

DRAFT

College of Engineering
VIA DEPARTMENT OF CIVIL AND ENVIRONMENTAL ENGINEERING
Degree: Bachelor of Science in Civil Engineering
Major: Civil and Environmental Engineering
Graduation Year: 2022 **DRAFT**
Credits Required for Graduation: 127

FALL 2018		Credits	SPRING 2019		Credits
CHEM 1035 General Chemistry <i>Pre: None</i>	3		ENGL 1106 First-Year Writing <i>Pre: ENGL 1105</i>	3	
CHEM 1045 General Chemistry Lab <i>Co: CHEM 1035</i>	1		MATH 1226 Calculus of a Single Variable (C-) <i>Pre: MATH 1225 (C-)</i>	4	
ENGL 1105 First-Year Writing <i>Pre: None</i>	3		PHYS 2305 Foundations of Physics I (with lab) <i>Pre: MATH 1225 or MATH 1226</i>	4	
MATH 1225 Calculus of a Single Variable <i>Pre: Math Ready</i>	4		ENGE 1216 Foundations of Engineering (C-) <i>Pre: ENGE 1215 (C-)</i>	2	
ENGE 1215 Foundations of Engineering (C-)	2		Pathway Elective	3	
Pathway Elective	3				
TOTAL	16		TOTAL	16	
FALL 2019		Credits	SPRING 2020		Credits
ESM 2104 Statics <i>Co: MATH 2204 or MATH 2204H</i>	3		ESM 2204 Mechanics of Deformable Bodies <i>Pre: ESM 2104, (MATH 2204 or MATH 2204H)</i>	3	
MATH 2114 Introduction to Linear Algebra <i>Pre: MATH 1225 (min grade of B) or MATH 1226</i>	3		GEOS 2104 Elements of Geology	3	
MATH 2204 Multivariable Calculus <i>Pre: MATH 1226</i>	3		ISE 2014 Engineering Economy <i>Pre: ENGE 1215 or ENGE 1414</i>	2	
PHYS 2306 Foundations of Physics I (with lab) <i>Pre: MATH 1226, PHYS 2305</i>	4		MATH 2214 Differential Equations <i>Pre: (Math 2114 or Math 2114H), Math 1226</i>	3	
CEE 2804 Introduction to Civil and Environmental Engineering	3 ^[F]		CEE 2814 Civil and Environmental Engineering Measurements (with lab) <i>Pre: (ENGE 1216 or ENGE 1414), MATH 1226; Co: CEE 2824</i>	4 ^[F,S]	
CEE 2824 Civil Engineering Drawings and CAD	1 ^[F,S]				
TOTAL	17		TOTAL	15	
FALL 2020		Credits	SPRING 2021		Credits
CEE 3304 Fluid Mechanics for Civil and Environmental Engineering (with lab) <i>Pre: CEE 2804, ESM 2104</i>	4 ^[F,S]		CEE Fundamental Course	3 ^[F,S]	
CEE 3804 Computer Applications for Civil and Environmental Engineers	3 ^[F,S]		CEE Fundamental Course (with Lab)	4 ^[F,S]	
CEE Fundamental Course (with Lab)	4 ^[F,S]		CEE Fundamental Course	3 ^[F,S]	
CEE Fundamental Course	3 ^[F,S]		CEE Fundamental Course	3 ^[F,S]	
Science and Engineering Elective	3		CEE Advanced Course	3	
TOTAL	17		TOTAL	16	
FALL 2021		Credits	SPRING 2022		Credits
CEE 4804 Professional and Legal Issues in Engineering <i>Pre: 2804;Co: 3304</i>	3 ^[F,S]		CEE Advanced Course	3	
CEE Advanced Course	3		CEE Advanced Course	3	
Fundamental or Advanced Course (If 4 cr. course taken, reduce Free Elective by 1 credit)	3		Pathway Elective	3	
Pathway Elective	3		Additional Elective	3	
Pathway Elective	3		Additional Elective	3	
TOTAL	15		<i>Pathway 7 may be taken here if not satisfied</i>	TOTAL	15

General Information about Checksheet: Superscripted annotation [F,S,SI,SII] in Credits column indicates that a CEE course is known to be offered in terms other than when shown. Course offerings are subject to change and the availability of sufficient resources. CEE Advanced courses may not be offered each academic term. Students must confirm course offerings in advance with their CEE Advisor. **A C- or better grade is required in any course that is a prerequisite for a CEE course.** The notation (C-) shown in the freshman year is provided for advising purposes only and means that CEE requires a grade of C- or better in that course. This notation is not shown in subsequent years; therefore, students must verify prerequisites when forming their academic plan.

Pathways to General Education (Pathway 1-6 course selection should include one course that also satisfies Pathway 7) Consult: https://www.pathways.prov.vt.edu/about/table.html for courses. Pathways courses must be completed prior to graduation																															
Pathway 1: Discourse (9 hrs: 6 hrs foundational + 3 hrs advanced)	<i>Foundational: ENGL 1105</i>	(3)	<i>Foundational: ENGL 1106</i>	(3)																											
	<i>Advanced: CEE 2804+3304+4804</i>			(3)																											
Pathway 2: Critical Thinking in the Humanities (6 hrs)		(3)		(3)																											
Pathway 3: Reasoning in the Social Sciences (6 hrs)		(3)		(3)																											
Pathway 4: Reasoning in the Natural Sciences (8 hrs)	PHYS 2305	(4)	PHYS 2306	(4)																											
Pathway 5: Quantitative and Computational Thinking (11 hrs)	<i>Foundational: MATH 1225</i>	(4)	<i>Foundational: MATH 1226</i>	(4)																											
	<i>Advanced: CEE 3804</i>			(3)																											
Pathway 6: Critique and Practice in Design and the Arts (7 hrs)	<i>Arts:</i>			(3)																											
	<i>Design: ENGE 1215 + ENGE 1216 or ENGE 1414</i>			(4)																											
Pathway 7*: Critical Analysis of Identity & Equity in the US (3 hrs)				(3)																											
*To be satisfied by an appropriate Pathway 1-6 course. If not satisfied, an additional 3 cr. Pathway 7 course is required bringing total for BSCE = 130 cr.																															
CEE Electives: The CEE department requires 3 credits of Science and Engineering Electives , 20 credits of Fundamental Electives , 12 credits of Advanced Electives , 3 additional credits of either Fundamental or Advanced electives , and 6 credits of Additional Electives as follows:																															
Science and Engineering Electives – 3 credits. Select from the following: CS 1064, GEOG 2084, ESM 2304, CEE 4814, BIM, CEE 4554																															
CEE Fundamental & Advanced Technical Electives–35 credits (C- policy applies): Electives are arranged to provide adequate breadth and depth of knowledge in CEE and specialty areas of interest. Thirty-two credits of courses must be selected, meeting the following four criteria:																															
<ol style="list-style-type: none"> Complete 6 of the 8 Fundamentals courses shown in the table below, at least two of which must have a lab. (20 cr) Complete 1 Advanced course in 3 of the 6 specialty areas in which fundamentals courses were selected in (1). (9 cr) Complete an additional advanced course in 1 of the 3 specialty areas in which advanced courses were selected in (2). (3 cr) Complete one additional course from either the Fundamental or Advanced categories. (3 cr) Within the choices above, complete at least one design project course: CEE 3434*, 4014, 4104, 4274, 4334, 4544, 4654, or 4664. 																															
	<table border="1"> <thead> <tr> <th>Specialty Areas</th> <th>Fundamentals Courses</th> <th>Advanced Courses (courses require prerequisites; C- policy applies; see CEE website course listing)</th> </tr> </thead> <tbody> <tr> <td>Construction</td> <td>3014</td> <td>4014, 4024, 4074</td> </tr> <tr> <td>Environmental</td> <td>3104</td> <td>4104, 4114, 4134, 4144, 4174</td> </tr> <tr> <td>Geotechnical</td> <td>3514 (lab)</td> <td>4514, 4534, 4544, 4564</td> </tr> <tr> <td>Land Development</td> <td>3274</td> <td>4254, 4264, 4274, 4284</td> </tr> <tr> <td>Materials</td> <td>3684 (lab)</td> <td>4614, 4634, 4664</td> </tr> <tr> <td>Structures</td> <td>3404</td> <td>3424, 3434*, 4454</td> </tr> <tr> <td>Transportation</td> <td>3604</td> <td>4604, 4624, 4654, 4674, 4684</td> </tr> <tr> <td>Water Resources</td> <td>3314 (lab)</td> <td>4304, 4314, 4324, 4334, 4344, 4384</td> </tr> </tbody> </table>	Specialty Areas	Fundamentals Courses	Advanced Courses (courses require prerequisites; C- policy applies; see CEE website course listing)	Construction	3014	4014 , 4024, 4074	Environmental	3104	4104 , 4114, 4134, 4144, 4174	Geotechnical	3514 (lab)	4514, 4534, 4544 , 4564	Land Development	3274	4254, 4264, 4274 , 4284	Materials	3684 (lab)	4614, 4634, 4664	Structures	3404	3424, 3434* , 4454	Transportation	3604	4604, 4624, 4654 , 4674, 4684	Water Resources	3314 (lab)	4304, 4314, 4324, 4334 , 4344, 4384			
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Additional Electives – 6 credits																															
(3) _____ Elective in CEE or an additional course from the Science and Engineering list;																															
(3) _____ Free elective (in CEE or any other department at any level)																															
Change of Major Requirements: Please see http://www.enge.vt.edu/undergraduate-changing-majors.html																															
Foreign Language Requirements: Students must have had two years of a foreign language in high school or one year at the college level (6 credit hours) of the same language. College-level credits used to meet this requirement do not count towards the degree.																															
Satisfactory Progress Towards Degree: University Policy 91 outlines university-wide minimum criteria to determine if students are making satisfactory progress towards the completion of their degrees. The CEE Department fully supports this policy. Specific expectations for satisfactory progress for Civil Engineering majors are as follows: <ul style="list-style-type: none"> Each student must meet the minimum University-wide criteria as described in Policy 91 and summarized in the Undergraduate Catalog (http://www.undergradcatalog.registrar.vt.edu/1617/academic-policies.html#22http://www.undergradcatalog.registrar.vt.edu/1617/academic-policies.html#22) A 2.5 overall GPA and a 2.5 in-major GPA must be maintained for continued enrollment in CEE. The in-major GPA consists of all courses taken under the CEE designation. 																															
Statement of Hidden Prerequisites: Pre-requisites for each course are listed after the course title. There are no hidden pre-requisites in the program of study. Prerequisites may change from what is indicated. Consult the University Catalog or check with your advisor for the most current pre-requisites.																															
Graduation Requirements: Students must pass all required courses and both the in-major and overall GPA must be at least 2.0 for graduation. The in-major GPA consists of all courses taken under the CEE designation.																															
Additional Checksheet Comments: Displayed course offerings are subject to sufficient resources. Courses are taught in the term in which they appear on the checksheet. CEE Fundamentals courses are typically taught each fall and spring term, whereas CEE Advanced courses may not be offered each academic term. Consult the CEE course listing and your departmental advisor for updates.																															