

# Pre-Engineering (PENG)

## Pre-Engineering (PENG)

The Pre-Engineering program provides students with the academic foundation needed for transfer to a bachelor's degree program in engineering science, such as electrical, chemical, civil, mechanical, computer, or environmental engineering.

Students earn an Associate of Science degree and are prepared to enter their bachelor's degree program with about half of the required credits already completed.

Students must consult with their academic advisor before choosing electives, to ensure that elective courses meet the requirements of the college or university where they will complete their bachelor's degree.

Students must meet the requirements set by the institution they will transfer to. Completing the Pre-Engineering degree does not guarantee acceptance at another college or university.

For more information, please contact the Engineering and Information Technologies Division at (513) 569-1743.

To apply for this program at Cincinnati State, visit the Admissions (<http://www.cincinnati.edu/academics/admission/>) section of the College website.

## Pre-Engineering (PENG)

Semester 1		Lec	Lab	Credits
CHE 121	General Chemistry 1	4	0	4
CHE 131	General Chemistry 1 Lab	0	3	1
ENG 101	English Composition 1	3	0	3
FYE 1XX	First Year Experience Elective	1	0	1
ENGR 111	Introduction to Engineering 1	2	2	3
Semester 2				
PHY 201	Physics 1: Calculus-Based	4	2	5
MAT 251	Calculus 1	5	0	5
ENG 10X	English Composition Elective	3	0	3
ENGR 112	Introduction to Engineering 2	2	2	3
Semester 3				
MAT 252	Calculus 2	5	0	5
COMM 110	Public Speaking	3	0	3
XXX XXX	Technical Elective 1	2	3	3
XXX XXX	Arts/Humanities Elective 1	3	0	3

Semester 4				
XXX XXX	Technical Elective 2	2	2	3
XXX XXX	Transfer Module Math/Science Elective	5	0	5
XXX XXX	Social Science Elective	3	0	3
XXX XXX	Arts/Humanities Elective 2	3	0	3
Semester 5				
XXX XXX	Technical Elective 3	2	3	3
XXX XXX	Technical Elective 4	1	40	2
HST XXX	History Elective	3	0	3
<b>Total Credits:</b>		<b>56</b>	<b>57</b>	<b>64</b>

## Electives

### First Year Experience Elective

FYE 100	College Success Strategies: Overview	1
FYE 105	College Success Strategies: Overview and Application	2
FYE 110	College Success Strategies: Practice and Application	3

### English Composition Elective

ENG 102	English Composition 2: Contemporary Issues	3
ENG 103	English Composition 2: Writing about Literature	3
ENG 104	English Composition 2: Technical Communication	3
ENG 105	English Composition 2: Business Communication	3

### Arts/Humanities Electives (select two courses)

Any Transfer Module course from ART, LIT, MUS, PHI, REL, THE	6
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### Transfer Module Math/Science Elective

MAT 253	Calculus 3	5
CHE 122 & CHE 132	General Chemistry 2 and General Chemistry 2 Lab	5
CHE 201 & CHE 211	Organic Chemistry 1 and Organic Chemistry 1 Lab	5
CHE 202 & CHE 212	Organic Chemistry 2 and Organic Chemistry 2 Lab	5
PHY 202	Physics 2: Calculus-Based	5

<b>Technical Electives<sup>1</sup></b>	<b>3</b>
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MAT 253	Calculus 3	5
SUR 105	Surveying Fundamentals	3
MET 111	Manufacturing Processes 1	3
MET 131	MET Computer Aided Drafting 1	3
MET 140	Engineering Materials	3
EET 121	Digital Systems 1	3
EET 131	Circuit Analysis 1	4
EET 132	Circuit Analysis 2	4
CHE 122 & CHE 132	General Chemistry 2 and General Chemistry 2 Lab	5
CHE 201 & CHE 211	Organic Chemistry 1 and Organic Chemistry 1 Lab	5
CHE 202 & CHE 212	Organic Chemistry 2 and Organic Chemistry 2 Lab	5
PHY 202	Physics 2: Calculus-Based	5
CET 291	Full-Time Cooperative Education 1: Civil Engineering Technology <sup>2</sup>	2
MET 291	Full-Time Cooperative Education 1: Mechanical Engineering Technology <sup>2</sup>	2
EET 291	Full-Time Cooperative Education 1: Electronics Engineering Technology <sup>2</sup>	2
EMET 291	Full-Time Cooperative Education 1: Electro- Mechanical Engineering Technology <sup>2</sup>	2
ENGR 200	Engineering Statics (Calculus Based)	3
ENGR 220	Engineering Dynamics	4
<b>Social Science Elective (select one course)</b>		
Any Transfer Module course from ECO, GEO, LBR, POL, PSY, SOC		3
<b>History Elective (select one course)</b>		
Any Transfer Module course from HST		3

<sup>1</sup> Program Chair consent required for Technical Electives. Not all courses are offered every semester. Since Technical Electives vary by transfer school and discipline, students must meet with a Pre-Engineering advisor before registering for courses.

<sup>2</sup> Only one full-time co-op course is permitted. Co-op credits may not transfer to bachelor's degree programs.

Some courses are offered in alternative versions identified with a letter after the course number-- for example, ENG 101 and ENG 101A.

- This curriculum displays only course numbers without the added letter.
- The alternative version, when available, meets the requirements of the course version without the added letter.

## Pre-Engineering (PENG)

- An ability to identify, formulate, and solve complex engineering problems using science and math and engineering principals.
- 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.
- An ability to communicate effectively with a range of audiences.

- An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgements, which consider global, environmental, and societal impacts
- An ability to function effectively on a design team. "Effective" means that teams have leadership, are diverse and collaborative, set goals, plan tasks, and meet objectives.
- An ability to develop and conduct experiments, analyze, and interpret data using engineering judgement to draw conclusions.
- An ability to acquire and apply new knowledge as needed using appropriate learning strategies.

## Faculty

### Program Chair/Advisor

George Armstrong, PE, PS, BS  
george.armstrong@cincinnatiastate.edu

## Engineering and Information Technologies Division Advising

(513) 569-1743