**Bachelor of Science**

#### COMPUTER SCIENCE

2014-2015 Undergraduate Catalog

**Four Year Progression Plan**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Freshman Year** | | | | | | | | | |
| **1st term** | | | | | | **2nd term** | | | |
| CS 126 | Computer Science I | | | 3 |  | CS 136 | Computer Science II | 3 |  |
| CS 126L | Computer Science I Lab | | | 1 |  | CS 136L | Computer Science II Lab | 1 |  |
| MAT 136 ☺ | Calculus I (SCI: SAS) | | | 4 |  | MAT 137 ☺ | Calculus II (FNRQ) | 4 |  |
| *LS* ☺ | Liberal Studies | | | 3 |  | ENG 105 ☺ | Critical Reading and Writing (FNRQ) | 4 |  |
| *LS/DIV* ☺ | Liberal Studies /Diversity \* | | | 3 |  | SE w Lab ☺ | Science Elective with Lab (SCI: LAB) \*\* | 4 |  |
| NAU 100 | Transition to College | | | 1 |  |  |  |  |  |
| Total units | | | | 15 | | Total units | | 16 | |
|  | | | | | | | | | |
| **Sophomore Year** | | | | | | | | | |
| **3rd term** | | | | | | **4th term** | | | |
| CS 249 | Data Structures | | 3 | |  | CS 212 | Web Programming **SPRING ONLY** | 3 |  |
| MAT 226 ☺ | Discrete Mathematics (SCI: SAS) | | 3 | |  | MSE☺ | Math or Science Elective \*\*\* | 3 |  |
| SE ☺ | Science Elective \*\* | | 3-4 | |  | *LS* ☺ | Liberal Studies | 3 |  |
| *LS* ☺ | Liberal Studies | | 3 | |  | CENE 225 or  STA 270 ☺ or  STA 275 | Engineering Analysis or  Applied Statistics or  Statistical Analysis | 3 |  |
| CS 200 | Introduction to Computer Organization  **FALL ONLY** | | 3 | |  | *LS/DIV* | Liberal Studies /Diversity \* | 3 |  |
| Total units | | | 15-16 | | | Total units | | 15 | |
|  | | | | | | | | | |
| **Junior Year** | | | | | | | | | |
| **5th term** | | | | | | **6th term** | | | |
| CS 301 | Social & Ethical Issues in Computer Science  **FALL ONLY** | | | 2 |  | CS 386 | Software Engineering **SPRING ONLY** | 3 |  |
| CS 315 | Automata Theory **FALL ONLY** | | | 3 |  | CS 396 | Principles Of Languages **SPRING ONLY** | 3 |  |
| CSE | CS Elective \*\*\*\*\* | | | 3 |  | CS 480 | Operating Systems **SPRING ONLY** | 3 |  |
| MSE ☺ | Math or Science Elective \*\*\* | | | 3 |  | MAT 316 ☺ or  MAT 362 ☺ | Linear Algebra or  Numerical Analysis | 3 |  |
| ENG 302W ☺ | Technical Writing | | | 3 |  | CSE | CS Elective \*\*\*\*\* | 3 |  |
| Total units | | | | 14 | | Total units | | 15 | |
|  | | | | | | | | | |
| **Senior Year** | | | | | | | | | |
| **7th term** | | | | | | **8th term** | | | |
| CS 421 | | Algorithms **FALL ONLY** | | 3 |  | CS 486C | Capstone Experience **SPRING ONLY** | 4 |  |
| CS 476 | | Requirements Engineering **FALL ONLY** | | 2 |  | CSE | CS Elective \*\*\*\*\* | 3 |  |
| CSE | | CS Elective \*\*\*\*\* | | 3 |  | CSE | CS Elective \*\*\*\*\* | 3 |  |
| CSE | | CS Elective \*\*\*\*\* | | 3 |  | *TE* ☺ | Technical Elective \*\*\*\* | 3 |  |
| TE ☺ | | Technical Elective \*\*\*\* | | 3 |  | *LS* ☺ | Liberal Studies | 3 |  |
| Total units | | | | 14 | | Total units | | 16 | |

**☺Typically offered in Summer**

**Liberal Studies Distribution blocks**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| AHI (6 units) | SPW (6 units) | CU (6 units) | Science (7 units) | Additional 3 units to reach 35 total |
|  |  |  | Lab Science Elective (4) |
|  |  |  | MAT 136 (4) | MAT 226 (3) |

DIVERSITY: Global\* \_\_\_\_\_\_\_ Ethnic\* \_\_\_\_\_\_\_\_

**PROGRAM INFORMATION**

A minimum of 120 units is required for this degree. This plan as written has 120-121 units (including NAU 100).

You must earn a C or better in all required CS course and no more than one D is allowed in CS electives or Technical electives.

Be aware that some courses (especially 200, 300 & 400 level courses) are only offered once a year (fall only or spring only). These courses may be pre-requisites for future courses. Check the Computer Science website at <http://www.nau.edu/cs> for planned course offerings. Many non-CS courses are offered during summer sessions and are denoted by a ☺.

\*Take a Liberal Studies Distribution Block elective course that also satisfies a Diversity requirement.

\*\* For Science electives choose one of the following blocks:

* PHY 161(lab included), PHY 262 (7 units)
* CHM 151/151L, CHM 152 (8 units)
* BIO 181/181L, BIO 182/182L (8 units)

\*\*\*Math or Science electives include 6 units at the 200 level or above from MAT, STA, PHY, BIO, CHM, GLG or AST.

\*\*\*\*Technical electives include 6 units at the 200 level or above from Engineering disciplines (EGR, EE, ME, CENE), Natural Sciences (MAT, STA, PHY, AST, CHM, BIO and GLG), and CS courses (excluding CS 248). Please note that you may petition the department chair for approval of courses with other prefixes.

\*\*\*\*\* CS electives include 18 units of additional CS courses at the 300 level or above. Up to six units of letter-graded individualized study classes (e. g., CS 485 or CS 497) are allowed. (Other computing-intensive courses may be petitioned for approval to the department chair.)

**GENERAL INFORMATION**

This degree progression plan is to be used in conjunction with the academic catalog and degree progress report.

• Students are encouraged see an academic advisor regularly to confirm their academic progress.

• Many courses have pre-requisites. Please check the academic catalog for pre-requisite and placement information.

• Some courses are only offered once a year (Fall term only or Spring term only). Some of these courses may be pre-requisites for future courses. Please check with your department for current course rotations.

• Honors students complete different requirements to meet NAU's liberal studies program. Students should consult an Honors Program advisor for complete information on fulfilling Honors Liberal Studies requirements.

• All students are required to complete a minimum of 120 total units which includes:

35 units of liberal studies courses: <http://www4.nau.edu/aio/LScourselist.htm>

6 units of diversity courses: (3 units in Global & 3 units in Ethnic): <http://www4.nau.edu/aio/DiversityCourseList.htm>

30 units of upper division courses (300-400 level), 18 of these units must be taken at NAU

• English and Math Placement Information: <http://www4.nau.edu/aio/Placement.html>

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