

## TECHNICAL INSTITUTE\*

DONALD C. METZ, *Director*

THE TECHNICAL INSTITUTE is a two-year college program of technical training for individuals preparing for positions in production, operations, and supervision. Also included is training for such supporting engineering positions as laboratory assistant, experimental technician, and draftsman. 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 Technical Institute 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 do not lead to the baccalaureate degree in engineering. 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."

### PROGRAMS OF STUDY

PROGRAMS OF STUDY are offered in Chemical, Electrical, Industrial and Mechanical Technology on both a day and evening basis. Courses required

\* See Admission requirements on page 77.

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.

#### First Year

FIRST SEMESTER			SECOND SEMESTER		
<i>Subjects</i>		<i>Cr. Hours</i>	<i>Subjects</i>		<i>Cr. Hours</i>
ITI 101	Industrial Org. & Prod.....	3	CTI 101	Inorganic Chemistry.....	3
MTI 101	Technical Drawing.....	3	CTI 101L	Inorganic Chem. Lab.....	1
STI 100	T. I. Survey.....	0	ITI 202	Elements of Supervision.....	3
STI 103	T. I. Mathematics.....	3	STI 104	Advanced T. I. Math.....	3
STI 121	Industrial Chemistry.....	1½	STI 111	Physics: Mechanics.....	3
STI 121L	Indust. Chemistry Lab.....	1	STI 111L	Physics: Mechanics Lab.....	½
STI 131	English Composition I.....	1½	STI 132	English Composition II.....	1½
STI 141	Practical Psychology.....	3	STI 133	Effective Speaking.....	1½
THL 106	Dogmatic Theology		PHL 103	Logic	
	or			or	
PHL 103	Logic.....	3	PHL 207	Philosophical Psy.....	3

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*Second Year*

FIRST SEMESTER		SECOND SEMESTER	
<i>Subjects</i>	<i>Cr. Hours</i>	<i>Subjects</i>	<i>Cr. Hours</i>
CTI 202 Quantitative Analysis ....	3	CTI 203 Physical Chemistry .....	3
CTI 202LQuan. Analysis Lab. ....	2	CTI 203LPhysical Chem. Lab. ....	1
CTI 204 Organic Chemistry .....	3	CTI 206 Instrumentation .....	3
CTI 304LOrganic Chemistry Lab....	1	CTI 207LApplied Chemistry .....	1
STI 212 Physics: Heat, Light, Sound .....	3	STI 113 Physics: Electricity .....	3
STI 212LPhysics: Heat, Light, Sound Lab. ....	1/2	STI 113LPhysics: Elec. Lab. ....	1/2
STI 251 Economics of Industry ....	3	STI 233 Report Writing .....	1 1/2
THL 206 General Mor. Theology ..	3	STI 252 American Political Ideas and Practices .....	3
		PHL 404 Ethics .....	3

## ELECTRICAL TECHNOLOGY

ELECTRICAL TECHNOLOGY is designed to prepare students for technological services in the modern industrial world. The first three semesters are common. Emphasis is placed on the fundamentals of circuit-theory, electronics, and measurements in addition to related courses in mathematics, physics, and chemistry.

Prior to the fourth semester each student may choose his specialization from electives including, electrical machinery, radio and television, and computer fundamentals. A drawing course in electrical diagrams must also be selected. The graduate is thus prepared to serve with manufacturers of electrical equipment and with users of modern electrical and electronic devices.

*First Year*

FIRST SEMESTER		SECOND SEMESTER	
<i>Subjects</i>	<i>Cr. Hours</i>	<i>Subjects</i>	<i>Cr. Hours</i>
ETI 102 Electrical Technology I....	3	ETI 101LElectrical Circuits Lab....	1
ITI 101 Industrial Org. & Prod....	3	ETI 103 Electrical Technology II..	3
STI 100 T. I. Survey .....	0	STI 104 Advanced T. I. Math. ....	3
STI 103 T. I. Mathematics .....	3	STI 111 Physics: Mechanics .....	3
STI 121 Industrial Chemistry .....	1 1/2	STI 111LPhysics: Mechanics Lab....	1/2
STI 121LIndustrial Chem. Lab. ....	1	STI 132 English Composition II....	1 1/2
STI 131 English Composition I....	1 1/2	STI 133 Effective Speaking .....	1 1/2
STI 141 Practical Psychology .....	3	STI 251 Economics of Industry ....	3
THL 106 Dogmatic Theology		PHL 103 Logic	
	or		or
PHL 103 Logic .....	3	PHL 207 Philosophical Psy. ....	3

*Second Year*

FIRST SEMESTER			SECOND SEMESTER		
<i>Subjects</i>		<i>Cr. Hours</i>	<i>Subjects</i>		<i>Cr. Hours</i>
ETI	202 Electronics .....	3	ETI	Electives .....	11
ETI	202LElectronics Lab. ....	1	ITI	202 Elements of Supervision..	3
ETI	203 Elec. Measurements .....	3	STI	252 American Political Ideas	
ETI	203LElec. Meas. Lab. ....	1		and Practices .....	3
STI	205 Math. for Elec. Tech. ....	3	PHI	404 Ethics .....	3
STI	212 Physics: Heat, Light,				
	Sound .....	3			
STI	212LPhysics: Heat, Light,				
	Sound Lab. ....	1/2			
STI	233 Report Writing .....	1 1/2			
THL	206 General Mor. Theology ..	3			

Prior to the fourth semester each student is required to elect eleven credit hours for specialization including one diagram course.

ETI	210 Electrical Machinery .....	4	ETI	213LElec. Blueprints & Diag...	2
ETI	211 Motor Control .....	4		or	
*ETI	223 Semi-Conductor Fund. ....	4	ETI	229LElectronic Circuit Diag...	2
ETI	224 Digital Computer Fund...	4	*ETI	107 Electrical Code .....	1
ETI	225 Radio and TV Fund. ....	4	ETI	230 Spec. Elec. Projects .....	1
ETI	226 Analog Comp. & Servos...	4		*Co-requisite with ETI 210	
*Required of all except those electing ETI 210.					

INDUSTRIAL TECHNOLOGY

THIS MAJOR FIELD of specialization is designed to prepare students primarily for technological services in the industrial engineering areas of production planning and control, plant layout, quality control, job evaluation, and cost control. It also covers the essentials of management with which foremen, supervisors, and administrative personnel in general are concerned.

Typical jobs are time-study man, methods planner, production control clerk, stock supervisor, cost analyst, job analyst, and personnel interviewers.

Emphasis is placed upon courses in motion and time study, job evaluation, wage incentive, production and operation planning, plant layout, industrial safety, and courses in mathematics, physics, and chemistry.

*First Year*

FIRST SEMESTER			SECOND SEMESTER		
<i>Subjects</i>		<i>Cr. Hours</i>	<i>Subjects</i>		<i>Cr. Hours</i>
ITI	101 Industrial Org. & Prod.....	3	ITI	104 Industrial Materials and	
MTI	101 Technical Drawing .....	3		Processes .....	3
STI	100 T. I. Survey .....	0	ITI	108 Production Methods and	
STI	103 T. I. Mathematics .....	3		Control .....	3
STI	121 Industrial Chemistry .....	1 1/2	MTI	105LMachine Tools Lab. ....	1
STI	121LIndustrial Chem. Lab. ....	1	STI	104 Advanced T. I. Math. ....	3
STI	131 English Composition I....	1 1/2	STI	111 Physics: Mechanics .....	3
STI	141 Practical Psychology .....	3	STI	111LPhysics: Mechanics Lab... 1/2	
THL	106 Dogmatic Theology		STI	132 English Composition II....	1 1/2
	or		STI	133 Effective Speaking .....	1 1/2
PHL	103 Logic .....	3	PHL	103 Logic	
				or	
			PHL	207 Philosophical Psy. ....	3

*Second Year*

## FIRST SEMESTER

<i>Subjects</i>	<i>Cr. Hours</i>
ITI 202 Elem. of Supervision .....	3
ITI 204 Motion and Time Study..	2
ITI 204L Motion and Time Study Lab. ....	1
ITI 214 Quality Control .....	2
STI 212 Physics: Heat, Light, Sound .....	3
STI 212L Physics: Heat, Light, Sound Lab. ....	1/2
STI 233 Report Writing .....	1 1/2
STI 251 Economics of Industry...	3
THL 206 General Mor. Theology ..	3

## SECOND SEMESTER

<i>Subjects</i>	<i>Cr. Hours</i>
ITI 205 Labor & Wage Admin. ....	3
ITI 207 Elements of Cost Cont....	3
ITI 208 Industrial Safety .....	1
ITI 210 Plant Layout .....	1 1/2
ITI 210L Plant Layout Lab. ....	1
STI 113 Physics: Electricity .....	3
STI 113L Physics: Elec. Lab. ....	1/2
STI 252 American Political Ideas and Practices .....	3
PHL 404 Ethics .....	3

## MECHANICAL TECHNOLOGY

MECHANICAL TECHNOLOGY has been developed with two options, Product Design, Option A, and Tool Design, Option B. The first year is common to both options and the student need not select his option until the start of his second year.

Emphasis is placed upon courses in drafting and design, industrial materials and methods of manufacture and related courses in mathematics, physics, and chemistry.

Product Design, Option A, is designed to prepare students primarily for technological services in drafting and design departments, mechanical maintenance divisions, testing and inspection laboratories, and related industrial production units. This held of specialization stresses the fundamentals of mechanics and mechanisms as applied to industrial problems.

Tool Design, Option B, is designed to prepare students primarily for technological services in tool engineering involving the selection of methods, tools, and machines for economical production.

*First Year*

## FIRST SEMESTER

<i>Subjects</i>	<i>Cr. Hours</i>
ITI 101 Industrial Org. & Prod....	3
MTI 101 Technical Drawing .....	3
STI 100 T. I. Survey .....	0
STI 103 T. I. Mathematics .....	3
STI 121 Industrial Chemistry .....	1 1/2
STI 121L Industrial Chem. Lab. ....	1
STI 131 English Composition I....	1 1/2
STI 141 Practical Psychology .....	3
THL 106 Dogmatic Theology	
or	
PHL 103 Logic .....	3

## SECOND SEMESTER

<i>Subjects</i>	<i>Cr. Hours</i>
ITI 104 Industrial Materials and Processes .....	3
MTI 102 Graph. Computations....	3
MTI 210 Machine Shop Practices..	3
STI 104 Advanced T. I. Math. ....	3
STI 111 Physics: Mechanics .....	3
STI 111L Physics: Mechanics Lab... 1/2	
STI 132 English Composition II..	1 1/2
PHL 103 Logic	
or	
PHL 207 Philosophical Psy. ....	3

## Second Year

## Option A

FIRST SEMESTER			SECOND SEMESTER		
Subjects		<i>Cr. Hours</i>	Subjects		<i>Cr. Hours</i>
MTI	203	Machine and Tool Drawing .....	ITI	202	Elements of Supervision...3
		1½	MTI	221	Strength of Materials.....3
MTI	203L	Machine and Tool Drawing Lab. ....	MTI	222	Machine Design .....1½
		1	MTI	222L	Machine Design Lab. ....1
MTI	220	Mechanics: Statics and Dynamics .....	STI	113	Physics: Electricity .....3
		3	STI	113L	Physics: Elec. Lab..... ½
MTI	223	Mechanism .....	STI	133	Effective Speaking .....1½
		3	STI	252	American Political Ideas and Practices .....3
STI	212	Physics: Heat, Light, Sound .....	PHL	404	Ethics .....3
		3			
STI	212L	Physics: Heat, Light, Sound, Lab. ....			
		½			
STI	233	Report Writing .....			
		1½			
STI	251	Economics of Industry....3			
THL	206	General Mor. Theology ..3			

## Option B

FIRST SEMESTER			SECOND SEMESTER		
Subjects		<i>Cr. Hours</i>	Subjects		<i>Cr. Hours</i>
ITI	211	Operation Planning .....	ITI	202	Elements of Supervision...3
		1½	ITI	207	Elements of Cost Cont....3
MTI	203	Machine & Tool Draw.....1½	ITI	212	Production Procedures ....1½
MTI	203L	Machine & Tool Drawing Lab. ....	MTI	206	Jig and Fixture Design....1½
		1	MTI	206L	Jig and Fix. Design Lab. 1
MTI	205	Die Design .....	STI	113	Physics: Electricity .....3
		3	STI	113L	Physics: Elec. Lab. .... ½
STI	133	Effective Speaking .....1½	STI	252	American Political Ideas and Practices .....3
STI	212	Physics: Heat, Light, Sound .....	PHL	404	Ethics .....3
		3			
STI	212L	Physics: Heat, Light, Sound Lab. ....			
		½			
STI	233	Report Writing .....			
		1½			
STI	251	Economics of Industry....3			
THL	206	General Mor. Theology ..3			