

# CEE 174: CIVIL ENGINEERING

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## History

1. Sep 18, 2018 by clmig-smenda
2. Oct 25, 2018 by Melissa Rose Schultz (mrschultz3)
3. May 8, 2019 by Melissa Rose Schultz (mrschultz3)
4. May 10, 2019 by Jennifer M Binzley (binzley)
5. Oct 16, 2019 by Sara K Hagen (skhagen)

## Changes saved but not submitted

**Viewing: CEE 174 : Civil Engineering**

**Last approved: Wed, 16 Oct 2019 19:04:34 GMT**

**Last edit: Thu, 13 Feb 2020 14:32:15 GMT**

Final Catalog

Rationale for Inactivation

Name of the school or college academic planner who you consulted with on this proposal.

Name
Sara Hagen - EGR

Proposal Abstract/Summary:

Edit program learning outcomes to include required change to ABET 1-7 and renumber previous l-m as 8-10

Type of Approval

Governance Approval Needed

If approved, what term should the proposed change be effective?

Fall 2020 (1212)

Select yes if this proposal is only to add, remove, or rearrange curricular requirements, and will change less than 50% of the curriculum.

No

## Basic Information

Program State:

Active

Type of Program:

Degree/Major

Parent Program:

Upload the Approved Notice of Intent and UW System Approval Memo.

Upload completed draft of the full Board of Regents Authorization Proposal for this program.

Parent Audience:

Who is the audience?

Undergraduate

Parent Home Department:

Home Department:

CIV EN EGR

Parent School/College:

School/College:

College of Engineering

The program will be governed by the home department/academic unit as specified. Will an additional coordinating or oversight committee be established for the program?

No

Describe procedures under which the coordinating/oversight committee will operate, including how the committee chair is appointed, to whom the chair reports, how participating faculty and staff are identified, provisions for transitions in the committee, and processes for interaction with the home department.

Parent is in the Graduate School:

Is this in the Graduate School?

Award:

Bachelor of Science

Other Award Name:

SIS Code:

CEE 174

SIS Code (BS):

SIS Description:

Civil Engineering BS

SIS Description (BS):

Transcript Title:

Civil Engineering

Will this name change apply to all enrolled students in the same term (turn-key)?

Named Options:

CM: Construction Engr & Mgmt

EV: Environmental Engineering

Does the parent program offer this as an additional major as well?

Will this be offered as an additional major as well?

No

Explain the program's process for reviewing joint degree proposals from students.

Describe the reason for offering the program as an additional major. Include evidence of student interest and demand, how the additional major benefits the students' learning experience, and describe how the program has capacity in course offerings and advising to support the additional major.

Provide information on which degree/majors it will likely be combined with most frequently and provide evidence that such combinations will not extend student time to degree beyond the standard four academic years.

Briefly describe the process the student follows to get permissions to declare the additional major from the primary degree/major and the additional major offering unit.

Will a doctoral minor be required?

Explain the rationale for the decision.

Describe the alternate breadth training resources that will be made available to/required of students.

Is this a non-admitting master's degree?

## **Suspension and Discontinuation**

What is the date by which you will submit a plan to resolve the suspended status, if approved?

What is the last term that a student could declare this program?

What is the last term that students may be enrolled in or complete the program?

What is the timeline and advance communication plan?

Explain the precipitating circumstances or rationale for the proposal.

What is the potential impact on enrolled students?

What is the potential impact on faculty and staff?

Explain and provide evidence of efforts made to confer with and to notify faculty and staff.

Explain and provide evidence of efforts made to confer with and to notify current students.

Explain and provide evidence of efforts made to confer with and to notify alumni and other stakeholders.

Teach-out plan - How will program quality be maintained during the suspended period or the teach-out period for discontinued programs?

Teach-out plan: A) For currently enrolled students, how will required courses, curricular elements, advising and other student services be provided?

Teach-out plan: B) For prospective students in the admissions pipeline, how are any commitments being met or needs to notify them that their program of interest will not be available?

Teach-out plan: C) For stopped out students, what provisions are made for their re-entry? What program(s) will they be re-entered into?

Teach-out plan: D) Provide any other information relevant to teach-out planning.

Roles by Responsibility: List one person for each role in the drop down list. Use the green + to create additional boxes.

<b>Role Type</b>	<b>Name (Last, First)</b>	<b>Email</b>	<b>Phone</b>	<b>Title</b>
Department Chair	Likos, William	likos@wisc.edu	608/890-2662	
Primary Contact	Harrington, Gregory W	gwharrin@wisc.edu	608/695-3380	Professor

Primary Dean's Office Contact	Hagen, Sara K	skhagen@wisc.edu	608/263-8860	Academic Planner
Faculty Director	Harrington, Gregory W	gwharrin@wisc.edu	608/695-3380	Professor

List the departments that have a vested interest in this proposal.

Are all program reviews in the home academic unit up to date?

Yes

Please explain.

Are all assessment plans in the home academic unit up to date?

Yes

Please explain.

Are all assessment reports in the home academic unit up to date?

Yes

Please explain.

Mode of Delivery:

Face-to-Face (majority face-to-face courses)

Provide information on how any lab courses required for the degree will be handled.

Will this program be part of a consortial or collaborative arrangement with another college or university?

No

Upload proposal:

Will instruction take place at a location geographically separate from UW-Madison?

No

Upload proposal:

Parent has outside accreditation:

Will this program have outside accreditation?

Yes

Parent Guide Accreditation tab

Guide Accreditation tab

Accreditation.

Accredited by the Engineering Accreditation Commission of ABET, <http://www.abet.org> (<http://www.abet.org/>).

Note: Undergraduate Program Educational Objectives and Student Outcomes are made publicly available at the Departmental website. (In this Guide, the program's Student Outcomes are designated by our campus as 'Learning Outcomes.')

Will graduates of this program seek licensure or certification after graduation?

No

Graduates of parent program seek licensure or certification after graduation.

Parent Guide Certification/Licensure tab

Guide Certification/Licensure tab

First term of student enrollment:

When will the application for the first term of enrollment open?

Which terms will you allow new students to enroll? What are the application deadlines for each term selected?

Year of three year check-in to GFEC (3 years after first student enrollment):

Year of first program review (5 years after first student enrollment):

If this proposal is approved, describe the implementation plan and timeline.

## **Rationale and Justifications**

How does the named option relate to the major and to other named options in the major, if relevant?

Why is the program being proposed? What is its purpose?

How is the certificate program designed to complement the degree/major of participating students?

What is its relation to the institution's mission? (Consider the mission broadly as a major research university with missions in teaching, research, service, and the Wisconsin Idea.) How does it contribute to the mission of the sponsoring unit(s)?

Do current students need or want the program? Provide evidence.

What is the market, workforce, and industry need for this program? Provide evidence.

How does the program represent emerging knowledge, or new directions in professions and disciplines?

In what ways will the program prepare students through diverse elements in the curriculum for an integrated and multicultural society (may include diversity issues in the curriculum or other approaches)?

What gap in the program array is it intended to fill?

What is the rationale for this change?

The adoption of the new ABET outcomes 1-7 is required.

What evidence do you have that these changes will have the desired impact?

n/a

What is the potential impact of the proposed change(s) on enrolled students?

What is the potential impact of the proposed change(s) on faculty and staff?

## Faculty and Staff Resources

List the core program faculty and staff with title and departmental affiliation(s) who are primarily involved and will participate in the delivery and oversight.

What resources are available to support faculty, staff, labs, equipment, etc. ?

Program advisor(s) with title and departmental affiliation(s).

How will the resource load for the additional advising be met?

Describe how student services and advising will be supported.

Describe the advising and mentoring practices that will be used in this program, including how annual assessment of student progress will be communicated.

Confirm that the program advisor(s) or coordinator(s) have been consulted and reviewed this proposal.

Select the Graduate Research Scholars Community for this program.

## Resources, Budget, and Finance

Is this a revenue program?

No

What is the tuition structure for this program?

Standard resident/MN/nonresident undergraduate tuition

Select a tuition increment:

What is the rationale for selecting this tuition increment?

Will segregated fees be charged?

If segregated fees will not be charged, please explain.

Upload the proposal for market based tuition:

Provide a summary business plan.

Provide an overview of plans for funding the program including but not limited to program administration, instructional/curricular delivery, technology needs and program assessment.

What is the marketing plan?

Describe resource and fiscal considerations - A. Provide an overview of plans for funding the program including program administration, instructional/curricular delivery, academic and career advising, technology needs, marketing (if relevant), financial aid and scholarships (if relevant), capacity for student learning outcomes assessment and program review.

Describe resource and fiscal considerations - B. Are the faculty, instructional staff and key personnel existing or new faculty and staff? If they already serve existing programs, how are they able to add this workload? If new faculty and staff will be added, how will they be funded?

Describe resource and fiscal considerations - C. What impacts will the program have on staffing needs beyond the immediate program? How are those needs being met?

Describe resource and fiscal considerations - D. For graduate programs, describe plans for funding students including but not limited to funding sources and how funding decisions will be made.

UW System Administration and the Board of Regents require submission of budget information in a specific format. These forms will be completed in collaboration with APIR after school/college approval and before submission to UWSA for Board consideration. These forms are uploaded here by APIR.

Given considerations associated with the proposed change, describe the academic unit's fiscal capacity to support the instructional and curricular requirements, academic and career advising, student support services, technology needs, and relevant assessment of student learning and program review requirements. Is there sufficient capacity in the curricular and academic support services to meet the additional workload? For research graduate programs, include information on how the program will be administered and how student funding will be handled. For undergraduate programs, include information on academic advising, career advising, student support services.

Does the program or change require substantial new resources other than those just described? Describe the needs. Confirm that the dean is committed to providing the resources.

Are new Library resources needed to support this program?

Provide a summary of the requirements.

Memo from the Libraries confirming that the needs can be addressed.

Describe plans for funding students including but not limited to funding sources and how funding decisions are made.

Will you be seeking federal financial aid eligibility for this Capstone program?

Capstone program students are eligible for federal financial aid (usually loans) if they participate in Gainful Employment (GE) requirements, that is, they prepare students for employment in a recognized occupation. For information about gainful employment requirements see: <https://studentaid.ed.gov/sa/about/data-center/school/ge>

Identify the SOC codes most closely associated with the occupational preparation the Capstone provides.

What program-specific financial aid, if any, is available for this program?

What is the time period that this program is designed to be completed in by the typical student?

Gainful Employment requirements come with the need to track employment of graduates and provide additional reports – does the program have the capacity to complete these requirements?

## **Curriculum and Requirements**

If you are proposing a change to the curriculum, what percentage of the curriculum is changing?

Less than 30% of the curriculum will change

Provide an explanation of the reasons for such a substantial curricular change, the potential impact on students, availability of courses, and plan for transition.

Which students are eligible for the certificate?

List the specific schools and colleges.

Provide justification for the limits.

Is this certificate available to University Special (non-degree seeking students)?

Which University Special students are eligible for the certificate?

Describe certificate program procedures to advise students who do not complete the certificate to notify the program advisor if they re-enroll as a University Special student to complete the certificate.

Describe certificate program procedures to notify Adult Career and Special Student Services (ACSSS) of those University Special students who are formerly unaffiliated with the program who intend to complete a certificate.

Describe certificate program procedures to report to the Registrar's Office when a University Special student has completed the certificate and supply a list of courses that student used to fulfill certificate requirements. (Note that SIS eDeclaration and DARS are not available for University Special students.)

Parent Plan Admissions/How To Get In Requirements

Guide Admissions/How to Get In tab

## **Admission to the College as a Freshman**

Students applying to UW–Madison (<https://www.admissions.wisc.edu/apply/>) need to indicate an engineering major (<https://www.engr.wisc.edu/academics/undergraduate-academics/choosing-a-major/>) as their first choice in order to be considered for direct admission to the College of Engineering. Direct admission to a major means students will start in the program of their choice in the College of Engineering and will need to meet progression requirements (<https://www.engr.wisc.edu/academics/student-services/academic-advising/first-year-undergraduate-students/progression-requirements/>) at the end of the first year to guarantee advancement in that program.

## **Cross-Campus Transfer to Engineering**

UW–Madison students in other schools and colleges on campus must meet the course and credit requirements for admission to engineering degree granting classifications specified in the general college requirements (<https://www.engr.wisc.edu/academics/student-services/academic-advising/cross-campus-students/>). The requirements are the minimum for admission consideration. Cross-campus admission is competitive and selective, and the grade point average expectations may increase as demand trends change. The student's overall academic record at UW–Madison is also considered. Students apply to their intended engineering program by submitting the online application by stated deadlines for spring and fall. The College of Engineering offers an online information tutorial and drop-in advising (<https://www.engr.wisc.edu/academics/student-services/academic-advising/cross-campus-students/>) for students to learn about the cross-campus transfer process.

## **Off-Campus Transfer to Engineering**

With careful planning, students at other accredited institutions can transfer coursework that will apply toward engineering degree requirements at UW–Madison. Off-campus transfer applicants are considered for direct admission to the College of Engineering by applying to the Office of Admissions with an engineering major listed as their first choice. Those who are admitted to their intended engineering program must meet progression requirements (<https://www.engr.wisc.edu/academics/student-services/academic-advising/transfer-students/>) at the point of transfer or within their first two semesters at UW–Madison to guarantee advancement in that program. A minimum of 30 credits in residence in the College of Engineering is required after transferring, and all students must meet all requirements for their major in the college. Transfer admission to the College of Engineering is competitive and selective, and students who have earned more than 80 transferable semester credits at the time of application are not eligible to apply.

The College of Engineering has dual degree programs with select four-year UW System campuses. Eligible dual degree applicants are not subject to the 80 credit limit.

Off-campus transfer students are encouraged to discuss their interests, academic background, and admission options with the Transfer Coordinator in the College of Engineering: [ugtransfer@engr.wisc.edu](mailto:ugtransfer@engr.wisc.edu) or 608-262-2473.

## **Second Bachelor's Degree**

The College of Engineering does not accept second undergraduate degree applications. Second degree students (<https://www.engr.wisc.edu/admissions/undergraduate-admissions/returning-adults-second-degree-students/>) might explore the Biological

Systems Engineering program at UW–Madison, an undergraduate engineering degree elsewhere, or a graduate program in the College of Engineering.

Describe plans for recruiting students to this program.

What is the recruiting and admissions strategy for underrepresented students?

Will students be declared in an intended major while completing the admission requirements?

Yes

Describe how the students will be advised and the transition to other degree granting program if they are not admitted.

Projected Annual Enrollment:

Maximum enrollment that can be supported with existing instructional and student services resources:

Describe plans for supporting enrollments that are much higher or much lower than the anticipated enrollment.

Are international students permitted to enroll in this program?

Those who are not familiar with using the html editor fields may upload a document with information about the curriculum for use by those who will format and edit the content that will appear in the Guide.

Select the school or college degree requirements that will be used.

All requirements are in the requirements listed below

Will this program have Honors in the Major?

Yes

Parent Requirements

Guide Requirements tab

## Summary of Requirements

The following curriculum applies to students who were admitted to the civil engineering degree program (classification changed to CEE) in fall 2016 or later.

Code	Title	Credits
	Introduction to Engineering	3
	Mathematics and Statistics	19
	Basic Science	16
	Engineering Mechanics	10
	Civil Engineering Mechanics	6
	Civil Engineering Tools	6
	Civil Engineering Breadth	21
	Civil Engineering Design	10
	Civil Engineering Electives	12
	Communications	8
	Liberal Studies	16
	Free Elective	1
	<b>Total Credits</b>	<b>128</b>

**Introduction to Engineering**

Code	Title	Credits
INTEREGR 170	Design Practicum	3
Total Credits		3

**Mathematics and Statistics Requirement**

Code	Title	Credits
MATH 221 or MATH 217 or MATH 275	Calculus and Analytic Geometry 1 Calculus with Algebra and Trigonometry II Topics in Calculus I	5
MATH 222 or MATH 276	Calculus and Analytic Geometry 2 Topics in Calculus II	4
MATH 234	Calculus--Functions of Several Variables	4
<i>One of the following courses:</i>		3
STAT 324	Introductory Applied Statistics for Engineers	
STAT 311	Introduction to Theory and Methods of Mathematical Statistics I	
<i>One of the following advanced mathematics courses:</i>		3
MATH 319	Techniques in Ordinary Differential Equations	
MATH 320	Linear Algebra and Differential Equations	
Total Credits		19

**Basic Science Requirement**

Code	Title	Credits
<i>One of the following:</i>		5
CHEM 103 & CHEM 104 CHEM 109	General Chemistry I and General Chemistry II Advanced General Chemistry	
<i>One of the following:</i>		5
PHYSICS 202 PHYSICS 208	General Physics General Physics	
<i>One of the following:</i>		3
GEOSCI 100 GEOSCI/ENVIR ST 106	Introductory Geology: How the Earth Works Environmental Geology	
<i>One of the following:</i>		3
ZOOLOGY/BIOLOGY/BOTANY 151 ZOOLOGY 153 ZOOLOGY/BOTANY/ENVIR ST 260 MICROBIO 101	Introductory Biology Introductory Biology Introductory Ecology General Microbiology	
Total Credits		16

**Engineering Mechanics Requirement**

Code	Title	Credits
E M A 201	Statics	3
E M A 202 or M E 240	Dynamics Dynamics	3
E M A 303 or M E 306	Mechanics of Materials Mechanics of Materials	3
E M A/M E 307	Mechanics of Materials Lab	1
Total Credits		10

**Civil Engineering Mechanics Requirement**

Code	Title	Credits
CIV ENGR 310	Fluid Mechanics	3
CIV ENGR/E M A 395	Materials for Constructed Facilities	3
Total Credits		6

### Civil Engineering Tools Requirement

Code	Title	Credits
M E 170 or M E 231	Civil Engineering Graphics Geometric Modeling for Design and Manufacturing	2-3
CIV ENGR/G L E 291	Problem Solving Using Computer Tools	4
Total Credits		6-7

### Civil Engineering Breadth Requirement

Code	Title	Credits
CIV ENGR 311	Hydroscience	3
CIV ENGR 320	Environmental Engineering	3
CIV ENGR/G L E 330	Soil Mechanics	3
CIV ENGR 340	Structural Analysis I	3
CIV ENGR 370	Transportation Engineering	3
CIV ENGR 494	Civil and Environmental Engineering Decision Making	3
CIV ENGR 498	Construction Project Management	3
Total Credits		21

### Civil Engineering Design Requirement

Code	Title	Credits
CIV ENGR 578	Senior Capstone Design	4
Every student must take at least one class in at least two of the following CEE disciplines, for a total of 6 credits. One of the two classes MUST be completed BEFORE taking CIV ENGR 578 Senior Capstone Design.		6
<i>Water Resources</i>		
CIV ENGR 414	Hydrologic Design	
<i>Environmental</i>		
CIV ENGR 426	Design of Wastewater Treatment Plants	
CIV ENGR 427	Solid and Hazardous Wastes Engineering	
CIV ENGR 428	Water Treatment Plant Design	
CIV ENGR 522	Hazardous Waste Management	
<i>Structural</i>		
CIV ENGR 442	Wood Structures I	
CIV ENGR 445	Steel Structures I	
CIV ENGR 447	Concrete Structures I	
CIV ENGR 641	Highway Bridges	
<i>Geological</i>		
CIV ENGR/G L E 530	Seepage and Slopes	
CIV ENGR/G L E 532	Foundations	
<i>Transportation</i>		
CIV ENGR 573	Geometric Design of Transport Facilities	
CIV ENGR 574	Traffic Control	
CIV ENGR 576	Advanced Pavement Design	
Note: If a student takes three or more courses from the above list, two of those courses will count toward this civil engineering design requirement and the other classes will count towards the electives requirement (see section below).		
Total Credits		10

### Engineering Electives Requirement

- Students must take at least 3 credits of coursework from an ABET-accredited degree-granting program outside of the Bachelor of Science in Civil Engineering program. INTEREGR and E P D courses do not qualify for meeting this requirement; any courses cross-listed with Civil Engineering (CIV ENGR) do not qualify for meeting this requirement.
- Students must take at least 3 credits of CEE coursework in addition to the civil engineering design requirement. **Note:** Students in the Construction Engineering Management or Environmental Engineering option programs must select from a set of CIV ENGR courses approved for those options.<sup>1,2</sup>
- Students must take at least 6 credits of coursework that meets at least one of the following<sup>1,2</sup>:
  - Any course offered by an engineering department, including but not limited to CIV ENGR.
  - Any Intermediate or Advanced level course with a breadth designation of Biological Sciences, Physical Sciences and/or Natural Sciences. These courses cannot also carry a breadth designation of Social Sciences, Humanities or Literature.

- c. Any of the following business courses: ACCT I S 300 Accounting Principles, FINANCE/ECON 300 Introduction to Finance, GEN BUS 301 Business Law, M H R 300 Managing Organizations, REAL EST/A A E/ECON/URB R PL 306 The Real Estate Process

**Total Credits: 12**

<sup>1</sup> Up to three credits of CIV ENGR 1 Cooperative Education Program may be used towards Item 2 or 3.

<sup>2</sup> Up to six credits of research work (CIV ENGR 299 Independent Study, CIV ENGR 489 Honors in Research, and/or CIV ENGR 699 Independent Study) may be used towards Item 2 or 3.

**Communications**

Code	Title	Credits
<i>Communications A (choose one)</i>		3
ENGL 100	Introduction to College Composition	
LSC 100	Science and Storytelling	
COM ARTS 100	Introduction to Speech Composition	
ESL 118	Academic Writing II	
<i>Speech-Related Course (choose one)</i>		2
E P D 275	Technical Presentations <sup>1</sup>	
COM ARTS 105	Public Speaking	
COM ARTS 181	Elements of Speech-Honors Course	
COM ARTS 262	Theory and Practice of Argumentation and Debate	
COM ARTS 266	Theory and Practice of Group Discussion	
<i>Writing-Related Courses (choose one)</i>		3
E P D/INTEREGR 397	Technical Communication <sup>1</sup>	
ENGL 201	Intermediate Composition	
Total Credits		8

<sup>1</sup> E P D 275 Technical Presentations and E P D/INTEREGR 397 Technical Communication strongly recommended to satisfy these requirements.

**Liberal Studies Requirements**

Code	Title	Credits
<b>College of Engineering Liberal Studies Requirements</b>		
Complete Requirements ( <a href="http://guide.wisc.edu/undergraduate/engineering/#requirements">http://guide.wisc.edu/undergraduate/engineering/#requirements</a> ) <sup>1</sup>		16
<b>Requirements specific to Civil Engineering:</b>		
<i>An economics course must be selected from the following list:</i>		
ECON 101	Principles of Microeconomics	
ECON 102	Principles of Macroeconomics	
ECON 111	Principles of Economics-Accelerated Treatment	
<i>A minimum of three credits of environmental studies course that meets the breadth designations of humanities, literature, and/or social science. Courses that also carry breadth designations of Biological Sciences, Natural Sciences, or Physical Sciences will not count towards this requirement.</i>		
Total Credits		16

<sup>1</sup> All liberal studies credits must be identified with the letter H, S, L, or Z. Language courses are acceptable without the letter and are considered humanities. An economics elective and an environmental studies elective are required.  
Note: See a CEE advisor for additional information.

**Named Options**

View as listView as grid

- Civil Engineering: Construction Engineering and Management (<http://guide.wisc.edu/undergraduate/engineering/civil-environmental-engineering/civil-engineering-bs/civil-engineering-construction-engineering-management-bs/>)
- Civil Engineering: Environmental Engineering (<http://guide.wisc.edu/undergraduate/engineering/civil-environmental-engineering/civil-engineering-bs/civil-engineering-environmental-engineering-bs/>)

Total credits required:

Parent Plan Graduate Policies

Guide Graduate Policies tab

Parent Guide Four Year Plan tab

Guide Four Year Plan tab

## SAMPLE FOUR-YEAR PLAN

### First Year

Fall	Credits Spring	Credits
MATH 221	5 MATH 222	4
CHEM 109	5 E M A 201	3
INTEREGR 170	3 M E 170 or 231	2
COMMUNICATIONS A	3 LIBERAL STUDIES	3
	GEOSCI 100 or 106	3
	16	15

### Second Year

Fall	Credits Spring	Credits
MATH 234	4 MATH 319 or 320	3
E M A 202	3 E M A 303 or M E 306	3
CIV ENGR 320	3 E M A/M E 307	1
BIOLOGY ELECTIVE	3 E P D 275	2
STAT 324 or 311	3 CIV ENGR 310	3
	ECON 101, 102, or 111	4
	16	16

### Third Year

Fall	Credits Spring	Credits
CIV ENGR 311	3 CIV ENGR/G L E 330	3
CIV ENGR 340	3 CIV ENGR/E M A 395	3
CIV ENGR/G L E 291	4 CIV ENGR 498	3
ETHNIC STUDIES	3 CIV ENGR 370	3
E P D/INTEREGR 397	3 PHYSICS 202 or 208	5
	16	17

### Fourth Year

Fall	Credits Spring	Credits
CIV ENGR DESIGN ELECTIVE	3 CIV ENGR 578	4
CIV ENGR DESIGN ELECTIVE	3 APPLIED ENGR ELECTIVE	3
CIV ENGR ELECTIVE	3 APPLIED ENGR ELECTIVE	3
CIV ENGR 494	3 LIBERAL STUDIES	3
ENV STUDIES ELECTIVE	3 ENGR OUTSIDE OF CIV ENGR	3
FREE ELECTIVE	1	
	16	16

Total Credits 128

Discuss expected progress to degree and time to degree. For undergraduate programs discuss considerations for supporting students to complete the degree in four academic years.

Provide detail on how breadth will be achieved.

Describe part-time format (<8 credits fall and spring semesters < 4 credits summer term) here.

Describe full-time, time-compressed, intensive format here.

Describe other format here.

## Program Learning Outcomes and Assessment

Parent Program Learning Outcomes

List the program learning outcomes.

Outcomes – enter one learning outcome per box. Use the green + to create additional boxes.	
1	an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
2	an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors
3	an ability to communicate effectively with a range of audiences
4	an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts
5	an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives
6	an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions
7	an ability to acquire and apply new knowledge as needed, using appropriate learning strategies
8	an ability to explain basic concepts in management, business, public policy, and leadership
9	an ability to explain the importance of professional licensure
10	an ability to understand common failure mechanisms of a component, process, or system and their causes and prevention

Summarize the assessment plan.

Approved Assessment Plan:

## Related Programs

List majors and certificates that may not be earned in combination with this program.

List majors that are anticipated to frequently be completed in combination with the proposed program. For each, describe how the proposed program can be completed in combination with the major without increasing time to degree.

Provide information in related programs offered by other UW System institutions and explain the extent to which the proposed program is distinct and how it overlaps or duplicates those programs.

## Commitments

All required courses are approved through the school/college level.

Courses are offered on a regular basis to allow timely completion.

Courses have enrollment capacity.

Courses in the curriculum are numbered 300 or higher.

Courses in the curriculum are numbered 699 or lower.

Courses in which a student elects the pass/fail option will not count toward completion of requirements.

Special topics courses are only used if all topics count for the certificate.

All requirements must be met; exceptions that amount to waiving requirements are not permitted.

Course substitutions to the curriculum should be kept to a minimum; if substitutions are being made on a regular basis, the curriculum should be re-examined. When course substitutions are made, the substituted course should be formally added to the curriculum through governance for inclusion in the curriculum the following academic year.

Substitutions are not permitted for any course unless the substitution would be provided for every student with the same substitution request.

When the proposed certificate is made available to University Special students it is only available to those who have earned a baccalaureate degree.

Certificate program faculty and staff understand that Adult Career and Special Student Services (ACSSS) in the Division of Continuing Studies will serve as the advising, admissions, and academic dean's office for all University Special students.

Certificate program faculty and staff will work with ACSSS to monitor and advise University Special students seeking a certificate.

Certificate courses have the enrollment capacity to accommodate University Special students. Certificate program faculty and staff understand that University Special students completing the certificate will not have enrollment priority over degree-seeking undergraduate students nor University Special students enrolled in capstone certificate programs.

If completing the certificate as a University Special student, at least 12 credits towards the certificate must be earned in residence at UW-Madison, either while enrolled as a University Special student or from coursework earned while enrolled as an undergraduate at UW-Madison. (Note this is a higher residency requirement than is used for degree-seeking students.)

All of the Capstone certificate credits must be earned "in residence" (which includes on campus and distance-delivered courses) at UW-Madison while enrolled in the Capstone certificate program. Because a Capstone certificate is comprised of just a few courses, it is not appropriate for students who already have completed the same or similar coursework at UW-Madison or another institution.

At least half of the credits must be earned in residence (UW-Madison on campus, study abroad, or distance courses); exceptions to the minimum residency requirement are not permitted.

Students must earn a minimum 2.000 GPA on required certificate coursework. Completed courses listed within the certificate curriculum, whether or not they meet a specific requirement, are included in the calculation of the GPA.

Students must earn a minimum 3.000 GPA on required certificate coursework. Completed courses listed within the certificate curriculum, whether or not they meet a specific requirement, are included in the calculation of the GPA.

Students must earn a minimum grade of C on all attempted Capstone certificate coursework.

The program faculty/staff will ensure the program is encoded into DARS and will work with the Registrar's Office DARS liaison to keep approved revisions to the curriculum current.

All students will be declared into the appropriate plan code in SIS via either an admission process or e-declaration. If the student does not have the plan code on their student record in SIS the student is not considered to be in the program.

Students may complete only 1 named option within a plan code.

The program faculty/staff will ensure the program website, Advance Your Career materials if applicable, and other presentations are consistent with the Guide information for this program.

Certificate requires no more than half of the credits required for a major in a related field.

Credential will not be awarded retroactively to students who completed all of the requirements before the credential was approved.

Degree-seeking students may not be concurrently enrolled in a Capstone certificate program.

Students enrolled in Capstone certificate programs are NOT eligible for teaching assistant (TA), research assistant (RA), project assistant (PA) nor graduate fellowship support. Programs must disclose this program policy to Capstone certificate students in the recommendation of admission letter, program website, program handbook, and program orientation.

To be eligible for admission to a Capstone program, a student must hold an earned bachelor's degree or equivalent credential from an accredited college or university.

## Supporting Information

List name and department of those who are in support of this proposal.

If those supporting the proposal provided a letter or email of support upload here. A letter is NOT required. Upload any other explanatory information about support from other UW-Madison units.

Additional Information:

## Approvals

Department Approval - This proposal has been approved by the faculty at the department/academic unit level. The program faculty confirm that the unit has the capacity and resources (financial, physical, instructional, and administrative) to meet the responsibilities associated with offering the program, including offering the necessary courses, advising students, maintaining accurate information about the program in the Guide and elsewhere, conducting student learning assessment and program review, and otherwise attend to all responsibilities related to offering this program.

Enter any notes about approval here:

Entered by:

Date entered:

School/College Approval - This proposal has been approved at the school/college level and it is submitted with the Dean's support. The Dean and program faculty confirm that the unit has the capacity and resources (financial, physical, instructional, and administrative) to meet the responsibilities associated with offering the program, including offering the necessary courses, advising students, maintaining accurate information about the program in the Guide and elsewhere, conducting student learning assessment and program review, and otherwise attend to all responsibilities related to offering this program.

Enter any notes about approval here:

Entered by and date:

Date entered:

GFEC Approval - This proposal has been approved by the Graduate Faculty Executive Committee and the Dean of the Graduate School.

Enter any notes about the approval here:

Entered by:

Date entered:

UAPC Approval - This proposal has been approved by the University Academic Planning Council and the Provost.

Enter any notes about approval here:

Entered by:

Date entered:

## For Administrative Use

Admin Notes:

Guide URL:

/undergraduate/engineering/civil-environmental-engineering/civil-engineering-bs/

Effective date:

Effective Guide Edition:

Career:

Undergraduate

SIS Program Code:

CEE

SIS Program Code (BS):

SIS Short Description:

Civil Engr

SIS code for additional major:

SIS code for intended major:

EGR 174

SIS code for honors in the major:

174HRCEE

SIS code for honors in the major (BS):

SIS code for honors in the major (BMAJ):

SIS code for special student certificate:

Other plan codes associated with this program:

Diploma Text:

Bachelor of Science-Civil Engineering

Diploma Text 2:

Degree:

167

Degree (BS):

Field of Study:

Physical Science

Program Length:

4

National Student Clearing House Classification:

Bachelors

Plan Group:

174

Educational Level:

Bachelors degrees

Award Category:

Bachelor's

Enrollment Category:

Undergraduate

CIP Code:

14.0801 - Civil Engineering, General.

STEMOPT:

UWSTEM:

Yes

HEALTH:

Educational Innovation Program:

Distance Education Program:

Non Traditional Program:

Special Plan Type:

CDR certificate category:

Added to UW System Crosswalk:

Yes

Reviewer Comments

Key: 152