

Date Submitted: 04/06/20 8:56 am

Viewing: **INEGBS : Industrial Engineering, Bachelor of Science in Industrial Engineering**

Last approved: 05/31/19 9:55 am

Last edit: 08/25/20 9:43 am

Changes proposed by: tellenbe

Catalog Pages Using
this Program

[Industrial Engineering B.S.I.E.](#)

[Industrial Engineering.\(INEG\).](#)

Submitter: 575-6731 User ID: **tellenbe calison** Phone:

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. INEG 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. 03/22/20 4:41 pm
Norman Dennis (ndennis): Approved for ENGR Dean Initial
2. 04/03/20 12:28 pm
Alice Griffin (agriffin): Rollback to Initiator

Department Code

Department of Industrial Engineering (INEG)

Program Code

INEGBS

Degree

Bachelor of Science in Industrial Engineering

CIP Code

3. 04/10/20 12:37 pm
Norman Dennis
(ndennis): Approved
for ENGR Dean
Initial
4. 05/08/20 1:52 pm
Alice Griffin
(agriffin): Approved
for Director of
Program
Assessment and
Review
5. 07/22/20 12:39 pm
Lisa Kulczak
(lkulcza): Approved
for Registrar Initial
6. 07/22/20 1:06 pm
Gary Gunderman
(ggunderm):
Approved for
Institutional
Research
7. 07/23/20 1:34 pm
Ed Pohl (epohl):
Approved for INEG
Chair
8. 08/24/20 3:09 pm
Manuel Rossetti
(rossetti): Rollback
to Director of
Program
Assessment and
Review for ENGR
Curriculum
Committee
9. 08/25/20 1:46 pm
Alice Griffin
(agriffin): Approved
for Director of
Program

- Assessment and Review
10. 09/02/20 9:53 am
Lisa Kulczak
(lkulcza): Approved for Registrar Initial
 11. 09/02/20 10:03 am
Gary Gunderman
(ggunderm): Approved for Institutional Research
 12. 09/02/20 10:06 am
Ed Pohl (epohl): Approved for INEG Chair
 13. 09/11/20 1:04 pm
Manuel Rossetti
(rossetti): Approved for ENGR Curriculum Committee
 14. 09/11/20 1:21 pm
Norman Dennis
(ndennis): Approved for ENGR Faculty
 15. 09/11/20 3:11 pm
Jeannie Hulen
(jhulen): Approved for ARSC Dean
 16. 09/11/20 3:12 pm
Norman Dennis
(ndennis): Approved for ENGR Dean
 17. 09/11/20 4:20 pm
Suzanne Kenner
(skenner): Approved for Global Campus
 18. 09/17/20 1:00 pm
Terry Martin

- (tmartin): Approved for Provost Review
19. 09/25/20 4:00 pm
Myrlinda Soedjede (myrlinda): Approved for University Course and Program Committee
20. 10/15/20 2:15 pm
Stephen Caldwell (stephenc): Approved for Faculty Senate

History

1. Aug 15, 2014 by Leepfrog Administrator (clhelp)
2. Mar 13, 2015 by Tamara Ellenbecker (tellenbe)
3. Apr 3, 2015 by Tamara Ellenbecker (tellenbe)
4. May 16, 2016 by Tamara Ellenbecker (tellenbe)
5. Mar 1, 2017 by Manuel Rossetti (rossetti)
6. May 30, 2017 by Charlie Alison (calison)
7. May 8, 2018 by cassady
8. Aug 1, 2018 by Charlie Alison (calison)

9. May 31, 2019 by
Charlie Alison
(calison)

14.3501 - Industrial Engineering.

Program Title

Industrial Engineering, Bachelor of Science in Industrial Engineering

Program Delivery

Method

On Campus

Is this program interdisciplinary?

No

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

Yes ~~No~~

College(s)/School(s)

College/School Name

Fulbright College of Arts and Sciences (ARSC)

What are the total hours needed to complete the program? 126

Program Requirements and Description

Requirements

The total graduation requirement in industrial engineering is 126 hours. For further information please visit the [departmental website](#).

Humanities/Social Science Electives

Although any elective included on the approved University Core humanities/social science list may be selected, [PSYC 2003](#) General Psychology (ACTS Equivalency = PSYC 1103) is recommended for industrial engineers.

Science Electives

The approved list of science electives is available in the industrial engineering departmental office.

Technical Electives

The purpose of technical electives is to provide students with the opportunity to expand their education within a particular area of interest. The approved list of technical electives is available in the industrial engineering department. At least 12 hours must be selected from INEG courses.

8-Semester Plan

Industrial Engineering B.S.I.E.

Eight-Semester Degree Program

The following section contains the list of courses required for the Bachelor of Science in Industrial 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. 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.

Students are required to complete 40 At least 12 hours of upper division courses (3000-4000 level). It is recommended that students consult with their adviser when making course selections. At least 12 hours of technical electives must be selected from INEG courses.

	Units	
	Fall	Spring
First Year		
GNEG 1111 Introduction to Engineering I	1	
MATH 2554 Calculus I (ACTS Equivalency = MATH 2405) (Satisfies General Education Outcome 2.1)	1	4
CHEM 1103 University Chemistry I (ACTS Equivalency = CHEM 1414 Lecture)	3	
PHYS 2054 University Physics I (ACTS Equivalency = PHYS 2034) (Satisfies General Education Outcome 3.4)	4	
ENGL 1013 Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1)	3	
GNEG 1121 Introduction to Engineering II		1
ENGL 1023 Composition II (ACTS Equivalency = ENGL 1023)	-	3
MATH 2564 Calculus II (ACTS Equivalency = MATH 2505)		4
Freshman Science Elective	-	4
ENGL 1033 Technical Composition II (ACTS Equivalency = ENGL 1023) (Satisfies General Education Outcome 1.2)		3
CHEM 1123/CHEM 1121L or PHYS 2074		4
Select one of the following courses to satisfy General Education Outcome 4.2:		3
HIST 2003 History of the American People to 1877 (ACTS Equivalency = HIST 2113)		
HIST 2013 History of the American People, 1877 to Present (ACTS Equivalency = HIST 2123)		
PLSC 2003 American National Government (ACTS Equivalency = PLSC 2003)		
Year Total:	15	15

Second Year		Units
		FallSpring
INEG 2001 Industrial Engineering Seminar		1
INEG 2103 Introduction to Industrial Engineering		3
INEG 2214 Computing Methods for Industrial Engineers I		4
INEG 2313 Applied Probability and Statistics for Engineers I		3
INEG 2413 Engineering Economic Analysis		3 -
MATH 2574 Calculus III (ACTS Equivalency = MATH 2603)		4
Science Requirement3, 5		3
INEG 2223 Computing Methods for Industrial Engineers II		3
INEG 2333 Applied Probability and Statistics for Engineers II		3
INEG 2403 Industrial Cost Analysis		3
INEG 2413 Engineering Economic Analysis		3
MATH 2584 Elementary Differential Equations		4
MEEG 2303 Introduction to Materials		- 3
CSCE 2004 Programming Foundations I		- 4
Year Total:		18 16
Third Year		Units
		FallSpring
INEG 3623 Simulation		3
ELEG 3903 Electric Circuits and Machines		3 -
Fine Arts (from University/State Core List)		3 -
INEG 3714 Work Methods and Ergonomics		4
Technical Elective4		3
MEEG 2303 Introduction to Materials		3
Fine Arts Elective (Select a course to satisfy General Education Outcome 3.1) 6		3
INEG 3513 Manufacturing Processes		3
Select one option from the following:		- 3
INEG 3613 Introduction to Operations Research		3
Technical Elective4		3
MEEG 2003 Statics		3
Select one of the following courses to satisfy General Education Outcome 3.3:		
ECON 2143 Basic Economics: Theory and Practice (or)		3
ECON 2013 Principles of Macroeconomics (ACTS Equivalency = ECON 2103) (and)		
ECON 2023 Principles of Microeconomics (ACTS Equivalency = ECON 2203)		
Year Total:		16 15
Fourth Year		Units
		FallSpring
INEG 4433 Systems Engineering and Management		3

<u>INEG 4553</u> Production Planning and Control	3
Two Technical Elective 3	6 -
Social Science (from University/State Core List) 4	3 -
<u>INEG 4911</u> Industrial Engineering Capstone Experience I	1
Two Technical Electives 4	6
Social Sciences Elective - Choose one course from the list below (Satisfies General Education Outcomes 3.3 and 4.1) 7	3
<u>INEG 4923</u> Industrial Engineering Capstone Experience II (Satisfies General Education Outcome 6.1)	3
Two Technical Electives4	6
Humanities (from University/State Core List) 4	- 3
Social Science (from University/State Core List) 4	- 3
Humanities Elective - Choose one course from the list below (Satisfies General Education Outcomes 3.2 and 5.1) 8	3
Social Sciences Elective - Choose one course from the list below (Satisfies General Education Outcome 3.3) 9	3
Year Total:	16 15

Total Units in Sequence: 126

- 1 Students have demonstrated successful completion of the learning indicators identified for learning outcome 2.1, by meeting the prerequisites for MATH 2554.
- 2 Students who enter the university with credit for ENGL 1023 are not required to complete ENGL 1033. Students who enter the university with exemption from ENGL 1023 are encouraged to take ENGL 1033.
- 3 Students who complete CHEM 1123/CHEM 1121L in the first year must satisfy this requirement with PHYS 2074. Otherwise, students may choose from a list of courses that is available on the departmental website.
- 4 The purpose of technical electives is to provide students with the opportunity to expand their education within a particular area of interest. The approved list of technical electives is available on the departmental website. At least 12 hours must be selected from INEG courses.
- 5 ~~The approved list of science electives is available in the industrial engineering departmental office.~~
- 6 **The 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.**
- 7 **The 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.**
- 8 **The 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.**
- 9 **The 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.

Are Similar Programs available in the area?

No

Estimated Student Demand for Program 250

Scheduled Program Review Date 2020-2021

Program Goals and Objectives

Program Goals and Objectives

NA

Learning Outcomes

Learning Outcomes

NA

Description and justification of the request

Description of specific change	Justification for this change
Remove CSCE 2004. Remove ELEG 3903. Move INEG 2413 to semester 4. Move MEEG 2303 to semester 5. Add INEG 2214 (new course) to semester 3. Add INEG 2223 (new course) to semester 4. Requirements associated with English, social sciences, fine arts, and humanities were adjusted to conform to the university's new General Education learning outcomes.	Based on stakeholder input from industry and students, the IE faculty decided that an increase emphasis in computing was needed within the degree program. To achieve this, two computing courses (INEG 2214 and INEG 2223) have been created and added to the program. This addition alleviates the need for IE students to take CSCE 2004. ELEG 3903 was removed to make room in the curriculum for an extra computing course and based on input from practicing industrial engineers on their career usage of that material. The movement of classes between semesters is to balance the course load for students.

Upload attachments

Reviewer Comments

Alice Griffin (agriffin) (03/25/20 3:38 pm): Changed effective date to fall 2021. It is too late to complete the approval process for fall 2020.

Alice Griffin (agriffin) (04/03/20 12:28 pm): Rollback: Please change response to the question regarding the proposal impacting another college. Since ENGL 1033 is required, it will impact Fulbright College. You may also add PSYC 2003 to footnote 8, since it is recommended for INEGBS students.

Alice Griffin (agriffin) (05/07/20 3:47 pm): Revised formatting of the eight semester degree plan to provide consistency with the General Education curriculum language.

Alice Griffin (agriffin) (05/08/20 12:04 pm): Added blanket statement regarding the 40 hour rule in the introductory paragraph above the eight semester plan with permission from college dean's office.

Manuel Rossetti (rossetti) (08/24/20 3:09 pm): Rollback: update footnotes

Alice Griffin (agriffin) (08/25/20 9:43 am): Revised footnotes to include a clearer statement for learning outcome 2.1 with approval from Gen Ed and Core Curriculum Committee Chair. As a result, renumbered each footnote. Also inserted into footnotes the additional courses approved later in the spring. Renamed Social Science to Social Sciences to match domain area in State Minimum Core.

Key: 493