

Pre-Engineering (PENG)

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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 Center for Innovative Technologies 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.

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Semester 1		Lec	Lab	Credits
CIT 100	Introduction to Engineering and Engineering Technologies	1	3	2
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
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
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				
CIT 130	Engineering Programming with MATLAB	2	3	3
XXX XXX	Technical Elective 3	2	3	3
XXX XXX	Technical Elective 4	1	40	2
HST XXX	History Elective	3	0	3
Total Credits:		55	59	63

Electives

First Year Experience Elective

FYE 100	College Survival Skills	1
FYE 105	College Success Strategies	2
FYE 110	Community College Experience	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 Elective (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

Technical Electives ¹		3
MAT 253	Calculus 3	5

CET 105	Introduction to Surveying	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	General Chemistry 2	5
& CHE 132	and General Chemistry 2 Lab	
CHE 201	Organic Chemistry 1	5
& CHE 211	and Organic Chemistry 1 Lab	
CHE 202	Organic Chemistry 2	5
& CHE 212	and Organic Chemistry 2 Lab	
PHY 202	Physics 2: Calculus-Based	5
CET 291	Full-Time Cooperative Education 1: Civil Engineering Technology ²	2
MET 291	Full-Time Cooperative Education 1: Mechanical Engineering Technology ²	2
EET 291	Full-Time Cooperative Education 1: Electronics Engineering Technology ²	2
EMET 291	Full-Time Cooperative Education 1: Electro-Mechanical Engineering Technology ²	2
Social Science Elective (select one course)		
Any Transfer Module course from ECO, GEO, LBR, POL, PSY, SOC		3
History Elective (select one course)		
Any Transfer Module course from HST		3

¹ 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.

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

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- Ability to apply knowledge of mathematics, science, and engineering.
- Ability to design and conduct experiments, as well as to analyze and interpret data.
- Ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.
- Ability to function on multidisciplinary teams.
- Ability to identify, formulate, and solve engineering problems.
- Understanding of professional and ethical responsibilities.
- Ability to communicate effectively.
- Understanding of the impact of engineering solutions in a global, economic, environmental, and societal context.
- Recognition of the need for, and ability to engage in life-long learning.
- Knowledge of contemporary issues.
- Ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

Faculty

Program Chair/Advisor

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