

Technical Institute*

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The Technical Institute offers college-level programs of technical education for engineering and scientific technicians who assist professional engineers and scientists. While engineering and scientific technicians usually work directly with engineers or scientists they are often called upon to work independently or with a minimum of direct supervision.

All curricula as developed by the University of Dayton are practical in nature and are designed to meet the needs of individuals and industry. Each course is carefully organized, using suggestions of persons actually working in the industrial situation. In addition, the following definition of Engineering Technology curricula as used by the Engineers' Council for Professional Development (ECPD) in accrediting such curricula, has been the basic guide for the University of Dayton Technical Institute.

"Curricula to be considered are technological in nature and lie in the post-high school area. They differ in content and purpose from those of the vocational school on one hand and from those of the engineering college on the other. Curricula in this field are offered by a variety of institutions and cover a considerable range as to duration and content of subject matter, but have in common the following purposes and characteristics :

1. The purpose is to prepare individuals for various technical positions or lines of activity encompassed within the field of engineering, but the scope of the programs is more limited than that required to prepare a person for a career as a professional engineer.
2. Programs of instruction are essentially technological in nature, based upon principles of science and include sufficient post-secondary school mathematics to provide the tools to accomplish the technical objectives of the curricula.
3. Emphasis is placed upon the use of rational processes in the principal fundamental portions of the curricula that fulfill the stated objectives and purposes.
4. Programs of instruction are briefer and usually more completely technical in content than professional curricula, though they are concerned with the same general fields of industry and engineering. They normally lead to the appropriate Associate Degree. Graduates of such programs are commonly designated as Engineering Technicians.
5. Training for artisanship is not included within the scope of education of technical institute type."

* See Admission requirements on page 35.

PROGRAMS OF STUDY

Programs of Study are offered in chemical technology, electronic engineering technology, industrial engineering technology and mechanical engineering technology on both a day and evening basis. Courses required and descriptions are included in the following pages. Each program is composed of certain basic courses covering fundamental and non-technical subjects and courses in the major field. The fundamental subjects are mathematics, physics, chemistry, English, drawing and industrial management. Non-technical subjects include psychology, economics, speech and government. Upon satisfactory completion of the prescribed courses in a program of study, a diploma granting an Associate in Technology Degree is awarded.

GUIDANCE AND COUNSELING

The facilities of the Guidance Center are available for Technical Institute students. Staff members experienced in this type of program will be on hand before and during registration. Prospective students are encouraged to visit the campus or telephone for information regarding any of the programs offered. Part-time evening students are particularly advised to consult with the Director of the Technical Institute before attempting to register for any semester.

VETERANS

Veterans must secure approval in advance from the Veterans Administration for attendance at Technical Institute classes. This approval is apart and separate from admission to the University. All programs of study are approved by the Veterans Administration.

CREDITS

All courses in the Technical Institute are evaluated on a semester hour basis. Recitation and similar classroom work generally require outside preparation, while laboratory or practice periods are usually self-contained.

CHEMICAL TECHNOLOGY

Chemical Technology is designed to prepare students for technological services in chemical manufacturing plants and processing industries as well as for technician positions in chemical laboratories.

Emphasis is placed upon laboratory procedures for basic chemical analysis, especially quantitative analysis, certain non-technical subjects, mathematics, and physics.

PROGRAM—T1: ASSOCIATE IN TECHNOLOGY WITH MAJOR IN CHEMICAL TECHNOLOGY

Dept.	No.	Course	1st Term ¹	2nd Term	3rd Term
<i>Freshman Year</i>					
CTI	101	Inorganic Chemistry		3-3-4	
ITI	101	Industrial Organization and Production		3-0-3	
MTI	103L	Technical Drawing		0-6-2	
ORI	100	Orientation	1-0-0		
PHL	103	Logic	3-0-3		
STI	105-6	Technical Institute Mathematics	3-0-3	3-0-3	
STI	114	Physics: Mechanics		2-2-2½	
STI	122	Industrial Chemistry	3-3-4		
STI	130	English Composition	3-0-3		
STI	141	Practical Psychology	3-0-3		
THL ²	106	Dogmatic Theology		3-0-3	
			16	17½	
<i>Sophomore Year</i>					
CTI	202	Quantitative Analysis	3-6-5		
CTI	203	Physical Chemistry		3-3-4	
CTI	206	Instrumentation		3-0-3	
CTI	208-9	Organic Chemistry	3-3-4	3-3-4	
STI	134	Effective Speaking		2-0-2	
STI	213	Physical Electricity		2-2-2½	
STI	214	Physics: Heat, Light and Sound	2-2-2½		
STI	234	Report Writing		2-0-2	
STI	252	American Political Ideas	3-0-3		
THL ³	206	General Moral Theology	3-0-3		
			17½	17½	
<i>Junior Year</i>					
CTI	207	Applied Chemistry	2-3-3		
CTI	301	Metallurgy	3-0-3		
CTI	302	Chemical Engineering Technology	3-0-3		
ITI	203	Elements of Supervision	2-0-2		
PHL	404	Ethics	3-0-3		
STI	251	Economics of Industry	3-0-3		
			17		

¹ Under "Term," 3-0-3 means 3 hrs. class, 0 hrs. laboratory, and 3 hrs. credit.

² Non-Catholics take Phl 207.

³ Non-Catholics take an elective.

ELECTRONIC ENGINEERING TECHNOLOGY

Electronic Engineering Technology is designed to prepare students for services as engineering technicians in the modern industrial world. Emphasis is placed on the fundamentals of circuit-theory, electronics, and measurements in addition to related courses in mathematics, physics, and chemistry. The graduate is thus prepared to perform research and development, serve with manufacturers of electronic equipment, and with users of modern electrical and electronic devices.

PROGRAM—T2: ASSOCIATE IN TECHNOLOGY WITH MAJOR IN ELECTRONIC ENGINEERING TECHNOLOGY

Dept.	No.	Course	1st Term ¹	2nd Term	3rd Term
<i>Freshman Year</i>					
ETI	102	Elements of Electrical Technology I		3-0-3	
ITI	101	Industrial Organization and Production	3-0-3		
ITI	203	Elements of Supervision		2-0-2	
ORI	100	Orientation	1-0-0		
PHL	103	Logic	3-0-3		
STI	105-6	Technical Institute Mathematics	3-0-3	3-0-3	
STI	114	Physics: Mechanics		2-2-2½	
STI	122	Industrial Chemistry		3-3-4	
STI	130	English Composition	3-0-3		
STI	134	Effective Speaking	2-0-2		
STI	141	Practical Psychology	3-0-3		
THL ²	106	Dogmatic Theology		3-0-3	
			17	17½	
<i>Sophomore Year</i>					
ETI	101L	Electrical Circuits Laboratory	0-3-1		
ETI	103	Elements of Electrical Technology II	3-0-3		
ETI	202	Electronics		3-3-4	
ETI	204	Electrical Measurements	2-3-3		
ETI	205	Electronic Measurements		3-3-4	
MTI	220	Mechanics: Statics and Dynamics		3-0-3	
PHL	404	Ethics		3-0-3	
STI	205	Mathematics for Electrical Technology	3-0-3		
STI	214	Physics: Heat, Light and Sound	2-2-2½		
STI	234	Report Writing	2-0-2		
STI	251	Economics of Industry		3-0-3	
THL ³	206	General Moral Theology	3-0-3		
			17½	17	
<i>Junior Year</i>					
ETI	223	Semi-Conductor Fundamentals	3-3-4		
ETI	224	Digital Computer Fundamentals	3-3-4		
ETI	227	Pulse Computer Fundamentals	3-0-3		
ETI	229L	Electronic Circuit Diagrams	0-6-2		
ETI	230	Special Electronic Projects	1-0-1		
STI	252	American Political Ideas	3-0-3		
			17		

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INDUSTRIAL ENGINEERING TECHNOLOGY

The curriculum in Industrial Engineering Technology has as its objective the implementation of the broad purposes of the University in a college program of technical education by :

- (1) Providing education to prepare students for subsequent development as responsible Christian citizens ;
- (2) Providing education in mathematics and basic sciences sufficient to support the specialized technical portion of the curriculum and to increase the student's awareness of fundamental scientific principles in order to facilitate his future growth in an advancing technology ;
- (3) Providing specialized education designed to prepare students primarily for technological services to management in such industrial engineering areas as production, operations and control. It also covers the essentials of management with which foremen, supervisors, and administrative personnel in general are concerned.

Emphasis is placed on courses in motion and time study, production control, plant layout, quality control, and cost control.

PROGRAM—T3: ASSOCIATE IN TECHNOLOGY WITH MAJOR IN
INDUSTRIAL ENGINEERING TECHNOLOGY

<i>Dept.</i>	<i>No.</i>	<i>Course</i>	<i>1st Term</i> ¹	<i>2nd Term</i>	<i>3rd Term</i>
<i>Freshman Year</i>					
ITI	101	Industrial Organization & Production	3-0-3		
ITI	104	Industrial Materials and Processes		3-0-3	
MTI	103L	Technical Drawing	0-6-2		
MTI	106L	Testing and Measurements		0-3-1	
MTI	107L	Machine Tool Operation		0-3-1	
ORI	100	Orientation	1-0-0		
PHL	103	Logic	3-0-3		
STI	105-6	Technical Institute Mathematics	3-0-3	3-0-3	
STI	114	Physics: Mechanics		2-2-2½	
STI	130	English Composition	3-0-3		
STI	134	Effective Speaking		2-0-2	
STI	141	Practical Psychology	3-0-3		
STI	234	Report Writing		2-0-2	
THL ²	106	Dogmatic Theology		3-0-3	
			17	17½	
<i>Sophomore Year</i>					
ITI	108	Production Methods and Control	3-0-3		
ITI	215	Elements of Cost Control	2-0-2		
ITI	216	Quantitative Methods in Ind. Eng. Tech.		3-0-3	
ITI	217	Industrial Economic Analysis		3-0-3	
ITI	230	Motion and Time Study I		2-3-3	
MTI	213	Industrial Mechanisms	3-0-3		
PHL	404	Ethics		3-0-3	
STI	122	Industrial Chemistry	3-3-4		
STI	213	Physics: Electricity		2-2-2½	
STI	214	Physics: Heat, Light and Sound	2-2-2½		
STI	251	Economics of Industry		3-0-3	
THL ³	206	General Moral Theology	3-0-3		
			17½	17½	
<i>Junior Year</i>					
ITI	203	Elements of Supervision	2-0-2		
ITI	205	Labor and Wage Administration	3-0-3		
ITI	218	Statistical Quality Control	3-0-3		
ITI	231	Motion and Time Study II	2-3-3		
ITI	232	Plant Layout	2-3-3		
STI	252	American Political Ideas	3-0-3		
			17		

¹ Under "Term," 3-0-3 means 3 hrs. class, 0 hrs. laboratory, and 3 hrs. credit.² Non-Catholics take Phl 207.³ Non-Catholics take an elective.

MECHANICAL ENGINEERING TECHNOLOGY

This curriculum is designed to give the student a practical knowledge of the modern fundamental principles of Mechanical Engineering Technology as they are applied in industrial and scientific endeavor.

Emphasis is placed on courses in applied mechanics; strength of materials; mechanism; thermodynamics; fluid mechanics; electronic technology; industrial automation actuation; dies, jig and fixture design; machine design, and basic technical courses such as technical drawing, physics, mathematics and chemistry which prepare a graduate to perform successfully as an aide to scientists and professional engineers.

The non-technical courses English, speech and report writing are specially designed to teach a student how to formulate and deliver technical communications, both oral and written.

Typical Mechanical Engineering Technician assignments are research and development laboratory technician, board designer, technical report writer, erection and maintenance technician, field service and customer relations technician, plant engineering technician and industrial automation actuation technician.

**PROGRAM—T4: ASSOCIATE IN TECHNOLOGY WITH MAJOR IN
MECHANICAL ENGINEERING TECHNOLOGY**

Dept.	No.	Course	1st Term ¹	2nd Term	3rd Term
<i>Freshman Year</i>					
ITI	101	Industrial Organization & Production	3-0-3		
ITI	104	Industrial Materials and Processes		3-0-3	
MTI	103L	Technical Drawing	0-6-2		
MTI	104L	Graphical Computations		0-6-2	
MTI	106L	Testing and Measurements		0-3-1	
ORI	100	Orientation	1-0-0		
STI	105-6	Technical Institute Mathematics	3-0-3	3-0-3	
STI	114	Physics: Mechanics		2-2-2½	
STI	122	Industrial Chemistry		3-3-4	
STI	130	English Composition	3-0-3		
STI	141	Practical Psychology	3-0-3		
STI	234	Report Writing		2-0-2	
THL ²	106	Dogmatic Theology	3-0-3		
			17	17½	
<i>Sophomore Year</i>					
MTI	107L	Machine Tool Operation		0-3-1	
MTI	221	Strength of Materials		2-2-3	
MTI	224	Statics	1-3-2		
MTI	225	Dynamics	1-3-2		
MTI	226L	Mechanism	0-6-2		
MTI	321L	Dies, Jigs and Fixtures		0-6-2	
MTI	230	Thermodynamics	2-0-2		
MTI	231	Fluid Mechanics		3-0-3	
PHL ³	103	Logic	3-0-3		
STI	206	Mathematics for Mechanical Design Tech.	3-0-3		
STI	213	Physics: Electricity		2-2-2½	
STI	214	Physics: Heat, Light and Sound	2-2-2½		
STI	251	Economics of Industry		3-0-3	
THL ⁴	206	General Moral Theology		3-0-3	
			16½	17½	
<i>Junior Year</i>					
ETI	201	Fundamentals of Electronic Technology	3-0-3		
ITI	203	Elements of Supervision	2-0-2		
MTI	227L	Industrial Automation Actuation	0-6-2		
MTI	322L	Machine Design	0-6-2		
PHL	404	Ethics	3-0-3		
STI	134	Effective Speaking	2-0-2		
STI	252	American Political Ideas	3-0-3		
			17		

¹ Under "Term," 3-0-3 means 3 hrs. class, 0 hrs. laboratory, and 3 hrs. credit.

² Non-Catholics take Phl 103.

³ Non-Catholics take Phl 207.

⁴ Non-Catholics take an elective.

