

CIVIL ENGINEERING ACADEMIC MAP: DEGREE BS (128 CREDIT HOURS)

This degree map is a semester-by-semester course schedule for students majoring in [Civil Engineering](#). The milestones listed to the right of each semester are designed to keep a student on track to graduate in four years. The schedule serves as a general guideline to help build a full schedule each semester. Milestones are courses and special requirements necessary for timely progress to complete a major. When one or more milestones are missed, students should consult with an academic advisor to determine if another degree path would be more suitable.

The Bachelor of Science in Civil Engineering is housed in the Department of Civil and Architectural Engineering. The degree program provides broad base background in civil engineering which builds upon basic mathematics, science, and engineering science and design courses. Design concepts are integrated throughout the curriculum and culminate in a two-semester capstone course during the senior year. This means entering student must have a strong background in mathematics and science.

Students must have an ACT (or Equivalent SAT) of 23 and a grade of 'C' or better in (Math 1710, 1720 – Pre-calculus I and II courses). Students with an ACT score lower than 19 will be placed in courses based upon ACT (or Equivalent SAT) sub-scores in Mathematic. Students who have satisfied all placement requirements determined at the time of admission should follow the four-year curriculum as detailed in the tables below. To make steady progress towards the degree, students must complete each course with a grade of 'C' or better. To graduate, a student cannot carry more than two "D" grades in the major courses.

To enroll in Upper Division engineering courses (3000-4000 level), students must have successfully completed the Engineering Entrance Examination (EEE) with a minimum score of 75% on each part (calculus, chemistry and physics). The eligibility criteria for taking the EEE are: (1) a minimum Grade Point Average of 2.5 in CHEM 1110/1111, MATH 1910, MATH 1920, PHYS 2110/2111, PHYS 2120, (2) a minimum cumulative Grade Point Average of 2.5, and (3) completion and submission of the EEE eligibility form to the Dean's Office at least one week prior to the examination. The college offers the exam at least five (5) times per year. Each student is allowed three (3) attempts to pass the examination. After the second attempt, the student is required to take at least one of the following courses: CHEM 1110, MATH 1910 or MATH 1920, PHYS 2110 before the examination can be taken a third and final time. Transfer students must successfully complete the examination before taking 3000 level courses.

Between the sophomore and senior years, students must engage in a practical engineering work experience. This practicum is a full-time, continuous eight (8) week activity. Seniors must take an exit examination (Senior Exit Exam) prior to graduation. At the beginning of the final year, students must meet with the academic advisor and file an approved graduation check list; seniors should come prepared with the latest transcript and any evaluation of transfer credits. It must be remembered that during the final year, students are unable to transfer more than six (6) credit hours.

Tennessee State University recognizes that students have diverse learning, life, and professional experiences. The University provides opportunities for students to earn college credit toward the degree through a number of assessment options that evaluate their learning experiences. These paths are grouped under the category "Prior Learning Assessment" (PLA). Various means of earning PLA credit at TSU are the following: Advance Placement Program, American Council of Education (ACE) Military Credit, American Council on Education (ACE) other Assessed Credit, College Level Exam Program (CLEP), DSST Credit by Examination Program (includes DANTES Examination), Institutional Course Challenge Exams (Departmental Exams), International Baccalaureate Credit, Other Military Service, Portfolio Assessment. To learn more about PLA contact your academic advisor or the Office of Student Support Services for Adult and Distance Learners (615) 963-7001.

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Fall Schedule		Milestones
Semester 1	Hrs.	Semester 1
ENGL 1010	3	Pre-Requisite Course: Must be taken before ENGL 1020, and HIST 2010, HIST 2020, HIST 2030, HIST 2050 or HIST 2700; Minimum grade "C" Required
MATH 1910 *	4	Minimum Grade of "C" Required
CHEM 1110/1111**	4	Minimum Grade of "C" Required
ENGR 1020	1	Pre-Requisite Course: Must be taken before taking HIST 2010, HIST 2020, HIST 2030, HIST 2050 or HIST 2700; Minimum grade "C" Required
ENGR 1151	1	Minimum Grade of "C" Required
UNIV 1000 ***	1	Minimum Grade of "C" Required
Total Hours	14	

*Before taking this course, students should discuss with an engineering academic advisor previous mathematic course experience(s) or scores on the ACT or SAT.

**Students must have taken either High School Chemistry earning at least a 75% or CHEM 1000/1001 and two years of High School Algebra before enrolling in CHEM 1110/1111.

***An Orientation course taken at another University does **NOT** meet this requirement. Students with less than 60 credit hours must take UNIV 1000 at TSU.

Spring Schedule		Milestones
Semester 2	Hrs.	Semester 2
ENGL 1020	3	Minimum Grade of "C" Required
MATH1920*	4	Pre-requisite Course: Must be taken before enrolling in MATH 2110; Minimum Grade of "C" Required
PHYS 2110 /2111*	4	Pre-requisite Course: Must be taken before enrolling in ENGR 2110; Minimum Grade of "C" Required
ENGR 2230*	3	Minimum Grade of "C" Required
Social Science**	3	
Total Hours	17	

*All three (3) of these courses must be taken during the same semester.

**Students must select a course from the following list of approved courses that meet the Social Science elective requirement: AFAS 2010, ANTH 2300, ECON, 2010, GEOG 1010, HPSS 1510, POLI 1010 PSYC 2010, WMST 2000, and URBS 2010.

Fall Schedule		Milestones
Semester 3	Hrs.	Semester 3
MATH 2110	4	Minimum Grade of "C" Required
PHYS 2120/2121	4	Minimum Grade of "C" Required
ENGR 2110	3	Pre-requisite Course: Must be taken before enrolling ENGR 2120, CVEN 3120 /3121, and CVEN 3400; Minimum Grade of "C" Required
COMM 2200	3	
BIOL 3010 /3011	2	
Total Hours*	17	Engineering Entrance Exam/Application Required

*All Students are required to take and pass Engineering Entrance Exam before enrolling in upper division (3000-4000) Engineering courses.

Spring Schedule		Milestones
Semester 4	Hrs.	Semester 4
MATH 3120	3	Pre-requisite Course: Must be taken before enrolling in ENGR 4400; Minimum Grade of "C" Required
ENGR 2120	3	Pre-requisite Course: Must be taken before enrolling in ENGR 3120, CVEN 3100/3101, and CVEN 4320; Minimum Grade of "C" Required
CVEN 3120/3121	4	Pre-requisite Course: Must be taken before enrolling in CVEN 3140; Minimum Grade of "C" Required
ENGL 2110*	3	Pre-requisite Course: Must be taken before enrolling in CVEN 3350
HIST 2010**	3	
Total Hours	16	

*The department recommends the courses cited above; however, courses within the range of ENGL 2012 through ENGL 2322 will meet this requirement

**The Department recommends HIST 2010; however, HIST 2030, HIST 2050, HIST 2060 or HIST 2700 satisfy this requirement.

Fall Schedule		Milestones
Semester 5	Hrs.	Semester 5
CVEN 3000*	3	Pre-requisite Course: Must be taken before enrolling in CVEN 4361 and CVEN 4250; Minimum Grade of "C" Required
CVEN 3100/3101	4	Pre-requisite Course: Must be taken before enrolling in CVEN 3250 and CVEN 4250; Minimum Grade of "C" Required
CVEN 3400	1	Minimum Grade of "C" Required
ENGR 4300*	3	Pre-Requisite: Junior Standing; Minimum Grade of "C" Required
CVEN 3410	3	Pre-requisite Course: Must be taken before enrolling in CVEN 3440 and CVEN 3420; Minimum Grade of "C" Required
ENGR 4400	3	Minimum Grade of "C" Required
Total Hours	17	

*Students must have earned junior status (60- 89 credit hours) before enrolling in CVEN 3000, and ENGR 4300.

Spring Schedule		Milestones
Semester 6	Hrs.	Semester 6
CVEN 3130 /3131	3	Minimum Grade of "C" Required
CVEN 3200	3	Minimum Grade of "C" Required
CVEN 3250	3	Minimum Grade of "C" Required
CVEN 4361	1	Minimum Grade of "C" Required
CVEN 3440	3	Minimum Grade of "C" Required
HIST 2220 or 2310	3	
Total Hours*	16	Practicum

*Each engineering student must complete a practicum prior to graduation. The experience must be eight (8) weeks in length and pre-approved by the advisor and the Department Chair.

Fall Schedule		Milestones
Semester 7	Hrs.	Semester 7
ENGR 4500*	1	Pre-requisite Course: Senior Standing; Must be taken before enrolling in CVEN 4510; Minimum Grade of "C" Required
CVEN 4250	3	Minimum Grade of "C" Required
CVEN 4320	3	Minimum Grade of "C" Required
CVEN 3420	3	Minimum Grade of "C" Required
ENGR 4900*	1	Minimum Grade of "C" Required
CVEN Design Tech. Elective**	3	Minimum Grade of "C" Required
Total Hours***	14	Program Review

*Only graduating seniors may enroll in these courses: ENGR 4500 and ENGR 4900.

**Advisor approval must be obtained before enrolling in CVEN Design Tech Electives. The electives are as follows: CVEN 3440, CVEN 4280, CVEN 4350, CVEN 4050, CVEN 4090, CVEN 4110, CVEN 4220 or CVEN 4430.

***All electrical engineering majors must review degree requirements with the Department Chair at least one semester prior to the semester in which graduation is anticipated.

Spring Schedule		Milestones
Semester 8	Hrs.	Semester 8
		Take Senior Exit Exam and Apply for Graduation
ENGR 4510*	1	Pre-Requisite: Graduating Senior Standing; Minimum Grade of "C" Required
CVEN 3350	3	Minimum Grade of "C" Required
CVEN 4470 *	3	Pre-Requisite: Graduating Senior Standing; Minimum Grade of "C" Required
ENGR 4201 *	0	Pre-Requisite: Graduating Senior Standing; Minimum Grade of "C" Required
Humanities**	3	
Social Science***	3	
Humanities**	3	
Total Hours****	16	

*Only graduating seniors may enroll in: ENGR 4510, CVEN 4470, and ENGR 4201.

**Students must take a 3 credit hour course from the following list of approved general education Humanities courses: AREN 2310, ART 1010, HIST 1000, THTR 1020, MUSC 1010, PHIL 1030, or RELS 2010. Students must remember not to duplicate a Humanities course option from a previous semester.

***Students must select a course from the following list of approved courses that meet the Social Science elective requirement: AFAS 2010, ANTH 2300, ECON, 2010, GEOG 1010, HPSS 1510, POLI 1010 PSYC 2010, WMST 2000, and URBS 2010. Please remember not to duplicate a Social Science course option from a previous semester.

****Students must take the Senior Exit Exam before graduating.

Employment Information: According to the U.S. Department of Labor (DOL), Employment of civil engineers is projected to grow 20 percent from 2012 to 2022, faster than the average for all occupations. As infrastructure continues to age, civil engineers will be needed to manage projects to rebuild bridges, repair roads, and upgrade levees and dams. Civil engineers design, construct, supervise, operate, and maintain large construction projects and systems, including roads, buildings, airports, tunnels, dams, and bridges. Civil Engineers also design and implement systems for water supply, wastewater treatment and environmental pollution control. Civil engineers generally work indoors in offices. However, many spend time outdoors at construction sites so they can monitor operations or solve problems onsite. Most work full time.

Representative Job Titles Related to this Major: Structural Engineer, Environmental Engineer, Transportation Engineer, Highway Engineer, Construction Engineer, Water Resource Engineer, Hydraulics Engineer, Project Engineer and Project Manager.

Representative Employers: (Locally): Gresham Smith Partners, Hospital Corporation of America (HCA), TN Department of Transportation(TDOT), AMEC Environment and Infrastructure Inc., US Army Corps of Engineers (USACE), Barge Waggoner Sumner & Cannon, Inc., Turner Construction, Skanska USA Building Inc., Federal Highway Administration, City of Nashville.

International study is available for all TSU students and may include opportunities for internships or taking course work towards various minors. International study may have an impact on the MAP; therefore, it is important to consult with the academic advisor for this major before participating in an international Program opportunity. Students interested in study abroad opportunities should contact the Office of International Programs and consult with their academic advisor.

This map is not intended to be a contract; either expressed or implied, between the University and the students, but represents a flexible program of the current curriculum which may be altered from time to time to carry out the academic objectives of the University. TSU specifically reserves the right to change, delete or add to any MAP at any time within the student's period of study at the University.
