## Bachelor of Science in Computer Engineering

## 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.

Transfer students should have completed 60 credits at an approved lower-division college or university and the following required courses (see Degree Requirements for required minimum grades).

| - |  | Minimum No. of Credits |
| :---: | :---: | :---: |
| English Composition | - | 6 |
| Social Science | - | 6 |
| Humanities | - | 6 |
| Additional Humanities or Social Science | - | 6 |
| Galculus (complete sequence) | $\begin{aligned} & \text { MAC 2311, 2312, } 2313 \text { or } \\ & \text { MAC 2281, 2282, } 2313 \end{aligned}$ | 12 |
| Physics for Engineers with Labs (complete sequence) | $\begin{aligned} & \text { PHY, 2048L, 2044, } \\ & 2049 \text {, } \end{aligned}$ | 8 |
| General Chemistry 1 with Lab (for science majors) | GHM 2045, 2045L | 4 |
| Differential Equations 1 | AAP 2302 or | 3-9F |
| Engineering Math 1 | MAP 3305 | 3 |
| Introduction to Programming in C | GOP 2220 | 3 |
| Fundamentals of Engineering* | EGN 1002 | 3 |


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* 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).

The number of credits in each course may vary by institution.

Pre-engineering A.A. programs at most community or state colleges allow students to complete most of the lowerdivision requirements

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## General Degree Requirements

The Bachelor of Science in Computer Engineering degree will be awarded to students who: 1. Meet all University general degree requirements;
2. Satisfy the following specific degree requirements of the Computer Engineering program

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) |  |  |
| Calculus with Analytic Geometry 1 (4) | MAC 2311 | 4 |
| Calculus with Analytic Geometry 2 (4) | MAC 2312 | 4 |
| Calculus with Analytic Geometry 3 (4) | MAC 2313 | 4 |
| Engineering Mathematics 1 | MAP 3305 | 3 |
| C for Engineers | EEL 2161 | 3 |
| General Physics for Engineers 1 (4) | PHY 2048 | 3 |
| General Physics Lab 1 (4) | PHY 2048L | $\underline{1}$ |
| Physics for Engineers 2 (4) | PHY 2044 | 3 |
| General Physics Lab 2 (4) | PHY 2049L | 1 |
| General Chemistry 1 | CHM 2045 | 3 |
| General Chemistry 1 Lab | CHM 2045L | $\underline{1}$ |
| Subtotal | - | 30 |

[^0]| Specific Degree Requirements |  |  |
| :---: | :---: | :---: |
| Non-Technical (1) |  |  |
| English Composition (2) |  | 6 |
| Social Science |  | 6 |
| Humanities |  | 6 |
| Additional Humanities or Social Science (3) | - | 6 |
| Subtotal |  | 2 |

(1) Four-year program students must meet specific requirements in these areas as described earlier in this catalog.
(2) See Writing Across Curriculum (Gordon Rule) writing requirements in the Degree Requirements section of this catalog.
(3) Two-additional courses that satisfy FAU General Education requirements in humanities or social science. Lower-Division Mathematics and Science

| Galculus (complete sequence) | MAC 2311, 2312, 2313 or MAC 2281, 2282, 2313 | 12 |
| :---: | :---: | :---: |
| Engineering Math 1 | MAP 3305 | 3 |
| General Physics with Calculus and tabs | $\begin{aligned} & \text { PHY } 2043 \text { or } 2048 \\ & \text { and PHY 2048L, and } \end{aligned}$ | 8 |


| (complete sequence) | PHY 2044 or 2049 and PHY <br> 2049L |  |
| :--- | :--- | :--- |
| General Chemistry 1 with Lab | CHM 2045, 2045L | 4 |
|  | Introduction to Programming in C | COP 2220 |
| Subtotal | 3 |  |


| Computer Engineering Core Courses(5) |  |  |
| :--- | :--- | :--- |
| 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 |
| 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 | 3 |
| Engineering Design 2 | EGN 4952C | 3 |
| Discrete Mathematics | MAD 2104 | 3 |
| Stochastic Models for Computer Science | STA 4821 |  |
| Subtotal | 3 |  |


| $\begin{array}{\|l} \hline \begin{array}{l} \text { Computer Engineering Semi-Core Courses (5) } \\ \text { (select four of the following) } \end{array} \\ \hline \end{array}$ |  |  |
| :---: | :---: | :---: |
| 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 | COP 4633 | 3 |
| CAD-Based Computer Design | CDA 4204 | 3 |
| Subtotal |  | 12 |


| Other Engineering_(5) |  |  |
| :---: | :---: | :---: |
| Fundamentals of Engineering ${ }^{\star}$ (3) | 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)(5,6) | $\mathbf{1 2}$ |
| :--- | :--- |
| Total | $\mathbf{1 2 4}$ |
| 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. ${ }^{*}$ 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) Need a "C" or better 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.

* Students are expected to tak Fundamentals of Engineoring during their freshman yoar. Students who onter the program with leas 30 credits and have no taken Fundamentals of Engineoring on an equivalent course can instead elect to take Sofware Hardware Codesign (CEN 4214):


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

| First Year, Fall (14 credits) | ENC 1101 | 3 |
| :--- | :--- | :--- |
| College Writing 1ᄎ | MAC 2311 | 4 |
| Calculus with Analytic Geometry 1 | CHM 2045 | 3 |
| General Chemistry 1 | CHM 2045L | 1 |
| General Chemistry 1 Lab | EGN 1002 | 3 |
| Fundamentals of Engineering |  |  |


| First Year, Spring (14 credits) |  |  |
| :---: | :---: | :---: |
| Calculus with Analytic Geometry 2 | MAC 2312 | 4 |
| General Physics for Engineers 1 | PHY 2048 | 3 |
| General Physics 1 Lab | PHY 2048L | 1 |
| Introduction to Programming in C | COP 2220 | 3 |
| College Writing 2Foundations of Written Communication** | ENC 1102 | 3 |


| Second Year, Fall (15 credits) | MAC 2313 | 4 |
| :--- | :--- | :--- |
| Calculus with Analytic Geometry 3 | PHY 2044 | 3 |
| Physics for Engineers 2 | PHY 2049L | 1 |
| General Physics 2 Lab | CDA 3201C | 4 |
| Introduction to Logic Design | 3 |  |
| FAU CoreFoundations of Society and Human Behavior ${ }^{\star}$ |  |  |


| Second Year, Spring (14 credits) | CDA 3331C | 4 |
| :--- | :--- | :--- |
| Introduction to Microprocessor Systems | COP 3014 | 3 |
| Foundations of Computer Science | COP 3014L | 1 |
| Foundations/Computer Science Lab |  |  |


| Engineering Math 1 | MAP 3305 | 3 |
| :--- | :--- | :--- |
| FAU CoreFoundations of Creative Expressions ${ }^{\star}$ | 3 |  |


| Second Year, Summer (9 credits) | EEL 3111 | 3 |
| :--- | :--- | :--- |
| Circuits 1 | MAD 2104 | 3 |
| Discrete Mathematics | 3 |  |
|  | FAU CoreFoundations of Global Citizenship |  |
|  |  |  |


| Third Year, Fall (16 credits) | COP 3530 | 3 |
| :--- | :--- | :--- |
| Data Structures and Algorithm Analysis | 3 |  |
| CE Semi-Core Course | EEE 3300 | 4 |
| Electronics 1 | STA 4821 | 3 |
| Stochastic Models for Computer Science | \|l|| |  |
| FAU CoreFoundations of Society and Human Behavior |  |  |


| Third Year, Spring (14 credits) |  |
| :--- | :--- |
| CE Semi-Core Course | CEN 4010 |
| Principles of Software Engineering | 3 |
| Electronics Laboratory 1 | EEL 3118L |
| CE Semi-Core Course | 2 |
|  | FAUCoreFoundations of Creative Expressions |
|  | 3 |


| Fourth Year, Fall (16 total credits) |  |  |
| :--- | :--- | :--- |
| Senior Seminar | COT 4935 | 1 |
| CE Semi-Core Course | 3 |  |
| Technical Electives $\#$ | 9 |  |
| Engineering Design 1 | EGN 4950C | 3 |


| Fourth Year, Spring (12 total credits) | COP 4610 | 3 |
| :--- | :--- | :--- |
| Computer Operating Systems | EGN 4952C | 3 |
| Engineering Design 2 | 3 |  |
| Technical Elective \# | 3 |  |
| FAU CoreFoundations of Global Citizenship ${ }^{\star}$ |  |  |
| Total | $\mathbf{1 2 4}$ |  |

${ }^{\star}$ FAU Core: One of the humanities or social science courses listed elsewhere in the catalog that satisfies the FAU Core Curriculum requirements for all four-year students. These include courses that satisfy the writing component for Writing Across the Curriculum (Gordon Rule); these must be passed with a "C" or better. See an advisor to discuss satisfying these with the minimum number of credits
** Must be passed with a "C" or better.
\# Technical electives: These must be approved by an advisor. Three, one-semester periods of Cooperative Education - Computer Engineering (COT 3949) can be counted as one computer engineering technical elective.

## 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, 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 Development Center, 561-297-3536 or visit its website at www.fau.edu/cdc. Directed Independent Study
Students in the Computer Science, 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.


UFS President: $\qquad$
Provost: $\qquad$


[^0]:    The Bachelor of Science in Computer Engineering degree will be awarded to students who:

    1. Meet all admission and degree requirements of the department and University;
    2. Complete the Computer Engineering core courses described below with at least a 2.5 GPA;
    3. Obtain a grade of " $C$ " or better in all engineering, science, mathematics and Writing Across Curriculum (Gordon Rule) writing courses
    4. Complete the following specific degree requirements, which total 124 credits.
