

Date Submitted: 01/29/21 4:07 pm

## Viewing: **CVEGBS : Civil Engineering, Bachelor of Science in Civil Engineering**

Last approved: 01/28/21 2:40 pm

Last edit: 02/18/21 9:40 am

Changes proposed by: rdw

Catalog Pages Using  
this Program

[Civil Engineering B.S.C.E.](#)

[Civil Engineering \(CVEG\)](#)

Submitter: User ID: **rdw kdhall** Phone:

**479-422-1116** ~~479-640-2525~~

Program Status Active

Academic Level Undergraduate

Type of proposal Major/Field of Study

Select a reason for this modification

Making Minor Changes to an Existing Degree (e.g. changing 15 or fewer hours, changing admission/graduation requirements, adding/changing Focused Study or Track)

Are you adding a concentration?

No

Are you adding or modifying a track?

No

Are you adding or modifying a focused study?

No

Effective Catalog Year Fall 2021

College/School Code

College of Engineering (ENGR)

### In Workflow

1. ENGR Dean Initial
2. Director of Program Assessment and Review
3. Registrar Initial
4. Institutional Research
5. CVEG Chair
6. ENGR Curriculum Committee
7. ENGR Faculty
8. ARSC Dean
9. ENGR Dean
10. Global Campus
11. Provost Review
12. University Course and Program Committee
13. Faculty Senate
14. Provost Final
15. Provost's Office-- Notification of Approval
16. Registrar Final
17. Catalog Editor Final

### Approval Path

1. 02/01/21 2:16 pm  
Norman Dennis (ndennis): Approved for ENGR Dean Initial
2. 02/03/21 4:29 pm  
Alice Griffin (agriffin): Approved for Director of

## Department Code

Department of Civil Engineering (CVEG)

## Program Code

CVEGBS

## Degree

Bachelor of Science in Civil Engineering

## CIP Code

## Program

Assessment and  
Review

3. 02/09/21 5:03 pm

Lisa Kulczak

(lkulcza): Approved  
for Registrar Initial

4. 02/09/21 5:30 pm

Gary Gunderman

(ggunderm):

Approved for  
Institutional  
Research

5. 02/10/21 3:35 pm

Micah Hale (micah):

Approved for CVEG  
Chair

6. 02/18/21 9:41 am

Manuel Rossetti

(rossetti): Approved  
for ENGRCurriculum  
Committee

7. 02/18/21 9:43 am

Norman Dennis

(ndennis): Approved  
for ENGR Faculty

8. 02/18/21 9:52 am

Jeannie Hulen

(jhulen): Approved  
for ARSC Dean

9. 02/18/21 10:32 am

Norman Dennis

(ndennis): Approved  
for ENGR Dean

10. 02/18/21 10:35 am

Suzanne Kenner

(skenner): Approved  
for Global Campus

11. 02/18/21 10:45 am  
Terry Martin  
(tmartin): Approved  
for Provost Review
12. 02/26/21 4:22 pm  
Alice Griffin  
(agriffin): Approved  
for University  
Course and Program  
Committee

### History

1. Aug 15, 2014 by  
Leepfrog  
Administrator  
(clhelp)
2. Mar 23, 2015 by  
Charlie Alison  
(calison)
3. Aug 18, 2015 by Lisa  
Kulczak (lkulcza)
4. May 9, 2016 by  
Kevin Hall (kdhall)
5. Jul 27, 2016 by  
Charlie Alison  
(calison)
6. Apr 24, 2017 by  
Kevin Hall (kdhall)
7. Jun 12, 2017 by  
Charlie Alison  
(calison)
8. May 21, 2019 by  
Rodney Williams  
(rdw)
9. Jan 28, 2021 by  
Kevin Hall (kdhall)

14.0801 - Civil Engineering, General.

Program Title

Civil Engineering, Bachelor of Science in Civil Engineering

Program Delivery

Method

On Campus

Is this program interdisciplinary?

No

Does this proposal impact any courses from another College/School?

Yes

College(s)/School(s)

**College/School Name**

Fulbright College of Arts and Sciences (ARSC)

What are the total hours needed to complete the program? 128

## Program Requirements and Description

Requirements

### Elective Courses

Students must select three 3-hour civil engineering elective courses in conference with their adviser. Normally, the civil engineering courses are selected from among the 4000-level elective CVEG courses. Exceptional students may be allowed to choose from the 5000 (graduate-level) course series.

Students must also choose one elective course in science, engineering, technology, or math (STEM) field.

Humanities and social science electives are selected from courses approved by the university which satisfy the University General Education Curriculum and the Arkansas State Minimum Core requirements.

Students are required to complete 40 hours of upper division courses (3000-4000 level). It is recommended that students consult with their adviser when making course selections.

#### Civil Engineering Design Electives

Students must complete two of the following four CVEG design project electives: [CVEG 4812](#) Environmental Design Project, [CVEG 4822](#) Geotechnical Design Project, [CVEG 4832](#) Structural Design Project, and [CVEG 4842](#) Transportation Design Project. Each design project elective is associated with a specific design-oriented course. The associated course must be taken at the same time as the design project elective. The associated courses may be taken alone but the design electives cannot.

# Civil Engineering B.S.C.E.

## Eight-Semester Degree Program

The Civil Engineering B.S.C.E. program is eligible for freshman students who want to participate in an Eight-Semester Degree Program. See the [Eight-Semester Degree Policy](#) for details of the program.

The following section contains the list of courses required for the Bachelor of Science in Civil Engineering degree and a suggested sequence. Not all courses are offered every semester, so students who deviate from the suggested sequence must pay careful attention to course scheduling and course prerequisites.

See the list of [state minimum core](#) courses available for engineering students.

First Year	Units
	FallSpring
<a href="#">MATH 2554</a> Calculus I (ACTS Equivalency = MATH 2405) (Satisfies General Education Outcome 2.1)1	4
<del><a href="#">PHYS 2054</a> University Physics I (ACTS Equivalency = PHYS 2034) (Satisfies General Education Outcome 3.4)</del>	<del>4</del> -
<a href="#">GNEG 1111</a> Introduction to Engineering I	1
<b>Satisfies General Education Outcome 3.4:</b>	
<b><a href="#">GEOS 1113</a> Physical Geology (ACTS Equivalency = GEOL 1114 Lecture)</b>	<b>4</b>
<b>&amp; <a href="#">GEOS 1111L</a> Physical Geology Laboratory (ACTS Equivalency = GEOL 1114 Lab)</b>	
<a href="#">CHEM 1103</a> University Chemistry I (ACTS Equivalency = CHEM 1414 Lecture)	3
<a href="#">ENGL 1013</a> Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1)	3
<a href="#">MATH 2564</a> Calculus II (ACTS Equivalency = MATH 2505)	4
<a href="#">GNEG 1121</a> Introduction to Engineering II	1
<del>Freshman Science Elective</del>	- <del>4</del>
<del>Freshman Science Elective Lab</del>	- <del>0</del>
<a href="#">ENGL 1033</a> Technical Composition II (ACTS Equivalency = ENGL 1023) (Satisfies General Education Outcome 1.2)	3
Select one of the following to satisfy General Education Outcome 4.2:	3
<a href="#">PLSC 2003</a> American National Government (ACTS Equivalency = PLSC 2003)	
<a href="#">HIST 2003</a> History of the American People to 1877 (ACTS Equivalency = HIST 2113)	
<a href="#">HIST 2013</a> History of the American People, 1877 to Present (ACTS Equivalency = HIST 2123)	
<b>Satisfies General Education Outcome 3.4:</b>	
<b><a href="#">PHYS 2054</a> University Physics I (ACTS Equivalency = PHYS 2034)</b>	<b>4</b>
Year Total:	15 15
Second Year	Units
	FallSpring
<a href="#">MATH 2574</a> Calculus III (ACTS Equivalency = MATH 2603)	4
<a href="#">CVEG 2013</a> Civil Engineering Mechanics I	3

<u><a href="#">CVEG 2002</a></u> Introduction to Civil Engineering Plans and CADD	2
<u><a href="#">CVEG 2053</a></u> Surveying Systems	4
& <u><a href="#">CVEG 2051L</a></u> Surveying Systems Laboratory	
Fine Arts Elective (Select a course to satisfy General Education Outcome 3.1)2	3
<u><a href="#">MATH 2584</a></u> Elementary Differential Equations	4
<u><a href="#">CVEG 2023</a></u> Civil Engineering Mechanics II	3
<u><a href="#">CVEG 2113</a></u> Structural Materials	3
<del>INEG 2313 Applied Probability and Statistics for Engineers I</del>	<del>- 3</del>
<del>GEOS 1113 Physical Geology (ACTS Equivalency = GEOL 1114 Lecture)</del>	<del>- 4</del>
<del>&amp; GEOS 1111L Physical Geology Laboratory (ACTS Equivalency = GEOL 1114 Lab)</del>	
<b><u><a href="#">INEG 3313</a></u> Engineering Probability and Statistics</b>	<b>3</b>
<b>Science Elective7</b>	<b>4</b>
Year Total:	16 17
Third Year	Units
	FallSpring
<u><a href="#">INEG 2413</a></u> Engineering Economic Analysis	3
<u><a href="#">CVEG 3303</a></u> Structural Analysis	3
<u><a href="#">CVEG 3213</a></u> Hydraulics	3
STEM Elective	3
<u><a href="#">CVEG 3413</a></u> Transportation Systems Engineering	3
<u><a href="#">CVEG 2851</a></u> Engineering Professional Practice Issues	1
<u><a href="#">CVEG 4303</a></u> Reinforced Concrete Design I	3
<u><a href="#">CVEG 3243</a></u> Environmental Engineering	3
<u><a href="#">CVEG 3132</a></u> Soil Mechanics	3
& <u><a href="#">CVEG 3131L</a></u> Soil Mechanics Laboratory	
<u><a href="#">CVEG 3223</a></u> Hydrology	3
Social Sciences Elective (select one course to satisfy General Education Outcomes 3.3 and 4.1)3	3
Year Total:	16 15
Fourth Year	Units
	FallSpring
Civil Engineering Elective4	3
Civil Engineering Design Elective (Satisfies General Education Outcome 6.1)	2
<u><a href="#">CVEG 4143</a></u> Foundation Engineering	3
<u><a href="#">CVEG 4423</a></u> Transportation Infrastructure	3
<u><a href="#">CVEG 4890</a></u> Fundamentals of Engineering Seminar	0
Humanities Elective (select one course to satisfy General Education Outcomes 3.2 and 5.1) 5	3
Social Sciences Elective (select one course to satisfy General Education Outcome 3.3)6	3
<u><a href="#">CVEG 4513</a></u> Construction Management	3
Civil Engineering Design Elective (Satisfies General Education Outcome 6.1)	2

Civil Engineering Design Elective (satisfies General Education Outcome 3.2),	4
<b><a href="#">CVEG 4243</a> Environmental Engineering Design</b>	<b>3</b>
Civil Engineering Electives4	6
Social Sciences Elective (select one course to satisfy General Education Outcome 3.3) 6	3
Year Total:	17 17

Total Units in Sequence: 128

1Students have demonstrated successful completion of the learning indicators identified for learning outcome 2.1, by meeting the prerequisites for [MATH 2554](#).

2The Fine Arts Elective courses which satisfy General Education Outcome 3.1 include: [ARCH 1003](#), [ARHS 1003](#), [COMM 1003](#), [DANC 1003](#), [LARC 1003](#), [MLIT 1003](#), [MLIT 1003H](#), [MLIT 1013](#), [MLIT 1013H](#), [MLIT 1333](#), [THTR 1003](#), [THTR 1013](#), or [THTR 1013H](#).

3The Social Sciences Elective courses which satisfy General Education Outcomes 3.3 and 4.1 include: [ANTH 1023](#), [COMM 1023](#), [HDFS 1403](#), [HDFS 2413](#), [HIST 1113](#), [HIST 1123](#), [HIST 2093](#), [HUMN 1114H](#), [HUMN 2114H](#), [INST 2013](#), [INST 2813](#), [INST 2813H](#), [PLSC 2013](#), [PLSC 2813](#), [PLSC 2813H](#), [RESM 2853](#), [SOCI 2013](#), [SOCI 2013H](#), or [SOCI 2033](#).

4See the elective list among the program requirements.

5The Humanities Elective courses which satisfy General Education Outcomes 3.2 and 5.1 include: [CLST 1003](#), [CLST 1003H](#), [CLST 1013](#), [HUMN 1124H](#), [PHIL 2003](#), [PHIL 2003C](#), [PHIL 2003H](#), [PHIL 2103](#), or [PHIL 2103C](#).

6The Social Sciences Elective courses which satisfy General Education Outcome 3.3 include: [AGEC 1103](#), [AGEC 2103](#), [ANTH 1023](#), [COMM 1023](#), [ECON 2013](#), [ECON 2023](#), [ECON 2143](#), [EDST 2003](#), [HDFS 1403](#), [HDFS 2413](#), [HDFS 2603](#), [HIST 1113](#), [HIST 1113H](#), [HIST 1123](#), [HIST 1123H](#), [HIST 2003](#), [HIST 2013](#), [HIST 2093](#), [HUMN 1114H](#), [HUMN 2114H](#), [INST 2013](#), [INST 2813](#), [INST 2813H](#), [PLSC 2003](#), [PLSC 2013](#), [PLSC 2203](#), [PLSC 2813](#), [PLSC 2813H](#), [PSYC 2003](#), [RESM 2853](#), [SOCI 2013](#), [SOCI 2013H](#), [SOCI 2033](#). Note, courses cannot be counted twice in degree requirements.

**7Chose one from the list below:**

[PHYS 2074](#), [GEOS 3514](#), [BIOL 1543](#) and [BIOL 1541L](#), [BIOL 2013](#) and [BIOL 2011L](#), or [CHEM 1123](#) and [CHEM 1121L](#).

Are Similar Programs available in the area?

No

Estimated Student 300

Demand for Program

Scheduled Program 2021

Review Date

Program Goals and

Objectives

**Program Goals and Objectives**

### Program Goals and Objectives

The objective of the civil engineering program is to produce graduates who are prepared to pursue: (a) careers in the broad field of civil engineering; (b) licensure as a Professional Engineer; (c) advanced education.

### Learning Outcomes

#### Learning Outcomes

1. Identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
2. apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, societal, environmental, and economic factors
3. communicate effectively with a range of audiences
4. 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. function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives
6. develop and conduct appropriate experiments, analyze and interpret data, and use engineering judgment to draw conclusions
7. acquire and apply new knowledge as needed, using appropriate learning strategies

### Description and justification of the request

Description of specific change	Justification for this change
<p>Per a request from The Freshman Experience Program and the Engineering Curriculum Committee, moved PHYS 2054 from Fall of First Year to Spring of First Year. GEOS 1113 and GEOS 1111L (required for CVEG students) was put in Fall of the first Year. Phys 2054 was substituted for what was formerly the Freshman Science Elective and Freshman Science Elective Lab (Spring of First Year) and The Freshman Science Elective and Lab was renamed Science Elective and moved to the original location of GEOS 1113 &amp; 1111L (Spring of 2nd year).</p>	<p>These changes were done at the request/behest of the Freshman Experience program and the Collège of Engineering Curriculum Committee</p>

Upload attachments

Reviewer Comments



**Norman Dennis (ndennis) (02/01/21 2:15 pm):** Added the options for the science elective.

**Alice Griffin (agriffin) (02/03/21 4:10 pm):** Changed effective date from summer 2021 to fall 2021. Program changes can only occur with the publication of the catalog in the fall.

**Alice Griffin (agriffin) (02/03/21 4:12 pm):** Removed "Moved From Fall First Year per FEP request" language from program requirements field. Otherwise, this phrase would appear in the catalog.

**Alice Griffin (agriffin) (02/03/21 4:14 pm):** Replaced course notation of "Science Elective" with a comment. This action removed the red error box from the program requirements.

**Alice Griffin (agriffin) (02/03/21 4:17 pm):** Hyper-linked courses in footnote 7.

**Alice Griffin (agriffin) (02/03/21 4:19 pm):** Corrected minor typos in the description field.

**Alice Griffin (agriffin) (02/03/21 4:20 pm):** ATTENTION: Because this program change impacts courses from the College of Arts & Sciences, it will require campus approval.

**Alice Griffin (agriffin) (02/03/21 4:26 pm):** Replaced GEOS 1111L independent listing with a sequence course attached to GEOS 1113. Also, reinserted General Education Language to satisfy learning outcome 3.4.