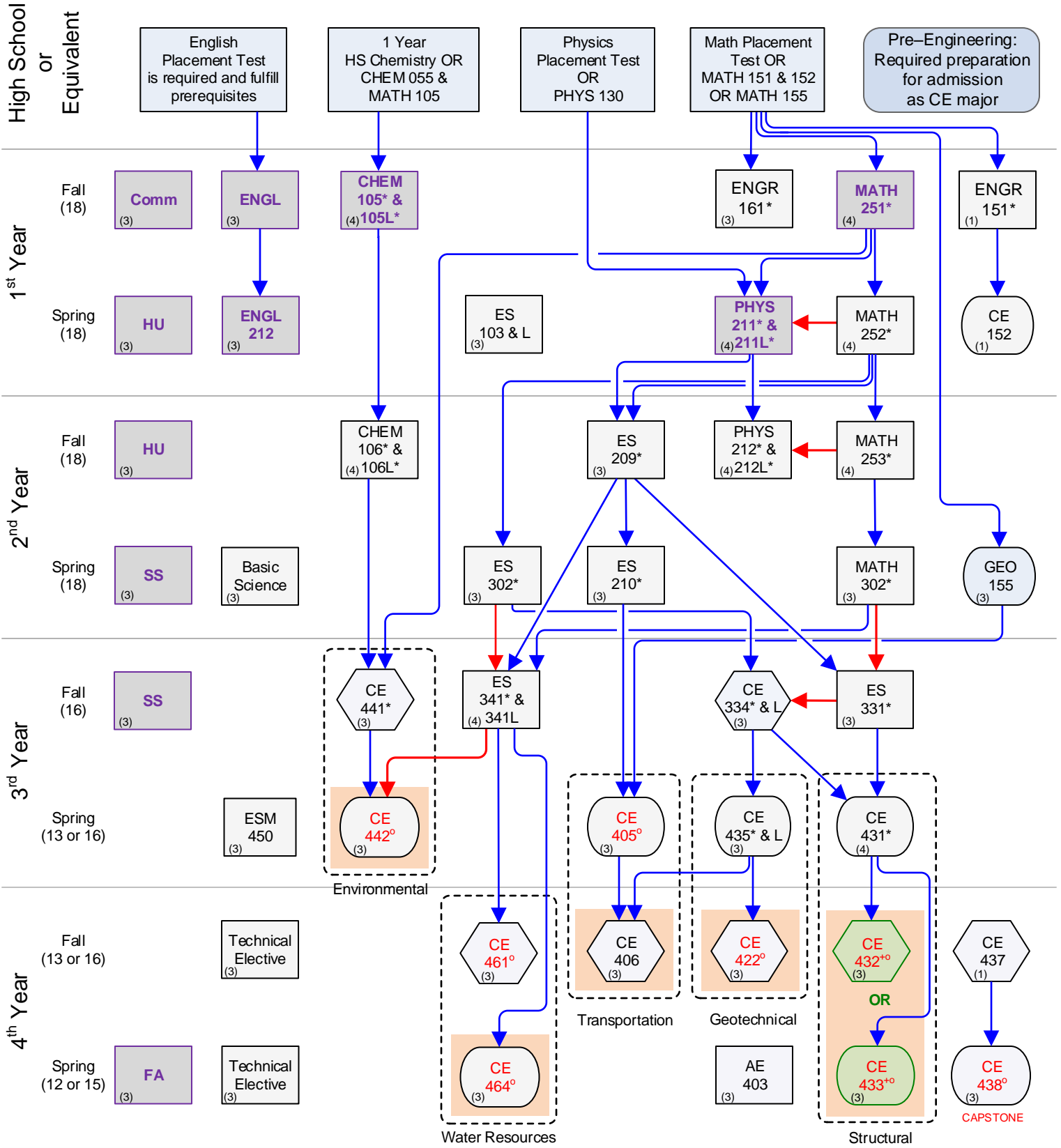


# UAA Civil Engineering Program Outline & Recommended Course Sequence

Catalog Year: 2015/2016



Course Offerings:



Prerequisite (blue arrow)  
Prerequisite or Concurrent (red arrow)

(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

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

**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
ENGR A161* Engr. Practices II	3
MATH A251* Calculus I	4
Oral Communication	3

Spring Semester (18 credits)

Humanities	3
ENGL A212 Technical Writing	3
ES A103/L Engr. Graphics & Labs	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

**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* Intro Environmental Engr.	3

Spring Semester (16 credits)

ESM A450 Econ. Analysis & Operation	3
CE A344 Water Resources Engr.	3
CE 435/L* Soil Mechanics w/lab	3
CE A405 Transportation Engineering I	3
CE A431* Structural Analysis	4

**Fourth year**

Fall Semester (13-16 credits)

Technical Elective <sup>4</sup>	3
CE A442 <sup>3</sup> Environmental Systems Design	3
CE A461 <sup>3</sup> Hydraulic Analysis and Design	3
CE A406 <sup>3</sup> Transportation Engineering II	3
CE A422 <sup>3</sup> Foundation Engineering	3
CE A432 <sup>3</sup> Steel Design	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 <sup>3</sup> Reinforced Concrete Design	3
CE A464 <sup>3</sup> Hydrologic Analysis and Des.	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>A 2<sup>nd</sup> course is required in four of the five disciplines. If all five are taken, one will count as a Technical Elective. If the structural discipline is chosen as one of the four, the 2<sup>nd</sup> course 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.