Date Submitted: 09/19/19 3:12 pm

Viewing: **CENGBS : Computer Engineering, Bachelor of Science in Computer Engineering**

Last approved: 06/07/16 8:33 am

Last edit: 09/20/19 3:20 pm

Changes proposed by: drt

Catalog Pages Using
this Program
    Computer Engineering B.S.Cmp.E.
    Computer Science and Computer Engineering (CSCE)

| Submitter: | User ID: | ~~drt~~ ~~crsleaf1~~ | Phone: |
| **575-5090** ~~575-6036~~ | | | |

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 2020 |

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. **CSCE Chair**
6. **ENGR Curriculum Committee**
7. **ENGR Faculty**
8. **ENGR Dean**
9. **Global Campus**
10. **Provost Review**
11. **University Course and Program Committee**
12. Faculty Senate
13. Provost Final
14. Provost's Office--Notification of Approval
15. Registrar Final
16. Catalog Editor Final

Approval Path

1. 09/20/19 9:39 am Norman Dennis (ndennis): Approved for ENGR Dean Initial
2. 09/23/19 11:51 am Alice Griffin (agriffin): Approved for Director of Program

Department Code
Department of Computer Science and Computer Engineering (CSCE)

Program Code | CENGBS

Degree | Bachelor of Science in Computer Engineering

CIP Code

Assessment and Review

3. 09/23/19 11:53 am Lisa Kulczak (lkulcza): Approved for Registrar Initial

4. 09/23/19 12:32 pm Gary Gunderman (ggunderm): Approved for Institutional Research

5. 09/30/19 5:18 pm Xiaoqing Liu (frankliu): Approved for CSCE Chair

6. 10/03/19 12:51 pm Manuel Rossetti (rossetti): Approved for ENGR Curriculum Committee

7. 10/04/19 9:35 am Norman Dennis (ndennis): Approved for ENGR Faculty

8. 10/04/19 9:36 am Norman Dennis (ndennis): Approved for ENGR Dean

9. 10/04/19 11:52 am Suzanne Kenner (skenner): Approved for Global Campus

10. 10/06/19 11:22 am Terry Martin (tmartin): Approved for Provost Review

History

1. Aug 15, 2014 by Leepfrog Administrator (clhelp)
2. Jan 14, 2015 by Susan Huskey (srh)
3. Apr 21, 2015 by Susan Huskey (srh)
4. Mar 21, 2016 by Susan Huskey (srh)
5. Jun 7, 2016 by Charlie Alison (calison)

14.0901 - Computer Engineering, General.

Program Title

Computer Engineering, Bachelor of Science in Computer Engineering

Program Delivery Method

On Campus

Is this program interdisciplinary?

Yes

College(s)/School(s)

College/School Name
Fulbright College of Arts and Sciences (ARSC)

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

No

What are the total hours needed to complete the program?

126

Program Requirements and Description

Requirements

The computer engineering degree has required sequences of courses in both hardware and software aspects of computer applications and design. Since almost all of today's complex systems encompass hardware and

software elements, computer engineering graduates must acquire the skills required to design, build, and test complex digital systems. At the advanced level, students are exposed to hands-on experience with open-ended problems with opportunities for research and design.

Humanities and social science electives are selected from the University Core Requirements listed in the Catalog of Studies. To satisfy the University Core, all CSCE students are required to take the following 18 hours of humanities/social science courses:

PHIL 3103	Ethics and the Professions	3
Fine Arts from Category "A"		3
U.S. History or Government		3
Social Science		9

The Undergraduate Handbook has a list of approved basic science, mathematics, and technical electives. Any course not included in these lists requires faculty approval.

The Bachelor of Arts in Computer Science degree has the same educational objectives as the Bachelor of Science degree. However, the course requirements differ greatly to allow students to double major or pursue other interests.

8-Semester Plan

Computer Engineering B.S.Cmp.E. Eight-Semester Degree Program

---

The following sections contain the list of courses required for the Bachelor of Science in Computer Engineering (B.S.Cmp.E.) with a suggested sequence below.

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. Students wishing to follow the eight-semester degree plan should see the Eight-Semester Degree Policy in the Academic Regulations chapter for university requirements of the program.

First Year	Units	
	Fall	Spring
GNEG 1111 Introduction to Engineering I	1	
MATH 2554 Calculus I (ACTS Equivalency = MATH 2405)	4	
PHYS 2054 University Physics I (ACTS Equivalency = PHYS 2034)	4	
CHEM 1103 University Chemistry I (ACTS Equivalency = CHEM 1414 Lecture)	3	
ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013)	3	
GNEG 1121 Introduction to Engineering II		1
MATH 2564 Calculus II (ACTS Equivalency = MATH 2505)		4
History/Government Elective		3
PHYS 2074 University Physics II (ACTS Equivalency = PHYS 2044 Lecture)		4
ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023)		3
Year Total:	15	15

	Units	
Second Year	**Fall**	**Spring**
CSCE 2004 Programming Foundations I	4	
CSCE 2114 Digital Design	4	
MATH 2574 Calculus III (ACTS Equivalency = MATH 2603)	4	
MATH 2603 Discrete Mathematics	3	
CSCE 2014 Programming Foundations II		4
CSCE 2214 Computer Organization		4
MATH 2584 Elementary Differential Equations		4
~~Two Social Science Electives~~	-	~~6~~
Social Science Elective		**3**
Social Science Elective		**3**
Year Total:	15	18

	Units	
Third Year	**Fall**	**Spring**
CSCE 3193 Programming Paradigms	3	
CSCE 3613 Operating Systems	3	
CSCE 3953 System Synthesis and Modeling	3	
~~INEG 2313 Applied Probability and Statistics for Engineers I~~	~~3~~	~~-~~
INEG 3313 Engineering Probability and Statistics Course INEG 3313 Engineering Probability and **Statistics Not Found**	**3**	
Basic Science Elective With Lab*	4	
CSCE 3513 Software Engineering		3
CSCE Elective		3
ELEG 3933 Circuits & Electronics		3
PHIL 3103 Ethics and the Professions		3
General Elective		3
Year Total:	16	15

	Units	
Fourth Year	**Fall**	**Spring**
CSCE 4561 Capstone I	1	
CSCE 4114 Embedded Systems	4	
~~Two CSCE Electives~~	~~6~~	~~-~~
CSCE Elective	**3**	
CSCE Elective	**3**	
Fine Arts Elective	3	
COMM 1313 Public Speaking (ACTS Equivalency = SPCH 1003)	3	
CSCE 4213 Computer Architecture		3

CSCE 4963 Capstone II	3
CSCE Elective	3
Social Science Elective	3
General elective	3
Year Total:	17 15

Total Units in Sequence:	126

Are Similar Programs available in the area?

No

Estimated Student Demand for Program	NA
Scheduled Program Review Date	**2020-2021** ~~NA~~
Program Goals and Objectives	

Program Goals and Objectives
Program Educational Objectives
For the B.S. degree program in computer engineering, the following set of program educational objectives describe what graduates are expected to attain within a few years after graduation.
Computer Engineering graduates will:
1. Be able to practice their profession in a competitive market. The competitive market includes being recruited by industrial firms, government agencies and graduate schools.
2. Make a significant contribution to society, including improving the standard of living particularly for the taxpayers of the state of Arkansas.
3. Understand the need for life-long learning and continued professional development for a successful and rewarding career.
4. Accept responsibility for leadership roles, in their profession, communities, and society.
~~NA~~

Learning Outcomes

Learning Outcomes

Student Learning Outcomes

CE1. An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.

CE2. 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.

CE3. An ability to communicate effectively with a range of audiences.

CE4. 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.

CE5. 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.

CE6. An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.

CE7. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies. ~~NA~~

Description and justification of the request

Description of specific change	Justification for this change
Replace INEG 2313 with INEG 3313. Updated computer engineering Student Learning Outcomes	INEG developed a new course, INEG 3313, for non-majors and the CE program has voted to replace INEG 2313 with INEG 3313. However, the INEG 3313 is in the approval chain and I cannot add it yet. CSCE voted to use new EAC of ABET outcomes for computer engineering

Upload attachments

Reviewer Comments

Alice Griffin (agriffin) (09/20/19 3:18 pm): Swapped Social Science elective course and CSCE elective course with a comment for each. It removed the red box error. College is encouraged

to review these changes to make sure the edits resulted in the intended outcome.

Alice Griffin (agriffin) (09/20/19 3:20 pm): Inserted Scheduled Program Review date.

Key: 474