# Bachelor of Science in Civil Engineering (2021-2022 Catalog Year)

## First Year: Fall
- **ES F101** – Intro. to Engineering 3
- **MATH F251X** – Calculus I 4
- **CHEM F105X** – General Chemistry 4
- **MIN F202 or CE F112** – Surveying 2 or 3
- **WRTG F111X** – Intro. to Acad. Writing 3

## First Year: Spring
- **MATH F252X** – Calculus II 4
- **CHEM F106X** – General Chemistry 4
- **COJO F1X1X** – Oral Comm.* 3
- **WRTG F21XX** – Writing* 3
- **LS F101X** – Library Info. & Research 1

## Second Year: Fall
- **MATH F253X** – Calculus III 4
- **PHYS F211X** – General Physics 4
- **DRT F210** – Intermediate CAD 3
- **ES F201** – Computer Techniques 3
- **GER A, H, SS, E (1 of 6)** 3

## Second Year: Spring
- **PHYS F212X** – General Physics 4
- **ES F208** – Mechanics 4
- **ES F301** – Engineering Analysis 3
- **GE F261** – Gen’l Geology for Engr. 3

## Third Year: Fall
- **ES F331** – Mechanics of Materials 3
- **CE F326** – Intro. to Geotech. & Fndts 4
- **ES F341** – Fluid Mechanics 4
- **CE F341** – Environmental Engr. 4

## Third Year: Spring
- **CE F302** – Transportation Engr. 3
- **CE F331** – Structural Analysis 3
- **CE F334** – Properties of Materials 3
- **GER A, H, SS, E (2 of 6)** 3
- **GER A, H, SS, E (3 of 6)** 3

## Fourth Year: Fall
- **CE F344** – Water Resources Engr. 3
- **CE F432** – Steel Design 3
- **ESM F450** – Economic Analysis & Ops. 3
- **Technical Elective** 3
- **Technical Elective** 3

## Fourth Year: Spring
- **CE F438** – Design of Engr. Systems 3
- **Technical Elective** 3
- **GER A, H, SS, E (4 of 6)** 3
- **GER A, H, SS, E (5 of 6)** 3
- **GER A, H, SS, E (6 of 6)** 3

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* Students may choose from a suite of courses to fulfill this requirement.

Students must take the Fundamentals of Engineering Exam in order to graduate.

**GER A, H, SS, E:** General Education Requirements – Arts, Humanities, Social Science, Ethics

**Technical electives:** 1) Complete 3 credits from the fields of environmental, construction, or transportation engineering; 2) Complete 6 credits from any of the following areas of emphasis, or as approved by an advisor:

**ARCTIC EMPHASIS**
- **CE F401** Arctic Engineering
- **CE F424** Permafrost Engineering
- **ME F441** Heat and Mass Transfer

**CONSTRUCTION EMPHASIS**
- **CE F451** Constr. Cost Est. and Bid Prep.

**ENVIRONMENTAL EMPHASIS**
- **CE F442** Water & Wastewater Trtmt. Design
- **CE F443** Air Pollution Management
- **ENVE F446** Biological Unit Processes

**GEOTECHNICAL EMPHASIS**
- **CE F422** Foundation Engineering

**GEOTECHNICAL EMPHASIS**
- **CE F433** Reinforced Concrete Design
- **CE F434** Timber Design

**TRANSPORTATION EMPHASIS**
- **CE F405** Design of Highways and Streets
- **CE F407** Pavement Materials and Design
- **CE F408** Transportation Safety Analysis

**WATER RESOURCES EMPHASIS**
- **CE F445** Hydrologic Analysis and Design
- **CE F420** Groundwater Engineering

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Modified 11/13/2020
STUDENT NAME: _______________________

ID #: ______________________________

2021-2022 CATALOG
CIVIL ENGINEERING
B.S. Degree Requirements
Minimum required credits: 125

GENERAL EDUCATION REQUIREMENTS:

COMMUNICATIONS:

WRTG F111X (3) _________
WRTG F21XX* (3) _________
COJO F1X1X* (3) _________

*ARTS: (3) ______________________________

*HUMANITIES: (3) __________________________

*SOCIAL SCIENCES: (3) ______________________

*SOCIAL SCIENCES: (3) ______________________

*ADDITIONAL A, H, SS: (3) ________________

*ETHICS: (3) ______________________________

*Course meeting Alaska Native-themed requirement:

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MATHEMATICS:

MATH F251X (4) _______  MATH F252X (4) _______
§MATH F253X (4) _______  §MATH F302 (3) _______

NATURAL SCIENCE:

CHEM F105X (4) _______  CHEM F106X (4) _______
§PHYS F211X (4) _______  §PHYS F212X (4) _______

LIBRARY & INFO. SKILLS:

LS F101X (1) _______

* For a list of allowable classes, check the UAF catalog or speak with your advisor.

Students must earn a C- grade (1.7) or better in each course.

MAJOR REQUIREMENTS:

Complete the following program (major) requirements (includes courses indicated with § to the left):

CE F112 (3) _________ or MIN F202 (2) _________
CE F302 (3) _________
CE F326 (4) _________
CE F331 (3) _________
CE F334 (3) _________
CE F341 (4) _________
CE F344 (3) _________
CE F432 (3) _________
CE F438 (3) _________
DRT F210 (3) _________
ES F101 (3) _________
ES F201 (3) _________
ES F208 (4) _________
ES F301 (3) _________
ES F331 (3) _________
ES F341 (4) _________
ESM F450 (3) _________
GE F261 (3) _________

Technical electives:

Envir., Constr., Transp. _________ (3) _______

Two additional technical electives:

__________ (3) _______  ___________ (3) _______

Note: Up to two graduate-level engineering courses can serve as technical electives if approved by advisor; the student must be within two semesters of graduation and have at least a 3.0 GPA.

Must take the Fundamentals of Engineering Exam.

EXAM TAKEN: ________________

Total minimum credits required for degree: 125

Modified 11/13/2020