

PHYSICS | BACHELOR OF SCIENCE: PHYSICS (PRE-ENGINEERING) (2+2 PROGRAM)

While the 3+2 degree will give you the best real-world preparation, the 2+2 Pre-Engineering program lets you focus on your engineering courses. You will be able to take your first semesters of pre-engineering classes required by all engineering schools at FHSU and then transfer to an engineering program to finish your degree. In this program, you learn the foundations of engineering from outstanding faculty members and get personal attention you can't find anywhere else.

Program Summary

Code	Title	Hours
	General Education	34
	Introductory Physics	16
	Intermediate Physics	9
	Advanced Physics	9
	Laboratory Electives	1
	Projects	1
	Cognates	20
	Open Electives	30
	Total Hours	120

Program Requirements

General Education

All undergraduate degrees require completion of the Kansas Systemwide General Education (<https://catalog.fhsu.edu/general-education/>).

Courses identified with ^{GE} on this page may satisfy a general education requirement in addition to the identified degree requirement. Students who apply a degree requirement to satisfy a general education requirement will typically add an equal number of hours to the the university elective category. This flexibility may allow you to complete a minor or certificate within the 120 hour degree. Transfer students and students majoring in programs with approved exceptions (<https://www.fhsu.edu/general-education/documents/fhsu-gen-ed-transfer-exceptions-explainer1.pdf>) are especially encouraged to select these courses in completing General Education requirements to maximize the likelihood of completing the degree with 120 credit hours.

Code	Title	Hours
	General Education	34-35

Major

Code	Title	Hours
	Introductory Physics	
PHYS 100	Introduction to Physics and Engineering ¹	3
PHYS 211 & 211L	Engineering Physics I and Engineering Physics I Laboratory ^{GE, 1}	5
PHYS 212 & 212L	Engineering Physics II and Engineering Physics II Laboratory ¹	5
PHYS 313	Modern Physics	3

Intermediate Physics		
Select three courses from the following:		9
PHYS 312	Scientific Computing and Productivity	
PHYS 221	Statics ¹	
PHYS 331	Electronic Circuits ¹	
PHYS 332	Analog and Digital Electronics	
PHYS 333	Introduction to Computational Physics	

Advanced Physics Electives		
Select three courses from the following:		9
PHYS 608	Special Topics I	
PHYS 620	Mathematics for the Physical Sciences	
PHYS 621	Mechanics	
PHYS 632	Electricity and Magnetism	
PHYS 652	Optics	
PHYS 660	Solid State Physics	
PHYS 672	Thermal Physics	
PHYS 677	Quantum Mechanics I	
PHYS 678	Quantum Mechanics II	

Laboratory Electives		
Select one course from the following:		1
PHYS 601	Computational Physics Laboratory	
PHYS 651	Advanced Physics Laboratory I	
PHYS 654	Advanced Physics Laboratory II	

Projects		
Select one course from the following:		1
PHYS 603	Projects I	
PHYS 675	Senior Seminar	

Cognates		
CHEM 120 & 120L	University Chemistry I and University Chemistry Laboratory I ^{GE, 1}	5
MATH 234	Analytic Geometry and Calculus I ¹	5
MATH 235	Analytic Geometry and Calculus II ¹	5
MATH 236	Analytic Geometry and Calculus III ¹	3
MATH 354	Differential Equations ¹	3

Total Hours		57
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¹ If you're interested in pursuing the 2+2 program with the intention of completing an Engineering degree elsewhere, you will work closely with an academic advisor to determine the best sequence of courses you need to take in order to meet your educational and career objectives. In addition to Fort Hays State University's General Education program, 2+2 students *typically* take the courses noted here.

Total Hours: 120 Degree Requirements

Code	Title	Hours
All bachelor degrees require:		
GPA of 2.0 on FHSU courses & 2.0 on all coursework (Higher program requirements prevail over the 2.0 when set)		
A minimum of 30 hours earned from FHSU with a grade of D, C, B, or A		

Successful completion of an upper division Writing and Information Literacy course (Most majors contain a course designated)

A minimum of 45 hours of recognized upper division credit

A minimum of 120 hours of recognized college credit