

SCIENCE AND MATHEMATICS

Overview

TTC's Division of Science and Mathematics provides the first two years of a four-year degree as well as general education and support courses for TTC programs. Students who plan to earn a degree from a four-year college or university can take freshman- and sophomore-level transfer courses through the Associate in Science degree program or through one of the specialty 2+2 programs.

For more information, call the Division of Science and Mathematics at 843.574.6015.

General Information

The Associate in Science program is designed to prepare students for four-year (baccalaureate) majors in such fields as:

- Engineering
- Biology
- Mathematics
- Chemistry
- Physics
- Education
- Environmental Science
- Pre-Med
- Pre-Veterinary
- Physician's Assistant
- Veterinary Medicine
- Forensic Science
- Chiropractic
- Radiation Therapy
- Industrial Management
- Medical Technology
- Cytotechnology
- Communication Sciences and Disorders
- Extracorporeal Circulation
- Health Information Administration
- Occupational Therapy
- Pharmacy
- Physical Therapy
- Other Health-Related Fields

Cancellation Policy

TTC reserves the right to cancel courses due to inadequate enrollment.

Note:

As with all TTC programs, students should consult with an academic advisor to discuss program requirements. Please note that you must have a separate advisor for this program, even if enrolled in more than one program at TTC. Academic advisors are assigned as part of the college orientation process conducted in the Orientation Centers on each campus through a walk-in service. Associate in Science advisors are selected based upon the college or university and upon the program to which you intend to transfer, including programs at TTC. Please refer to New Student Orientation for more details.

Programs of Study

Associate Degree Programs

Associate in Science

General Technology

Environmental Technology

Environmental Safety and Health Technology

Sustainable Technology

Certificate Programs

Environmental Safety and Health Technology

Environmental Technology

Sustainable Technology

Associate in Science

Associate in Science

Credit Requirements: 60 Semester Credit Hours

Program Credit Requirements

The Associate in Science degree is designed for students planning to transfer to four-year programs and for students who wish to broaden their general knowledge. The degree stresses mathematics and natural and physical sciences.

Recommended Sequence of Courses

I. General Education Requirements:

ENG 101	English Composition I	3
ENG 102	English Composition II	3
MAT 109	College Algebra with Modeling	3
or		
MAT 130	Elementary Calculus	3
or		
MAT 110	College Algebra	3
or		
MAT 112	Precalculus	5
or		
MAT 120	Probability and Statistics	3
or		

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MAT 140	Analytic Geometry and Calculus I	4	ENG 203	American Literature Survey	3
PSY 201	General Psychology	3	ENG 205	English Literature I	3
or			ENG 206	English Literature II	3
ECO 210	Macroeconomics	3	ENG 208	World Literature I	3
SPC 205	Public Speaking	3	ENG 209	World Literature II	3
or			ENG 214	Fiction	3
SPC 209	Interpersonal Communication	3	HIS 101	Western Civilization to 1689	3
or			HIS 102	Western Civilization Post 1689	3
THE 101	Introduction to Theater	3	HIS 104	World History I	3
			HIS 105	World History II	3
			HIS 201	American History: Discovery to 1877	3

II. Math/Lab Science Requirements

(Must include another math course and at least one lab science course.)

Select 21 semester credit hours from the following:

AST 101	Solar System Astronomy	4	PHI 101	Introduction to Philosophy	3
AST 102	Stellar Astronomy	4	PHI 110	Ethics	3
BIO 101	Biological Science I	4	REL 101	Introduction to Religion	3
BIO 102	Biological Science II	4	THE 101	Introduction to Theater	3
BIO 210	Anatomy and Physiology I	4	Languages/Social Sciences:		
BIO 211	Anatomy and Physiology II	4	ANT 101	General Anthropology	3
BIO 225	Microbiology	4	CHN 101	Elementary Chinese I	4
CHM 110	College Chemistry I	4	CHN 102	Elementary Chinese II	4
CHM 111	College Chemistry II	4	CHN 201	Intermediate Chinese I	3
CHM 211	Organic Chemistry I	4	CHN 202	Intermediate Chinese II	3
CHM 212	Organic Chemistry II	4	ECO 210	Macroeconomics	3
EVT 224	Environmental Chemical Analyses	4	ECO 211	Microeconomics	3
MAT 109	College Algebra with Modeling	3	FRE 101	Elementary French I	4
MAT 130	Elementary Calculus	3	FRE 102	Elementary French II	4
MAT 110	College Algebra	3	FRE 201	Intermediate French I	3
MAT 111	College Trigonometry	3	FRE 202	Intermediate French II	3
MAT 112	Precalculus	5	GER 101	Elementary German I	4
MAT 120	Probability and Statistics	3	GER 102	Elementary German II	4
MAT 132	Discrete Mathematics	3	GER 201	Intermediate German I	3
MAT 140	Analytic Geometry and Calculus I	4	GER 202	Intermediate German II	3
MAT 141	Analytic Geometry and Calculus II	4	PSC 201	American Government	3
MAT 240	Analytic Geometry and Calculus III	4	PSC 215	State and Local Government	3
MAT 242	Differential Equations	4	PSC 220	Introduction to International Relations	3
PHY 201	Physics I	4	PSY 201	General Psychology	3
PHY 202	Physics II	4	PSY 203	Human Growth and Development	3
PHY 221	University Physics I	4	PSY 212	Abnormal Psychology	3
PHY 222	University Physics II	4	SOC 101	Introduction to Sociology	3
PHY 223	University Physics III	4	SOC 102	Marriage and the Family	3

III. Humanities, Languages and Social Science Requirements

Select nine semester credit hours from the following (must include at least one Humanities course):

ART 101	Art History and Appreciation	3	SPA 201	Intermediate Spanish I	3
ART 105	Film as Art	3	SPA 202	Intermediate Spanish II	3
ART 107	History of Early Western Art	3			
ART 108	History of Western Art	3			

IV. Computing Requirement

(Select one from the following.)

CPT 101	Introduction to Computers	3
CPT 102	Basic Computer Concepts	3
EGR 270	Introduction to Engineering	3

V. Electives

Select 12 credits from the following courses:

(NOTE: Students may also select from courses in Mathematics and Lab Science requirements and Humanities, Languages and Social Sciences requirements above.)

ACC 101	Accounting Principles I	3
ACC 102	Accounting Principles II	3
BIO 205	Ecology	3
BIO 206	Ecology Lab	1
BUS 101	Introduction to Business	3
BUS 121	Business Law I	3
CHM 201	Survey of Organic Chemistry	3
CRJ 101	Introduction to Criminal Justice	3
CWE	Cooperative Work Experience	3
ECE 201	Electrical and Computer Engineering Seminar	1
ECE 205	Electrical and Computer Lab I	3
ECE 211	Introduction to Computer Engineering I	3
ECE 212	Introduction to Computer Engineering II	3
ECE 221	Introduction to Electrical Engineering I	3
ECE 222	Introduction to Electrical Engineering II	3
EGR 260	Engineering Statics	3
EGR 262	Engineering Dynamics	3
EGR 264	Introduction to Engineering Mechanics of Solids	3
EGR 266	Engineering Thermodynamics Fundamentals	3
EGR 273	Problem Solving for Engineers	2
EGR 275	Introduction to Engineering/Computer Graphics	3
EGR 282	Introduction to Civil Engineering	2
EGR 285	Engineering Surveying I	3
EGR 286	Engineering Surveying II	3
EGR 295	Engineering Surveying Lab I	1
EGR 296	Engineering Surveying Lab II	1
ENG 260	Advanced Technical Communications	3
EVT 110	Introduction to Treatment Facilities	3
EVT 201	Environmental Science	3
EVT 251	Health Effects of Hazardous Materials	3
EVT 254	Industrial Safety and Emergency Response	3

EVT 256	Hazardous Waste	3
GEO 102	World Geography	3
HIS 106	Introduction to African History	3
HIS 130	African-American History to 1877	3
HIS 131	African-American History, 1877 to Present	3
JOU 101	Introduction to Journalism	3
MAT 123	Contemporary College Mathematics	3
MGT 101	Principles of Management	3
MGT 201	Human Resource Management	3
MKT 101	Marketing	3
SPC 205	Public Speaking	3
SPC 209	Interpersonal Communication	3

No course can count more than once.

Associate in Science

Associate in Science

Credit Requirements: 60 Semester Credit Hours

Sample Degree Plan

The Associate in Science program allows flexibility in course selection and sequencing. The following sample may be a helpful guide for students who are planning to transfer but are unsure where or for what major. If you already know where you plan to transfer and/or for which major, see your assigned advisor for the Associate in Science program. This degree plan may not be suited to your goal.

First Semester

English Composition I (ENG 101)	3
General Psychology (PSY 201)	3
or	
Macroeconomics (ECO 210)	3
Introduction to Computers (CPT 101)	3
College Algebra (MAT 110)	3
Lab Science	4

Second Semester

English Composition II (ENG 102)	3
College Trigonometry (MAT 111)	3
Lab Science	4
Languages/Social Science	3
*Electives	3

Third Semester

Math or Lab Science	4
Math or Lab Science	4
Humanities	3
*Electives	3

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Fourth Semester

Math or Lab Science	4
Communication (SPC 205, SPC 209 or THE 101)	3
Humanities/Languages/Social Sciences	3
*Electives	4-6

Minimum semester credit hours required: 60

* *Recommend additional math/lab science or humanities/languages/social sciences courses as electives*

All courses must be selected from the Associate in Science display.

Lighter semester loads may be accomplished by attending Summer Semester(s).

General Technology

Associate in Applied Science

Environmental Technology Career Path

Credit Requirements: 61 semester credit hours

General Education (All three program paths share the same general education requirements):

19 credits minimum

ENG 101	English Composition I	3
BIO 101	Biological Science I	4
CPT 101	Introduction to Computers	3
or		
CPT 102	Basic Computer Concepts	3
MAT 110	College Algebra	3
PSY 201	General Psychology	3

or

ECO 210	Macroeconomics	3
REQ HUM	Humanities	3

Primary Technical Specialty (All three program paths share the same primary technical specialty):

30 credit hours

EVT 110	Introduction to Treatment Facilities	3
EVT 154	Chemistry of Hazardous Materials	4
EVT 222	Environmental Microbiology	4
EVT 210	Introduction to Environmental Law	3
EVT 201	Environmental Science	3
EVT 224	Environmental Chemical Analyses	4
EVT 251	Health Effects of Hazardous Materials	3
EVT 254	Industrial Safety and Emergency Response	3
EVT 256	Hazardous Waste	3

Secondary Technical Specialty – Laboratory Science

12 credit hours

BIO 102	Biological Science II	4
CHM 110	College Chemistry I	4
CHM 111	College Chemistry II	4

Recommended Sequence of Courses

First Semester – Fall

BIO 101	Biological Sciences I	4
ENG 101	English Composition	3
MAT 110	College Algebra	3
EVT 201	Environmental Science	3

Total 13

Second Semester – Spring

CHM 110	College Chemistry	4
EVT 210	Environmental Law	3
EVT 256	Hazardous Waste	3
BIO 102	Biological Sciences II	4

Total 14

Third Semester – Summer

EVT 110	Introduction to Treatment Facilities	3
EVT 224	Environmental Chemical Analysis	4
EVT 254	Industrial Safety and Emergency Response	3

Total 10

Fourth Semester – Fall

CPT 101	Introduction to Computers	3
or		
CPT 102	Basic Computer Concepts	3
EVT 154	Chemistry of Hazardous Materials	4
EVT 222	Environmental Microbiology	4
EVT 251	Health Effects of Hazardous Materials	3

Total 14

Fifth Semester – Spring

CHM 111	College Chemistry II	4
PSY 201	General Psychology	3

or

ECO 210	Macroeconomics	3
REQ HUM	Select one course from Humanities listing on page B-3	3

Total 10

Environmental Safety and Health Career Path

Credit Requirements: 62 Semester Credit Hours

General Education (All three program paths share the same general education requirements):

19 credits minimum

ENG 101	English Composition I	3
BIO 101	Biological Science I	4
CPT 101	Introduction to Computers	3
or		
CPT 102	Basic Computer Concepts	
MAT 110	College Algebra	3
PSY 201	General Psychology	3
or		
ECO 210	Macroeconomics	3
REQ HUM	Humanities	3

Primary Technical Specialty (All three program paths share the same primary technical specialty):

30 credit hours

EVT 110	Introduction to Treatment Facilities	3
EVT 154	Chemistry of Hazardous Materials	4
EVT 222	Environmental Microbiology	4
EVT 210	Introduction to Environmental Law	3
EVT 201	Environmental Science	3
EVT 224	Environmental Chemical Analyses	4
EVT 251	Health Effects of Hazardous Materials	3
EVT 254	Industrial Safety and Emergency Response	3
EVT 256	Hazardous Waste	3

Secondary Technical Specialty – Environmental, Safety, and Health

Choose a minimum of 13 hours from the following to include CHM 110

EVT 260	Air Pollution Control System	3
EVT 253	Occupational Environment, Safety, Health Concepts	3
EVT 263	Introduction to Safety Management	3
EVT 249	Fundamentals of Industrial Hygiene	3
EVT 259	Industrial Ventilation	3
CHM 110	College Chemistry I	4

Recommended Sequence of Courses

First Semester – Fall

BIO 101	Biological Sciences I	4
MAT 110	College Algebra	3
EVT 201	Environmental Science	3
EVT253	Occupational and ESH Concepts	3
		Total 13

Second Semester – Spring

CHM 110	College Chemistry	4
EVT 210	Environmental Law	3
EVT 256	Hazardous Waste	3
ENG 101	English Composition	3
		Total 13

Third Semester – Summer

EVT 110	Introduction to Treatment Facilities	3
EVT 224	Environmental Chemical Analysis	4
EVT 254	Industrial Safety and Emergency Response	3
		Total 10

Fourth Semester – Fall

EVT 154	Chemistry of Hazardous Materials	4
EVT 222	Environmental Microbiology	4
EVT 251	Health Effects of Hazardous Materials	3
EVT 263	Introduction to Safety Management	3
		Total 14

Fifth Semester – Spring

CPT 101	Introduction to Computers	3
or		
CPT 102	Basic Computer Concepts	
ELE EVT	Select 3 hours from any EVT course not used for a degree requirement	3
PSY 201	General Psychology	3
or		
ECO 210	Macroeconomics	3
REQ HUM	Select one course from Humanities listing on page B-3	3
		Total 12

Science and Mathematics

Sustainable Technology

Career Path

Credit Requirements: 62 Semester Credit Hours

General Education (All three program paths share the same general education requirements):

19 credits minimum

ENG 101	English Composition I	3
BIO 101	Biological Science I	4
CPT 101	Introduction to Computers	3
or		
CPT 102	Basic Computer Concepts	
MAT 110	College Algebra	3
PSY 201	General Psychology	3
or		
ECO 210	Macroeconomics	3
REQ HUM	Humanities	3

Primary Technical Specialty (All three program paths share the same primary technical specialty):

30 credit hours

EVT 110	Introduction to Treatment Facilities	3
EVT 154	Chemistry of Hazardous Materials	4
EVT 222	Environmental Microbiology	4
EVT 210	Introduction to Environmental Law	3
EVT 201	Environmental Science	3
EVT 224	Environmental Chemical Analyses	4
EVT 251	Health Effects of Hazardous Materials	3
EVT 254	Industrial Safety and Emergency Response	3
EVT 256	Hazardous Waste	3

Secondary Technical Specialty – Sustainable Technology

Choose a minimum of 13 hours from the following to include CHM 110

EVT 225	Best Management Practices Applications	3
EVT 250	Solid Waste Management	3
EVT 262	Energy Management	3
EVT 264	Transportation Systems	3
EVT 265	Introduction to Biotechnology	4
CHM 110	College Chemistry I	4

Recommended Sequence of Courses

First Semester – Fall

BIO 101	Biological Sciences I	4
MAT 110	College Algebra	3
EVT 201	Environmental Science	3
EVT 262	Energy Management	3
		Total 13

Second Semester – Spring

CHM 110	College Chemistry	4
EVT 210	Environmental Law	3
EVT 256	Hazardous Waste	3
ENG 101	English Composition	3
		Total 13

Third Semester – Summer

EVT 110	Introduction to Treatment Facilities	3
EVT 224	Environmental Chemical Analysis	4
EVT254	Industrial Safety and Emergency Response	3
		Total 10

Fourth Semester – Fall

EVT 154	Chemistry of Hazardous Materials	4
EVT 222	Environmental Microbiology	4
EVT 251	Health Effects of Hazardous Materials	3
EVT 264	Transportation Systems	3
		Total 14

Fifth Semester – Spring

PSY 201	General Psychology	3
or		
ECO 210	Macroeconomics	3
REQ HUM	Select one course from Humanities listing on page B-3	3
CPT 101	Introduction to Computers	3
or		
CPT 102	Basic Computer Concepts	3
EVT 225	Best Management Practices in EVT	3
		Total 12

Environmental Technology

Certificate in Applied Sciences

Credit Requirements: 37 credit hours

The Environmental Technology certificate program prepares the graduate for employment in positions related to air quality, water quality, solid waste management, hazardous materials, hazardous waste, and emergency response.

Recommended Course Sequence:

First Semester – Fall

EVT 201	Environmental Science	3
MAT 110	College Algebra	3
		Total 6

Second Semester – Spring

EVT 210	Environmental Law	3
EVT 256	Hazardous Waste	3
CHM 110	College Chemistry	4
		Total 10

Third Semester – Summer

EVT 110	Introduction to Treatment Facilities	3
EVT 224	Environmental Chemical Analyses	4
EVT 254	Industrial Safety and Emergency Response	3
		Total 10

Fourth Semester – Fall

EVT 154	Chemistry of Hazardous Materials	4
EVT 222	Environmental Microbiology	4
EVT 251	Health Effects of Hazardous Materials	3
		Total 11

Environmental, Safety, and Health

Certificate in Applied Sciences

Credit Requirements: 19 credit hours

The Environmental, Safety, and Health certificate program prepares the graduate for employment in positions related to air quality compliance, water quality compliance, solid waste compliance, hazardous materials compliance, hazardous waste compliance, industrial hygiene, industrial safety, health physics and industrial ventilation.

Recommended Course Sequence:

First Semester – Fall

EVT 253	Occupational and ESH Concepts	3
EVT 263	Introduction to Safety Management	3
		Total 6

Second Semester – Spring

EVT 249	Fundamentals of Industrial Hygiene	3
EVT 259	Industrial Ventilation	4
EVT 260	Air Pollution Control Systems	3
		Total 10

Third Semester – Summer

EVT 254	Industrial Safety and Emergency Response	3
		Total 3

Sustainable Technology

Certificate in Applied Sciences

Credit Requirements: 19 credit hours

The Sustainable Technology certificate prepares the graduate for employment in positions related to energy management, resource conservation, waste minimization, transportation system management and biotechnology.

Recommended Course Sequence:

First Semester – Fall

EVT 262	Energy Management	3
EVT 264	Transportation Systems	3
		Total 6

Second Semester – Spring

EVT 225	Best Management Practices (BMP) Applications	3
EVT 256	Hazardous Waste	3
		Total 6

Third Semester – Summer

EVT 250	Solid Waste Management	3
EVT 265	Introduction to Biotechnology	4
		Total 7