B.S. Physics: Engineering Physics Requirements

The BS Physics major focuses on fundamental knowledge in core areas of physics, engineering, and astronomy coupled with the development of foundational experimental, computational, and observational skills. The program helps students improve their analytical, problem-solving, and effective scientific communication skills through oral, written, and visual mechanisms. This major prepares students for graduate studies and for careers related to fundamental science, engineering, education, finance, public policy, and any other analytically and technologically demanding field. Students majoring in Physics choose from one of four concentration areas: Astronomy, Engineering Physics, Engineering Technology, or Physics.

Note that all students must achieve 120 undergraduate credits and a minimum 2.0 overall GPA to graduate. The final major-GPA requirement for Physics: Engineering Physics Track is 2.0.

Required Physics Core Courses – 21 credits

PHYS 100 Physics I (4 credits)
PHYS 102 Physics II (4 credits)
PHYS 212 Modern Physics (3 credits)
PHYS 220 Electronics (3 credits)
PHYS 230 Optics (3 credits)
PHYS 315 Advanced Lab (2 credits)
PHYS 380 Senior Seminar (2 credits)

Engineering Physics Track Required Courses – 24 credits

ENGR 121 Engineering Drawing and Design (3 credits)
ENGR 130 Engineering Mechanics (3 credits)
ENGR 230 Strength of Materials (3 credits)
ENGR 330 Fluid Mechanics (3 credits)
PHYS 245 Mathematical Physics I (3 credits)
PHYS 312 Classical Mechanics I (3 credits)
PHYS 316 Electromagnetism I (3 credits)
PHYS 327 Thermodynamics and Statistical Mechanics (3 credits)

Engineering Physics Track Electives – 3 credits

Students must discuss with their advisor which electives would best serve their future career goals before choosing them.
ENGR 370 Research in Engineering (3 credits)
PHYS 214 Intro. to Subatomic Physics (3 credits)
PHYS 250 Programming for Experimental Research and Industry (3 credits)
PHYS 290 Intro. to Nanotechnology (3 credits)
PHYS 340 Computational Physics (3 credits)
PHYS 350 Instrumentation in Physics (3 credits)

Other Required Courses – 12 credits

CHEM 102 General Chemistry II (4 credits)
MATH 182 Calculus II (4 credits)
MATH 283 Calculus III (4 credits)

Directed General Education Courses

CHEM 100 General Chemistry I – Category C1 (4 credits)
MATH 181 Calculus I – Category C2 (4 credits)
BIOL 104 Principles of Biology – Category C3 (4 credits)

University Electives – 15 credits

Program Plan Code: BS_PHYS_ENGP
Effective Date: Fall 2020

BS Physics: Engineering Physics Major Check Sheet

Student Name: Student ID Number:

This check sheet provides a mechanism for students and advisors to keep track of a student's progress in the program. Please refer to the program requirements for more details regarding options.

Note that all students must achieve 120 undergraduate credits and a minimum 2.0 overall GPA to graduate. The final major-GPA requirement for Physics: Engineering Physics is 2.0.

Required Physics Core Courses – 21 credits

PHYS 100 Physics I	4 credits	Grade:
PHYS 102 Physics II	4 credits	Grade:
PHYS 212 Modern Physics	3 credits	Grade:
PHYS 220 Electronics	3 credits	Grade:
PHYS 230 Optics	3 credits	Grade:
PHYS 315 Advanced Lab	2 credits	Grade:
PHYS 380 Senior Seminar	2 credits	Grade:
Total Credits	21 total credits	

Engineering Physics Track Required Courses – 24 credits

ENGR 121 Engineering Drawing and Design	3 credits	Grade:
ENGR 130 Engineering Mechanics	3 credits	Grade:
ENGR 230 Strength of Materials	3 credits	Grade:
ENGR 330 Fluid Mechanics	3 credits	Grade:
PHYS 245 Mathematical Physics I	3 credits	Grade:
PHYS 312 Classical Mechanics I	3 credits	Grade:
PHYS 316 Electromagnetism I	3 credits	Grade:
PHYS 327 Thermodynamics and Statistical Mechanics	3 credits	Grade:
Total Credits	24 total credits	

Engineering Physics Track Electives – 3 credits

Course 1:	3 credits	Grade:
Total Credits	3 total credits	

Other Required Courses – 12 credits

CHEM 102 General Chemistry II	4 credits	Grade:
MATH 182 Calculus II	4 credits	Grade:
MATH 283 Calculus III	4 credits	Grade:
Total Credits	12 total credits	

Directed General Education Courses

CHEM 100: General Chemistry I (Category C1)	4 credits	Grade:
MATH 181: Calculus I (Category C2)	4 credits	Grade:
BIOL 104: Principles of Biology (Category C3)	4 credits	Grade:

University Electives – 15 credits

Course 1:	credits	Grade:
Course 2:	credits	Grade:
Course 3:	credits	Grade:
Course 4:	credits	Grade:
Course 5:	credits	Grade:
Total Credits	15 total credits	

Summary of Graduation Requirements

Total credits from major courses	**60**
Total credits from general education program	**45**
Total credits from university electives	**15**
Minimum total credits to graduate	**120**
Minimum overall GPA	**2.0**
Minimum GPA in major program	**2.0**

Program Plan Code: BS_PHYS_ENGP
Effective Date: Fall 2020

B.S. Physics: Engineering Physics 8-Semester Planner

Student Name: Student ID Number:

Each semester listed below provides information including course categories, typical credit hours (CH.), and space to add specific course selections. This planner is a suggested path. Consult with your advisor regarding your unique plans and interests as you make choices about your schedule.

First Semester Plan

Major	PHYS 100	4 CH.	Selection:
Gen Ed	MATH 181 (Category C2)	4 CH.	Selection:
Gen Ed	CHEM 100 (Category C1)	4 CH.	Selection:
Gen Ed	FYSM 100	3 CH.	Selection: FYSM100 -
Total		**15 CH.**	

Second Semester Plan

Major	PHYS 102	4 CH.	Selection:
Major	MATH 182	4 CH.	Selection:
Major	CHEM 102	4 CH.	Selection:
Major	ENGR 121	3 CH.	Selection:
Total		**15 CH.**	

Third Semester Plan

Major	PHYS 220	3 CH.	Selection:
Major	MATH 283	4 CH.	Selection:
Major	ENGR 130	3 CH.	Selection:
Gen Ed	Category A1	3 CH.	Selection:
Gen Ed	Category A3	3 CH.	Selection:
Total		**16 CH.**	

Fourth Semester Plan

Major	PHYS 230	3 CH.	Selection:
Major	ENGR 230	3 CH.	Selection:
Gen Ed	BIOL 104 (Category C3)	4 CH.	Selection:
Gen Ed	Category A2	3 CH.	Selection:
Gen Ed	Category B	3 CH.	Selection:
Total		**16 CH.**	

Fifth Semester Plan

Major	PHYS 212	3 CH.	Selection:
Major	PHYS 245	3 CH.	Selection:
Major	ENGR 330	3 CH.	Selection:
Gen Ed	Category B	3 CH.	Selection:
Gen Ed	Category A4	3 CH.	Selection:
Total		**15 CH.**	

Sixth Semester Plan

Major	PHYS 316	3 CH.	Selection:
Major	Engineering Physics Track Elective	3 CH.	Selection:
Gen Ed	Category D	3 CH.	Selection:
Gen Ed	Category D	3 CH.	Selection:
Elective	University Elective	3 CH	Selection:
Total		**15 CH.**	

Seventh Semester Plan

Major	PHYS 312	3 CH.	Selection:
Major	PHYS 380	2 CH.	Selection:
Gen Ed	Category B	3 CH.	Selection:
Gen Ed	Category D	3 CH.	Selection:
Elective	University Elective	3 CH.	Selection:
Total		**14 CH.**	

Eighth Semester Plan

Major	PHYS 315	2 CH.	Selection:
Major	PHYS 327	3 CH.	Selection:
Elective	University Elective	3 CH.	Selection:
Elective	University Elective	3 CH.	Selection:
Elective	University Elective	3 CH.	Selection:
Total		**14 CH.**	

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