



Oregon State
University

School of Chemical, Biological, and Environmental Engineering (CBEE)

College of Engineering
cbee.oregonstate.edu

Undergraduate Advising Guide

Environmental Engineering (ENVE)

Revised 3/20/19

Environmental engineers manage our environment for the benefit of humanity and nature. They provide engineering solutions to problems with our land, air and water resources. In both public and private practice, environmental engineers work in interdisciplinary teams to manage environmental problems through application of scientific, engineering, and social skills. These include issues of air pollution and control, water supply and distribution, wastewater collection and treatment, solid and hazardous waste disposal, control of hazardous substances, pollution in surface and ground-waters, public health, and the ecological health of our environment.

General questions? Email cbee.advising@oregonstate.edu

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CBEE Curriculum & Advising

This advising guide is intended to give an overview of the requirements for the B.S. Environmental Engineering degree in the School of Chemical, Biological, and Environmental Engineering (CBEE) at OSU. This major requires 192 credits for graduation and generally takes 4-5 years to complete. Upper division engineering courses in all engineering majors at OSU are limited to students who have been accepted into Pro School.

This guide includes information about course prerequisites and sample term-by-term plans to graduate within 4 years. To create an individualized curriculum plan, log in to MyDegrees through MyOSU and utilize the Planner. As of AY 2018-19, the use of Planner will be required for all College of Engineering students.

Advising Appointments:

Please check your MyDegrees to determine your assigned advisor. If an advisor is not listed on MyDegrees, please email us at cbee.advising@oregonstate.edu.

Advising appointments are required once per term for all CBEE undergraduate students to obtain their PIN number for registration for the following term. Please schedule your appointment through the links above. You should schedule your advising appointment online at cbee.oregonstate.edu/undergraduate-advising.

Walk-In Advising:

CBEE Advisors provide one walk-in time daily, from 3:30-4pm. These times are intended for students with quick 1-10 minute questions. No PINs will be distributed during walk-in advising.

Late policy:

If you arrive to a scheduled advising appointment 5 minutes or more late, you may be asked to reschedule. If you arrive 10 minutes or more late, you must reschedule. When we reserve time for you, we require all of that time to provide you with the best quality work possible. When you are late it decreases the advisors ability to accomplish this.

We strive to see every student as close to their appointment time as possible. It is your responsibility to remember your appointment and to be on time. We understand that true emergencies happen. We ask that you please be courteous of your advisors valuable time and attention. The Advisors, Faculty and Staff thank you.

No show policy:

No penalty for the first time you do not come to a scheduled appointment. If you no show on a 2nd appointment or more, we will not give you your PIN for registration until the final day of Phase I registration. If you schedule an appointment and need to cancel, please contact your advisor.

General Questions:

We have a Frequently Asked Questions page (<https://cbee.oregonstate.edu/undergraduate-advising/FAQs>) where we aggregate common student questions. If you don't see the question you need on this page, please email us your questions at cbee.advising@oregonstate.edu.

Environmental Engineering (192 Credits)

Revised 3/20/19

Credits	First Year			Second Year			Third Year			Fourth Year											
	Fall	Winter	Spring	Fall	Winter	Spring	Fall	Winter	Spring	Fall	Winter	Spring									
1	Chemistry CH 231 (4FW)	Chemistry CH 232 (4WS)	Chemistry CH 233 (4FS)	Organic Chemistry CH 331 (4FW)	Organic Chemistry CH 332 (4WS)	Dynamics ENGR 212 (3FWS)	Transport I CHE 331 (4F)	Transport II CHE 332 (3W)	Transport III CHE 333 (3WS)	Water & Wastewater ENVE 421 (4F)	ENVE Design ENVE 422 (4W)	Sust. Water Resources ENVE 456 (3S)									
2						Strength of Materials ENGR 213 (3FWS)							Intro to Env Engr ENVE 322 (4W)	Transport Lab CHE 334 (3S)	Bioreactors ENVE 457 (3F)	Env. Fate & Transport ENVE 431 (4W)	Air Pollution Control ENVE 425 (3S)				
3							Thermo CHE 311 (3F)	Hydraulic CE 313 (4WS) or Geotechnical CE 372 (4W)	Hydrology CE 412 (4FS)									Process Laboratory CBEE 414 (3F)	ENVE Laboratory ENVE 415 (3W)	Env. Engr. Design ENVE 490 (4S)	
4																					Graphics & Design CCE 201 (3FW)
5	CH 261 (1)	CH 262 (1)	CH 263 (1)	Differential Equations MTH 256 (4FWS)	Matrices MTH 264 (2)	Technical Writing WR 327 (3FWS)	Orientation CBEE 101 (3F)	Engr. Comp. CBEE 102 (3W)	Physics w/ Calculus PH 211 (4FWS)	Physics w/ Calculus PH 212 (4FWS)	Physics w/ Calculus PH 213 (4FWS)	Process Analysis CBEE 213 (4S)	Material Balances CBEE 211 (3F)	Energy Balances CBEE 212 (3W)	Perspective (3FWS)	General Microbiology MB 230 (4FWS)	DPD (3FWS)	Env. Geology GEO 221 (4S)	Engineering Elective (3-4FWS)	Engineering Elective (3-4FWS)	
6	Differential Calculus MTH 251 (4FWS)	Integral Calculus MTH 252 (4FWS)	Vector Calculus MTH 254 (4FWS)		Series MTH 265 (2)																Technical Writing WR 327 (3FWS)
7				English Composition WR 121 (3FWS)		COMM 111/114 (3FWS)	HHS 231 (2FWS)	Statics ENGR 211 (3FWS)	Perspective (3FWS)	General Microbiology MB 230 (4FWS)	DPD (3FWS)	Env. Geology GEO 221 (4S)	Engineering Elective (3-4FWS)	Engineering Elective (3-4FWS)	Synthesis (3FWS)						
8	PAC (1FWS)	Statics ENGR 211 (3FWS)	Perspective (3FWS)		General Microbiology MB 230 (4FWS)											DPD (3FWS)	Env. Geology GEO 221 (4S)	Engineering Elective (3-4FWS)	Engineering Elective (3-4FWS)	Synthesis (3FWS)	
9				Orientation CBEE 101 (3F)		Engr. Comp. CBEE 102 (3W)	Physics w/ Calculus PH 211 (4FWS)	Physics w/ Calculus PH 212 (4FWS)	Physics w/ Calculus PH 213 (4FWS)	Process Analysis CBEE 213 (4S)	Material Balances CBEE 211 (3F)	Energy Balances CBEE 212 (3W)	Perspective (3FWS)	General Microbiology MB 230 (4FWS)	DPD (3FWS)						Env. Geology GEO 221 (4S)
10	English Composition WR 121 (3FWS)	COMM 111/114 (3FWS)	HHS 231 (2FWS)		Statics ENGR 211 (3FWS)											Perspective (3FWS)	General Microbiology MB 230 (4FWS)	DPD (3FWS)	Env. Geology GEO 221 (4S)	Engineering Elective (3-4FWS)	
11				PAC (1FWS)		Statics ENGR 211 (3FWS)	Perspective (3FWS)	General Microbiology MB 230 (4FWS)	DPD (3FWS)	Env. Geology GEO 221 (4S)	Engineering Elective (3-4FWS)	Engineering Elective (3-4FWS)	Synthesis (3FWS)								
12	Orientation CBEE 101 (3F)	Engr. Comp. CBEE 102 (3W)	Physics w/ Calculus PH 211 (4FWS)		Physics w/ Calculus PH 212 (4FWS)									Physics w/ Calculus PH 213 (4FWS)	Process Analysis CBEE 213 (4S)	Material Balances CBEE 211 (3F)	Energy Balances CBEE 212 (3W)	Perspective (3FWS)	General Microbiology MB 230 (4FWS)	DPD (3FWS)	Env. Geology GEO 221 (4S)
13				English Composition WR 121 (3FWS)		COMM 111/114 (3FWS)	HHS 231 (2FWS)	Statics ENGR 211 (3FWS)	Perspective (3FWS)	General Microbiology MB 230 (4FWS)	DPD (3FWS)	Env. Geology GEO 221 (4S)	Engineering Elective (3-4FWS)								
14	PAC (1FWS)	Statics ENGR 211 (3FWS)	Perspective (3FWS)		General Microbiology MB 230 (4FWS)									DPD (3FWS)	Env. Geology GEO 221 (4S)	Engineering Elective (3-4FWS)	Engineering Elective (3-4FWS)	Synthesis (3FWS)			
15				Orientation CBEE 101 (3F)		Engr. Comp. CBEE 102 (3W)	Physics w/ Calculus PH 211 (4FWS)	Physics w/ Calculus PH 212 (4FWS)	Physics w/ Calculus PH 213 (4FWS)	Process Analysis CBEE 213 (4S)	Material Balances CBEE 211 (3F)	Energy Balances CBEE 212 (3W)	Perspective (3FWS)						General Microbiology MB 230 (4FWS)	DPD (3FWS)	Env. Geology GEO 221 (4S)
16	English Composition WR 121 (3FWS)	COMM 111/114 (3FWS)	HHS 231 (2FWS)		Statics ENGR 211 (3FWS)									Perspective (3FWS)	General Microbiology MB 230 (4FWS)	DPD (3FWS)	Env. Geology GEO 221 (4S)	Engineering Elective (3-4FWS)			
17				PAC (1FWS)		Statics ENGR 211 (3FWS)	Perspective (3FWS)	General Microbiology MB 230 (4FWS)	DPD (3FWS)	Env. Geology GEO 221 (4S)	Engineering Elective (3-4FWS)	Engineering Elective (3-4FWS)	Synthesis (3FWS)								
18	Orientation CBEE 101 (3F)	Engr. Comp. CBEE 102 (3W)	Physics w/ Calculus PH 211 (4FWS)		Physics w/ Calculus PH 212 (4FWS)									Physics w/ Calculus PH 213 (4FWS)	Process Analysis CBEE 213 (4S)	Material Balances CBEE 211 (3F)	Energy Balances CBEE 212 (3W)	Perspective (3FWS)	General Microbiology MB 230 (4FWS)	DPD (3FWS)	Env. Geology GEO 221 (4S)

	Pre-requisites for upper division coursework
	Engineering Electives
	Baccalaureate Core course not covered by major requirements (S/U grading allowed)

This advising guide is intended for scheduling only. Course offerings and requirements are subject to change. Please reference the OSU Online catalog for a complete list of degree requirements.

Environmental Engineering Major

Required Courses

Math

Course #	Credit Hours	Description	Prerequisites	Terms Offered
MTH 251	4	Differential Calculus	MTH 112	FWS
MTH 252	4	Integral Calculus	MTH 251	FWS
MTH 254	4	Vector Calculus I	MTH 252	FWS
MTH 256	4	Differential Equations	MTH 254	FWS
MTH 264	2	Introduction to Matrix Algebra	MTH 252	FWS
MTH 265	2	Introduction to Series	MTH 252	FWS

Science

Course #	Credit Hours	Description	Prerequisites	Terms Offered
CH 231/261	5	General Chemistry + Lab	MTH 111	FW
CH 232/262	5	General Chemistry + Lab	CH 231	WS
CH 233/263	5	General Chemistry + Lab	CH 232	FS
CH 331	4	Organic Chemistry (CH334/5/6 can substitute)	CH 233	FW
CH 332	4	Organic Chemistry (CH334/5/6 can substitute)	CH 331	WS
GEO 221	4	Environmental Geology	-	FWS
MB 230	4	Introductory Microbiology	-	FWS
PH 211	4	General Physics with Calculus	MTH 251, MTH 252 (co)	FWS
PH 212	4	General Physics with Calculus	PH 211, MTH 252	FWS
PH 213	4	General Physics with Calculus	PH 212, MTH 254	WS

Engineering

Course #	Credit Hours	Description	Prerequisites	Terms Offered
CBEE 101	3	Chemical, Biological and Environmental Engineering Orientation	-	F
CBEE 102	3	Engineering Problem Solving and Computation	MTH 112	W
CBEE 211	3	Material Balances and Stoichiometry	MTH 252, 2nd year engr standing	F
CBEE 212	3	Energy Balances	CBEE 211, MTH 256 (co)	W
CBEE 213	4	Process Data Analysis	CBEE 212	S
CBEE 320	3	Professionalism and Engineering Ethics	-	F
CBEE 414	3	Process Engineering Laboratory	CBEE 213 (co), CHE 311, CHE 333	F
CCE 201	3	Engineering Graphics and Design	MTH 111	FW
CE 313 or CE 372	4	Hydraulic Engineering (CE 313) or Geotechnical Engineering (CE 372)	CE 313: CHE 331, CE 372: ENGR 213, CHE 331	CE 313: WS, CE 372: W
CE 412	4	Hydrology	-	FS
CHE 311	3	Thermodynamics	CBEE 212, MTH 256, CH 233/263	F
CHE 331	4	Transport Phenomena I: Fluids	CBEE 212 (co), MTH 256	F
CHE 332	3	Transport Phenomena II: Heat	CHE 311 and 331	W
CHE 333	3	Transport Phenomena III: Mass	CHE 331 and 332 (co)	S
CHE 334	3	Transport Phenomena Laboratory	CBEE 213 (co), CHE 333 (co)	S
ENGR 211	3	Statics	MTH 252, 2nd year engr standing	FWS
ENGR 212	3	Dynamics	ENGR 211, PH 211	FWS
ENGR 213	3	Strength of Materials	ENGR 211	FWS
ENVE 322	4	Fundamentals of Environmental Engineering	CH 232, MTH 256	W
ENVE 415	3	Environmental Engineering Laboratory	CBEE 414	W
ENVE 421	4	Water and Wastewater Characterization	ENVE 321 or ENVE 322	F
ENVE 422	4	Environmental Engineering Design	ENVE 421	W
ENVE 425	3	Air Pollution Control	ENVE 321 or ENVE 322	S
ENVE 431	4	Fate and Transport of Chemicals in Environmental Systems	CH 440 or CHE 331, ENVE 421	W
ENVE 456	3	Sustainable Water Resources Development	senior standing	S
ENVE 457	3	Bioreactors	CHE 333	F
ENVE 490	4	Environmental Engineering Design	ENVE 422	S

Elective Courses

ENVE majors are required to take 7 credits upper division engineering electives.

Engineering Electives (7 credits)

Course #	Credit Hours	Description	Prerequisites	Terms Offered
BEE 446	4	River Engineering	-	S
BEE 458	3	Nonpoint Source Pollution Assessment and Control	-	S
BEE 468	4	Bioremediation Engineering	-	W
BEE 544	4	Open Channel Hydraulics		
CBEE 416	3	Process Engineering Project	CHE or BIOE or ENVE 415	S
CE 313	4	Hydraulic Engineering	CHE 331	WS
CE 372	4	Geotechnical Engineering	ENGR 213, CHE 331	W
CE 413	3	GIS in Water Resources	-	
CE 514	4	Groundwater Hydraulics	CE 547	W
FE 257	3	GIS and Forest Engineering Principles	-	FW
FE 457	4	Techniques for Forest Resource Analysis	AREC 351 or FOR 330	FW
GEOG 360	4	GIScience I: Geographic Information Systems and Theory	-	FWS

Baccalaureate Core

OSU requires completion of a set of Baccalaureate Core ("Bacc Core") courses, divided into 4 categories- Skills, Perspectives, Synthesis, and Difference, Power, and Discrimination (DPD). Some of these course requirements are met by technical courses within your major. Those Bacc Core requirements not fulfilled through technical course requirements are outlined below.

Skills (12 credits)

Course #	Credit Hours	Description	S/U Allowed
WR 121	3	English Composition	No
WR 327	3	Technical Writing	No
COMM 111 or 114	3	Public Speaking (COMM 111) or Argument and Critical Discourse COMM (114)	No
HHS 231	2	Lifetime Fitness for Health	Yes
HHS 24x or PAC	1	Lifetime Fitness or Physical Activity Courses	Yes

Perspectives (16 credits)

Course Categories	Credit Hours	S/U Allowed
Biological Science w/ Lab	4	No
Cultural Diversity	3	Yes
Literature & Arts	3	Yes
Social Processes & Institutions	3	Yes
Western Culture	3	Yes

Synthesis (6 credits)

Course Categories	Credit Hours	S/U Allowed
Contemporary Global Issues	3	Yes
Science, Technology, and Society	3	Yes

Difference, Power, & Discrimination (3 credits)- No S/U grading

Important Links

CBEE Resources

CBEE Advising: <http://cbee.oregonstate.edu/undergraduate-advising>

Go to this site to book an appointment with your advisor! This page also contains general advising information and the latest copy of the advising guide.

CBEE Advising FAQs: <https://cbee.oregonstate.edu/undergraduate-advising/FAQs>

Frequently asked questions by CBEE students. Covers a range of topics from advising appointments to GPA requirements.

Research, Internships, and Careers: <http://cbee.oregonstate.edu/careers>.

Practical work experience in a research laboratory or in industry is essential to your future employment and educational goals. CBEE students have a variety of opportunities to develop laboratory skills and obtain career advice from faculty and peer mentors.

College of Engineering Resources

College of Engineering (COE): <http://engineering.oregonstate.edu/>

College of Engineering home page.

MY COE: <http://engineering.oregonstate.edu/my-coe>

Page with information about COE procedures and links to other OSU websites that are relevant to COE students.

OSU Resources

Student Online Services: <https://myosu.oregonstate.edu>

In your online account, you can register for classes, access MyDegrees, view & order transcripts, view account holds, and pay your student fees & tuition.

Catalog: <https://catalog.oregonstate.edu/>

The general OSU catalog contains information about all of the different major and minor programs at OSU, including course requirements and prerequisites.

OSU Schedule of Classes Searcher: <https://classes.oregonstate.edu/>

Use this tool to search for class availability sorted by term, requirement, subject, or campus.

Transfer Credits: <http://registrar.oregonstate.edu/transfer-credits>

General guide to transferring credits to OSU.

Transfer Course Search:

https://adminfo.ucsadm.oregonstate.edu/prod/OSU_ADMTAM.P_tcs_splash_page

This tool allows you to search course equivalencies by the institution and course subject/number.

Registrar Forms: <http://registrar.oregonstate.edu/forms>

Forms relating to registration, grading, student records, veterans benefits, and graduation.