Department of Civil and Environmental Engineering and Earth Sciences

Undergraduate Studies Handbook

2023-2024

Academic Year

CEEES Department
Contact Information

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Contents

1 Advising Information

1.1 Introduction

This document provides a guide to the policies and procedures for undergraduate studies in the Department of Civil and Environmental Engineering and Earth Sciences at the University of Notre Dame (herein after Department). It serves both to elaborate items such as contact information and advising roles, curricular requirements and options for majors, minors and concentrations, and to summarize certain information of frequent interest to students. It supplements two University of Notre Dame undergraduate policy documents: 1) the Undergraduate Academic Code and 2) the Bulletin of Information.

Nothing herein is to be interpreted as contrary to the regulations of the Undergraduate Affairs and Programs. Circumstances will arise that either have not been included or will require a decision on the part of the Department. **The advisor is always the first person to contact if a question should arise. If a problem cannot be resolved, then the Director of Undergraduate Studies (DUS) or the Department Chairman should be approached.** Modifications to the department undergraduate program regulations are approved from time to time by the CEES Undergraduate Studies Committee and are made known by publishing a new version of the Undergraduate Studies Handbook.

1.2 CEEES Web Page

The Undergraduate webpage is the best resource for:

- Standard major planning: degree requirements for CE, EVEG, and EES programs
- Courses satisfying minor and concentration requirements
- Links to Study Abroad pages
- CEEES Field Trips
- CEEES student groups, organizations, and service opportunities

1.3 The Undergraduate Academic Program Administrator

Ms. Johna Belin can help if you need:

- CEEES course registration overrides
- Clarification and confirmation of information on the CEEES Web Page
- Graduation Progress System (GPS) adjustments pertaining to CEEES major requirements

1.4 The Academic Advisors

Mrs. Cindy S. Cubillo and Mrs. Julia Qian can help if you have question about:

- 4-Year Academic Plans or Non-standard major planning
- Adding and dropping courses
- Switching majors or adding programs, minors, and concentrations
- University and College degree requirements
- Transfer student advising
- Connections to academic and campus resources

1.5 The Director of Undergraduate Studies

Prof. Brad Weldon is the best resource for specifics about the CEEES majors:

- Study Abroad planning and course approvals
- Dual degree program approvals
- Course substitutions
- Research credit approvals
- Advice on transfer credit for courses taken at another institution
- Graduate fellowship opportunities
- What, if anything, can be double-counted for various types of requirements
- CPT/OPT issues

1.6 The Associate Dean for Advising and Academic Affairs

Associate Dean Michael Ryan can help if you have:

- Issues related to academic probation, dismissal, and readmission
- Course withdrawal after drop date
- Leaves of absence from University
- Course overload approval (19+ credit hours/semester)
- S/U grading approval
- Part-time status approvals

1.7 Faculty Advisors

They are the best resource for general, “big picture” discussions:

- Student and department expectations for the college experience
- Discernment: is CE, EVEG, or EES the right major?
- Choosing CEEES electives
- Choosing engineering minors and CEEES concentrations
- Research opportunities in CEEES
- Career aspirations
- Graduate school aspirations

1.8 Other Resources

Registrar’s Office (transcripts, enrollment verification, registration information, university calendars)

Path Class Search and NOVO Browse Classes on InsideND are the best resources for:

- Course offerings and descriptions
- Course attributes, which indicate what requirements a course satisfies

- The Graduation Progress System (GPS) on InsideND:
- The GPS degree audit report is a guide when planning progress towards completion of degree. Your academic advisor or the Office of the Registrar may be contacted for assistance in interpreting the report.

The Meruelo Family Center for Career Development is the best resource for:

- Opportunities available at specific companies
- Mock interviews, Scheduling interviews, Resume preparation, and more
- Chris Washko serves as Assistant Director, Engineering Careers

University Health Services

University Student Affairs

Office of Community Standards

2 CEEES Course Plans

2.1 Curricular Planning

It is recommended that all CEEES majors initiate a 4-year graduation plan by the end of their first year. This curricular plan should be reviewed by academic advisors or Directors of Undergraduate Studies (DUS) before the start of each new semester to ensure the student is on track to graduate on time. Planning resources include the CEEES Department website, the Bulletin of Information and the CEEES Undergraduate Handbook. Additional resources in Inside ND can be found through Grade History and the Graduation Progress System (GPS).

The following pages provide four-year course plans for students in CE, EVEG, and EES majors.

- CE Course Plan & Curriculum Map for Class of 2024 +
- EVEG Course Plan & Curriculum Map for Class of 2024+
- EVES Course Plan & Curriculum Map for Class of 2024+

2.2 CE Course Plan for Class of 2024+

First Year					
Fall Semester (Credit Hours:18)			**Spring Semester (Credit Hours:18)**		
EG 10117	Engineering Design	3	EG 10118	Engineering Computing	3
CHEM 10171/11171	Intro to Chemical Principles	4	PHYS 10310	Engineering Physics I	4
MATH 10550	Calculus I	4	MATH 10560	Calculus II	4
	Core Curriculum Course*	3		Technical Elective *	3
USEM or WR 13100	University Seminar or Writing & Rhetoric (or WRIT)	3		Core Curriculum Course*	3
FYS 10101	Moreau First Year Experience	1	FYS 10102	Moreau First Year Experience	1
Sophomore Year					
Fall Semester (Credit Hours:15.5)			**Spring Semester (Credit Hours:16.5)**		
MATH 20550	Calculus III	3.5	MATH 20580	Intro to Linear Algebra and Differential Equations	3.5
PHYS 10320	Engineering Physics II	4	ACMS 30440	Probability and Statistics	3
CE 20111	Planet Earth	3	AME 20241	Solid Mechanics	3
CE 20150	Statics	3	CE 30160	CE Materials with Lab	4
CE 20600	Intro. to CAD	2		Core Curriculum Course	3
Junior Year					
Fall Semester (Credit Hours:15)			**Spring Semester (Credit Hours:16.5)**		
CE 30125	Computational Methods	3	CE 30150	Dynamics and Modeling	3
CE 30200	Intro. to Structural Engineering	3	CE 40270	Reinforced Concrete Design	4
CE 30300	Intro. to Environmental Engineering	3	CE 40450	Hydraulics with Lab	3.5
CE 30460	Fluid Mechanics	3		Core Curriculum Course*	3
MATH 30650	Differential Equations	3		Core Curriculum Course*	3
Senior Year					
Fall Semester (Credit Hours:14.5/13.5)			**Spring Semester (Credit Hours:15)**		
CE 30510	Geotechnical Engineering with Lab	3.5		CE Elective*	3
CE 40280 or CE 40460	Steel Design (4 credits) or Groundwater Hydrology (3 credits)	4/3		CE Elective*	3
CE 40620	Transportation	3	CE 30210 or CE40420	Structural Analysis or Reactive Transport	3
CE 40701	Principles of Practice	1	CE 40702	Senior Design	3
	University Core Course*	3		University Core Course*	3

2.3 CE Concentrations

Beginning in the spring semester junior year, Civil Engineering students are required to select either the Structures Concentration or the Hydraulics Concentration. Note that by suitable choice of electives, both tracks may be satisfied. The concentration designation allows the specialization to be displayed on a student's transcript. In order to receive this designation on the transcript, a student is required to approve a change of curriculum eform to update their academic record to show the chosen concentration. This form must be initiated by a CEEES Department representative. Below is a list of the courses required in each concentration.

Structures Concentration Courses:
CE 30210: Structural Analysis (3 cr.) - SPRING
CE 40270: Reinforced Concrete Design (4 cr.) - SPRING
CE 40280: Steel Design (4 cr.) - FALL

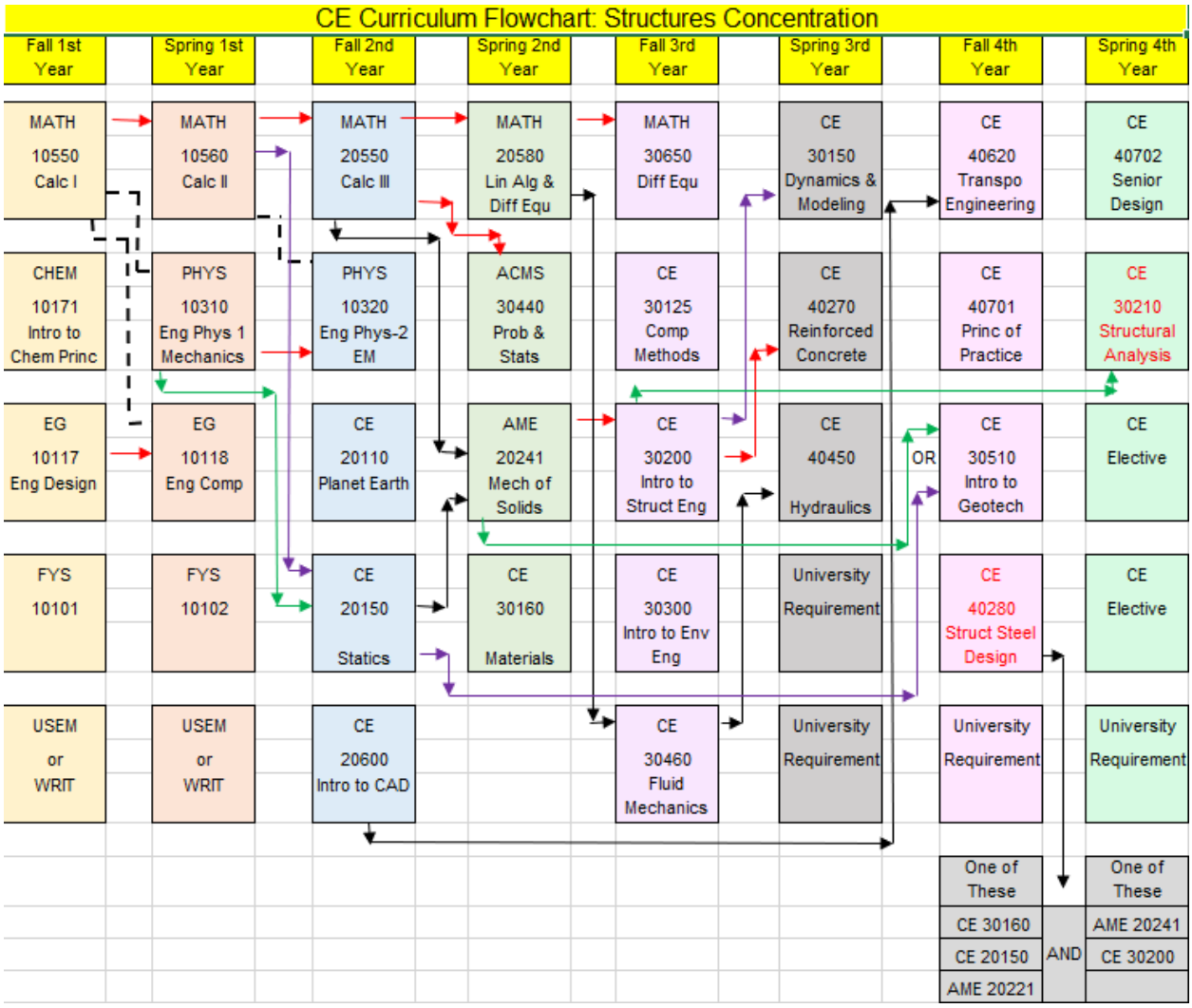
Total: 129 credit hours

Hydraulics Concentration Courses:
CE 40420: Reactive Transport (3 cr.) - SPRING
CE 40450: Hydraulics (3.5 cr.) - SPRING
CE 40460: Groundwater Hydrology (3 cr.) - FALL

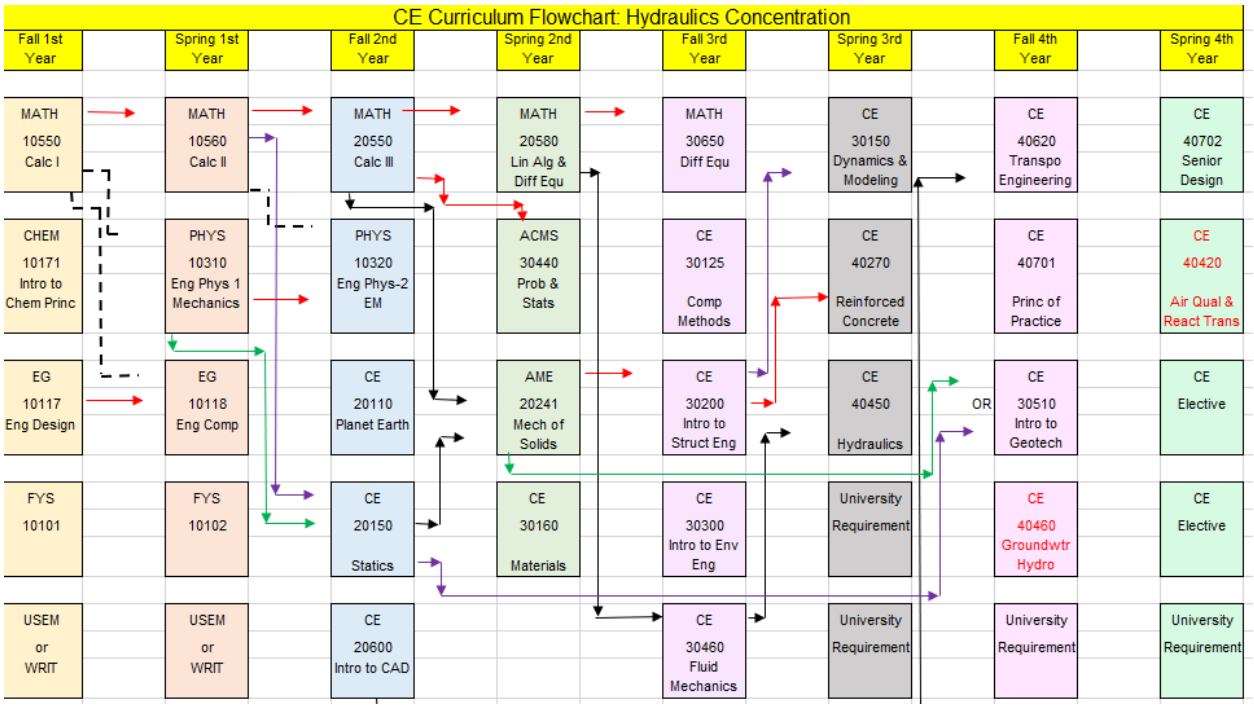
Total: 128 credit hours

* Students may rearrange the sequence of University Core Course, CE, and Technical Elective courses depending on individual schedules and minors or dual degrees.

2.4 CE Curriculum Flowchart: Structures Concentration



2.5 CE Curriculum Flowchart: Hydraulics Concentration



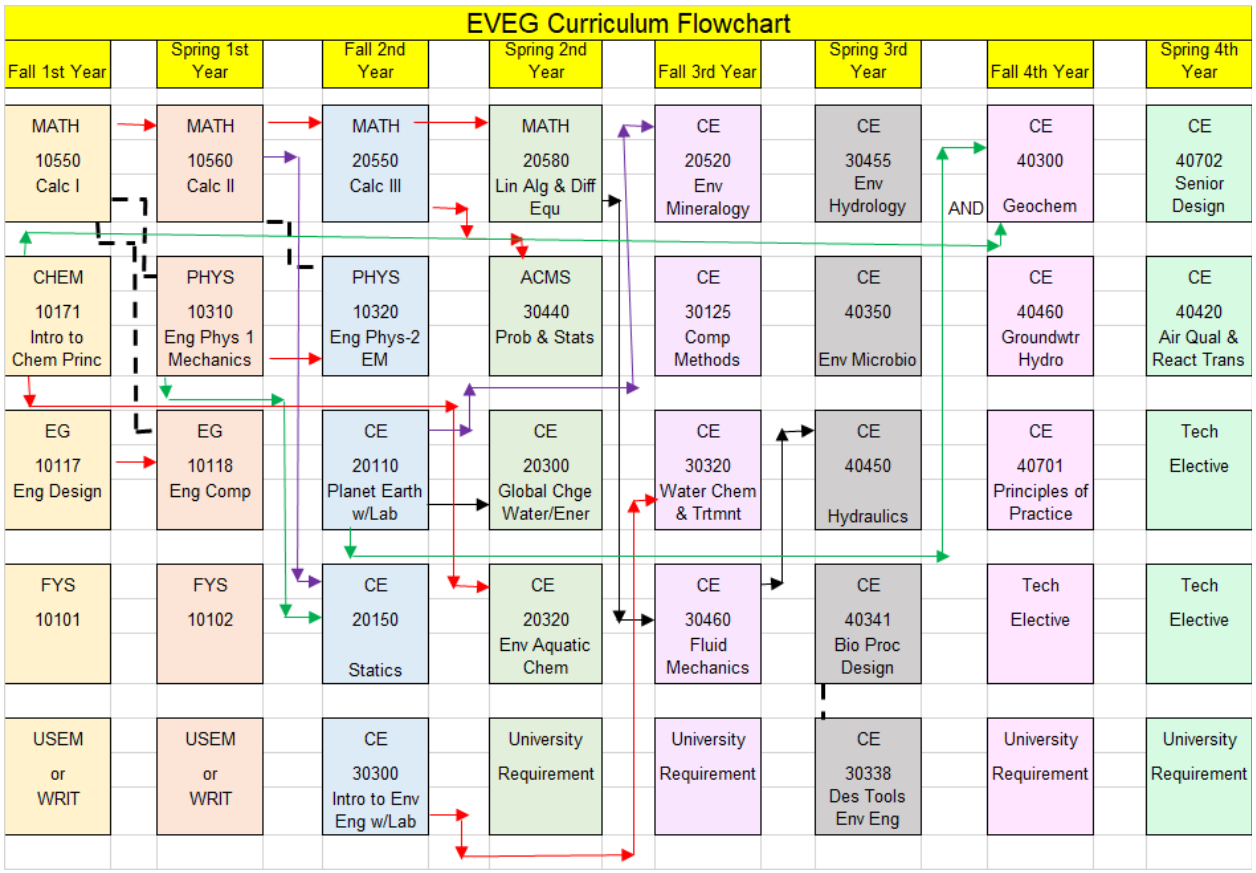
2.6 EVEG Course Plan for Class of 2024+

First Year					
Fall Semester (Credit Hours: 18)			**Spring Semester (Credit Hours: 18)**		
EG 10117	Engineering Design	3	EG 10118	Engineering Computing	3
CHEM 10171/11171	Intro. to Chemical Principles	4		CEEES Elective or Substitute	3
MATH 10550	Calculus I	4	MATH 10560	Calculus II	4
	Core Curriculum Course*	3	PHYS 10310	Engineering Physics I	4
USEM or WR 13100	University Seminar or Writing & Rhetoric (or WRIT)	3		University Core Courses*	3
FYS 10101	Moreau First Year Experience	1	FYS 10102	Moreau First Year Experience	1
Sophomore Year					
Fall Semester (Credit Hours: 18.5)			**Spring Semester (Credit Hours: 15.5)**		
CE 20110/ CE 21110	Planet Earth and Lab	4	CE 20300	Global Change, Water, and Energy	3
CE 30300/ CE 31300	Intro. Env. Eng. and Lab	4	CE 20320	Environmental Aquatic Chemistry	3
CE 20150	Statics	3	ACMS 30440	Probability and Statistics	3
MATH 20550	Calculus III	3.5	MATH 20580	Intro to Linear Algebra and Differential Equations	3.5
PHYS 10320	Engineering Physics II	4		Core Curriculum Course*	3
Junior Year					
Fall Semester (Credit Hours: 16)			**Spring Semester (Credit Hours: 16)**		
CE 20520	Environmental Mineralogy	4	CE 30338	Design Tools for Environmental Engineers	1
CE 30125	Computational Methods	3	CE 30455	Environmental Hydrology	3
CE 30320	Physical-Chemical Drinking Water Treatment Processes	3	CE 40450	Hydraulics	3
CE 30460	Fluid Mechanics	3	CE 40341	Biological Processes Design	3
	Core Curriculum Course*	3	CE 40350	Environmental Microbiology	3
				Core Curriculum Course*	3
Senior Year					
Fall Semester (Credit Hours: 13)			**Spring Semester (Credit Hours: 15)**		
CE 40300	Geochemistry	3	CE 40420	Air Quality & Reactive Transport	3
CE 40460	Groundwater Hydrology	3	CE 40702	Senior Design	3
CE 40701	Principles of Practice	1		Technical Elective *	3
	EG Elective *	3		EG Elective *	3
	Core Curriculum Course*	3		Core Curriculum Course*	3

Total: 130 Credit Hours

* Students may rearrange the sequence of University Core Course, EG, and Technical Elective courses depending on individual schedules and minors or dual degrees.

2.7 EVEG Curriculum Flowchart



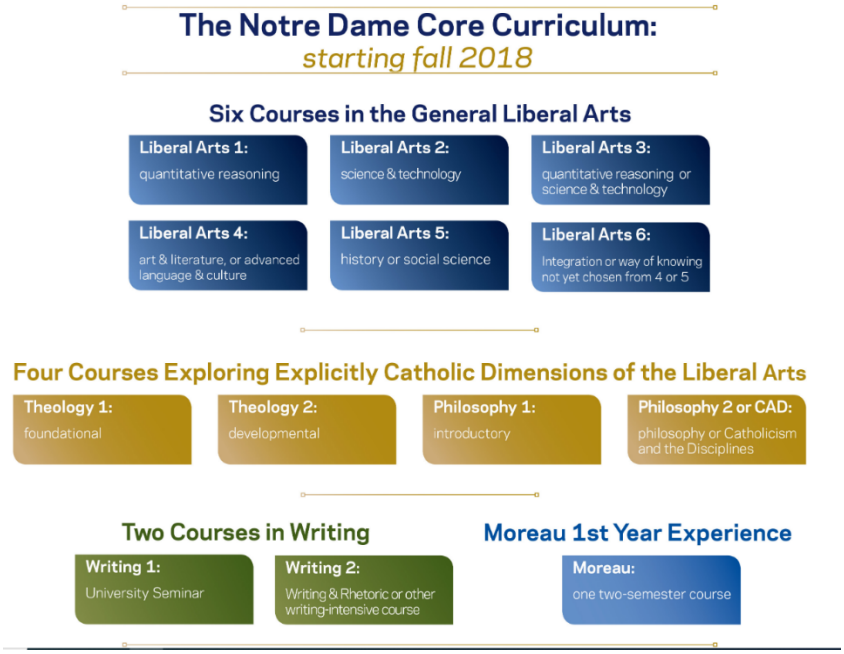
2.8 Environmental Earth Sciences Course Plan for Class of 2024 +

First Year					
Fall Semester (Credit Hours: 18)			**Spring Semester (Credit Hours: 18)**		
EG 10117	Engineering Design	3	EG 10118	Engineering Computing	3
CHEM 10171	Intro to Chemical Principles	4		CEEES Elective or Substitute	3
MATH 10550	Calculus I	4	MATH 10560	Calculus II	4
	Core Curriculum Course*	3	PHYS 10310	Engineering Physics I	4
USEM or WR 13100	University Seminar or Writing & Rhetoric (or WRIT)	3		Core Curriculum Course*	3
FYS 10101	Moreau First Year Experience	1	FYS 10102	Moreau First Year Experience	1
Sophomore Year					
Fall Semester (Credit Hours: 15.5)			**Spring Semester (Credit Hours: 16.5)**		
CE 20110/ CE 21110	Planet Earth and Lab	4	CE 20230	Programming	1
CE 30300/ CE 31300	Intro. Env. Eng. and Lab	4	CE 20300	Global Change, Water, and Energy	3
MATH 20550	Calculus III	3.5	CE 20320	Environmental Aquatic Chemistry	3
PHYS 10320	Engineering Physics II	4	ACMS 30440	Probability and Statistics	3
			MATH 20580	Intro to Linear Algebra and Differential Equations	3.5
				Core Curriculum Course*	3
Junior Year					
Fall Semester (Credit Hours: 17)			**Spring Semester (Credit Hours: 14)**		
CE 20520	Environmental Mineralogy	4	CE 30540	Petrology/Earth Materials	3
CE 30125	Computational Methods	3	CE 30560	Dynamic Earth	3
CE 30455	Environmental Hydrology	3	CE 45200	Field Trip	1
CE 30500	Geomorphology for Eng. & Sci.	3		Technical Elective	3
	CEEES Field Trip	1		Core Curriculum Course*	3
	Core Curriculum Course*	3			
Senior Year					
Fall Semester (Credit Hours: 18)			**Spring Semester (Credit Hours: 12)**		
CE 30530	Sedimentology and Stratigraphy	3	CE 40350	Environmental Microbiology	3

CE 40300	Geochemistry	3		CEEES Elective	3
CE 40350	Environmental Microbiology	3		CEEES Elective	3
CE 40460	Groundwater Hydrology	3		Core Curriculum Course*	3
	Core Curriculum Course*	3			
	CEEES Elective	3			

2.10 The Notre Dame Core Curriculum

Central to undergraduate education at the University of Notre Dame is the core curriculum, a set of requirements that apply to all students, regardless of major. While the approach to the core will necessarily evolve over time, the goal is always the same: to provide students with a common foundation in learning that will make a unique contribution to their intellectual and personal development as well as their lives after Notre Dame. See full description at https://corecurriculum.nd.edu/



Six Courses in the General Liberal Arts

- Liberal Arts 1: Quantitative Reasoning
- Liberal Arts 2: Science & Technology
- Liberal Arts 3: Quantitative Reasoning or Science & Technology
- Liberal Arts 4: Art & Literature, or Advanced Language & Culture
- Liberal Arts 5: History or Social Science
- Liberal Arts 6: Integration or Way of Knowing not yet chosen from 4 or 5

Four Courses Exploring Explicitly Catholic Dimensions of the Liberal Arts

- Theology 1: Foundational
- Theology 2: Developmental
- Philosophy 1: Introductory
- Philosophy 2 or CAD: Philosophy elective or
- Catholicism and the Disciplines

Two Courses in Writing

- Writing 1: University Seminar[1]
- Writing 2: Writing & Rhetoric or Other Writing-Intensive Course[2]

Moreau First Year Experience

- Moreau: One two-semester course

[1] *Regardless of which core curriculum you fall under, a University Seminar (USEM) course may be double-counted to fulfill both the USEM requirement and one of the other university requirements.*

[2] *Students who have AP credit to test out of Writing and Rhetoric may have opportunities to double-count by choosing an approved writing-intensive course that also fulfills a university, college, or major requirement. Writing and Rhetoric does not count toward any other ways of knowing.*

3 CEEES Electives

3.1 CE Electives

CE electives must be satisfied by taking any CE courses, 30000 level or above, within the CEEES Department that are not required of the major. To find these, go to class search classsearch.nd.edu and select the subject *CE - Civil and Environmental Engineering and Earth Sciences.* Students should make sure to read through registration restrictions for each course including prerequisites, enrollment level limitations, and special approvals by department or instructor.

There are some exceptions to this, such as the courses listed below:

- CE 23600: Challenges and Innovations in Civil and Environmental Engineering
- AME 20222: Mechanics II

3.2 Engineering Electives

Engineering electives must be satisfied by taking courses level 30000 or above within the College of Engineering. These are identified in classsearch.nd.edu by searching the subject *EG - Engineering*.

3.3 Technical Electives

Technical electives must be 30000 level or above courses offered by a department in the College of Engineering or in the College of Science. Special requests for the technical elective should be brought to the Director of Undergraduate Studies or the Academic Advisor.

The above stated general rule notwithstanding, the following exceptions are noted:

Courses not accepted:

- ACMS 40390 - Introduction to Numerical Methods
- PHYS 30389 - Philosophical Issues in Physics
- AME 50561 - Reliability Engineering
- Special Studies courses without the CE designation are accepted only after approval using the Course Acceptance Petition

Courses **accepted**:

- CHEM 10172 - Organic Structure and Reactivity
- CHEM 20273 - Organic Reactions and Applications
- CHEM 10182 - Organic Structure and Mechanism
- CHEM 20283 - Organic Reactions and Applications
- BIOL 20201 and 20202 - General Biology A and B
- AME 20222 - Mechanics II
- CSE 20232 - C/C++ Programming
- EE 20224 - Intro Electrical Engineering
- CE 20700: Sustainable Development in a Changing World

A student may submit a Course Acceptance Petition for any other course other than those included in the general rules or an exception for any of the required Departmental electives, The submitted course must have explicit written approval of the Chair of the Department of Civil and Environmental Engineering and Earth Sciences and concurrence by the Associate Dean for Academic Affairs to satisfy a Technical Elective, CEEES Elective or Engineering Elective requirement for any degree program in the Department.

3.4 Medical School

Engineering is the fifth most common major for Notre Dame Students applying to medical school. The Center for Health Sciences Advising can provide you with advice on choosing courses as an engineering student planning to attend medical school.

Most medical schools require applicants to have taken the MCAT (Medical College Admission Test), and to have completed:

- One year of Biology (Recommend BIOS 10171/11173: Biological Sciences I and lab, BIOS 10172/11174: Biological Sciences II and lab)
- Two years of Chemistry (10171, 10172, 20273, 20274 with labs)
- One year of Physics
- One year of English
- Biochemistry

Many schools recommend courses in:

- Psychology
- Social sciences (Economics, Political Science, Sociology, etc.)

Note that some medical schools (e.g. Harvard) require the biology courses to be taken in college (not satisfied by AP credits). If you have AP credit, you must take higher level biology courses with lab components. There are similar restrictions on AP chemistry and physics. Other schools accept credits awarded through AP testing (at Notre Dame this usually requires a score of 5). If you are interested in a specific medical school you should verify their policy on AP credits early in the program.

Hence, in addition to the CEEES degree requirements, students must take additional courses. In addition to the courses, the Notre Dame preprofessional programs generally require a 1 credit lab component with each course. Students with an interest in preparing for medical school should consult with personnel in the Center for Health Sciences Advising for curricular planning advice, as they have prepared course plans for engineering students interested in medical school.

For CEEES majors, BIOS 10171, 10172 with labs and/or CHEM 10172, 20273, 20274 with labs may be used to satisfy the General Technical Elective requirements. Students should consult with the Director of Undergraduate Studies or the Academic Advisor for approval of any General Technical Electives that are not currently listed in GPS.

3.5 ROTC

ROTC courses can count toward satisfying engineering degree requirements as follows:

Navy ROTC

An NCSI 40000 level course can be applied to satisfy a University core requirement where the course has the necessary attribute or has been approved to meet the requirement. For example, NSCI 40402 has the WKSP attribute assigned and so it may count as the second philosophy and a technical elective course. A second NSCI 40000 level course can be used to satisfy either the HISTORY or SOCIAL SCIENCE (not both) requirement.

Army ROTC

An MSL 40000 level course can be used to satisfy either the HISTORY or SOCIAL SCIENCE (not both) requirement. A second MSL 40000 level course can be used to satisfy a technical elective requirement. For engineering majors with free electives, other MSL graded courses (usually 30000-level) can be used to satisfy free electives.

Air Force ROTC

An AS 40000 level course can be used to satisfy either the HISTORY or SOCIAL SCIENCE (not both) requirement. An AS 40000 level course can be used to satisfy a technical elective requirement. For engineering majors with free electives, other AS graded courses (usually 30000-level) can be used to satisfy free electives.

4 Study Abroad

Students who study abroad in the academic year generally do it during the fifth or sixth semester. Below are the requirements to participate in the programs. Any student who is not behind in the program is eligible to participate. However, in certain cases students must register for the correct courses during their sophomore year to attend the program, and if they do not do so, then they are not eligible to attend.

4.1 Academic Year Program Locations

If a student needs to take CEEES courses abroad, these locations offer the best options:

- **Dublin (Ireland) - UCD**
- **Galway (Ireland)**
- **Perth (Australia)**
- **Santiago (Chile)**

It is recommended for students to meet with the DUS or their Academic Advisor to discuss study abroad options.

Students with program specific questions should schedule an appointment with the Notre Dame International Study Abroad Team. Each location has a specific program director, which you can find at https://studyabroad.nd.edu/programs/program-advising/

For additional information on a specific program, please speak with your adviser or the DUS and visit the Notre Dame International Study Abroad website at studyabroad.nd.edu.

4.2 Summer Study Abroad Programs

The International Programs offered by the College of Engineering feature courses taught by Notre Dame faculty, so you can enjoy time abroad and still graduate in four years. Most engineering students choose to go abroad the summer after their first or second year (leaving later years open for internships).

Additionally, the Summer Engineering & Environmental Science program is offered through the Kylemore Abbey Global Centre in Ireland.

The **College of Engineering** offers summer programs in:

- Alcoy (Spain)
- Berlin (Germany)
- Dublin (Ireland)
- London (England)
- Kitakyushu (Japan)
- Rome (Italy)

A student may also apply to summer programs offered through Notre Dame International Study Abroad.

5 Minors

The College of Engineering offers seven minors, which are open to Notre Dame students in any major who have taken the appropriate pre-requisite courses for upper-level engineering and science courses.

A student seeking an Engineering degree is allowed to count the same course to satisfy a university requirement, a college requirement, and a program requirement (major, supplementary major, minor). A multi-counted course can be used no more than once at each level (university, college, program). There is no limit to the number of multi counts a student may use in their degree. However, each program will require a specific number of credit hours to earn the degree - AP / IB / Credit by examination credits do count towards the total number of required credit hours.

Note: if a student counts a course (or courses) for their unique course of study (primary degree and secondary credential), they may be required to take additional courses in order to meet the minimum required courses needed to earn the degree. In such cases, the student should consult their advisor or DUS to determine which additional courses are required.

The department who manages the minor should be consulted for the rules. Students in other colleges should consult their own program department for similar restrictions.

- Bioengineering
- Computational Engineering
- Energy Engineering
- Energy Studies
- Engineering Corporate Practice
- Environmental Earth Sciences
- Resiliency and Sustainability of Engineering Systems

5.1 Bioengineering (MBIE)

The Minor in Bioengineering integrates the tools of engineering analysis with the fundamentals of life sciences to enliven understanding of living organisms, medical treatments, and biochemical pathways. The goal is to provide quantitative predictions and insight toward the design of medical and biological devices and processes. *Offered by:* Aerospace and Mechanical Engineering and Chemical and Biomolecular Engineering.

5.2 Computational Engineering (MCOM)

This Minor in Computational Engineering exposes students to the fundamentals of programming and numerical methods, providing experience and skills in computer usage and knowledge of applications from a range different areas. The minor provides a solid grounding in the application of computational methods to various engineering problems such as fluid mechanics, structural analysis, elasticity, and optimization. *Offered by:* Aerospace and Mechanical Engineering.

5.3 Energy Engineering (MENE)

This minor involves many engineering and non-engineering disciplines and focuses on the technical aspects of energy to prepare students for professional jobs or advanced studies in this important area. Topics include: blackouts (the stability of the power grid and other reliability issues); energy efficiency and policy; sources of energy and related environmental concerns; carbon dioxide capture and storage; nuclear energy and associated difficulties; and biofuels. *Offered by:* Aerospace and Mechanical Engineering

5.4 Energy Studies (MENS)

The Energy Studies Minor examines the issue of energy from a variety of perspectives. Students will learn to quantify energy resources and recognize the laws of thermodynamics that govern energy conversion; understand the linkages between ethics and energy utilization; assess the strengths and weaknesses and impact of alternative energy technologies; and understand the influence of geopolitics, economics, and public policy on the nation's and the world's energy future. *Offered by:* ND Energy.

5.5 Engineering Corporate Practice (MECP)

The College of Engineering collaborates with the Mendoza College of Business and the College of Arts and Letters to offer the Minor in Engineering Corporate Practice, which prepares students for future careers while exploring topics at the intersection of engineering and business.

5.6 Environmental Earth Sciences (MEES)

This minor provides a foundation in the physical sciences, emphasizing processes that occur near or at the surface of earth and the impact of human activity on such processes. Students explore geochemical, mineralogical and hydrological properties of earth's crust and develop an understanding of the interplay of natural processes such as mineral-water-rock-bacteria interactions with anthropogenic issues such as transport of toxic heavy metals and safe disposal of nuclear waste. *Offered by:* Civil and Environmental Engineering and Earth Sciences

5.7 Resiliency and Sustainability of Engineering Systems (MRSE)

This minor spans a broad range of topics on the environmental consequences of engineering systems in sustainable development. It focuses on engineering for mitigation and resiliency, emphasizing communications skills to prepare students to work with city planners, policymakers and the public. *Offered by:* Civil and Environmental Engineering and Earth Sciences.

6 Undergraduate Research and Projects

6.1 Undergraduate Research and Engineering Projects

Most students benefit greatly from becoming involved in research projects and participating in the Department's research activities. CEEES students may do research for either course credit or as a paid research aide. Please note: students cannot receive credit and be paid for the same research position.

6.2 Finding a Research Advisor

To find suitable supervisors and research topics, students should talk to their instructors and academic advisors to find out about on-going research in the Department.

Students can explore the departmental website and the faculty websites for more detailed information on their research. Individual faculty members should be contacted directly to see if they have openings for undergraduate research aides.

Every fall semester, the College of Engineering hosts an Undergraduate Engineering Fair to showcase engineering research opportunities, projects, and labs.

6.3 Research as a Paid Position

The supervising faculty member will determine if the research can be done as a paid position. Once this decision is made, the student should come the Department office and complete the necessary employment paperwork with CEEES Undergraduate Academic Program Administrator.

6.4 Research and Projects for Credit

Upperclassman can elect to do research for credit at the 30000 level or above. There is a maximum of 6 credit hours that can count towards Technical, Engineering or CEEES Electives.

7 Student Organizations and Activities

7.1 Professional and Honors Societies

7.1.1 Engineering Leadership Council

The Engineering Leadership Council of Notre Dame exists as a student government body within the College of Engineering which supports all CoE clubs via working with the Dean's Office. ELC members are provided with excellent leadership development opportunities while serving the CoE student body with professional development and community outreach. More info contact elc@nd.edu or visit https://elc.nd.edu/

7.1.2 Society of Women Engineers, Notre Dame Chapter

Notre Dame's Society of Women Engineers encourages women to pursue engineering as an exciting and fulfilling educational and career choice. We bring together women at all levels — undergraduate, graduate, faculty, and alumni — to create a community of support and opportunities for women to thrive.

The Society of Women Engineers (SWE) gives support, guidance and recognition to women engineers and engineering students. Today, SWE is a nationally recognized professional, educational, non-profit, service organization. Its student section membership includes graduate and undergraduate female and male engineers. More info at https://engineering.nd.edu/student-experience/women-in-engineering/

7.1.3 ELITE Engineers

- ELITE (Enhancing Leadership through Intentional and Transformational Experiences) engineers is a program designed to help students develop their identity as engineers and support their success inside and outside of the classroom. Programming offered through the program is centered around the pillars of career/professional development, academic excellence, community building, and wellness. Although open to anyone, this program may be of special interest to first gen and/or students from underrepresented backgrounds in STEM. Click here to join the mailing list.

7.1.4 Society of Hispanic Professional Engineers (SHPE)

The purpose of this student chapter is to: 1. Increase the number of underrepresented students in the fields of science, technology, engineering, and mathematics (STEM) at the University of Notre Dame. 2. Promote the advancement of underrepresented STEM students in employment and education. 3. Improve the retention of underrepresented students enrolled in STEM majors. 4. Provide a forum for the exchange of information pertinent to underrepresented STEM students enrolled at the University of Notre Dame. 5. Develop a working network with local schools to encourage pre-college, underrepresented students to enter the STEM fields. 6. Promote professional advancement for underrepresented STEM students by fostering cooperation among industry, government, academic, and professional leaders to improve educational and employment opportunities. 7. Provide counseling and financial assistance to underrepresented students in STEM. For more information, please contact us at shpe@nd.edu

7.1.5 National Society of Black Engineers (NSBE)

Founded in 1975, The National Society of Black Engineers has strived to increase the number of culturally responsible Black Engineers who excel academically, succeed professionally, and positively impact the community. The objective of the National Society of Black Engineers shall be to stimulate and develop student interest in engineering; to strive to increase the number of students studying engineering at both the undergraduate and graduate levels; and to endeavor in the advancement of the ethnic minority engineer in professional industry. For more information, please contact nsbe@nd.edu

7.1.6 TAU BETA PI

In 1960, the Indiana Gamma Chapter of Tau Beta Pi was installed at Notre Dame to foster a spirit of liberal culture in the engineering college and to recognize those who have conferred honor upon Notre Dame by distinguished scholarship and exemplary character as undergraduates in engineering or by their attainment as alumni in the field of engineering. Seniors in the top fifth of their class and juniors in the top eighth of their class are eligible for election under rigid standards of scholarship, character, leadership, and service. More info at https://www.tbp.org/off/DisplayChapterInfo.cfm?ID=57

7.1.7 Chi Epsilon, The Civil Engineering Honors Society

- The purpose of Chi Eopsilon is to bring closer together those students at the University of Notre Dame who excel at civil engineering while showing leadership and exemplary character. For more information, please visit the XE Notre Dame Chapter website.

7.1.8 Engineers Without Borders (EWB)

Engineers Without Borders - Notre Dame strives to live out the mission of EWB-USA: "EWB-USA builds a better world through engineering projects that empower communities to meet their basic human needs." In accordance with the mission of Engineers Without Borders-USA, EWB-ND strives to bring necessary changes to international communities in order to improve the quality of living. EWB-ND works with the community to implement and maintain the given project. More info at https://ewbnotredame.weebly.com/the-team.html.

Other Programs

Challenges Seminar

Grand Challenges Scholars Program