



# ASSOCIATE OF APPLIED SCIENCE INDUSTRIAL TECHNOLOGY

**2024-25 Catalog**

Effective Summer 2024

*The catalog in force is assigned to students based on the academic year they first applied to the college, and changes only when students change their major or request the change in writing.*

**4300**

*Refer to Policy No. 3357:15-13-28.*

*Business, Engineering, and Information Technologies Division*

*Industrial Technology Department*

TECHNICAL Course Number	Course Title	Credits	Pre- and Co-Requisites	Completed Sem./Year
AIT101	Basic Machines	2		
MST121	Blueprint Reading	2		
MST134	Hydraulic and Pneumatic Systems <sup>^</sup>	4	MTH022 <b>or</b> MTH023 <b>or</b> Proficiency	
MST221	Mechanical Drive Components	3		
EST230	Electrical Circuits and Devices <sup>^</sup>	4	(MTH025 or Proficiency) <b>or</b> MTH107	
IET270	Dimensional Metrology and Inspection I <sup>^</sup>	3	(MTH025 or Proficiency) <b>or</b> MTH107	
AIT139	Introduction to Robotics	2		
MST125	Basic Pumps	3		
MET225	Manufacturing Processes	3		
<b>TECHNICAL ELECTIVES: 7 credit hours minimum (typically 2 to 3 classes)</b>				
	<i>See Technical Elective list below.<sup>2</sup> ##</i>	7	<i>Check for prerequisites</i>	
<b>Total</b>		<b>33</b>		
NON-TECH Course Number	Course Title	Credits	Pre- and Co-Requisites	Completed Sem./Year
SSC101	Student Success Seminar <sup>^^</sup>	1	<i>Take first semester</i>	
ITD122	Computer Applications for Professionals <sup>^</sup>	3	ITD100 <b>or</b> Proficiency	
PHY101	Principles of Physics <sup>^</sup>	4	(MTH024 <b>or</b> MTH025 <b>or</b> Proficiency) <b>or</b> MTH105 <b>or</b> MTH107 <b>and</b> (IDS102 <b>or</b> Proficiency)	
MTH107	Industrial Math <sup>^</sup>	3	(MTH021 or Proficiency) <b>or</b> Pre-Co-MTH007	
ENG124	College Composition <sup>^</sup>	3	Co-ENG024 <b>or</b> Co-ENG011 <b>or</b> Proficiency	
ENG221	Technical Report Writing	3	ENG124	
COM121 <b>or</b> COM123	Effective Speaking <b>or</b> Small Group Communication <sup>^</sup>	3 <b>or</b> 3	IDS102 <b>or</b> Proficiency	
IET121	Industrial Management Concepts	2		
MET123	Material Science	3		
	<i>Select two (2) courses of Arts &amp; Humanities and/or Social &amp; Behavioral Sciences Electives from the list below.<sup>1</sup></i>	6	<i>Check for prerequisites</i>	
<b>Total</b>		<b>31</b>		
<b>TOTAL CREDIT HOURS</b>		<b>64</b>		

<sup>^</sup>Based upon SSC placement score

<sup>^^</sup>To promote student success, this course should be taken in the first semester

<sup>1</sup> Arts & Humanities and/or Social & Behavioral Sciences Electives: any course with the following catalog entry: ENG233, ENG234, ENG236, ENG237, HIS121, HIS122, PHL122, SOC, PSY

<sup>##</sup>Participation in CDL121 requires a valid Ohio Driver's License. Must be 18 years of age and show proof of legal presence in the United States. Must meet Department of Transportation (DOT) vision and physical requirements and pass the DOT drug screen.

<sup>2</sup> Technical Electives: See second page

***Please reach out to your academic advisor to see what other Career Enhancement and One-Year Certificates you may be eligible for upon completion of this degree.***

**TECHNICAL ELECTIVES: 7 credit hours minimum from the list below.**

Course Number	Course Title	Credits	Pre- and Co-Requisites	Completed Sem./Year
ABC110	Electrical Applications I	6		
ABC120	Electrical Applications II	5		
AIT103	Non-Destructive Testing	2		
AIT122	Machine Tools	4		
AIT123	Advanced Machine Tools	4	AIT122	
AIT124	Principles of Rigging	2		
AIT125	Commercial Plumbing	3		
AIT134	Preventive and Predictive Maintenance	3		
AIT137	CAD/CAM	4	AIT122 and IET223	
AIT220	Industrial Robotics	4		
AIT221	Advanced CNC Programming	3	IET223 or ARL121 or ARL122	
CDL121	CDL - Class A – Safe Operation and Control ##	6		
CDL122	CDL - Class A – Advanced Operations and Maintenance	6	CDL121	
DET125	Basic AutoCAD	3		
EET123	Electronic Devices and Circuits	4	EET120 or EST230	
EET227	PLC's and Industrial Controls I	3	EET120 or EST230	
ENV123	OSHA 10-Hour General Industry Safety	1		
ENV124	Transportation Hazardous Mat Training	1		
ENV165	OSHA 10-Hour Construction Safety	1		
ENV221	OSHA 40-Hour HAZWOPER	2		
ENV230	OSHA 8-Hour HAZWOPER Refresher	1		
ENV231	OSHA 30-Hour General Industry	2		
ETD225	Engineering Special Topics	6		
ETD226	Engineering Special Topics	2		
ETD227	Engineering Special Topics	3		
ETD228	Engineering Special Topics	4		
ETD229	Engineering Special Topics	5		
IET223	Computer Numerical Control	4		
MST126	Pipefitting Principles & Applications	3		
MST127	Principles of Welding	6		
MST135	Plumb and Pipe Code Principles	3		
MST136	3G and 4G Welding Cert Exam Preparatory	4	MST127	
MST137	6G Welding Cert Exam Preparatory	4	MST136	
MST138	Preparatory Gas Tungsten Arc Welding	4	MST127	
MST139	Gas Tungsten Arc Welding	3	MST138	
MST227	Metallic Inert Gas Welding	3	MST127	
PIP110	Plumbing/Pipefitting Applications I	6		
PIP120	Plumbing/Pipefitting Applications II	6		
PIP130	Plumbing/Pipefitting Applications III	6		
PIP140	HVAC Systems Operations I	6		
PIP150	HVAC Systems Operations II	6		
PIP160	Basic Rigging, Crane and Tooling	3		
PIP161	Pipe, Rigging, Refrigeration, and Compressors	4		
PIP162	Steam and Hydronic Heat	2		
PIP163	Basic Electric, Motors, and Relays	3		

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**ADDITIONAL TECHNICAL ELECTIVES**

<b>Course Number</b>	<b>Course Title</b>	<b>Credits</b>	<b>Pre- and Co-Requisites</b>	<b>Completed Sem./Year</b>
PIP164	Compressors, Condensers, Evaporators and Expansion Devices	3		
PIP165	Plumbing Fixture Install and Mockup	3		
PIP166	Circuit Boards and Wire Diagrams	2		
PIP167	Electrical Safety, Meters, and Material Identification	2		
PIP168	Pump Operation and Systems Installation	2		
PIP169	Soldering, Brazing, and Tube Bending	2		
PIP170	Operation and Recovery of Refrigeration Systems	4		
PIP175	Industrial Crane Rigging and Signaling	2		
PIP180	Advanced Layout and Pipe Threading and Grooving	3		
PIP185	Plumbing Code	2		
PIP190	Backflow and Medical Gas	2		
PIP195	Safety, Fittings, and Introduction to Code	3		
PIP200	Underground, Steam and Hydronic Heat	6		
PIP205	Mechanical Drawing and Layout	2		
PIP210	Torch Cutting, Soldering, and Brazing	2		
PIP215	Digital Layout, Plangrid, and Tube Bending	3		
PIP220	Plumbing Code and Welding	2		
PIP225	Gas Tungsten Arc Welding	2		
PIP230	Shielded Metal Arc Welding	2		
PIP235	Metal Inert Gas Welding	2		
PIP236	Advanced Steam and Hydronic Systems and Service	4		
PIP237	Industrial Rigging and Signaling	3		
PIP238	Building and Mechanical Controls	3		
PIP239	Balance of Heating, Ventilation, and Air Conditioning Systems and Fuel Oil Heat	3		
PIP240	Primary and Secondary Pumping	3		
PIP241	Advanced Controls and Backflow	2		
PIP242	Variable Refrigerant Flow Systems and Installation	2		
PIP243	Flame Safeguard Controls, Specialized Refrigeration and Advanced Heating, Ventilation, and Air Conditioning	3		
UPP100	Operations/Heritage	1		
UPP101	Material ID, Safe Tool Use, First Aid, and CPR	3		
UPP102	Shielded Metal Arc Welding and Blueprint Reading and Drawing	4		
UPP103	Gas Tungsten Arc Welding and AutoCAD	4		
UPP104	Advanced Welding, Rigging and Signaling, and Med Gas	6		
UPP105	Medical Gas Installer and Semiconductor Orbital Welding	4		
UPP106	Plumber Pipefitter Math Applications	2		
UPP107	Torch Cutting, Soldering and Brazing, and Drainage Systems	4		
UPP108	Fitting and Joining, Intermediate Drainage Systems, and Rigging	3		
UPP109	Pipe Fitting Fabrication and Applications and Tube Bending	4		
UPP110	Plumbing Design and Install and Stainless Fitter for Semiconductor Construction	3		
UPP111	Hydronic Heating and Cooling Piping and Stainless Fitter for Semiconductor Construction	4		
UPP112	Advanced Plumbing Code and Backflow Test	4		
UPP113	Advanced Hydronic Heating and Cooling Systems Piping	4		
UPP114	Hydronics and Steam Heating Systems	4		
UPP115	Air Conditioning and Heat Pumps and Variable Frequency Drives	4		
UPP116	Pump Service and Maintenance and Chiller Install and Service	4		
UPP117	Refrigeration Install and Principles of Air Flow	4		
UPP118	Start Test and Balance, Pump Maintenance, and Boiler Service	4		
UPP119	Industrial Rigging and Signaling, Pneumatic Controls	4		
UPP120	Test Start and Balancing	2		
UPP121	Boiler Service and Repair and Variable Refrigerant Flow	4		
UPP122	Basic Refrigeration and Electricity	4		

UPP123	Advanced Plumbing and Pipefitting Mathematical Applications	1	
BTA100	Core Skills I	6	
BTA101	Welding Skills SMAW/GMAW	5	
BTA102	Advanced Fitting/Welding	6	
BTA103	Plumbing Core and Code	2	
BTA104	Plumbing Rough, Finish, Welding	4	
BTA105	Rigging and Tube Bending/Revit	6	
BTA106	Advanced Fitting	4	
BTA107	Med Gas, Orbital Welding, Intel	4	
BTA108	Advanced Welding	2	
BTA109	Crane Signaling	2	
BTA110	CFC	2	
BTA111	Basic Electricity	2	
BTA112	Gas Install	2	
BTA113	Tube Bending, Rigging and Signal	2	
BTA114	Economizer Fundamentals and Controls	2	
BTA115	Electric Controls	2	
BTA116	Hydronics	2	
BTA117	Refrigeration Controls	2	
BTA118	Sheet Metal Layout	2	
BTA119	Pumps	1	
BTA120	Start, Test, and Balance	2	
BTA121	Schematics and Diagrams	4	
BTA122	Pneumatics, Series 90 Control, Flame Safeguard	3	
BTA123	Supermarket Refrigeration	3	
BTA124	Solar Systems	2	
BTA125	Rigging, Signal, Shop Project	2	
BTA126	Heating, Ventilation, Air Conditioning Control Systems	2	
BTA127	CO2 Transcritical Systems	2	
BTA128	A2L Refrigerants	2	
BTA129	Install Braze and Solder	2	

**FULL-TIME STUDENT ADVISING NOTES**

Academic Advising

Students should make an appointment to see their advisor before registering for classes each semester. They should have prepared a completed registration form, including courses they wish to take, prior to this meeting.

Course Sequence

The semester-by-semester listing below provides the normal scheduling option for full-time associate degree students who plan to finish in two years.

<u>First Semester</u>		<u>Credit Hours</u>	<u>Pre- and Co-requisites</u>
SSC101	Student Success Seminar^^	1	<i>Take first semester</i>
AIT101	Basic Machines	2	
ITD122	Computer Applications for Professionals^	3	ITD100 <b>or</b> Proficiency
ENG124	College Composition^	3	Co-ENG024 <b>or</b> Co-ENG011 <b>or</b> Proficiency
MTH107	Industrial Math^	3	(MTH021 or Proficiency) <b>or</b> Pre-Co-MTH007
IET270	Dimensional Metrology and Inspection I^	3	(MTH025 or Proficiency) <b>or</b> MTH107
		<b>15</b>	
<u>Second Semester</u>			
MST121	Blueprint Reading	2	
MST134	Hydraulic and Pneumatic Systems^	4	MTH022 <b>or</b> MTH023

			<b>or Proficiency</b>
EST230	Electrical Circuits and Devices <sup>^</sup>	4	(MTH025 or Proficiency) <b>or</b> MTH107
IET121	Industrial Management Concepts	2	
MET123	Material Science	<u>3</u>	
		<b>15</b>	
<u>Third Semester</u>			
ENG221	Technical Report Writing	3	ENG124
PHY101	Principles of Physics <sup>^</sup>	4	(MTH024 <b>or</b> MTH025 <b>or</b> Proficiency) <b>or</b> MTH105 <b>or</b> MTH107 <b>and</b> (IDS102 <b>or</b> Proficiency)
COM121	Effective Speaking	3	
<b>or</b>	<b>or</b>	<b>or</b>	
COM123	Small Group Communication <sup>^</sup>	3	IDS102 <b>or</b> Proficiency
AIT139	Introduction to Robotics	2	
MET225	Manufacturing Processes	3	
<i>Arts &amp; Humanities and/or Social &amp; Behavioral Sciences Elective<sup>1</sup></i>		<u>3</u>	<i>Check for prerequisites</i>
		<b>18</b>	
<u>Fourth Semester</u>			
MST221	Mechanical Drive Components	3	
<i>Technical Electives<sup>2</sup> ##</i>		7	<i>Check for prerequisites</i>
MST125	Basic Pumps	3	
<i>Arts &amp; Humanities and/or Social &amp; Behavioral Sciences Elective<sup>1</sup></i>		<u>3</u>	<i>Check for prerequisites</i>
		<b>16</b>	
	<b>TOTAL CREDITS</b>	<b>64</b>	

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