CIVIL ENGINEERING
UNDERGRADUATE HANDBOOK

FALL 2024

The Pennsylvania State University
University Park Campus

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Important News

- Your assigned CEE faculty advisors will assist with academic planning and timely completion for graduation. Your faculty advisers are also available to answer questions related to CEE technical areas and electives, career planning, research, and graduate school opportunities. You can find your faculty adviser's contact information in LionPATH. Professor Tom Skibinski will assist with other academic concerns and campus referrals.

- CE 438W (Construction Engineering Design Capstone) has replaced CE 439W (Geotechnical and Materials Engineering Design Capstone) at the University Park campus. CE 438W is a capstone focused on construction with geotechnical components. The prerequisites for CE 438W are CE 432 and one of the following: CE 435, CE 436, CE 455 (formerly CE 397), CE 456 (formerly CE 497), or CE 457 (formerly CE 497)., The Department will allow CE 456 (formerly CE 497)- Construction Scheduling to be taken as a co-requisite with CE 438W. Students wishing to pursue either CE 455 – Construction Cost Estimating, CE 456 – Planning and Scheduling, or CE 457- Construction Equipment & Methods must submit a *prerequisite override request* through LionPATH to enroll in CE 438W. Please plan accordingly.

- The prerequisites for the Structural Design Capstone (CE 448W) have changed to Prerequisite: CE 342 and CE 341 (now enforced as a pre or co requisite).

- CE 403 (formerly CE 497) (Energy Use, Climate Change, and Our Engineered Infrastructure) has replaced CE 371 (Water and Wastewater Treatment) in the courses offered at University Park.

- A CE Tech Elective can be now substituted for ME 201. Petition required.

- If your degree audit indicates the "2 courses out of 3 technical areas" and you have yet to take one or both of these courses, you can now file an e-petition to substitute one or two CE tech elective(s) in any CE technical area to take their place(s).

- The prerequisites for several courses are in the process of being updated. Please refer to this handbook for the current prerequisites.

1. Curriculum Updates

1.1 New Course Offerings

- CE 352 (formerly CE 397): Construction Safety and Risk Management. This course mainly focuses on the study of construction safety and introduces students to OSHA regulations and industry practices related to creating and maintaining safe construction sites. Topics include construction accident prevention, safety information sources, mandatory training, record keeping and maintenance of records, compliance with OSHA worker safety and environmental safety laws inspection procedures, and penalties for lack of conformance to safety laws, weather precautions, emergency planning, and OSHA procedures and regulations. The course also introduces the student to the concepts of risk management and control.
  Technical Area: Construction
  Prerequisite: CE 332
  Typically offered: Fall

- CE 397: Interpretation of Design/Construction Drawings & Specifications. This course is in the developmental stages and is intended to teach students how to read and interpret design and construction drawings and specifications. Knowledge of these documents is critical in understanding how a project is designed and how it needs to be built. These documents serve as the road map to a successful project. Interpretation of drawings and specifications happens continuously throughout the project life cycle and in post construction by the owner. This is a one (1) credit course and is not a degree requirement.
  Technical Area: All
  Pre- or Corequisite: CE Major and 4th Semester Standing
  Typically offered: Fall (subject to cancellation due to lack of enrollment)

- CE 397: Leadership and Case Studies in Construction. This seminar course is in the developmental stages and is intended to inform students about the world and opportunities in both building and heavy civil construction. Presentations will be made weekly by the CEE Department's Construction Engineering Management (CEM) Board Members. Students will learn about various construction projects or significant project situations. Students will be able to interact with the construction company executives presenting the seminars. This is a one (1) credit course and is not a degree requirement.
  Technical Area: Construction
  Pre- or Corequisite: CE Major and 4th Semester Standing
  Typically offered: Fall (subject to cancellation due to lack of enrollment)

- CE 402: Computing Methods for Civil and Environmental Engineering. Essential computing methods, implementations, and applications in civil and environmental engineering. Basic programming with Python, scientific and technical visualization, root finding, interpolation and curve fitting, direct and iterative solution of linear equation systems, numerical integration, numerical differentiation, and numerical solution of ordinary differential equations.
  Technical Area: Relevant to all areas
  Prerequisite: CMPSC 200 or CMPSC 201 or CMPSC 121 or CMPSC 131; *Concurrent*: MATH 251
  Typically offered: Fall

- CE 403 (formerly CE 497): Energy Use, Climate Change, and Our Engineered Infrastructure. Methods to quantify energy use in understandable units; energy analysis of transportation, homes, and industry; identification and quantification of greenhouse gas emissions; basics of climate change; renewable energy growth; energy storage; and environmental and climate justice.
  Technical Area: Environmental
  Prerequisite: None
  Typically offered: Fall and Spring

- CE 438W: Construction Engineering Design Capstone. Geotechnical reports, material specifications, quality control, equipment, estimation, scheduling, design details, excavations, foundations, retaining walls, formwork, and pavements. This course provides an overview of a comprehensive construction project with significant soils work.
  Technical Areas: Construction, Geotechnical and Materials Engineering

Prerequisites: CE 432 and one of the following courses: CE 435 or CE 436 or CE 455 (formerly CE 397) Construction Cost Estimating, or CE 456 (formerly CE 497) Planning & Scheduling, or CE 457 (formerly CE 497) Construction Equipment and Methods. CE 456 may be taken as a co-requisite to CE 438W. It is highly recommended that students take CE 455 prior to taking the capstone.
Typically offered: Spring
Note: This course replaces CE 439W: Geotechnical and Materials Engineering Design Capstone, which will no longer being offered at University Park.

- CE 455 (formerly CE 397): Construction Cost Estimating. Methods and procedures for construction project estimating and bidding, including extracting quantities from drawings, classifying work in accordance with specifications, compiling and pricing estimates, preparing bids, and computer applications.
  Technical Area: Construction
  Pre- or Corequisite: CE 332
  Typically offered: Fall and Spring

- CE 456 (formerly CE 497): Planning & Scheduling. Methods and procedures for construction project scheduling, including work breakdown structures, activity duration estimates, scheduling logic, precedence networking, Gantt charts, CPM and PERT techniques, resource scheduling, schedule updating and reduction, and computer applications.
  Technical Area: Construction
  Pre- or Corequisite: CE 332 and 6th semester standing
  Typically offered: Spring

- CE 457 (formerly CE 497): Construction Equipment and Methods. Major construction equipment and selected construction methods for civil and structural systems, including appropriate equipment based on operational parameters, principles of construction productivity measurement and analysis, process design, and discrete event simulation.
  Technical Area: Construction
  Prerequisite: CE 332
  Typically offered: Fall

- CE 497: Business & Legal Aspects in Construction. This course will introduce the student to basic business principles and the fundamental principles of contracts and their interpretation as they relate to contracting and the construction industry. Knowledge of construction project management is critical in understanding the business and legal aspects in construction.
  Technical Area: Construction
  Prerequisite: CE 432 and 7th semester standing
  Typically offered: Spring

  CE 497: GIS Essentials for Civil Engineers. Use of geospatial data and the principles of land surveying to create Geographic Information Systems to develop maps and models and perform analysis related to the contour and configuration of the earth's surface and the position of fixed objects to inform engineering design. Geospatial datasets relevant to civil engineering will be utilized to demonstrate the role of reference frames, coordinate systems, and map projections along with demonstrating various uses and analyses. Metadata, dataset accuracy and limitations, liability, and ethics of geospatial data will be discussed.
  Technical Area: N/A
  Pre- or Corequisite: CE 310 or Instructor Approval
  Typically offered: Spring

  CE 497: Water Quality Chemistry: This is the same course as CE 475, but without the lab component, thereby making it a three (3) credit course.
  Technical Area: Environmental
  Prerequisite: CE 370, CHEM 110, CHEM 111
  Typically offered: Spring

CE 497: Introduction to AI/ML for Civil & Environmental Engineering and Geosciences: This course offers a comprehensive introduction to Artificial Intelligence (AI) and Machine Learning (ML), equipping future engineers and scientists with cutting-edge AI/ML skills, preparing them for advanced AI tasks and making them proficient in solving complex problems with AI models. It bridges fundamental principles of ML with domain-relevant examples taken from Civil and Environmental Engineering and Geosciences, providing students with the skills necessary to train and run AI/ML models in their respective fields.
Technical Area: Civil & Environmental Engineering and Geosciences
Prerequisite: C+ or higher in CMPSC121, or 122, or 131, or 132, or 200, or 201, or ESC 261M
Typically offered: Spring

1.2 Summer 2025 Courses

The Summer 2025 CEE courses offered at University Park have not yet been determined and there is a possibility that no or minimal courses will be offered. Students shall not assume summer CEE courses will be available. Please plan accordingly.

1.3 Courses No Longer Offered

CE 371: Water and Wastewater Treatment, CE 439W: Geotechnical and Materials Engineering Design Capstone, and CE 441: Structural Design of Foundations will no longer be offered at the University Park campus.

1.4 New prerequisite changes

The Department of Civil & Environmental Engineering is currently relaxing the prerequisite requirements for several courses to decrease enrollment problems for students. Note that students will need to file a prerequisite override request (in LionPATH) before they can register (instructions in §2.2.1), as the Department's changes have not yet been implemented in LionPATH.

1.4.1 New changes (not in the Spring 2024 Handbook)

CE 438W Construction Engineering Capstone	*Previously:* *Now:*	Pre: CE 432 and CE 435 or CE 436 Pre: CE 432 and one of the following courses [CE 435 or CE 436 or CE 455 (formerly CE 397) Construction Cost Estimating, or CE 456 (formerly CE 497) Planning & Scheduling, or CE 457 (formerly CE 497) Construction Equipment and Methods]. CE 456 may be taken as co-requisite to CE 438W.
CE 448W Advanced Structural Design	*Previously:* *Now:*	Pre: CE 342 and CE 341; Pre or Co: ENGL 202C Pre: CE 342; Pre or Co: CE 341

1.4.2 Changes in previous Handbook

CE 465W Water Resources Capstone Course	*Previously:* *Now:*	Pre: CE 461; Pre or Co: CE 462 Pre: CE 461 or CE 462

2. Advising Resources

2.1 Important Contacts

Thomas J. Skibinski, PE Department Director of Undergraduate Studies	208L ECoRE Building tjs36@psu.edu (814) 863-0026	• Course petition requests • Return from suspension reviews • Re-enrollments • Pre-requisite override requests • ETM extensions/exceptions • Academic recovery planning • Campus referrals • Interpreting university policies/procedures • Academic support, such as time-management, tutoring resources, goal-setting, etc.
Brenton Hockenberry Department Undergraduate Program Assistant	208A ECoRE Building blh5621@psu.edu (814) 867-0470	• Graduation verification • Late add/late drop requests • Faculty Advisor assignments • Implementation of approved course petitions
Faculty Advisers	*See LionPATH for contact information*	• Information and course planning for technical areas/electives • Short and long-term Academic Planning • Understanding general education requirements • Career and professional planning, opportunities, and internships • Discipline specific research opportunities • Graduate school information

2.2 How-to Guides

2.2.1 Register for a course without meeting the prerequisites.

In some cases, a student may need to register for a course if: (1) they do not meet all the prerequisite requirements; (2) the prerequisites in LionPATH are outdated (see §1.3), or (3) LionPATH fails to recognize that the student has met the prerequisite requirements. In these cases, a student must submit a prerequisite override request using these steps below. Note that students will not be automatically enrolled if the prerequisite override request is approved. They will still need to enroll in the course after approval.

- Go to the Student Home Base at https://www.LionPATH.psu.edu/
- Click on the "Enrollment" button
- Click request Prerequisite Override from the left-hand menu
- Complete form and submit
- Students will be notified via PSU email once the override has been approved or disapproved

A step-by-step guide can be found at https://LionPATHsupport.psu.edu/student-help/ by clicking the "Requesting a Prerequisite Override (doc)" link.

ACTUAL LINK in LionPATH under Enrollment.

2.2.2 View your Academic Requirements Report.

The best way for students to evaluate their progress towards graduation and determine what courses they need to take is to view their **Academic Requirements** Report in LionPATH. Academic Requirements can be found by selecting "Degree Planning and Progress" from your student home base and then clicking "My Academic Requirements" on the left-hand navigation bar. Details on how to view and interpret your Academic Requirements Report can be found at https://LionPATHsupport.psu.edu/student-help/ (scroll down to "Running a Degree Audit").

Once you access "My Academic Requirements", you can click on "View as a PDF". This will create a PDF document of your academic requirements which is easier to read and highlights in red any course work or degree requirement that are still outstanding.

2.2.3 File an e-petition to have a course appear on a degree audit.

In certain cases, the University Registrar's Academic Requirements Report will not recognize when an eligible course satisfies a degree requirement. In such cases, students will need to file an electronic petition (e-petition) to the College to initiate the approval process. A *New Substitution* form can be started at https://coursesub.psu.edu/Student/Home.aspx. Common acceptable substitutions include:

- Move "3": Substitute a course in one of the Knowledge Domains areas of Arts, Humanities, Social and Behavioral Sciences, Natural Sciences, or Health and Wellness for a course in one of the other areas. For example, a student might take three courses in the Arts, and only one course in the Social and Behavioral Sciences. In another example, a student might take two courses in the Natural Sciences and two courses in Health and Wellness; or a student might take two courses in the Natural Sciences and three courses in the Humanities. *This substitution is referred to as the Move 3 substitution (previously: 3-6-9).*
- World Language Substitution: Students who have earned credit for a level 3 or higher foreign language (e.g. SPAN 003, FR 003, etc.) may use these 3 credits to fulfill 3 credits of GA, GH, or GS. If this substitution is made, this course cannot be the only course in a Knowledge Domain.
- First Year Seminar (FYS): If student attended a campus with no first-year seminar (FYS), the student would need to petition one credit from a course that is not used to meet any other graduation requirement to substitute for the missing FYS credit.

- EMCH 210 instead of EMCH 211 + EMCH 213: Substitution petition. *EMCH 211 (3 cr.) and EMCH 213 (3 cr.) total 6 credits, but taking EMCH 210 (5 cr.) creates a 1 credit shortfall of the degree requirements. The student must identify one additional credit from a course that is not currently being used to meet any other graduation requirement to fulfill the 1 credit shortfall. This course must be notated on the e-petition. If the student does not have a credit that can satisfy the 1 credit shortfall, then the student must take a course to obtain this 1 credit.*
- MATH 250 plus MATH 252 in place of MATH 251. Petition required if not done automatically.
- IE 424 in place of STAT 401. IE 424 cannot be used as a technical elective.
- ROTC: petition 3 cr. for ME 201 (or a CE Tech Elective), and 3 cr. for GA, GH, or GS; student must have 18 credits in the ROTC program before petitioning.
- CMPSC 121, CMPSC 131, or ESC 261M instead of CMPSC 200 or 201.
- ME 300 or CHE 220 substitute for ME 201.
- A CE Tech Elective can be now substituted for ME 201.
- ENGR 310 – Acceptable technical elective. Petition required.
- AE 471 – Not allowed as a technical elective for those students pursing the CEM Focus Area and CE 438W Capstone.
- Technical Electives: petition anything not on the approved list for review and approval/disapproval.
- Transfer credits: general transferred credits that do not automatically count as direct transfers.
- If your degree audit indicates the "2 courses out of 3 technical areas" and you have yet to take one or both of these courses, you can now file an e-petition to substitute one or two CE tech elective(s) in any CE Technical Area to take their place(s).

For course transfers from another university, use the Penn State Transfer Credit Tool (https://public.PionPATH.psu.edu/psc/CSPRD/EMPLOYEE/SA/c/PE_AD077.PE_AD077_TRN_CRD_T.GBL?Page=PE_AD077_MAIN_SRCH&Action=U&). This tool will determine if another course is an exact match for a Penn State course. If so, you will need to ask the other institution to send Penn State documents confirming completion of that class (e.g., an official transcript). When processed, these courses will be automatically included in the correct location in your Academic Requirements Report. If your course is not an exact match, you will need to submit a New Transfer Review form (https://coursesub.psu.edu/Student/Home.aspx). Approval of a "New Transfer Review" course in not guaranteed.

Course transfers from another university or college require a grade of "C" or higher to be accepted by Penn State. A grade of "C-" is not acceptable.

3. Degree Requirements

Students must earn 127 credits to complete the B.S. degree in Civil Engineering. A complete list of the required courses can be found in the links in §3.1.

3.1 Useful resources

- The entrance to CE major requirements:

  https://bulletins.psu.edu/undergraduate/colleges/engineering/civil-engineering-bs/#howtogetintext

- A complete list of the degree requirements for a B.S. in Civil Engineering:

  https://bulletins.psu.edu/undergraduate/colleges/engineering/civil-engineering-bs/#programrequirementstext

- Instructions on how to access a student's degree audit:

  https://LionPATHsupport.psu.edu/student-help/ (scroll down to "Degree Audit").

3.2 Requirements

3.2.1 General Education

The CE program requires that students meet the University's General Education Requirements. Penn State requires the completion of a minimum of 45 General Education credits. 27 of these credits are automatically fulfilled through current CE requirements:

- MATH 140 & 141 fulfill Quantification (GQ)
- ENGL 15, CAS 100, & ENGL 202C fulfill Writing/Speaking (GWS)
- CHEM 110, PHYS 211 & 212 fulfill Natural Sciences (GN)
- ECON 102 or 104 fulfills Social and Behavioral (GS)

There are **18 additional credits of General Education (Knowledge Domains)** students still need to complete. Students have the most flexibility with Arts, Humanities, and Social Sciences (AHS). In Summer 2023, the University implemented a new Gen Ed curriculum. These new requirements are indicated within the brackets [ ]. Students are to adhere to the Gen Ed curriculum that was in place when they entered the University. These 18 credits must include:

- 3 credits of Arts (GA)
- 3 credits of Humanities (GH)
- 3 credits of Health and Wellness (GHW)
- 3 credits of Social and Behavioral (GS) [3 credits of Exploration]
- 6 credits of Inter Domain OR Linked Courses in different knowledge domains (GS, GH, or GS) [Integrative Studies (e.g. Inter-domain coursework)]

Additionally, students must also fulfill a US Cultures (US) requirement (3 credits) and an International Cultures (IL) requirement (3 credits), which is most effectively done by having AHS courses count as both AHS and US or IL.

Students are encouraged to meet with an adviser to assist with general education course selection. Additional details on General Education requirements can be located in the Undergraduate Degree Bulletin. A General Education Planning Tool is also available: https://genedplan.psu.edu/Home/Index

3.2.2 C or Better Courses

To fulfill graduation requirements, students must earn a C grade or better in the following courses:

CHEM 110	Chemical Principles I
EDSGN 100	Cornerstone Engineering Design
EMCH 211	Statics
EMCH 212	Dynamics
EMCH 213	Strength of Materials
ENGL 202C	Effective Writing: Technical Writing
MATH 140	Calculus with Analytic Geometry I
MATH 141	Calculus with Analytic Geometry II
MATH 251	Ordinary and Partial Differential Equations (or MATH 250 + MATH 252)
PHYS 211	General Physics: Mechanics
PHYS 212	General Physics: Electricity and Magnetism
CAS 100(A or B)	Effective Speech
ENGL 15 (or 30H)	Rhetoric and Composition
CE 310	Surveying
CE 321	Highway Engineering
CE 332	Professionalism, Engineering Economics & Construction Project Delivery
CE 335	Engineering Mechanics of Soils
CE 336	Materials Science for Civil Engineers
CE 340	Structural Analysis
CE 360	Fluid Mechanics
CE 370	Introduction to Environmental Engineering

3.2.3 Cumulative GPA minimum

A cumulative GPA of 2.00 or better is required for graduation. If the cumulative GPA drops below 2.00, the student may be dropped for poor scholarship. If the student is dropped as a degree candidate, the College of Engineering requires that all deficiencies be removed before they can be re-enrolled in the major. When half of the deficiencies are removed, the student may pursue enrolling in Division of Undergraduate Studies (DUS).

3.2.4 Laboratory Requirement

The Civil Engineering curriculum requires that students select one CE lab in addition to the prescribed ones. Students can choose from CE 337 or CE 475 to meet this requirement. For the 4-credit CE 475 course, 1-credit is counted towards this lab requirement and 3-credits are counted towards a technical elective.

3.2.5 Technical Elective Requirements

- Students must take 18 credits of technical elective credits, which are courses in CE beyond the core requirements and relevant courses in other departments. Six (6) credits must be earned by taking two courses among the three categories below. The two courses must be taken from different lists categories (i.e., this requirement is commonly referred to as the "2 out of 3 requirement"). If your degree audit indicates the "2 courses out of 3 technical areas" and you have yet to take one or both of these courses, the Department will now all you to file an e-petition to substitute one or two CE tech elective(s) in any CE technical area to take their place(s).
  1. Structural Engineering (CE 341, 342, or 447)
  2. Water Resource Engineering (CE 461 or 462)

3. Environmental Engineering (CE 403 (formerly 497), 473, 475, 476, or 479, or 497[1])

The other 12 credits may be taken from any CE 3xx or 4xx courses not being used to meet other curricular requirements as technical electives. Of these 12 credits, at least 3 credits must be a CE course.

Alternatively, any 400-level courses from the following list can be used to meet the technical elective requirement. Students will still need to meet the prerequisites for courses offered in other Departments.

ACS	Acoustics
AERSP	Aerospace Engineering
AE	Architectural Engineering *(except AE 401, 402, 403, 404, or 430)*
ABE	Agricultural and Biological Engineering
BME	Biomedical Engineering
CHE	Chemical Engineering
CMPEN	Computer Engineering
CMPSC	Computer Science
CO-OP	Complete 1 credit each of ENGR 295A/I, 395A/I, 495A/I
CSE	Computer Science and Engineering
ECON	Economics
EDSGN	Engineering Design
EE	Electrical Engineering
EGEE	Energy and Geo-Environmental Engineering
EMCH	Engineering Mechanics
EME	Energy and Mineral Engineering
ENGR	Engineering
ENVE	Environmental Engineering
ENVSE	Environmental Systems
ERM	Environmental Resource Management
ESC	Engineering Science
FSC	Fuel Science
GEOG	Geography
GEOSC	Geosciences
IE	Industrial Engineering (except IE 424)
MATSC	Material Science and Engineering
ME	Mechanical Engineering
METEO	Meteorology
MINE	Mineral Engineering
MNPR	Mineral Processing
MNG	Mining Engineering
NUCE	Nuclear Engineering
PNG	Petroleum and Natural Gas Engineering
STAT	Statistics (except STAT 401)
SUR	Surveying

Requests for other courses to count as a technical elective, outside of those listed below, will be considered by the Department Undergraduate Coordinator via an academic petition submitted through the University's Course Substitution Request System. The petition request must demonstrate the technical nature and a supporting connection to the department curriculum for the requested substitute course. Approval must be granted prior to scheduling the course.

[1] Students may use the CE 403: Energy Use, Climate Change, and Our Engineered Infrastructure to fulfil this requirement, but they must file an e-petition to have it count.

3.3 Recommended Technical Electives by Technical Area

3.3.1 General Civil Engineering Education

CE 341: Design of Concrete Structures	Prereq: CE 340; Co- or Prereq: CE 336 Reg. Offering: Spring
CE 402: Computing Methods for Civil and Environ. Engr.	Prereq: CMPSC 121 or 131 or 200 or 201; Co- or Prereq: MATH 251 Reg. Offering: Fall
CE 410: Sustainable Residential Land Development	Prereq: CE 332 or AE 372 Reg. Offering: Fall
CE 432: Construction Project Management	Prereq: CE 332 Reg. Offering: Fall
CE 461: Water Resource Engineering	Prereq: CE 360 Reg. Offering: Fall and Spring
CE 403: Energy Use, Climate Change, and Infrastructure	Prereq: CHEM 110; MATH 111 or 141 Reg. Offering: Fall and Spring
CE 497: Introduction to AI/ML for Civil & Environmental Engineering and Geosciences (3 credits)	Prereq: CMPSC 121 or 131 or 200 or 201 Reg. Offering: Spring
EDSGN 468: Engineering Design and Analysis with AutoCAD	Prereq: EMCH 210 or 211
ENGR 405: Project Management for Professionals	Prereq: 4th semester standing
ENGR 408: Leadership Principles	Prereq: 5th semester standing

3.3.2 Construction Engineering Management (CEM) Focus

CE 352 (formerly CE 397): Construction Safety and Risk Management	Co- or Prereq: CE 332 and 5th sem. standing Reg. Offering: Fall
CE 432: Construction Project Management	Prereq: CE 332 Reg. Offering: Fall
CE 455 (formerly CE 397): Construction Cost Estimating	Co- or Prereq: CE 332 Reg. Offering: Fall and Spring
CE 456 (formerly CE 497): Planning & Scheduling	Prereq: CE 332 and 6th sem. standing Reg. Offering: Spring
CE 457 (formerly CE 497): Construction Equipment and Methods	Prereq: CE 332 Reg. Offering: Fall
CE 497: Business & Legal Aspects in Construction	Prereq: CE 432 and 7th sem. standing Reg. Offering: Spring

3.3.3 Environmental Engineering Focus

CE 402: Computing Methods for Civil and Environ. Engr.	Prereq: CMPSC 121 or 131 or 200 or 201; Co- or Prereq: MATH 251 Reg. Offering: Fall
CE 473: Ecological Design on Regenerative Aquatic Systems	Prereq: CE 370 Reg. Offering: Fall
CE 475: Water Quality Chemistry	Prereq: CE 370 Reg. Offering: Spring
CE 476: Solid and Hazardous Wastes	Prereq: CE 370 Reg. Offering: Spring
CE 479: Environmental Microbiology for Engineers	Prereq: CE 370 Reg. Offering: Fall
CE 497: Introduction to AI/ML for Civil & Environmental Engineering and Geosciences (3 credits)	Prereq: CMPSC 121 or 131 or 200 or 201 Reg. Offering: Spring
ERM 448: Rural Road Ecology and Maintenance	Prerequisites: MATH 22 and MATH 26; or MATH 41; or MATH 110 or MATH 140 Co- or Prereq: ASM 327 or BE 307 or CE 335 or CE 370 or FOR 308 or FOR 470
BE 467: Design of Stormwater and Erosion Control Facilities	Prereq: BE 307 or CE 461 Reg. Offering: Fall
BE 477: Land-Based Waste Disposal	Prereq: BE 307 or CE 461
STAT 484: The R Statistical Programing Language	Prereq: 3 credits of statistics
STAT 485: Intermediate R Statistical Programming Language	Co- or prereq: STAT 484

3.3.4 Geotechnical and Materials Engineering Focus

CE 434: Geotechnical Engineering Design	Prereq: CE 335 Reg. Offering: Spring
CE 435: Foundation Engineering	Prereq: CE 335 Reg. Offering: Fall
CE 436: Construction Engineering Materials	Prereq: CE 336 and (STAT 401 or IE 424) Reg. Offering: Fall
CE 437: Engineering Materials for Sustainability	Prereq: CE 336 Reg. Offering: Spring
CE 497: Introduction to AI/ML for Civil & Environmental Engineering and Geosciences (3 credits)	Prereq: C+ or higher in CMPSC 121, or 122, or 131, or 132, or 200, or 201, or ESC 261M Reg. Offering: Spring

3.3.5 Structural Engineering Focus

CE 341: Design of Concrete Structures	Prereq: CE 340; Co- or Prereq: CE 336 Reg. Offering: Spring
CE 342: Design of Steel Structures	Prereq: CE 340; Co- or Prereq: CE 336 Reg. Offering: Fall
CE 402: Computing Methods for Civil and Environ. Engr.	Prereq: CMPSC 121 or 131 or 200 or 201; Co- or Prereq: MATH 251 Reg. Offering: Fall
CE 447: Structural Analysis by Matrix Methods	Prereq: CE 340 Reg. Offering: Fall
AE 431: Advanced Concrete Design for Buildings	Prereq: AE 402 and AE 430 (generally CE 340 and 341 are allowed substitutes)
AE 432: Design of Masonry Structures	Prereq: AE 402 or CE 341

3.3.6 Transportation Engineering Focus

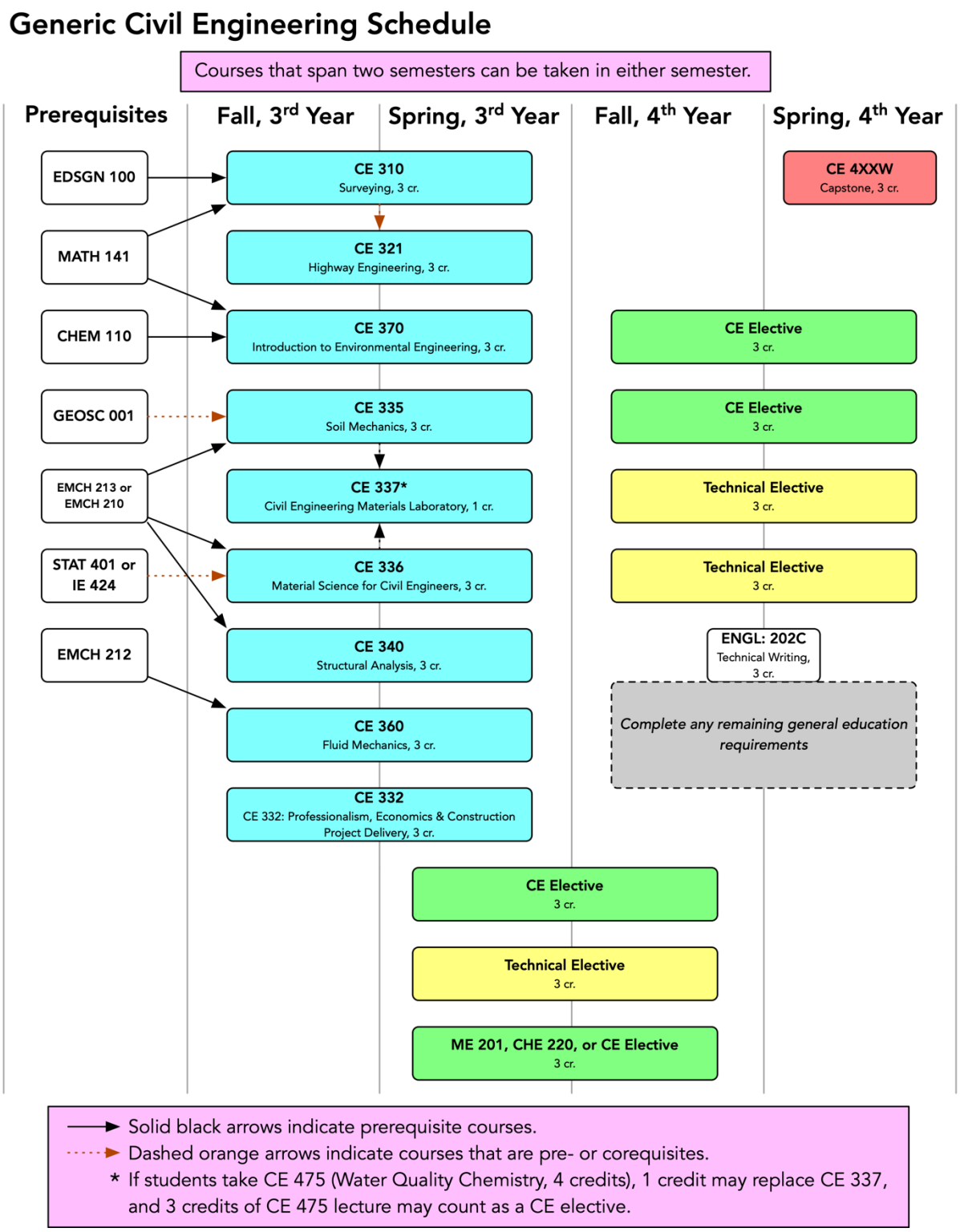
CE 422: Transportation Planning	Prereq: STAT 401 or IE 424 Reg. Offering: Fall
CE 423: Traffic Operations	Co- or prereq: CE 321 Reg. Offering: Fall
CE 521: Transportation Networks and Systems Analysis	Co- or prereq: 3 credits of comp. sci.
CE 523: Analysis of Transportation Demand	Prereq: STAT 401 or IE 424
CE 525: Transportation Operations	Prereq: CE 423
CE 526: Highway and Street Design	Prereq: CE 421

CE 528: Transportation Safety Analysis	Prereq: STAT 401 or IE 424

3.3.7 Water Resources Engineering Focus

CE 402: Computing Methods for Civil and Environ. Engr.	Prereq: CMPSC 121 or 131 or 200 or 201; Co- or Prereq: MATH 251 Reg. Offering: Fall
CE 461: Water Resource Engineering	Prereq: CE 360 Reg. Offering: Fall and Spring
CE 462: Open Channel Hydraulics	Prereq: CE 360 Reg. Offering: Fall and Spring
BE 467: Design of Stormwater and Erosion Control Facilities	Prereq: BE 307 or CE 461 Reg. Offering: Fall
ERM 447: Stream Restoration	Prereq: ASM 327 or BE 307 or CE 360 or CE 370
ERM 448: Rural Road Ecology and Maintenance	Prereq: MATH 22 and MATH 26; or MATH 41; or MATH 110 or MATH 140 Concurrent Courses: ASM 327 or BE 307 or CE 335 or CE 370 or FOR 308 or FOR 470

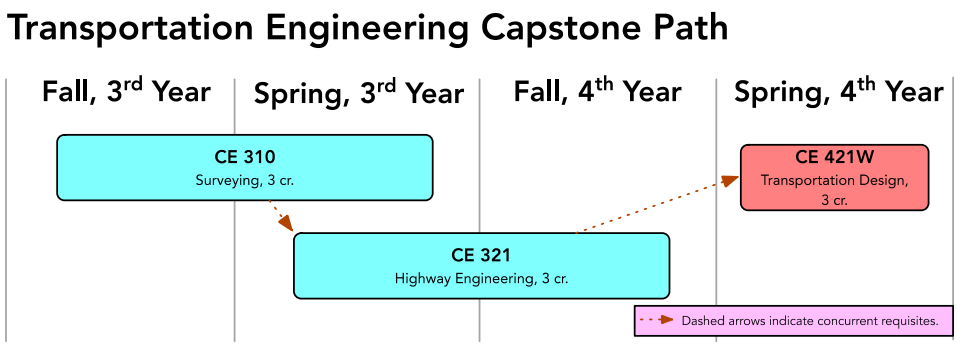
3.4 Generic Civil Engineering 3rd and 4th year course plan



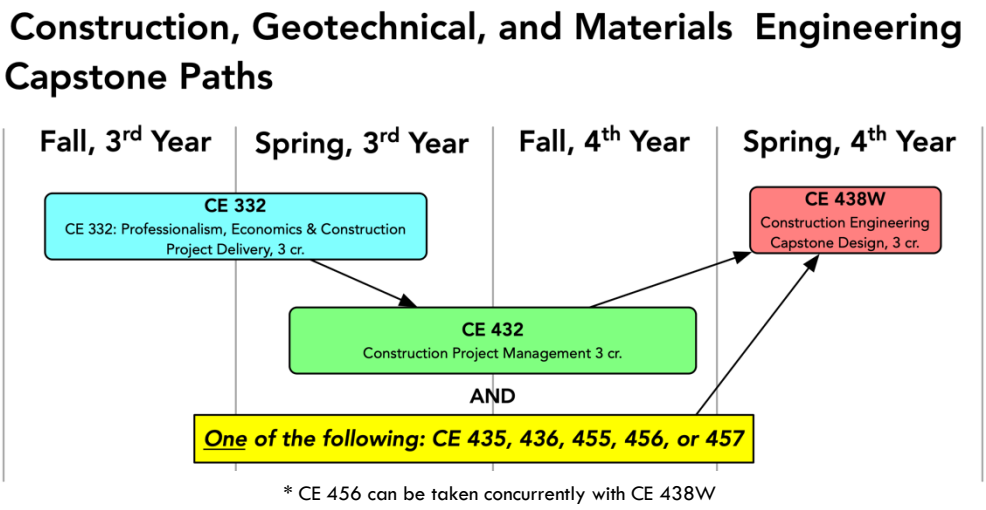
3.5 CE Capstone courses.

The department of Civil Engineering at the University Park campus currently offers five capstone courses (denoted with a "W" for writing intensive). *Capstone courses are only offered in the Spring Semester at the University Park campus.*

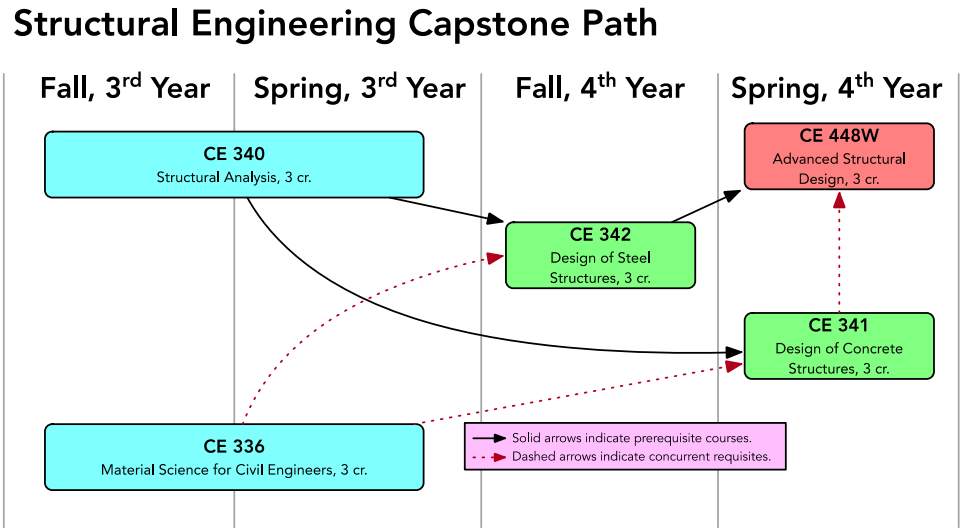
- CE 421W: Transportation Design; Corequisite: CE 321 (offered in Fall and Spring)



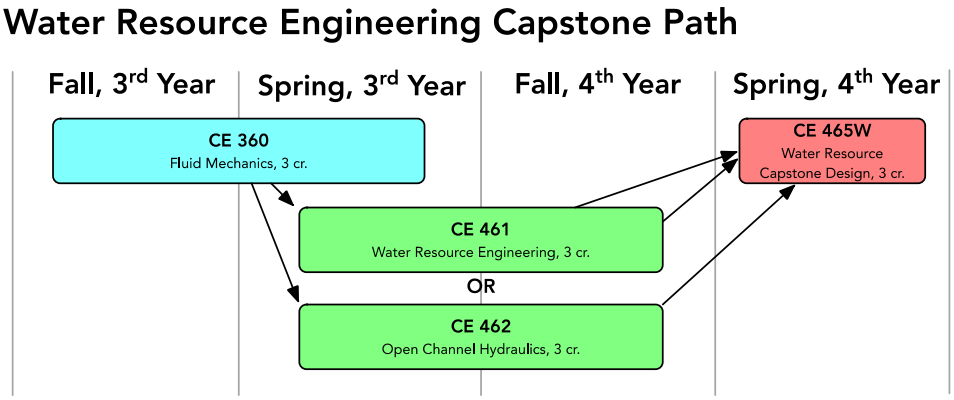
- CE 438W: Construction Engineering Capstone Design;



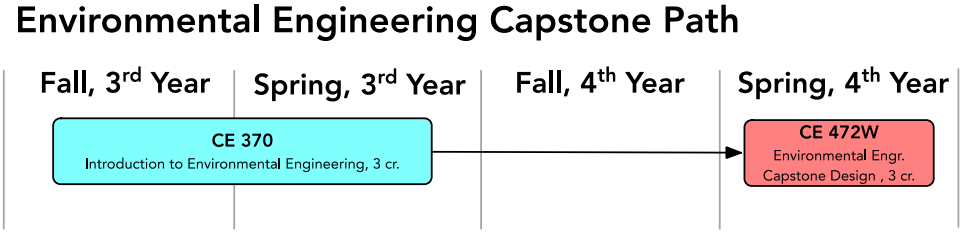
- CE 448W: Structural Design Capstone; Prerequisite: CE 342 (offered in Fall); Pre- or Corequisite: CE 341 (offered in the Spring semester).



- CE 465W: Water Resources Capstone Design; Prerequisite: CE 461 (offered Fall and Spring) or CE 462 (offered Fall and Spring)



- CE 472W: Environmental Engineering Capstone Design; Prerequisite: CE 370 (offered Fall and Spring).



4. CE Course Offerings and Prerequisites

Below is a complete list of the permanent CE courses currently offered at the University Park campus. Changes to prerequisites and corequisites that do not yet appear in LionPATH are shown in blue.

4.1 Core required CE courses (C or Better grade required, except CE 337).

CE 310 **SURVEYING (3)** – Fundamental surveying measurements, traverse computations, coordinate geometry, mapping, GPS and GIS, circular and parabolic curves, earthwork, boundary surveys, CAD applications.
Prereqs: EDSGN 100, MATH 141
Reg. Offering: Fall and Spring

CE 321 **HIGHWAY ENGINEERING (3)** – Highway engineering principles; vehicle and driver characteristics; geometric and pavement design; traffic engineering; capacity and analysis and signal timing.
Pre- or Coreq: CE 310
Reg. Offering: Fall and Spring

CE 332 **PROFESSIONALISM, ECONOMICS & CONSTRUCTION PROJECT DELIVERY (3)** – Introduction to the engineering management process; engineering economics; construction project delivery systems; contract documents; preliminary cost estimating; ethics; and professional practice.
Prereq: None
Reg. Offering: Fall and Spring

CE 335 **ENGINEERING MECHANICS OF SOILS (3)** – Soil compositions, classification, subsurface exploration, groundwater flow, stress analysis, compaction, soil behavior, consolidation, and shear strength.
Prereq: EMCH 213 or EMCH 210; Coreq: GEOSC 001
Reg. Offering: Fall and Spring

CE 336 **MATERIALS SCIENCE FOR CIVIL ENGINEERS (3)** – Introduction to civil engineering materials; their structure and behavior; relationship between structure and behavior.
Prereq: EMCH 213 or EMCH 210; Coreq: STAT 401 or IE 424
Reg. Offering: Fall and Spring

CE 337 **CIVIL ENGINEERING MATERIALS LAB (1)** – Materials: soils, aggregates, concrete, steel, wood and polymers. (Note this course is required but does not require a C or better grade.)
Pre- or Coreq: CE 335 or CE 336
Reg. Offering: Fall and Spring

CE 340 **STRUCTURAL ANALYSIS (3)** – Analysis of statically determinate and indeterminate trusses, beams, and frames; reactions; axial forces; shears; moments; deflections; introduction to influence lines.
Prereq: EMCH 213 or EMCH 210
Reg. Offering: Fall and Spring

CE 360 **FLUID MECHANICS (3)** – Mechanics of fluids; flow in conduits and around bodies; friction and energy loss; fluid measurements.
Prereq: EMCH 212
Reg. Offering: Fall and Spring

CE 370 **INTRODUCTION TO ENVIRONMENTAL ENGINEERING (3)** – Nature and scope of environmental issues; air, water, land impacts; fundamentals and processes of pollution control, drinking water and wastewater treatment.
Prereqs: CHEM 110; MATH 111 or MATH 141
Reg. Offering: Fall and Spring

4.2 Additional CE courses

4.2.1 General Civil Engineering courses (relevant to all areas)

CE 402 **COMPUTING METHODS FOR CIVIL AND ENVIRONMENTAL ENGINEERING.** Essential computing methods, implementations, and applications in civil and environmental engineering. Basic programming with Python, scientific and technical visualization, root finding, interpolation and curve fitting, direct and iterative solution of linear equation systems, numerical integration, numerical differentiation, and numerical solution of ordinary differential equations.
Prereq: CMPSC 200 or CMPSC 201 or CMPSC 121 or CMPSC 131; Coreq: MATH 251
Reg. Offering: Fall

CE 410 **SUSTAINABLE RESIDENTIAL LAND DEVELOPMENT (3)** – Residential land development design process including conservation and green design approaches; site assessment; grading and earthwork; utility design and layout; and stormwater management.
Prereq: CE 332 or AE 372
Reg. Offering: Fall

CE 411 **RESIDENTIAL CONSTRUCTION DESIGN PROJECT (1)** – Interdisciplinary teams will develop a complete design and investment package for a real life new residential or real estate development.
Prereq: Fifth semester standing or higher
Reg. Offering: Fall

4.2.2 Construction Engineering Management (CEM) Courses

CE 352 **CONSTRUCTION SAFETY AND RISK MANAGEMENT (3)** This course mainly focuses on the study of construction safety and introduces students to OSHA regulations and industry practices related to creating and maintaining safe construction sites. Topics include construction accident prevention, safety information sources, mandatory training, record keeping and maintenance of records, compliance with OSHA worker safety and environmental safety laws inspection procedures, and penalties for lack of conformance to safety laws, weather precautions, emergency planning, and OSHA procedures and regulations. The course also introduces the student to the concepts of risk management and control.
Prereq: CE 332
Reg. Offering: Fall

CE 432 **CONSTRUCTION PROJECT MANAGEMENT (3)** Fundamentals of project management. This course introduces students to the basic practical aspects of the construction process and the quantitative methods used to manage projects within budget, deadline, and prescribed quality. Students will understand the construction market and the inter-relationships among the various players involved. Focus in this course is on integrating the various facets of construction cost estimating, planning, scheduling, control, and overall project management.
Prereq: CE 332
Reg. Offering: Fall

CE 438W **CONSTRUCTION ENGINEERING DESIGN CAPSTONE (3).** Geotechnical reports, material specifications, quality control, equipment, estimation, scheduling, design details, excavations, foundations, retaining walls, formwork, and pavements. This course provides an overview of a comprehensive construction project with significant soils work.
Prereq: CE 432 and one of the following courses: CE 435 or CE 436 or CE 455 or CE 456 or CE 457. Prereq override required for CE 455, CE 456 and CE 457. CE 456 may be taken as a co-requisite with CE 438W.

Reg. Offering: Spring

CE 455 **CONSTRUCTION COST ESTIMATING (3)** This course focuses on the fundamental principles of detailed cost estimating and bidding in civil infrastructure projects, including classifying work in accordance with specifications standards, extracting quantity take-offs from drawings, compiling and pricing estimates, finalizing bids, and the utilization of software and spreadsheets to automate estimating functions. The course also introduces estimating methods used for the preparation of conceptual and preliminary estimates.
Prereq: CE 332 or AE 372
Reg. Offering: Fall and Spring

CE 456 **PLANNING AND SCHEDULING (3)** This course discusses the theory and practice used in planning and scheduling projects; defining task and resources, creating logic diagrams, and monitoring the projects. This course encompasses construction tenets and fundamentals including organizing, staffing, directing, and controlling representing concepts and principles integral to career applications in project and design management. Students who successfully complete this course will be able to: 1) understand and use planning, scheduling, and control techniques for managing construction projects 2) understand scheduling techniques and computer applications in critical path methods, PERT, and resource scheduling 3) understand construction financing and schedule / cost relations 4) understand the principles of project tracking, progress measurements, trend analysis, and forecasting
Prereq: CE 332 and 6th Semester Standing
Reg. Offering: Spring

CE 457 **CONSTRUCTION EQUIPMENT AND METHODS (3)** This course describes the major construction equipment along with selected construction methods for civil infrastructure projects. This includes understanding construction equipment economics, selection of appropriate equipment based on operational parameters, principles of equipment productivity analysis and measurement, methods for equipment productivity improvement, safe operation of construction equipment, techniques for optimizing equipment utilization, and technologies for enhancing equipment integration and automation.
Prereq: CE 332 or AE 472
Reg. Offering: Fall

4.2.3 Environmental Engineering Courses

CE 472W **ENVIRONMENTAL ENGINEERING CAPSTONE DESIGN (3)** – Principles and design of unit operations for water; domestic and industrial wastewater treatment, equipment selection and application.
Prereq: CE 370
Reg. Offering: Spring

CE 473 **ECOLOGICAL DESIGN OF REGENERATIVE AQUATIC SYSTEMS (3)** – This course utilizes fundamental ecological principles to design: ecological wastewater treatment systems; constructed wetlands for mine water treatment; and regenerative aquaponic systems with an emphasis on sustainable development at the water-energy-food nexus.
Prereq: CE 370
Reg. Offering: Fall

CE 475 **WATER QUALITY CHEMISTRY (4)** – Chemistry applicable to the understanding and analysis of water quality, pollution and treatment.
Prereq: CE 370
Reg. Offering: Spring

CE 476 **SOLID AND HAZARDOUS WASTES (3)** – This course covers three main topics: 1) municipal solid waste handling and disposal (including landfill-gas-to-energy, direct waste-to-energy, and recycling options); 2) the fate and transport of hazardous wastes in the environment; and 3) the design of appropriate technologies for the remediation of contaminated soil and groundwater.
Prereq: CE 370
Reg. Offering: Spring

CE 479 **ENVIRONMENTAL MICROBIOLOGY FOR ENGINEERS (3)** – Introductory microbiology for engineers; microbe structure, function, and diversity; environmental ecosystems; diagnostic labs.
Prereq: CE 370
Reg. Offering: Fall

4.2.4 Geotechnical and Materials Courses

CE 337 **CIVIL ENGINEERING MATERIALS LAB (1)** – Materials: soils, aggregates, concrete, steel, wood and polymers.
Pre- or Coreq: CE 335 or CE 336
Reg. Offering: Fall and Spring

CE 434 GE**OTECHNICAL ENGINEERING DESIGN (3)** – Fundamental engineering geology, subsurface exploration including geophysical techniques, principles of shallow and deep foundation designs, slope stability, geosynthetics design, groundwater and drainage, and geotechnical earthquake engineering.
Prereq: CE 335
Reg. Offering: Spring

CE 435 **FOUNDATION ENGINEERING (3)** – Bearing capacity, settlement, and structural design of shallow foundations; lateral earth pressure; design of retaining and sheet-pile walls; and an introduction to deep foundations.
Prereq: CE 335
Reg. Offering: Fall

CE 436 **CONSTRUCTION ENGINEERING MATERIALS (3)** – Design, production, application, specification, and quality control of construction materials unique to civil engineering.
Prereqs: CE 336 and (STAT 401 or IE 424)
Reg. Offering: Fall

CE 437 **ENGINEERING MATERIALS FOR SUSTAINABILITY (3)** – Environmental impact of materials; life-cycle assessment; material selection to optimize performance; design, evaluation, and production of green construction materials.
Prereq: CE 336
Reg. Offering: Spring

CE 438W **CONSTRUCTION ENGINEERING DESIGN CAPSTONE.** Geotechnical reports, material specifications, quality control, equipment, estimation, scheduling, design details, excavations, foundations, retaining walls, formwork, and pavements. This course provides an overview of a comprehensive construction project with significant soils work.
Prereq: CE 432 and one of the following courses: CE 435 or CE 436 or CE 455 or CE 456 or CE 457. Prereq override required for CE 455, CE 456 and CE 457. CE 456 may be taken as a co-requisite with CE 438W.
Reg. Offering: Spring

4.2.5 Structural Engineering Courses

CE 341 **DESIGN OF CONCRETE STRUCTURES (3)** – Design of reinforced concrete beams, slabs, and columns with emphasis on ultimate-strength methods; pre-stressed concrete; buildings and bridge applications.
Prereq: CE 340; Co- or Prereq: CE 336
Reg. Offering: Spring

CE 342 **DESIGN OF STEEL STRUCTURES (3)** – Design and analysis of structural steel tension members, beams, columns, beam-columns, composite beams, and connections.
Prereq: CE 340; Co- or Prereq: CE 336
Reg. Offering: Fall

CE 447 **STRUCTURAL ANALYSIS BY MATRIX METHODS (3)** – Analysis of truss and frame structures using flexibility and stiffness methods of matrix analysis; computer applications.
Prereq: CE 340
Reg. Offering: Fall

CE 448W **ADVANCED STRUCTURAL DESIGN (3)** – Wind, snow, seismic, bridge loads, and building design using steel, concrete and pre-stressed concrete; advanced steel connections. Capstone project; computer applications.
Prereq: CE 342; Co- or prereq: CE 341
Reg. Offering: Spring

4.2.6 Transportation Engineering Courses

CE 421W **TRANSPORTATION DESIGN (3)** – Design of streets and highway facilities; emphasis on geometric elements, intersections and interchanges, roadway drainage, and pavement design procedures.
Pre- or Coreq: CE 321
Reg. Offering: Spring

CE 422 **TRANSPORTATION PLANNING (3)** – Transportation systems planning, modeling, and management; data collection, analysis, and forecasting.
Pre- or Coreq: STAT 401 or IE 424
Reg. Offering: Fall

CE 423 **TRAFFIC OPERATIONS (3)** – The highway capacity manual, concepts and analyses, freeway operations, signalized and unsignalized intersections, signal coordination, traffic impact studies.
Pre- or Coreq: CE 321
Reg. Offering: Fall

4.2.7 Water Resource Engineering Courses

CE 461 **WATER-RESOURCE ENGINEERING (3)** – Qualitative and quantitative description of the hydrologic cycle, flood and drought frequency analysis, climate and land use change impacts, risk analysis and uncertainty, water resource management at regional, national and global scale.
Prereq: CE 360
Reg. Offering: Fall and Spring

CE 462 **OPEN CHANNEL HYDRAULICS (3)** – Open channel hydraulics for free surface flow in rivers, canals, steep chutes, transitions, and through bridges and culverts.
Prereq: CE 360
Reg. Offering: Fall and Spring

CE 465W **WATER RESOURCES CAPSTONE DESIGN (3)** – Hydraulic design of river structures and open channels including super critical and spatially varied flow; hydrologic/hydraulic computer modeling; design project.
Prereq: CE 461 or CE 462
Reg. Offering: Spring

5. Opportunities and Student Activities

American Concrete Institute (ACI)

The ACI (American Concrete Institute) student club is open to any student interested in concrete structures or materials. Along with the local ACI Pittsburg Chapter, the Chapter organizes ACI Grade I Certification training and promotes advanced concrete knowledge. Student teams have the resources to travel to the semi-annual Concrete Conventions and participate in student competitions. The ACI advisor is Dr. Aleksandra Radlińska.

American Society of Civil Engineers (ASCE) – Penn State Student Chapter

ASCE is the professional civil engineering society, with a student chapter open to freshmen and sophomores interested in the organization and all students enrolled in civil engineering. This organization was established to expand the college experience for students in civil engineering and aid in establishing the professional contacts that are so valuable to the practicing engineer. Student chapter members hold offices, secure speakers for chapter meetings, visit engineering works, attend professional meetings, present papers, and keep abreast of professional activities through ASCE publications. These activities stimulate early professional consciousness and prepare students for entry into the profession and into the American Society of Civil Engineers. The ASCE faculty advisor is Dr. Aleksandra Radlińska and the faculty practitioner advisor is Thomas J. Skibinski, P.E.

Chapter activities include concrete canoe races and steel bridge competitions. How do you make concrete float? Join the committee that designs the concrete mix used in making the canoe, and then designs, builds, and races the canoe. Does constructing a bridge over imaginary water interest you? Join the steel bridge team to design, construct and test the load of 2,500 pounds on the bridge. The Concrete Canoe team advisor is Mr. Thomas Skibinski, and the Steel Bridge team advisors are Mr. Thomas Skibinski and Dr. Pinlei Chen.

The Central Pennsylvania Section of ASCE offers four $2,000 scholarships to civil engineering students. Competition is open to students who are enrolled at Penn State and other colleges and universities within the boundaries of the Central Pennsylvania ASCE Section. Contact the Penn State Student Chapter or Thomas J. Skibinski for further information.

For further information concerning the Penn State ASCE Student Chapter please visit the Jeremy Herbstritt Student Lounge, 105 Sackett, or the Penn State ASCE web page http://www.pennstateasce.com/.

CEE Alumni Mentoring Program

The program connects CEE Alumni mentors with current students on a one-to-one relationship for guidance, information, and networking related to the student's professional development. Registration required to match an Alumni with a student: CEE Mentor Program - Student Guidelines | Penn State Engineering (psu.edu)

Chi Epsilon

Chi Epsilon is the national honor society for juniors and seniors enrolled in civil engineering. Membership is by invitation and is based on scholarship, character, practicality, and sociability. The purpose of this organization is to recognize and develop the fundamental characteristics of the successful civil engineer. The faculty advisor is Dr. Jay Regan.

Constructors Association of Western Pennsylvania (CAWP) Construction Cost Estimating Competition

Please contact Thomas Skibinski, P.E. (tjs36@psu.edu) for details.

Earthquake Engineering Research Institute (EERI-PSU)

The national chapter of the EERI (http://www.eeri.org/site/) is a "nonprofit, technical society of engineers, geoscientists, architects, planners, public officials and social scientists" with the aim of reducing earthquake risk by advancing science, improving the understanding of the impact of earthquakes on society, and advocating comprehensive and realistic measures for reducing the harmful effects of earthquakes. Dr. Gordon Warn is faculty advisor.

Engineering Cooperative Education

Students can participate in the College of Engineering's Cooperative Education program beginning with the junior year. By alternating semesters of work and study, a year of work experience is accrued. Using the summer sessions before the junior year and during the senior years, it requires four and one-half years to earn a Bachelor of Science degree with a Certificate in Engineering Cooperative Education. Completion of three work assignments and a report for each assignment is required for certification. Continuing participation in the program is contingent upon satisfactory academic and work performance.

To obtain additional information on the Co-op program, students are encouraged to attend one of the workshops presented by the Engineering Career Resources & Employer Relations Office. The Engineering Career Resources & Employer Relations Office is located in 117 Hammond Building. (http://www.engr.psu.edu/career). The cooperative education coordinator for our department is Dr. William Burgos. The coordinator will also grade the co-op reports.

Engineers for a Sustainable World

Engineers for a Sustainable World (ESW) is an international nonprofit network of students and professionals united by their shared vision for technical sustainability. By working with ESW, our members gain both the technical and professional skills to tackle the world's biggest problems by participating in the design, construction, and implementation of solutions for their local community. The Penn State student chapter advisors are Dr. Rachel Brennan and Dr. John Gershenson.

Engineers in Action

Engineers in Action is a service organization that strives to bring together students of all backgrounds to revitalize communities by designing and constructing pedestrian footbridges over impassable rivers. During the rainy seasons, many communities do not have safe means to cross flooding rivers separating them from their markets, healthcare, and education. Isolation caused by impassable rivers is a root cause of poverty all over the world which is why EIA's mission is to empower today's students to become tomorrow's global leaders by designing and building bridges with under-served communities. The faculty advisor is Mr. Brian Naberezny.

Engineers Without Borders

The national chapter of the EWB-USA (http://www.ewb-usa.org) is an international nonprofit organization that supports community-driven development programs worldwide through the design and implementation of sustainable engineering projects, while fostering responsible leadership. The Penn State student chapter advisor is Dr. Jay Regan.

Institute Of Transportation Engineers (ITE)

ITE is a professional organization of students who are interested in transportation and traffic engineering. A number of meetings are held each year, with representatives of transportation firms and agencies serving as guest speakers. Meetings are posted on the ITE bulletin board on the second floor of Sackett Building. The ITE advisor is Dr. Vikash Gayah.

National Association of Home Builders (NAHB)

The National Association of Home Builders (NAHB) Student Chapter is a focus for students interested in housing, light commercial construction, and development. It provides students with the opportunity to learn more about the housing

industry. Students who are in the following majors are eligible for membership in the NAHB Student Chapter: Civil and Environmental Engineering, Architectural Engineering, Architecture, Landscape Architecture and Real Estate. There are a number of benefits, professional, academic, and social, to joining the student chapter. There are a number of scholarships available to students interested in housing and/or residential construction (http://www.engr.psu.edu/ce/divisions/residential/undergraduate_scholarships.html).

Any student interested in becoming an NAHB Student Chapter member should contact Dr. Ali Memari, Hankin Chair of Residential Building Construction or Tracy Dorman in 206 B Sackett Building; 814-865-2341 or tdorman@engr.psu.edu.

Study Abroad

Studying abroad is a great way to gain international experience either with academic credit, internships or service-learning opportunities. For details on programs, applying and other opportunities of studying abroad, visit Global Penn State at https://global.psu.edu/. The faculty advisor is Dr. William Burgos.

6. Summer Course Offerings in Summer 2025

The Summer 2025 CEE courses offered at University Park have not yet been determined and there is a possibility that no or minimal courses will be offered. Students shall not assume summer CEE courses will be available. Please plan accordingly.