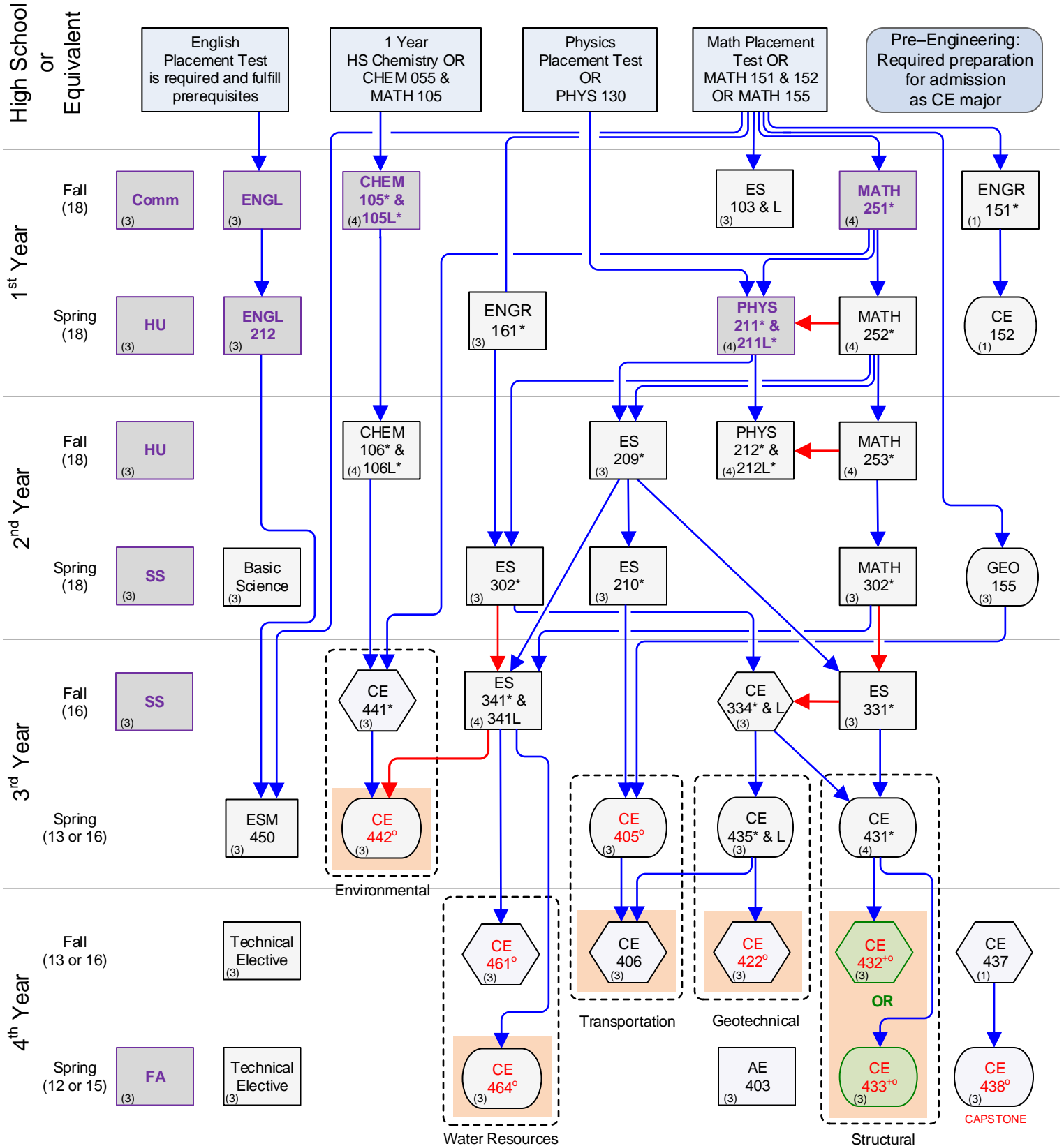


# UAA Civil Engineering Program Outline & Recommended Course Sequence

Catalog Year: 2016/2017



Course Offerings:



**Course that fulfill GER Requirements:**  
 Comm – Communications  
 HU – Humanities  
 FA – Fine Arts  
 SS – Social Science

Prerequisite →  
 Prerequisite or Concurrent →

(x) indicates number of credits per course / semester  
 \* must be completed with a grade of C or better

°At least 1 design course must be taken prior to CAPSTONE

\*Either CE432 or CE433 is Required, the other may be used as Tech Elective

Select 4 courses, one each in four of the five disciplines

**Bachelor of Science in Civil Engineering Recommended Course Sequence**

**First year**

Fall Semester (18 credits)

|                                     |   |
|-------------------------------------|---|
| Written Communication <sup>1</sup>  | 3 |
| CHEM A105* General Chemistry I      | 3 |
| CHEM A105L* General Chemistry I Lab | 1 |
| ENGR A151* Engr. Practices I        | 1 |
| MATH A251* Calculus I               | 4 |
| Oral Communication                  | 3 |
| ES A103/L Engr. Graphics & Labs     | 3 |

Spring Semester (18 credits)

|                                     |   |
|-------------------------------------|---|
| Humanities                          | 3 |
| ENGL A212 Technical Writing         | 3 |
| PHYS A211* General Physics I        | 3 |
| PHYS A211L* General Physics I Lab   | 1 |
| CE A152* Intro to Civil Engineering | 1 |
| MATH A252* Calculus II              | 4 |
| ENGR A161* Engr. Practices II       | 3 |

**Second year**

Fall Semester (18 credits)

|                                      |   |
|--------------------------------------|---|
| Humanities                           | 3 |
| CHEM A106* General Chemistry II      | 3 |
| CHEM A106L* General Chemistry II Lab | 1 |
| ES A209* Engineering Statics         | 3 |
| PHYS A212* General Physics II        | 3 |
| PHYS A212L* General Physics II Lab   | 1 |
| MATH A253* Calculus III              | 4 |

Spring Semester (18 credits)

|                                     |   |
|-------------------------------------|---|
| Social Science                      | 3 |
| Basic Science Elective <sup>2</sup> | 3 |
| ES A302* Engr. Data Analysis        | 3 |
| ES A210* Engineering Dynamics       | 3 |
| MATH A302* Differential Equations   | 3 |
| GEO A155* Fundamentals of Surveying | 3 |

**Third year**

Fall Semester (16 credits)

|   |   |
|---|---|
| Social Science                                    | 3 |
| ES A341* Fluid Mechanics                          | 3 |
| ES A341L* Fluid Mechanics Lab                     | 1 |
| CE A334/L* Properties of Materials w/lab          | 3 |
| ES A331* Mechanics of Materials                   | 3 |
| CE A441 Fundamentals of Environmental Engineering | 3 |

Spring Semester (13-16 credits)

|                                      |   |
|--------------------------------------|---|
| ESM A450 Econ. Analysis & Operation  | 3 |
| CE 435/L* Soil Mechanics w/lab       | 3 |
| CE A405 Transportation Engineering I | 3 |
| CE A431* Structural Analysis         | 4 |
| CE A442 Environmental Systems Design | 3 |

**Fourth year**

Fall Semester (13-16 credits)

|                                     |   |
|-------------------------------------|---|
| Technical Elective <sup>4</sup>     | 3 |
| CE A406 Transportation Engr. II     | 3 |
| CE A461 Hydraulic Analysis & Design | 3 |
| CE A422 Foundation Engineering      | 3 |
| CE A432 Steel Design <sup>3</sup>   | 3 |
| CE A437 Project Planning            | 1 |

Spring Semester (12-15 credits)

|   |   |
|---|---|
| Fine Arts                                       | 3 |
| Technical Elective <sup>4</sup>                 | 3 |
| CE A438 Design of Engr. Systems                 | 3 |
| AE A403 Arctic Engineering                      | 3 |
| CE A433 Reinforced Concrete Design <sup>3</sup> | 3 |
| CE A464 Hydrologic Analysis & Design            | 3 |

All courses with an asterisk (\*) must be completed with a grade of "C" or better.

<sup>1</sup>Students who do not meet the prerequisite requirements for ENGL A212 must take ENGL A111

<sup>2</sup>The Civil Engineering Program requires a Basic Science Elective (min. 3 credits) is taken from the following list: BIOL A115/L Fundamentals of Biology I with Lab (4), BIOL/GEOL A178 Fundamentals of Oceanography (3), BIOL A271/L Principles of Ecology with Lab (4), GEOL A111 Physical Geology (4), GEOL A115 Environmental Geology (3).

<sup>3</sup>One structural design course is required and this may be fulfilled by taking either CE A432 Steel Design or CE A433 Reinforced Concrete Design. If both courses are taken, the second course will count as a technical elective.

<sup>4</sup>Graduate level courses (600 or above) that may be used as technical electives are listed in the Civil Engineering section of the catalog. A petition must be filed with the department to apply these courses as undergraduate credit.