper-division course with significant technical disciplinary content. A maximum of 3 credits in Cooperative Education (EEL 4949) can be used as a technical elective.

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Sample Four-Year Program of Study
For the sample four-year program of study for the Bachelor of Science in Electrical Engineering, refer to the Curriculum Sheets and Flight Plans by major.

Second Bachelor's Degree
Individuals seeking a second bachelor's degree must satisfy all admission and degree requirements of a first bachelor's degree. The minimum number of FAU credits (beyond those used for the first degree) needed to earn a Bachelor of Science in Computer Engineering is 30 credits at the 3000 level or higher.

Cooperative Education
Students in the Electrical Engineering program are encouraged to consider gaining practical experience through participation in Cooperative Education. Three, one-semester periods of Cooperative Education (EEL 4949) may be substituted for one program technical elective. For information, contact the FAU Career Center, 561-297-3533 or visit its website at www.fau.edu/cdc. www.fau.edu/career/

Note: No more than 6 credits of directed independent study may be applied toward the undergraduate degree.

Directed Independent Study
Students in the Electrical Engineering program are allowed to take no more than the equivalent of one course (3 credits) to satisfy degree requirements. If a student needs more than 3 credits of independent study, written approval must be obtained from the chair of the department prior to enrolling in the additional credits.

Undergraduate Transfer Students
Prior to the academic advising session, course descriptions and syllabi need to be submitted to the Undergraduate Academic Advisor for evaluation of possible transfer credits. Course descriptions can be provided by submitting an undergraduate catalog from the post-secondary institution attended, submitting course descriptions from an online

catalog (requires that the post-secondary institution web address be at the bottom of each page) or by providing course syllabi. The Academic Advisor evaluation needs to be performed even if a student has an evaluation by an approved agency.

Approved by:	***Date:***
Department Chair: Morgan Eisdorf	02/16/2017
College Curriculum Chair: _____	_____
College Dean: _____	_____
UUPC Chair: _____	_____
Undergraduate Studies Dean: _____	_____
UFS President: _____	_____
Provost: _____	_____