

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

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

The Bachelor of Science in Architectural Engineering is housed in the Department of Civil and Architectural Engineering. The degree provides a broad-based background in architectural engineering that builds upon basic mathematics, science, and engineering science and engineering 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. This means entering student must have a strong background in mathematics and science courses.

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 Mathematics. 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 should complete each course with a grade of 'C' or better. To graduate, a student cannot carry more than two "D" grades

The next milestone for students is the Engineering Entrance Examination (EEE). 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 **2.0** in CHEM 1110/1111, MATH 1910, MATH 1920, PHYS 2110/2111, PHYS 2120, (2) a minimum cumulative Grade Point Average of 2.5 in the listed courses in Chemistry, Math and Physics 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. To qualify for waiver of the EEE exam, the student must have a minimum cumulative Grade Point Average of 2.5 in the listed courses in Chemistry, Math and Physics. Transfer students can take 3000 level engineering courses if they meet the prerequisites, on the condition that they pass or waive the EEE during their first semester at TSU.

Between the sophomore and senior years, students is encouraged to engage in a practical engineering work experience. This practicum is a full-time, continuous eight (8) week activity. During the senior year, students in the Architectural Engineering program must take ENGR 4201 – Engineer-in-Training Lab and receive a Pass ("P") grade. 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. Seniors must take an exit examination (Senior Exit Exam) prior to graduation

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: Advanced Placement Program, American Council of Education (ACE) Military 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 at (615) 963-7001 or adultstudentsupport@tnstate.edu.

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Fall Schedule		Milestones
Semester 1	Hrs.	Semester 1
ENGL 1010	3	Pre---Requisite Course: Must be taken before ENGL 1020,HIST 2010, HIST 2020, HIST 2030, HIST 2060, HIST 2070 AND HIST 2700; Minimum grade of "C" Required
MATH 1910*	4	Pre---requisite Course: Must be taken before MATH 1920, PHYS 2110/2111, ENGR 2010, ENGR 2230: Minimum Grade of "C" Required
CHEM 1110/1111**	4	Minimum Grade of "C" Required
ENGR 1020	1	Pre---requisite Course Must be taken before ENGR 2230: Minimum Grade of "C" Required
ENGR 1151	1	Pre---requisite Course Must be taken before AREN 1111: 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 mathematics 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	Pre---Requisite Course: Must be taken before HIST 2010, HIST 2020, HIST 2030, HIST 2060, HIST 2070 AND HIST 2700; Minimum grade "C" Required
MATH 1920	4	Pre---requisite Course must be taken before MATH 2110: Minimum Grade of "C" Required
PHYS 2110	4	Pre---requisite Course must be taken before ENGR 2110, and ENGR 2010 Minimum Grade of "C" Required
AREN 1111	2	Pre---requisite Course must be taken before AREN 2011: Minimum Grade of "C" Required
COMM 2200	3	
Total Hours	16	

Fall Schedule		Milestones
Semester 3	Hrs.	Semester 3
		Students should take and pass the Engineering Entrance Exam (EEE) before enrolling in upper division (3000---4000) Engineering courses. Application to the upper division Required during this Semester. The EEE can be waived by the Department for transfer student with GPA above 2.5.
MATH 2110	4	
PHYS 2120	4	Pre---requisite Course must be taken before ENGR 2000/2001; Minimum Grade of "C" Required
ENGR 2110	3	Pre---requisite Course must be taken before ENGR 2130/2131, and CVEN 3100: Minimum Grade of "C" Required
ENGR 2230	3	Pre---requisite Course must be taken before ENGR 2000/2001: Minimum Grade of "C" Required
HIST 2010*	3	
Total Hours	17	

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

Spring Schedule		Milestones
Semester 4	Hrs.	Semester 4
MATH 3120	3	Co---Requisite with ENGR 2000/2001
ENGR 2120	3	Minimum Grade of "C" Required
ENGR 2130	4	Pre---requisite Course must be taken before AREN 3410: Minimum Grade of "C" Required
ENGR 2010	3	Pre---requisite Course must be taken before MEEN 4200; Minimum Grade of "C" Required
ENGR 2000/2001*	4	Co---Requisite with MATH 3120: Pre---requisite Course must be taken before AREN 4430: Minimum Grade of "C" Required
Total Hours	17	

*An alternate three (4) credit hour Circuits I/Circuits Lab courses may be taken with the approval of the Department Chair. For example: AITT 2000/2001. Pre---requisite Course must be taken before AREN 4430: Minimum Grade of "C" Required

Fall Schedule		Milestones
Semester 5	Hrs.	Semester 5
AREN 2300*	3	Minimum Grade of "C" Suggested
CVEN 3100	3	Minimum Grade of "C" Suggested
AREN 3410	3	Pre---requisite Course must be taken before AREN 3440, and AREN 3420: Minimum Grade of "C" Required
AREN 2011	3	Pre---requisite Course: must be taken before AREN 3021: Minimum Grade of "C" Required
ENGR 3400	3	Minimum Grade of "C" Suggested
AREN 4430	3	Minimum Grade of "C" Suggested
Total Hours	18	

*Students must have earned junior status (60--- 89 credit hours) before enrolling in AREN 3410

Spring Schedule		Milestones
Semester 6	Hrs.	Semester 6
MEEN 4200	3	Minimum Grade of "C" Suggested
AREN 3440	3	Minimum Grade of "C" Suggested
AREN 3021	3	Minimum Grade of "C" Suggested
Technical (Structural/Mechanical Option) Elective*	3	Minimum Grade of "C" Suggested
HIST 2020**	3	
Humanities: AREN 2310	3	Minimum Grade of "C" Suggested
Total Hours***	18	Engineering Practicum

*Advisor approval must be obtained before enroll in the Technical Electives from either the Structural Option or the Mechanical Option. The electives are: AREN 3460, AREN 4220, AREN 4440, AREN 4450 or MEEN 4150. Alternative electives will be considered with the approval of the academic advisor.

**The Department recommends HIST 2020; however, HIST 2030, HIST 2050, HIST 2060 or HIST 2700 satisfy this requirement.

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

Fall Schedule		Milestones
Semester 7	Hrs.	Semester 7
		All architectural engineering majors must review degree requirements with the Department Chair at least one semester prior in which graduation is anticipated.
ENGR 4500*	1	Pre-requisite Course: Senior Standing Required, must be taken before ENGR 4510: Minimum Grade of "C" Required
CVEN 3400	1	Minimum Grade of "C" Suggested
AREN 3420	3	Minimum Grade of "C" Suggested
ENGR 4900*	1	Minimum Grade of "C" Suggested
Technical (Structural/Mechanical Option) Elective**	3	Minimum Grade of "C" Suggested
ENGR 4400	3	Minimum Grade of "C" Suggested
Social Science Elective***	3	
Total Hours	15	

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

** Advisor approval must be obtained before enroll in the Technical Electives from either the Structural Option or the Mechanical Option. The electives are: AREN 3460, AREN 4220, AREN 4440, AREN 4450 or MEEN 4150. Alternative electives will be considered with the approval of the academic advisor.

*** Students must select course from the following list of approved Social Behavioral electives: AFAS 2010, ANTH 2300, ECON 2010, GEOG 1010, HPSS 1510, POLI 1010 PSYC 2010, WMST 2000, and SOCI 2010

Spring Schedule		Milestones
Semester 8	Hrs.	Semester 8
ENGR 4510*	1	Pre---Requisite Senior Standing Required; Minimum Grade of "C" Required
AREN 4470	3	Minimum Grade of "C" Suggested
Humanities: ENGL LIT**	3	
ENGR 4201*	0	Pre---Requisite Senior Standing Required
Humanities Elective***	3	
Social Science Elective****	3	
Total Hours	13	Senior Exit Exam

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

**Courses within the range of ENGL 2012 through ENGL 2322 will meet this requirement

*** Students must take 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. (Total of 9 credit hours required in Humanities.)

**** Students must select course from the following list of approved Social Behavioral electives: AFAS 2010, ANTH 2300, ECON 2010, GEOG 1010, HPSS 1510, POLI 1010 PSYC 2010, WMST 2000, and SOCI 2010. Total of 6 credit hours required in Social sciences. Students must remember not to duplicate courses from a previous semester.

Employment Information:

Architectural Engineers plan and design houses, office buildings, and other structures along with mechanical, electrical and plumbing (MEP) system. In addition, architectural engineers are involved in construction management of building and infrastructure projects along with the facilities management. Architectural engineers also design and implement building retrofits, including MEP systems.

Representative Job Titles Related to this Major:

Architectural Engineer, Structural Engineer, Environmental Engineer, Construction Engineer, Project Engineer, Mechanical Engineer and Project Manager.

Representative Employers:

(Locally): Hospital Corporation of America (HCA), TN Department of Transportation (TDOT), AMEC Environment and Infrastructure Inc., 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 academic 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.