

# BACHELOR OF SCIENCE-CIVIL ENGINEERING (CIVE)

The Bachelor of Science in Civil Engineering curriculum is thoughtfully designed to provide students with a strong foundation in engineering principles, analytical skills, and practical experiences essential for success in the civil engineering field. The program spans four years and includes a total of 125 semester credit hours.

It integrates foundational courses in mathematics, physics, and chemistry with a comprehensive sequence of core engineering topics, including structural analysis, geotechnical engineering, water resources, and transportation systems. Students start with introductory coursework in engineering, calculus, and science, gradually advancing to more complex subjects such as reinforced concrete design, fluid mechanics, and construction management.

Additionally, the curriculum incorporates key general education components—such as communication, history, government, and philosophy—to ensure graduates are well-rounded. Emphasis is placed on hands-on learning through labs, surveying, and a two-part capstone design sequence. In their final year, students have the opportunity to customize their education by choosing elective courses in specialized areas like foundation engineering, hydrology, bridge design, and internships.

Overall, the program prepares graduates for licensure and professional practice, combining theoretical knowledge with practical application and professional development.

## Degree Requirements

Students should refer to their DegreeWorks degree audit in their Web for Students account for more information regarding their degree requirements.

### Course List

| Code   | Title   | Hours |
|--|---|-------|
| <b>Major Requirements</b>  |   |       |
| General Education Requirements ( <a href="http://catalog.tamut.edu/academic-information/university-core-curriculum/">http://catalog.tamut.edu/academic-information/university-core-curriculum/</a> ) |   | 42    |
| PHYS 2325  | University Physics I <small>satisfies Core Curriculum</small>               | 3     |
| <b>Science, Mathematics &amp; Civil Engineering Foundational Courses</b>   |   |       |
| PHYS 2125  | University Physics I Lab <small>satisfies Core Curriculum</small>           | 1     |
| PHYS 2326  | University Physics II <small>satisfies Core Curriculum</small>              | 3     |
| PHYS 2126  | University Physics II Lab <small>satisfies Core Curriculum</small>          | 1     |
| ECON 2301  | Principles of Macroeconomics <small>satisfies Core Curriculum</small>       | 3     |
| CHEM 1307<br>or CHEM 1311  | General Chemistry for Engineering Students<br>General Chemistry I           | 3     |
| CHEM 1117<br>or CHEM 1111  | General Chemistry for Engineering Students Lab<br>General Chemistry I (Lab) | 1     |
| MATH 2413  | Calculus I <small>satisfies Core Curriculum</small>                         | 4     |
| MATH 2414  | Calculus II   | 4     |
| MATH 2415  | Calculus III  | 4     |
| MATH 2320  | Differential Equations  | 3     |
| ENGR 1201  | Introduction to Engineering   | 2     |
| ENGR 2304  | Programming for Engineers   | 3     |
| ENGR 2301  | Engineering Mechanics - Statics   | 3     |
| ENGR 2302  | Engineering Mechanics - Dynamics  | 3     |
| CVEN 2305  | Physical Geology  | 3     |
| <b>Advanced Civil Engineering Courses</b>  |   |       |
| ENGR 304   | Engineering Graphics I  | 3     |
| ENGR 307   | Probability and Statistics for Engineers.                                   | 3     |
| ENGR 340   | Fluid Mechanics   | 3     |
| ENGR 341   | Fluid Mechanics Laboratory  | 1     |
| ENGR 343   | Mechanics of Materials  | 3     |
| ENGR 410   | Engineering Economics   | 3     |
| CVEN 303   | Course CVEN 304 Not Found   |       |
| CVEN 305   | Civil Engineering Materials   | 3     |

|   |                           |            |
|---|---------------------------|------------|
| CVEN 310  | Structural Analysis       | 3          |
| CVEN 311  | Course CVEN 311 Not Found |            |
| CVEN 312  | Course CVEN 312 Not Found |            |
| CVEN 320  | Course CVEN 320 Not Found |            |
| CVEN 330  | Course CVEN 330 Not Found |            |
| CVEN 404  | Course CVEN 404 Not Found |            |
| CVEN 440  | Course CVEN 440 Not Found |            |
| CVEN 490  | Course CVEN 490 Not Found |            |
| CVEN 491  | Course CVEN 491 Not Found |            |
| Select 6 semester credit hours of Electives from any UD CVEN course or ENGR 365, ENGR 315, ENGR 404, ENGR 431, ENGR 432 |                           | 6          |
| <b>Minimum Hours for Degree</b>   |                           | <b>125</b> |

Note: A minimum of 45 upper division hours (300 and 400 level courses) are required for this degree. Resident credit totaling 25% of the hours is required for the degree. A minimum GPA of 2.0 is required in three areas for graduation: Overall GPA, Institutional GPA, and Major GPA.

## Bachelor of Science - Civil Engineering - Four Year Plan

### First Year

| Code  | Title   | Hours     |
|---|---|-----------|
| <b>Fall</b>   |   |           |
| ENGL 1301   | Composition I <sup>satisfies Core Curriculum</sup>                | 3         |
| CHEM 1311   | General Chemistry I <sup>satisfies Core Curriculum</sup>          | 3         |
| or CHEM 1307  | General Chemistry for Engineering Students                        |           |
| CHEM 1111   | General Chemistry I (Lab) <sup>satisfies Core Curriculum</sup>    | 1         |
| or CHEM 1117  | General Chemistry for Engineering Students Lab                    |           |
| MATH 2413   | Calculus I <sup>satisfies Core Curriculum</sup>                   | 4         |
| ENGR 1201   | Introduction to Engineering                                       | 2         |
| Creative Arts Core Curriculum Requirement ( <a href="http://catalog.tamut.edu/academic-information/university-core-curriculum/">http://catalog.tamut.edu/academic-information/university-core-curriculum/</a> ) |   | 3         |
| UNIV 1100   | University Foundations <sup>required for FTIC students only</sup> | 1         |
| <b>Fall Total Semester Credit Hours</b>   |   | <b>17</b> |
| <b>Spring</b>   |   |           |
| PSCI 2305   | U.S. Government and Politics <sup>satisfies Core Curriculum</sup> | 3         |
| ENGL 1302   | Composition II <sup>satisfies Core Curriculum</sup>               | 3         |
| MATH 2414   | Calculus II   | 4         |
| PHYS 2325   | University Physics I <sup>satisfies Core Curriculum</sup>         | 3         |
| PHYS 2125   | University Physics I Lab <sup>satisfies Core Curriculum</sup>     | 1         |
| CVEN 2305   | Physical Geology  | 3         |
| <b>Spring Total Semester Credit Hours</b>   |   | <b>17</b> |
| <b>Total First Year Semester Credit Hours</b>   |   | <b>34</b> |

### Second Year

| Code                                    | Title   | Hours     |
|---|---|-----------|
| <b>Fall</b>                             |   |           |
| ENGR 2301                               | Engineering Mechanics - Statics                                   | 3         |
| MATH 2415                               | Calculus III  | 4         |
| SPCH 1315                               | Public Speaking <sup>satisfies Core Curriculum</sup>              | 3         |
| PHYS 2326                               | University Physics II <sup>satisfies Core Curriculum</sup>        | 3         |
| PHYS 2126                               | University Physics II Lab <sup>satisfies Core Curriculum</sup>    | 1         |
| HIST 1301                               | United States History I <sup>satisfies Core Curriculum</sup>      | 3         |
| <b>Fall Total Semester Credit Hours</b> |   | <b>17</b> |
| <b>Spring</b>                           |   |           |
| ECON 2301                               | Principles of Macroeconomics <sup>satisfies Core Curriculum</sup> | 3         |

|  |                                  |           |
|--|----------------------------------|-----------|
| ENGR 343                                       | Mechanics of Materials           | 3         |
| MATH 2320                                      | Differential Equations           | 3         |
| ENGR 2302                                      | Engineering Mechanics - Dynamics | 3         |
| ENGR 304                                       | Engineering Graphics I           | 3         |
| <b>Spring Total Semester Credit Hours</b>      |                                  | <b>15</b> |
| <b>Total Second Year Semester Credit Hours</b> |                                  | <b>32</b> |

## Third Year

| Code  | Title   | Hours     |
|---|---|-----------|
| <b>Fall</b>                                   |   |           |
| CVEN 303                                      |   |           |
| CVEN 310                                      | Structural Analysis   | 3         |
| CVEN 305                                      | Civil Engineering Materials   | 3         |
| HIST 1302                                     | United States History II <small>satisfies Core Curriculum</small>   | 3         |
| ENGR 340                                      | Fluid Mechanics   | 3         |
| ENGR 341                                      | Fluid Mechanics Laboratory  | 1         |
| <b>Fall Total Semester Credit Hours</b>       |   | <b>15</b> |
| <b>Spring</b>                                 |   |           |
| ENGR 307                                      | Probability and Statistics for Engineers.                           | 3         |
| CVEN 311                                      |   |           |
| CVEN 312                                      |   |           |
| CVEN 320                                      |   |           |
| PSCI 2306                                     | State and Local Government <small>satisfies Core Curriculum</small> | 3         |
| <b>Spring Total Semester Credit Hours</b>     |   |           |
| <b>Total Third Year Semester Credit Hours</b> |   | <b>30</b> |

## Fourth Year

| Code  | Title                     | Hours      |
|---|---------------------------|------------|
| <b>Fall</b>   |                           |            |
| CVEN 330  |                           |            |
| ENGR 410  | Engineering Economics     | 3          |
| ENGR 2304   | Programming for Engineers | 3          |
| CVEN 490  |                           |            |
| 3sch Prescribed Elective <small>"Select 6 semester credit hours from any upper-division CVEN course or from ENGR 365, ENGR 315, ENGR 404, ENGR 431, or ENGR 432, as listed in the Degree Requirements section."</small>   |                           | 3          |
| <b>Fall Total Semester Credit Hours</b>   |                           | <b>14</b>  |
| <b>Spring</b>   |                           |            |
| CVEN 440  |                           |            |
| CVEN 491  |                           |            |
| CVEN 404  |                           |            |
| Language, Philosophy and Culture Core Curriculum Requirement ( <a href="http://catalog.tamut.edu/academic-information/university-core-curriculum/">http://catalog.tamut.edu/academic-information/university-core-curriculum/</a> ) <small>satisfies Core Curriculum</small> |                           | 3          |
| 3sch Prescribed Elective <small>"Select 6 semester credit hours from any upper-division CVEN course or from ENGR 365, ENGR 315, ENGR 404, ENGR 431, or ENGR 432, as listed in the Degree Requirements section."</small>   |                           | 3          |
| <b>Spring Total Semester Credit Hours</b>   |                           | <b>15</b>  |
| <b>Total Fourth Year Semester Credit Hours</b>  |                           | <b>29</b>  |
| <b>Minimum Hours for Degree</b>   |                           | <b>125</b> |

Note: A minimum of 45 upper division hours (300 and 400 level courses) are required for this degree. Resident credit totaling 25% of the hours is required for the degree. A minimum GPA of 2.0 is required in three areas for graduation: Overall GPA, Institutional GPA, and Major GPA.