

TO: Faculty of College of Engineering
FROM: Faculty of the School of Nuclear Engineering
SUBJECT: Change in degree requirements for the Bachelor of Science in Nuclear Engineering (B.S.NE)

The Faculty of the School of Nuclear Engineering has approved the following change in the degree requirements for the B.S. degree in Nuclear Engineering below. This will be effective for students entering Purdue in Fall 2017 semester and later.

This action is now submitted to the Engineering Faculty with a recommendation for approval.

Proposed Changes:

The degree requirement of CHM 116 will be removed.

Lower the total credit hours to 125.

Approval of additional courses to meet the Written and Oral Communication Foundational Outcomes.

Reason:

Students have been required to complete both CS 159 and CHM 116 to complete their degree in the past. Going forward, we would like to remove the requirement of CHM 116 to get a BSNE degree. This will lower the overall credit hours required for the BSNE degree and better align with first year engineering's plan of study.

CS 159 will be the recommended science selective for first-year engineering students. However, entry into Nuclear Engineering will not be denied if the student has chosen a different science selective. If a student enters Nuclear Engineering with something other than CS 159, we plan to offer students the option to use it toward 3 credits of their technical electives.

The previous plan of study only listed ENGL 106 as the approved course for the Written Communication Foundational Outcome and COM 114 as the Oral Communication Foundational Outcome. We would like to add COM 217, Science Writing and Presentations, to our list of approved courses for Oral Communication Foundational Outcomes. We would like to add COM 204, Critical Perspectives on Communication, ENGL 108, Accelerated First Year Composition: Engaging in Public Discourse, and HONR 19903, Interdisciplinary Approaches to Writing, to our list for Written Communication Foundational Outcomes.

Based on all of these changes, this will lower our total credit hours required for a Bachelor of Science in Nuclear Engineering to 125.



Klod Kokini, Interim Department Head
School of Nuclear Engineering



Martin Lopez-de-Bertodano,
Undergraduate Chair, School of
Nuclear Engineering

Nuclear Engineering
 Sample Plan of Study (effective Fall 2017)
 125 Credit Hours

Fall Semester 1

Spring Semester 2

Credits	Recommended Courses	Credits	Recommended Courses
4-5	MA 16100 or 16500	4-5	MA 16200 or 16600
4	CHM 11500	3	CS 15900
3-4	ENGL 106 or other approved written communication foundational outcome*	2	ENGR 132
2	ENGR 13100	4	PHYS 17200
		3	COM 11400 or COM 21700
13-14		16	

Fall Semester 3

Spring Semester 4

Credits	Recommended Courses	Credits	Recommended Courses
4	MA 26100	3	ME 27400
3	NUCL 20000 (Critical Course)	3	MA 26600
3	ME 20000	3	NUCL 27300
3	ME 27000	2	NUCL 20500
0	NUCL 29800	0	NUCL 29800
3	General Elective Course	3-4	PHYS 24100 or 27200
		3	General Elective Course
16		17	

Fall Semester 5

Spring Semester 6

Credits	Recommended Courses	Credits	Recommended Courses
3	MA 26500	3	NUCL 31000
3	NUCL 30000	3	MA Elective (300 level or above)
3	NUCL 32000	3	NUCL 35100
3	NUCL 32500	3	NUCL 35500
0	NUCL 39800	0	NUCL 39800
3	NUCL 35000	3	Technical Elective Course
3	General Elective Course		
18		15	

Fall Semester 7

Spring Semester 8

Credits	Recommended Courses	Credits	Recommended Courses
2	NUCL 30500	3	NUCL 45000
3	NUCL 40200	0	NUCL 49800
1	NUCL 44900	3	ECE 20100
3	NUCL 42001 or 51000	3	General Elective Course
0	NUCL 49800	3	Technical Elective Course
3	Technical Elective Course	3	Technical Elective Course
3	Technical Elective Course		
15		15	

*Other Approved Written Foundational Outcome Courses include: ENGL 108, COM 204, HONR 19903

Nuclear Engineering
College of Engineering

125 Credits for Graduation
Students must have a graduation index of 2.0

Nuclear Engineering Major Courses (56 credits)

Required NUCL courses (41 credits)

- (3) NUCL 20000 – Introduction to Nuclear Engineering (Critical)
 - (2) NUCL 20500 – Nuclear Engineering Lab
 - (3) NUCL 27300 – Mechanics of Materials
 - (0) NUCL 29800 – Nuclear Engineering Sophomore Seminar
 - (3) NUCL 30000 – Nuclear Structure and Radiation Interaction
 - (2) NUCL 30500 – Nuclear Engineering Lab II
 - (3) NUCL 31000 – Introduction to Neutron Physics
 - (3) NUCL 32000 – Materials for Nuclear Applications
 - (3) NUCL 32500 – Nuclear Materials Lab I.
 - (3) NUCL 35000 – Nuclear Thermal Hydraulics I
 - (3) NUCL 35100 – Nuclear Thermal Hydraulics II
 - (3) NUCL 35500 – Nuclear Thermal Hydraulics Lab
 - (0) NUCL 39800 – Nuclear Engineering Junior Seminar
 - (3) NUCL 40200 – Nuclear Power Systems
 - (1) NUCL 44900 – Senior Design Proposal
 - (3) NUCL 45000 – Senior Design
 - (0) NUCL 49800 – Senior Seminar
 - (3) NUCL 42001 *or* 51000 – Radiation Interaction with Materials and Applications *or* Nuclear Reactor Theory
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- (3) ECE 20100 – Linear Circuit Analysis
 - (3) ME 20000 – Thermodynamics
 - (3) ME 27000 – Basic Mechanics I
 - (3) ME 27400 – Basic Mechanics II
 - (3) MA Elective – 300 level or above

NE Technical Electives (15 credits)

- (3) Technical Elective I
- (3) Technical Elective II
- (3) Technical Elective III
- (3) Technical Elective IV
- (3) Technical Elective V

Other Departmental/Program Course Requirements (44 credits)

- (4/5) MA 16500/16100 – Calculus I (*Quantitative Reasoning*)
- (4/5) MA 16600/16200 – Calculus II
- (4) CHM 11500 – General Chemistry I (*Science Selective*)
- (2) ENGR 13100 – Transforming Ideas to Innovation I (*Information Literacy*)

- (2) ENGR 13200 – Transforming Ideas to Innovation II
- (3/4) ENGL 10600 *or* other approved written communication foundational outcome course – ENGL 10800, COM 20400, HONR 19903
(*Written Communication*)
- (3) COM 11400 – Fundamentals of Speech Communication *or* COM 21700 – Science Writing and Presentations (*Oral Communication*)
- (4) PHYS 17200 – Physics I
- (3) CS 15900 – Programming Applications for Engineers (*Science Selective*)
- (4) MA 26100 – Calculus III
- (3) MA 26500 – Linear Algebra
- (3) MA 26600 – Ordinary Differential Equations
- (3/4) PHYS 24100 *or* PHYS 27200 – Electricity and Optics *or* Electric and Magnetic Interactions

General Electives (12 credits)*

- (3) Lower Level Humanities
- (3) Upper Level Humanities
- (3) Lower Level Behavioral and Social Sciences
- (3) Upper Level Behavioral and Social Sciences

Students must also meet:

- (3) *Science, Technology and Society Selective*
- (3) *Human Cultures Humanities*
- (3) *Human Cultures Behavioral and Social Sciences*

**If student select courses that meet 2 foundational outcomes simultaneously, then they can complete the General Elective requirements with 12 credit hours.*