

## UNOFFICIAL ADVISING GUIDE (2024-2025)

All degree programs are comprised of courses for Pathways General Education, Degree Core, Major, and Electives. The [2024-2025 Undergraduate Catalog](#)\* and the updated [Degree Audit Reporting System](#) (DARS) are the **official** way to view the program requirements. The catalog will be available July 2024 and the DARS will be available by December 2024.

**Prerequisite:** Course(s) needed prior to taking the listed courses.

**Corequisite:** Course(s) needed along with or prior to the listed course.

**Minimum Grades:** If a minimum grade above passing is necessary, it is denoted in parenthesis next to the title.

**Term Offerings:** The term(s) each in-discipline course is typically taught.

F = Fall   S = Spring   S1 = Summer 1   S2 = Summer 2   S3 = Summer 3   W = Winter

## PROGRAM CURRICULUM

The program curriculum provides the course requirements for Civil Engineering.

### Pathways General Education Courses

Course	Title	Concept	Credits	Prerequisite and Corequisites**
<input type="checkbox"/> ENGL 1105	First-Year Writing	1F	3	None
<input type="checkbox"/> ENGL 1106	First-Year Writing	1F	3	Pre: ENGL 1105
<input type="checkbox"/> CEE 2804	Intro to Civil and Environmental Engineering (C-)	1A	3	
<input type="checkbox"/> CEE 3304	Fluid Mechanics for Civil and Environmental Engineering (C-)	1A	4	Pre: ESM 2104 (C-); CEE 2804 (C-)
<input type="checkbox"/> CEE 4804	Professional and Legal Issues in Civil Engineering	1A	3	Pre: CEE 2804 (C-); Co: CEE 3304
<input type="checkbox"/> Pathways Concept 2	Select three credits from Pathways Concept 2	2	3	
<input type="checkbox"/> Pathways Concept 2	Select three credits from Pathways Concept 2	2	3	
<input type="checkbox"/> Pathways Concept 3	Select three credits from Pathways Concept 3	3	3	
<input type="checkbox"/> Pathways Concept 3	Select three credits from Pathways Concept 3	3	3	
<input type="checkbox"/> PHYS 2305	Foundations of Physics	4	4	Pre: MATH 1225
<input type="checkbox"/> CHEM 1035	General Chemistry	4	3	Pre: CHEM 1014, MATH 1014, MATH 1025, MATH 1536, MATH 1225, MATH 1214, or MATH 1524
<input type="checkbox"/> MATH 1225	Calculus of a Single Variable	5F	4	Pre: MATH 1214
<input type="checkbox"/> MATH 1226	Calculus of a Single Variable (C-)	5F	4	Pre: MATH 1225 (C-)
<input type="checkbox"/> CEE 3804	Computer Applications for Civil and Environmental Engineering	5A	3	
<input type="checkbox"/> ENGE 1215	Foundations of Engineering	6D	2	None
<input type="checkbox"/> ENGE 1216	Foundation of Engineering (C-)	6D	2	Pre: ENGE 1215
<input type="checkbox"/> Pathways Concept 6	Select three credits from Pathways Concept 6A	6A	3	
<input type="checkbox"/> Pathways Concept 7	Pathways 7 course should be double-counted w/ Pathways 2 or 3 to avoid taking additional cr. hr.	7	--	
<b>Subtotal</b>			<b>53</b>	

### Degree Core Courses

Course	Title	Credits	Prerequisites and Corequisites**
<input type="checkbox"/> CEE 2834	Civil Engineering Drawings and Virtual Modeling (C-)	3	None
<input type="checkbox"/> CEE 2814	Geomatics (C-)	4	Pre: (ENGE 1216 or ENGE 1414 or BC 1224), MATH 1226; Co: CEE 2834
<input type="checkbox"/> CEE 3814	Analytical Tools in Civil and Environmental Engineering	3	Pre: CEE 3804**
<input type="checkbox"/> CEE Fundamental Elective with Lab - CEE 3314 Water Resources Engineering		4	Pre: CEE 3304 (C-)
<input type="checkbox"/> CEE Fundamental Elective with Lab*		4	Pre: Varies
<input type="checkbox"/> CEE Fundamental Elective – CEE 3104 Introduction to Environmental Engineering		3	Pre: CHEM 1035(C-), CHEM 1045 (C-), MATH 1226(C-), PHYS 2305(C-)
<input type="checkbox"/> CEE Fundamental Elective*		3	Pre: Varies
<input type="checkbox"/> CEE Fundamental Elective*		3	Pre: Varies
<input type="checkbox"/> CEE Fundamental Elective*		3	Pre: Varies
<b>Subtotal</b>		<b>30</b>	

### Major Courses

Course	Title	Credits	Prerequisites and Corequisites**
<input type="checkbox"/> CHEM 1045	General Chemistry Lab (C-)	1	Co: CHEM 1035
<input type="checkbox"/> ESM 2104	Statics (C-)	3	Pre: MATH 1226; Co: MATH 2204
<input type="checkbox"/> ESM 2204	Mechanics of Deformable Bodies (C-)	3	Pre: ESM 2104, MATH 2204
<input type="checkbox"/> GEOS 2104	Elements of Geology (C-)	3	None
<input type="checkbox"/> ISE 2014	Engineering Economy	2	None
<input type="checkbox"/> MATH 2114	Introduction to Linear Algebra	3	Pre: MATH 1225 (B) or MATH 1226
<input type="checkbox"/> MATH 2204	Introduction to Multivariable Calculus	3	Pre: MATH 1226
<input type="checkbox"/> MATH 2214	Introduction to Differential Equations	3	Pre: MATH 1226, MATH 2114
<input type="checkbox"/> CEE Advanced Elective in Environmental Engineering*		3	Pre: Varies
<input type="checkbox"/> CEE Advanced Elective in Water Resources Engineering*		3	Pre: Varies
<input type="checkbox"/> CEE Advanced Elective* - Design Project from Environmental or Water Resources Engineering		3	Pre: Varies
<input type="checkbox"/> CEE Advanced Elective* from area other than Environmental and Water Resources Engineering		3	Pre: Varies
<input type="checkbox"/> ENGE 3900	Career Bridge Experience	0	None
<b>Subtotal</b>		<b>33</b>	

\*Fundamental and Advanced Program Electives course options can be found in the [2024-2025 Undergraduate Catalog](#)

### Elective Courses

The list of courses in each elective category can be found in the [2024-2025 Undergraduate Catalog](#)\*

Course	Credits	Prerequisites and Corequisites**
<input type="checkbox"/> CEE Technical Elective	3	Varies
<input type="checkbox"/> CEE Technical Elective	3	Varies
<input type="checkbox"/> Restricted Elective	3	Varies
<input type="checkbox"/> Restricted Elective	3	Varies
<b>Subtotal</b>		<b>12</b>

**Total Credits: 128**

**\*\*Per CEE Department policy, a C- or better is required in any course that is a prerequisite for another CEE course. Students should verify prerequisite requirements.**

**A "C-" notation on specific courses indicates that a C- or better is required in that course for a following CEE course. This notation is provided for first and second year advising purposes.**

## ROADMAP (Starting Math: Calculus)

The roadmap provides a suggested plan for when to schedule each course.

Year 1					
Fall			Spring		
CHEM 1035	General Chemistry	3	PHYS 2305	Foundations of Physics	4
CHEM 1045	General Chemistry Lab	1	ENGL 1106	First-Year Writing	3
ENGL 1105	First-Year Writing	3	MATH 1226	Calculus of a Single Variable	4
MATH 1225	Calculus of a Single Variable	4	ENGE 1216	Foundations of Engineering	2
ENGE 1215	Foundations of Engineering	2	Pathways	Concept 2, 3, 6a, or 7	3
Pathways	Concept 2, 3, 6a, or 7	3			
<b>Credits</b>			<b>Credits</b>		
<b>16</b>			<b>16</b>		
Year 2					
Fall			Spring		
ESM 2104	Statics	3	ESM 2204	Mechanics of Deformable Bodies	3
CEE 2834	Civil Engineering Drawings & Virtual Modeling	3	GEOS 2104	Elements of Geology	3
CEE 2804	Introduction to CEE	3	CEE 3804	Computer Applications for CEE	3
MATH 2114	Intro to Linear Algebra	3	MATH 2214	Intro to Differential Equations	3
MATH 2204	Intro to Multivariable Calc.	3	CEE 2814	Geomatics	4
<b>Credits</b>			<b>Credits</b>		
<b>15</b>			<b>16</b>		
Year 3					
Fall			Spring		
CEE 3304	Fluid Mechanics for CEE	4	CEE 3814	Analytical Tools in CEE	3
ISE 2014	Engineering Economy	2	CEE 4804	Professional and Legal Issues in CE	3
CEE Fundamental Elective with Lab		4	CEE 3314	Water Resources Engr. (Fund. w/ Lab)	4
CEE 3104	Intro to Env. Engr. (Fundamental)	3	CEE Fundamental Elective		3
Pathways	Concept 2, 3, 6a, or 7	3	CEE Fundamental Elective		3
<b>Credits</b>			<b>Credits</b>		
<b>16</b>			<b>16</b>		
Year 4					
Fall			Spring		
CEE Fundamental Elective		3	CEE Advanced Elective – Environmental Engr		3
CEE Advanced Elective – Design Project from Environmental Engr or Water Resources Engr		3	CEE Advanced Elective – from area other than Environmental Engr and Water Resources Engr		3
CEE Advanced Elective - Water Resources Engr		3	Technical Elective		3
Technical Elective		3	Restricted Elective		3
Restricted Elective		3	Pathways* Concept 2, 3, 6a, or 7		3
Pathways	Concept 2, 3, 6a, or 7	3	*Pathways 7 course should be double-counted w/ Pathways 2 or 3 to avoid taking additional cr. hrs.		
<b>Credits</b>			<b>Credits</b>		
<b>18</b>			<b>15</b>		

Schedule of CEE courses available at [https://cee.vt.edu/Undergraduate-menu/current\\_UG\\_students.html](https://cee.vt.edu/Undergraduate-menu/current_UG_students.html). CEE course offerings by semester are subject to change.

## ROADMAP (Starting Math: Pre-Calculus)

The roadmap provides a suggested plan for when to schedule each course.

Year 1									
Fall			Spring				Summer		
MATH 1214	Preparation for Calculus	3	MATH 1225	Calculus of a Single Variable	4	MATH 1226	Calculus of a Single Variable	4	
CHEM 1035	General Chemistry	3	ENGL 1106	First Year Writing	3				
CHEM 1045	General Chemistry Lab	1	PHYS 2305	Foundations of Physics	4				
ENGL 1105	First Year Writing	3	ENGE 1216	Foundations of Engineering	2				
ENGE 1215	Foundations of Engineering	2	Pathways	Concept 2, 3, 6a, or 7	3				
Pathways	Concept 2, 3, 6a, or 7	3							
		<b>Credits 15</b>			<b>Credits 16</b>			<b>Credits 4</b>	
Year 2									
Fall			Spring				Summer		
ESM 2104	Statics	3	ESM 2204	Mech. of Deformable Bodies	3				
CEE 2834	CE Drawings & Virtual Modeling	3	GEOS 2104	Elements of Geology	3				
CEE 2804	Intro to CEE	3	CEE 3804	Computer Apps for CEE	3				
MATH 2114	Intro to Linear Algebra	3	MATH 2214	Intro to Differential Equations	3				
MATH 2204	Intro to Multivariable Calculus	3	CEE 2814	Geomatics	4				
		<b>Credits 15</b>			<b>Credits 16</b>			<b>Credits</b>	
Year 3									
Fall			Spring				Summer		
CEE 3304	Fluid Mechanics for CEE	4	CEE 3814	Analytical Tools in CEE	3				
ISE 2014	Engineering Economy	2	CEE 4804	Prof. & Legal Issues in CE	3				
CEE Fundamental with Lab		4	CEE 3314	Water Resources Engr	4				
CEE 3104	Intro to Environmental Engr.	3	CEE Fundamental Elective		3				
Pathways	Concept 2, 3, 6a, or 7	3	CEE Fundamental Elective		3				
		<b>Credits 16</b>			<b>Credits 16</b>			<b>Credits</b>	
Year 4									
Fall			Spring				Summer		
CEE Fundamental Elective		3	CEE Advanced Elective – Environmental Engr		3				
CEE Advanced – Design Project from Env. Engr or Water Resources Engr		3	CEE Advanced Elective – from area other than Environmental Engr and Water Resources Engr		3				
CEE Advanced Elective - Water Resources Engr.		3	Technical Elective		3				
Technical Elective		3	Restricted Elective		3				
Restricted Elective		3	Pathways	Concept 2, 3, 6a, or 7	3				
Pathways	Concept 2, 3, 6a, or 7	3						<b>Credits</b>	
		<b>Credits 18</b>			<b>Credits 15</b>				