Applied Engineering Technology

Description: The Applied Engineering Technology program curriculum leads to an Associate in Applied Science (A.A.S.) degree and prepares students for employment in a range of scientific technology occupations and also provides a foundation for transfer to four-year technology programs. The flexible design of the program allows students to choose from a range of scientific technology fields, including engineering technology, among others that are developed as industry trends demand. Students will be prepared to demonstrate scientific observation skills, to operate equipment and/or relevant software, and to promote safety and quality in the workplace.

Students in the Applied Engineering Technology program may choose courses from two pathways: engineering technology or transfer.

The engineering technology pathway is geared towards the student who wishes to complete the A.A.S. degree and seek employment upon graduation in an electrical and/or technical field where knowledge of basic electronics is essential. This pathway includes core electronics courses and AET electives. The electives include in-context principles and concepts relative to the workplace environments that students may be employed in.

The transfer pathway is designed to allow a student to transfer into a bachelor's degree engineering technology program. Locally, both Temple and Drexel offer engineering technology degree programs at the bachelor's level. College level chemistry and physics are components of these curricula along with precalculus math courses.

Engineering technology programs emphasize problem solving and having lab and technical based skills. Engineering technology programs prepare individuals for application oriented careers in industry, such as manufacturing, field-service, marketing, technical sales, or as technical members of an engineering team.

Student Learning Outcomes:

Upon completion of the Applied Engineering Technology curriculum, the student will be able to:
- Demonstrate foundational knowledge in at least one technology field.
- Demonstrate laboratory skills in basic science and technology areas.
- Explain the interplay between scientific information and public policy and standards.
- Present technical information in oral, written, or graphic format.
- Work effectively as part of a team.

Program Entry Requirements: This program is open to all interested students. All new students are normally required to take the College's placement test at their time of entry. Students who are identified as needing developmental course work must satisfactorily

complete the appropriate English and mathematics courses as a part of their degree program.

Program of Study and Graduation Requirements: Depending on the students' pathway, a minimum of 60-61 credits as prescribed must be completed with a minimum grade point average of 2.0. A minimum grade of "C" must be achieved in all required program courses.

Engineering Technology Pathway

Course Sequence:
Semester 1

Course Number and Name	Prerequisites and Corequisites	Credits	Gen Ed Req.
AET 101 - Introduction to Robotics		4 credits	Scientific Reasoning
ENGL 101 - English Composition I		3 credits	Writing/Research/Info Lit 1
FNMT 118 - Intermediate Algebra or higher	FNMT 017 or FNMT 019 completed or FNMT 118 (or higher) placement	3 credits	Quantitative Reasoning
CHEM 110 - Introductory Chemistry or higher level chemistry	FNMT 118 ready and ENGL 101 ready	4 credits	
CIS 103 - Computer Applications & Concepts		3 credits	Technological Competency

Semester 2

Course Number and Name	Prerequisites and Corequisites	Credits	Gen Ed Req.
ENGL 102 - The Research Paper	ENGL 101 with a grade of "C" or better	3 credits	Writing/Research/Info Lit 2
ELEC 120 - Direct and Alternating Current Circuits	FNMT 118 or higher MATH with a grade of "C" or better or	4 credits	

Course Number and Name	Prerequisites and Corequisites	Credits	Gen Ed Req.
	placement in MATH 161 or higher.		
Any AET course above AET 101 or Prior Learning Experience	Please see the catalog for prerequisites	3 or 4 credits	
ENGL 115 - Public Speaking	ENGL 101, which may be taken concurrently	3 credits	Oral Communication/ Creative Expression

Semester 3

Course Number and Name	Prerequisites and Corequisites	Credits	Gen Ed Req.
ELEC 124 - Semiconductor Devices	ELEC 120 with a grade of "C" or better	4 credits	
Any TWO AET courses above AET 101 or Prior Learning Experience	Please see the catalog for prerequisites	6 to 8 credits	
PHYS 105 - Survey of Physics		4 credits	
ANTH 112 - Cultural Anthropology or HIST 142 - Food History or HIST 150 - History of American Health Care or SOC 101 - Introduction to Sociology or SOC 115 - Gender and Society		3 credits	Cultural Analysis and Interpretation

Semester 4

Course Number and Name	Prerequisites and Corequisites	Credits	Gen Ed Req.
ELEC 130 - Digital Electronics	FNMT 118 completed or higher math placement	4 credits	

Course Number and Name	Prerequisites and Corequisites	Credits	Gen Ed Req.
Any **TWO** AET courses above AET 101 or Prior Learning Experience	Please see the catalog for prerequisites	6 to 8 credits	
General Elective		3 or 4 credits	

Minimum Credits Needed to Graduate: 60

Semester 1

Course Number and Name	Prerequisites and Corequisites	Credits	Gen Ed Req.
AET 101 - Introduction to Robotics		4 credits	Scientific Reasoning
ENGL 101 - English Composition I		3 credits	Writing/Research/Info Lit 1
MATH 161 - Precalculus I	FNMT 118 with a grade of "C" or better	3 credits	Quantitative Reasoning
CIS 103 - Computer Applications & Concepts		3 credits	Technological Competency
General Elective		3 or 4 credits	

Semester 2

Course Number and Name	Prerequisites and Corequisites	Credits	Gen Ed Req.
ENGL 102 - The Research Paper	ENGL 101 with a grade of "C" or better	3 credits	Writing/Research/Info Lit 2
ELEC 120 - Direct and Alternating Current Circuits	FNMT 118 or higher MATH with a grade of "C" or better or placement in MATH 161 or higher.	4 credits	

Course Number and Name	Prerequisites and Corequisites	Credits	Gen Ed Req.
MATH 162 - Precalculus II	MATH 161 with a grade of "C" or better, or placement in MATH 162 or higher	3 credits	
CHEM 110 - Introductory Chemistry or higher level chemistry	FNMT 118 ready and ENGL 101 ready	4 credits	
CSCI 111 - Computer Science I	FNMT 118 prerequisite or placement in MATH 161 or higher	4 credits	

Semester 3

Course Number and Name	Prerequisites and Corequisites	Credits	Gen Ed Req.
ELEC 130 - Digital Electronics	FNMT 118 completed or higher math placement	4 credits	
CHEM 121 - College Chemistry I or General Elective*	CHEM 110 with a "C" or better and FNMT 118 or MATH 118.	3 or 4 credits	
PHYS 111 - General Physics I	MATH 162 or Math 171 or MATH 171 placement.	4 credits	
Technical Elective (choose one): Any AET course above AET 101 or ELEC 124 - Semiconductor Devices	Please see the catalog for AET prerequisites For ELEC 124: ELEC 120 with a grade of "C" or better	3 or 4 credits	

Semester 4

Course Number and Name	Prerequisites and Corequisites	Credits	Gen Ed Req.
Technical Elective (choose one): Any AET course above AET 101 or ELEC 124 - Semiconductor Devices	Please see the catalog for AET prerequisites For ELEC 124: ELEC 120 with a grade of "C" or better	3 or 4 credits	
PHYS 112 - General Physics II	PHYS 111 or permission of the department head.	4 credits	
ENGL 115 - Public Speaking	ENGL 101, which may be taken concurrently	3 credits	Oral Communication/ Creative Expression
ECON 181 - Principles of Economics (Macroeconomics)	FNMT 118 or higher	3 credits	Cultural Analysis & Interpretation

Minimum Credits Needed to Graduate: 61

* Students planning to transfer to Temple University should take CHEM 121.

General Education Requirements: All general education requirements necessary for graduation are met through the courses in the program as indicated above. Students who wish to take courses that differ from the general education courses indicated above must complete a course substitution request form. To access the form, login to the MyCCP portal, and in the **Student** tab, under **Electronic Forms**, click on the **Records and Registration Forms** link, then choose **Request for Course Substitution Of Graduation Requirement** link. A more detailed explanation of the College's general education requirements is also available.

For More Information, Contact: The Division of Math, Science and Health Careers, Room W1-1, 1700 Spring Garden Street, Philadelphia, PA 19130, Telephone (215) 751-8430; or the College Information Center (215) 751-8010.

Courses and Completion Sequence

The following courses and sequence of courses is designed for the optimal success and completion of the Applied Engineering

Engineering Technology Pathway Courses and Completion Sequence (proposed)

Semester 1

Course Number and Name	Advisory Notes	Credits	Course Type
AET 101 - Introduction to Robotics		4 credits	Scientific Reasoning
ENGL 101 - English Composition I	Prerequisite for ENGL 102 and ENGL 115; must earn a C or better	3 credits	Writing/Research/Info Lit 1
FNMT 118 - Intermediate Algebra or higher	Prerequisite for AET 130, AET 201, ELEC 120, ELEC 130, MATH 161; must earn a C or better for MATH 161.	3 credits	Quantitative Reasoning
CHEM 110 - Introductory Chemistry or higher level chemistry	Prerequisite for AET 201	4 credits	
CIS 103 - Computer Applications & Concepts		3 credits	Technological Competency

Semester 2

Course Number and Name	Advisory Notes	Credits	Course Type
ENGL 102 - The Research Paper		3 credits	Writing/Research/Info Lit 2
ELEC 120 - Direct and Alternating Current Circuits	Prerequisite for ELEC 124; must earn a C or better	4 credits	

Course Number and Name	Advisory Notes	Credits	Course Type
Any AET course above AET 101 or Prior Learning Experience	Please see the catalog for prerequisites	3 or 4 credits	AET Elective
ENGL 115 - Public Speaking		3 credits	Oral Communication/ Creative Expression

Semester 3

Course Number and Name	Advisory Notes	Credits	Course Type
ELEC 124 - Semiconductor Devices		4 credits	
Any TWO AET courses above AET 101 or Prior Learning Experience	Please see the catalog for prerequisites	6 to 8 credits	AET Elective
PHYS 105 - Survey of Physics		4 credits	
ANTH 112 - Cultural Anthropology or HIST 142 - Food History or HIST 150 - History of American Health Care or SOC 101 - Introduction to Sociology or SOC 115 - Gender and Society	Students should consult with an advisor or program faculty to choose courses that transfer	3 credits	Cultural Analysis & Interpretation

Semester 4

Course Number and Name	Advisory Notes	Credits	Course Type
ELEC 130 - Digital Electronics		4 credits	
Any TWO AET courses above AET 101 or Prior Learning Experience	Please see the catalog for prerequisites	6 to 8 credits	AET Elective
General Elective	Students should consult with an advisor or program faculty to choose courses that transfer	3 or 4 credits	

Transfer Pathway Courses and Completion Sequence (proposed)

Semester 1

Course Number and Name	Advisory Notes	Credits	Course Type
AET 101 - Introduction to Robotics		4 credits	Scientific Reasoning
ENGL 101 - English Composition I	Prerequisite for ENGL 102; must earn a C or better	3 credits	Writing/Research/Info Lit 1
MATH 161 - Precalculus I	Students must place at MATH 161 or higher or pass FNMT 118 with a grade of "C" or better; prerequisite for MATH 162 and ECON 181	3 credits	Quantitative Reasoning
CIS 103 - Computer Applications & Concepts		3 credits	Technological Competency
General Elective	Students should consult with an advisor or program faculty to choose courses that transfer	3 or 4 credits	

Semester 2

Course Number and Name	Advisory Notes	Credits	Course Type
ENGL 102 - The Research Paper		3 credits	Writing/Research/Info Lit 2
ELEC 120 - Direct and Alternating Current Circuits	Prerequisite for ELEC 124; must earn a C or better	4 credits	

Course Number and Name	Advisory Notes	Credits	Course Type
MATH 162 - Precalculus II		3 credits	
CHEM 110 - Introductory Chemistry	Students must be both FNMT 118 ready and ENGL 101 ready; prerequisite for CHEM 121; must earn a C or better	4 credits	
CSCI 111 - Computer Science I		4 credits	

Semester 3

Course Number and Name	Advisory Notes	Credits	Course Type
ELEC 130 - Digital Electronics		4 credits	
CHEM 121 - College Chemistry I or General Elective	Students planning to transfer to Temple University should take CHEM 121.	3 or 4 credits	
PHYS 111 - General Physics I	Students must have completed MATH 162 or Math 171 or placed in MATH 171; prerequisite for PHYS 112	4 credits	
Technical Elective (choose one): Any AET course above AET 101 or ELEC 124 - Semiconductor Devices	Please see the catalog for AET prerequisites	3 or 4 credits	

Semester 4

Course Number and Name	Advisory Notes	Credits	Course Type
Technical Elective (choose one): Any AET course above AET 101 or ELEC 124 - Semiconductor Devices	Please see the catalog for AET prerequisites	3 or 4 credits	
PHYS 112 - General Physics		4 credits	
ENGL 115 - Public Speaking		3 credits	Oral Communication/ Creative Expression
ECON 181 - Principles of Economics (Macroeconomics)		3 credits	Cultural Analysis & Interpretation