

# Bachelor of Science in Computer Science

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## COMPUTER SCIENCE ELECTIVES:

19 - 21 credits to be chosen from CS and CE upper division  
Courses that are not in the CS core and/or research.

### Information Technology

- CAP 4630 Introduction to Artificial Intelligence\*
- CNT 4104 Introduction to Data Communications
- CNT 4403 Introduction to Data & Network Security
- COP 4814 Web Services
- COP 4703 Applied Database Systems\*
- COP 4593 Component Programming with .NET \*
- CAP 4770 Data Mining & Machine Intelligence
- COP 4854 Cutting Edge Web Technology

### Applications

- CAP 4034 Computer Animation
- CAP 4028 Introduction to Game Programming
- COP 4367 Graphical Application Development
- CAP 4401 Digital Image Processing

### Software Engineering

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

### System Programming

- COP 4020 Programming Languages\*

### Computer Architecture

- CDA 4204 CAD-Based Computer Design
- CDA 4210 Introduction to VLSI
- CDA 4630 Introduction to Embedded System Design
- CDA 4102 Structured Computer Architecture
- CEN 4214 Software-Hardware Co-Design

### System Performance

- CEN 4400 Introduction to Computer System Performance
- MAP 4260 Introduction to Queuing Theory‡

‡ Cannot be used as both add math & elective.

## MATH ELECTIVE OPTIONS:

(3 - 4 credits each)

- MAC 2313 Calculus w/Analytic Geometry III
- MAD 3400 Numerical Methods
- MAP 2302 Differential Equations I
- MAP 4260 Queuing Theory
- MAS 2103 Matrix Theory
- MAP 3305 Engineering Math I
- MAS 4301 Modern Algebra

## OTHER REQUIREMENTS:

### To Declare Computer Science Major:

Grade of "C" or better in:  
COP2220 and MAC1140 and MAC1114 or MAC1147

### 4-year & Transfer Students:

At least 120 credits  
At least 45 credits at a senior institution  
Grade of "C" or better in all core, math & science courses

### Transfer Students:

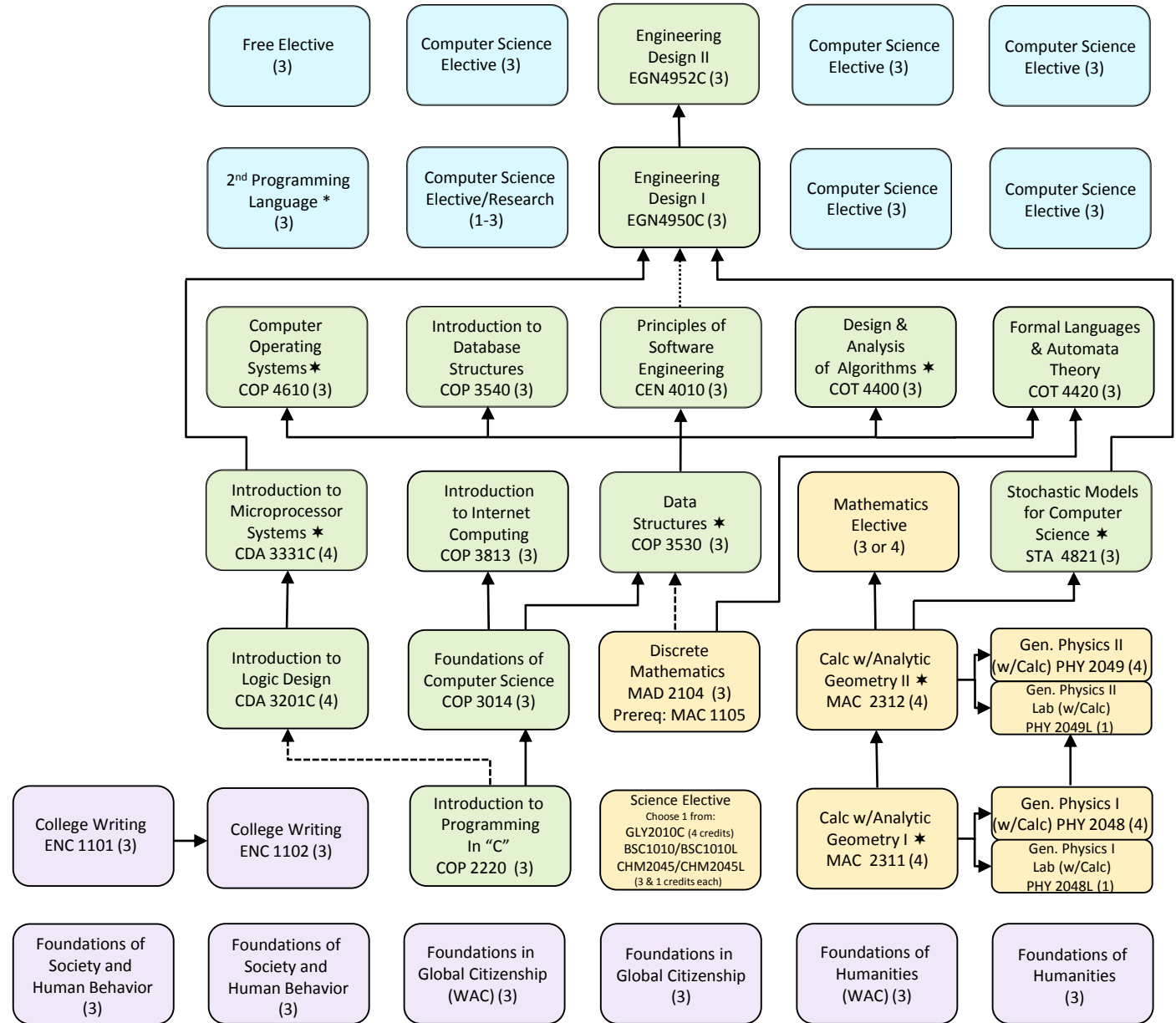
Last 30 upper division credits from FAU

### Second Degree Students :

At least 30 new FAU credits  
At least 25 credits upper division CS/CE courses at FAU  
Grade of "C" or better in all core, math & science courses

### Course Requirements for Admission

to MSCS program \* required courses



**LEGEND:** ← Pre-Requisite   ←----- Pre- or Co-   Science & Math   Core Courses   Engineering Fund. Courses   IFP Requirements

This flowchart is reviewed periodically and is subject to change as new requirements become necessary to educate engineers. The information is intended to inform and is not a replacement for a degree audit conducted with an academic advisor.

**FLORIDA ATLANTIC UNIVERSITY – INTELLECTUAL FOUNDATION PROGRAM 2015 – 2016**

*All courses are three (3) credits unless otherwise indicated. Course selections should be made in consultation with an academic advisor.*

**PRE-PROFESSIONAL ENGINEERING PROGRAM (2015-2016)**

College of Engineering and Computer Science

**FOUNDATIONS OF WRITTEN COMMUNICATION**

(6 credit hours required – Writing Across the Curriculum - WAC)

Grade of “C” or higher is required in each course

\_\_\_ ENC 1101 ..... College Writing I (**REQUIRED**)

\_\_\_ ENC 1102 ..... College Writing II +

**THE FOLLOWING COURSES BELOW MAY BE SUBSTITUTED FOR ENC 1102:**

**English Department**

\_\_\_ ENC 1930+ .... University Honors Seminar in Writing (**Permit Only**)

\_\_\_ ENC 1939+ .... Special Topic: College Writing

\_\_\_ ENC 2452+ .... Honors Composition for Science

**Anthropology Department**

\_\_\_ ANT 1471+ .... Cultural Difference in a Globalized Society

**History Department**

\_\_\_ HIS 2050+ ..... Writing History: The American Revolution

**Nursing Department (Department Permission Required)**

\_\_\_ NSP 1195+ ..... Being Cared For: Reflections from Other Side of Bed

*Note: Students must take four Writing-Across-the-Curriculum (WAC) courses, two of which must be taken from Foundations of Written Communication.*

**FOUNDATIONS OF SCIENCE & THE NATURAL WORLD**

(6 credit hours required - **One of the courses must have a lab**)

Student must take two of the following courses, one must be from group A.

The second course may be from group A or group B.

**Grade of “C” or higher is required**

**\*\*\* SEE SCIENCE REQUIREMENTS BY MAJOR ON PAGE 3 \*\*\***

Group A

**Biology Department**

\_\_\_ BSC 1005 & L ..... Life Science (3 credits including Lab)

\_\_\_ BSC 1010 & L & D .. Biological Principles (4 credits including Lab & Dis)

\_\_\_ BSC 2085 & L ..... Anatomy & Physiology 1 (4 credits including Lab) \*

**Chemistry Department**

\_\_\_ CHM 1020C ..... Contemporary Chemical Issues

\_\_\_ **CHM 2045 & L ..... General Chemistry 1 (4 cr. w/Lab) ‡ (REQUIRED)**

**Geosciences Department**

\_\_\_ ESC 2000 ..... Blue Planet (**online course**)

**Physics Department**

\_\_\_ AST 2002 ..... Introduction to Astronomy (**P/F**)

\_\_\_ **PHY 2048 & L ..... General Physics 1 (5 cr. w/ Lab) \*\* (REQUIRED)**

\_\_\_ PHY 2053 ..... College Physics 1 (4 credits) \*\*\*

Group B

**Anthropology Department**

\_\_\_ ANT 2511 & L ..... Intro to Biological Anthropology (4 cr. Incl. Lab)

**Biology Department**

\_\_\_ BSC 1011 & L & D .. Biodiversity (4 cr. including Lab & Discussion)

**Chemistry Department**

\_\_\_ CHM 2032 & L ..... Chem. for Health Sciences (4 cr. including Lab)

\_\_\_ CHM 2083 ..... Chemistry in Modern Life (**P/F**)

**Engineering Dean Department**

\_\_\_ ETG 2831 ..... Nature: Inter. of Sci., Eng., & the Humanities

**Geosciences Department**

\_\_\_ GLY 2010C ..... Physical Geology (4 cr. including Lab)

\_\_\_ GLY 2100 ..... History of Earth and Life

\_\_\_ MET 2010 & D ..... Weather and Climate

**Physics Department**

\_\_\_ **PHY 2049 & L ..... General Physics 2 (5 cr. w/ Lab) (REQUIRED)**

\_\_\_ PSC 2121 ..... Physical Science

**FOUNDATIONS OF MATHEMATICS & QUANTITATIVE REASONING**

(6 credit hours required – Grade of “C” or higher is required)

Student must take two of the following courses, one must be from group A.

The second course may be from group A or group B.

**PRETEST IS REQUIRED BEFORE TAKING YOUR FIRST MATH COURSE**

Group A

\_\_\_ MGF 1106 ..... Math for Liberal Arts 1

\_\_\_ MGF 1107 ..... Math for Liberal Arts 2

\_\_\_ MAC 1105 ..... College Algebra

\_\_\_ STA 2023 ..... Introductory Statistics

\_\_\_ **MAC 2311 ..... Calc. w/Analytic Geometry 1 (4 credits) (REQUIRED)**

*or any mathematics course for which one of the above courses is the direct prerequisite*

Group B

\_\_\_ MAC 1140 ..... Precalculus Algebra

\_\_\_ MAC 1114 ..... Trigonometry

\_\_\_ MAC 1147 ..... Precalculus Algebra & Trigonometry (5 credits)

\_\_\_ MAC 2233 ..... Methods of Calculus

\_\_\_ **MAC 2312 ..... Calc. w/Analytic Geometry 2 (4 credits) (REQUIRED)**

**Philosophy Department**

\_\_\_ PHI 2102 ..... Logic

*Note: Students must take at least one course with the prefix MAC or MGF.*

**FOUNDATIONS OF SOCIETY & HUMAN BEHAVIOR**

(6 credit hours required)

Student must take two of the following courses, one must be from group A.

The second course may be from group A or group B.

Group A

**History Department**

\_\_\_ AMH 2010 ..... United States History Since 1877 (**P/F**)

**Anthropology Department**

\_\_\_ ANT 2000 ..... Introduction to Anthropology

**Economics Department**

\_\_\_ ECO 2013 ..... Macroeconomic Principles §

**Political Science Department**

\_\_\_ POS 2041 ..... Government of the United States

**Psychology Department**

\_\_\_ PSY 1012 ..... Introduction to Psychology

**Sociology Department**

\_\_\_ SYG 1000 ..... Sociological Perspectives

Group B

**History Department**

\_\_\_ AMH 2020 ..... United States History to 1877 (**P/F**)

**Economics Department**

\_\_\_ ECO 2023 ..... Microeconomic Principles §

\_\_\_ ECP 2002 ..... Contemporary Economic Issues

**Exceptional Student Education Department**

\_\_\_ EEX 2091 ..... Disability and Society

**Geosciences Department**

\_\_\_ EVR 2017 ..... Environment and Society

**Public Administration Department**

\_\_\_ PAD 2258 ..... Changing Environment of Soc., Bus., & Gov't

**Sociology Department**

\_\_\_ SYD 2790 ..... Race, Class, Gender, and Sexuality

\_\_\_ SYG 2010 ..... Social Problems

**Urban & Regional Planning Department**

\_\_\_ URP 2051 ..... Designing the City

### FOUNDATIONS IN GLOBAL CITIZENSHIP

(6 credit hours required)

Student must choose two (2) courses from among the following:

#### Anthropology Department

\_\_\_ ANT 2410..... Culture and Society

#### Curriculum, Culture & Education Department

\_\_\_ EDF 2854 ..... Educated Citizen in Global Context

#### Geosciences Department

\_\_\_ GEA 2000..... World Geography

#### Political Science Department

\_\_\_ INR 2002..... Introduction to World Politics

#### Languages, Linguistics, & Comparative Literature Department

\_\_\_ LAS 2000..... Intro to Caribbean & Latin American Studies

\_\_\_ LIN 2607 ..... Global Perspectives on Language (**online course**)

#### Sociology Department

\_\_\_ SYP 2450..... Global Society

#### Social Work Department

\_\_\_ SOW 1005..... Global Perspectives of Social Services

#### History Department

\_\_\_ WOH 2012 & D..... History of Civilization 1 (**WAC**) ++

\_\_\_ WOH 2022 ..... History of Civilization 2

### FOUNDATIONS OF HUMANITIES

(6 credit hours required)

Student must take two of the following courses, one must be from group A.

The second course may be from group A or group B.

#### Group A

#### Visual Art & Art History Department

\_\_\_ ARH 2000 .....Art Appreciation (**P/F**)

#### Music Department

\_\_\_ MUL 2010.....Music Appreciation

#### Philosophy Department

\_\_\_ PHI 2010 & D.....Introduction to Philosophy (**WAC**) ++

#### Theatre & Dance Department

\_\_\_ THE 2000 .....Theatre Appreciation

#### Group B

#### Architecture Department

\_\_\_ ARC 2208.....Culture & Architecture

#### Theatre & Dance Department

\_\_\_ DAN 2100 .....Appreciation of Dance

#### School of Communication & Multimedia Studies

\_\_\_ FIL 2000 & D.....Film Appreciation

#### Languages, Linguistics, & Comparative Literature Department

\_\_\_ LIT 2100.....Introduction to World Literature

#### English Department

\_\_\_ LIT 2010.....Interpretation of Fiction (**WAC**) ++

\_\_\_ LIT 2030.....Interpretation of Poetry (**WAC**) ++

\_\_\_ LIT 2040.....Interpretation of Drama (**WAC**) ++

\_\_\_ LIT 2070.....Interpretation of Creative Nonfiction (**WAC**) ++

### STUDENTS ASSUME RESPONSIBILITY FOR MEETING ALL GRADUATION REQUIREMENTS

*Course selections should be made in consultation with an academic advisor.*

### Legend

- + - ENC 1101 is a prerequisite.
- ++ - Two Foundations of Written Communications classes are required before taking this course.
- § - Sophomore standing (30 credits earned) is a requirement to take this course.
- \* - Nursing majors are required to take this course in their first semester.
- \*\* - MAC 2311 is a prerequisite for this course. If a lab is needed, then take General Physics 1 Lab (PHY 2048 Lab).
- \*\*\* - MAC 1105 and MAC 1114 are prerequisites for this course. If a lab is needed, then take General Physics 1 Lab (PHY 2048 Lab).
- ‡ - Co-requisite of College Algebra (MAC 1105) or a prerequisite of Introductory Chemistry (CHM 1025).
- WAC - (WAC) Writing across the curriculum course.

#### § Writing Across the Curriculum (WAC)/Gordon Rule

Students must attain grades of "C" or higher. 12 credits of writing (WAC) and 6 credits of mathematics are required.

#### Please note:

Students must take four (4) WAC courses. Two (2) courses are to be taken from Foundations of Written Communication. We strongly recommend the two additional WAC courses come from these courses: PHI 2010, WOH 2012, LIT 2010, LIT 2030, LIT 2040 and LIT 2070. See advisor for additional details.

#### (D) = Discussion, (L) = Lab

Courses indicating a (D) or (L) are linked with a lecture, a lab, and/or a discussion. If you select one of these courses, you must register for the lecture, lab, and/or discussion. You **must** attend the lecture, lab, and/or discussion.

#### Elective Credits

The number of elective credits allowed varies by major. Please consult with an academic advisor to determine the number of elective credits required for your major. **Certain majors do not allow any electives.**

#### P/F

Certain designated undergraduate courses may be taken for a letter grade of pass (P) or fail (F). Students must indicate the grade option preferred when registering; otherwise, a letter grade will be given. The maximum credit available to any student on the P/F option is one course per term with a maximum of 12 credits during a student's entire course of study. This option is not available for courses in the student's major, for students on probation, or for **Engineering** majors.

<http://myfau.fau.edu>

#### Go to MyFAU to:

- ❖ Check e-mail
- ❖ See FAU Announcements
- ❖ **FAU Self-Service:**
  - ❖ Course schedules
  - ❖ Registration (drop/add classes) and withdrawals
  - ❖ Student records and financial aid
  - ❖ Tuition payments
  - ❖ The University Course Catalog

## FOREIGN LANGUAGE (4-8 credits) – **REQUIRED only for COMPUTER SCIENCE MAJOR**

Students with more than one year of a foreign language in high school should enroll in the second half of the beginners foreign language class (ARA/CHI/FRE/GER/HBR/ITA/JPN/LAT/SPN 1121) or a higher level course. Proficiency for a first-level course can be earned by successfully completing a second-level course. For questions related to this requirement, consult an academic advisor. CLEP exam credits meet this requirement: see the catalog.

- **NOTE:** Native Speakers of a foreign language must consult the Languages, Linguistics, and Comparative Literature Department regarding this requirement.
- **NOTE:** Honors Seminars SHALL BE ACCEPTED AS MEETING THE WAC/GRW REQUIREMENT. See the University Advising Services Office for details.

**FREE ELECTIVES:** Engineering students **DO NOT** have any electives. Engineering students must stick to the core curriculum.

### MAJOR REQUIREMENTS

(All required major courses must earn a “C” or better)

- \_\_\_ EGN 1002 & L Fundamentals of Engineering [**Must be taken freshman year**] (**NOT required for Computer Science majors**)
- \_\_\_ SPC 2608 Public Speaking (**Required for Computer Science & Geomatics majors ONLY**)

### SCIENCE REQUIREMENTS BY MAJOR

(All required science courses must earn a “C” or better)

#### Civil, Electrical, Geomatics, Mechanical, Ocean, and Computer Engineering:

- \_\_\_ CHM 2045 & L .....General Chemistry 1 (4 cr. w/Lab) ‡ (**REQUIRED**)
- \_\_\_ PHY 2048 & L .....General Physics 1 (5 cr. w/ Lab) \*\* (**REQUIRED**)
- \_\_\_ PHY 2049 & L .....General Physics 2 (5 cr. w/ Lab) (**REQUIRED**)

#### Civil Engineering majors must also choose 1 from:

- \_\_\_ BSC 1010 & L & D...Biological Principles (4 credits including Lab & Discussion)
- \_\_\_ GLY 2010C.....Physical Geology (4 cr. including Lab) (**RECOMMENDED**)

#### Computer Science:

- \_\_\_ PHY 2048 & L .....General Physics 1 (5 cr. w/ Lab) \*\* (**REQUIRED**)
- \_\_\_ PHY 2049 & L .....General Physics 2 (5 cr. w/ Lab) (**REQUIRED**)

#### Computer Science majors must also choose 1 from:

- \_\_\_ CHM 2045 & L .....General Chemistry 1 (4 cr. w/Lab) ‡
- \_\_\_ BSC 1010 & L & D...Biological Principles (4 credits including Lab & Discussion)
- \_\_\_ GLY 2010C.....Physical Geology (4 cr. including Lab)

### REQUIREMENT INFORMATION

- **NOTE:** All Engineering and Computer Science students should take Physics I (PHY 2048 & PHY 2048L) with Calculus II (MAC 2312) in the same semester.
- **NOTE:** Students must receive a minimum grade of “C” and overall GPA of 2.5 or greater in a combination of the math and physics courses below. Calculation of the GPA will be based on the highest grade earned. Advance placement (AP) – a score of 5 is equivalent to an “A” and a score of 4 is equivalent to a “B”.
- **Electrical and Computer Engineering:** MAC 2311 & MAC 2312 = 2.5 GPA **or** MAC 2311 & PHY 2043 *or* PHY 2048 = 2.5 GPA.
- **Ocean, Mechanical, Civil, Environmental & Geomatics Engineering:** MAC 2311 & PHY 2043 *or* PHY 2048 = 2.5 GPA.
- **Computer Science:** COP 2220 & MAC 1140 & MAC 1114 = 2.5 GPA **or** COP 2220 & MAC 1147 = 2.5 GPA.

**Incoming Freshman and students transferring with less than 30 credits contact:**

Nicole Raymond  
University Advising Services  
Phone: (561) 297-3064

**Transfer students or students with more than 30 credits contact:**

College of Engineering & Computer Science  
Phone: (561) 297-2780  
Email address: engineering-advising@fau.edu