

 	ASSOCIATE OF APPLIED SCIENCE INDUSTRIAL TECHNOLOGY	2023-24 Catalog Effective Spring 2024
	<i>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. Refer to Policy No. 3357:15-13-28.</i>	4300

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

[^]Based on SSC placement scores

^{^^}To promote student success, this course should be taken in the first semester

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

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² Technical Electives: see next page

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

Course Number	Course Title	Credits	Pre- and Co-Requisites	Completed Sem./Year
AIT103	Non-Destructive Testing	2		
AIT122	Machine Tools	4		
AIT123	Advanced Machine Tools	4	AIT122	
IET223	Computer Numerical Control	4		
AIT221	Advanced CNC Programming	3	IET223 or ARL121 or ARL122	
AIT124	Principles of Rigging	2		
AIT125	Commercial Plumbing	3		
AIT220	Industrial Robotics	4		
DET125	Basic AutoCAD	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	
CDL121	CDL - Class A – Safe Operation and Control ##	6		
CDL122	CDL - Class A – Advanced Operations and Maintenance	6	CDL121	
MST126	Pipefitting Principles & Applications	3		
MST127	Principles of Welding	6		
AIT137	CAD/CAM	4	AIT122 and IET223	
AIT134	Preventive and Predictive Maintenance	3		
MST135	Plumb and Pipe Code Principles	3		
EET123	Electronic Devices and Circuits	4	EET120 or EST230	
EET227	PLC's and Industrial Controls I	3	EET120 or EST230	
ETD225	Engineering Special Topics	1		
ETD226	Engineering Special Topics	2		
ETD227	Engineering Special Topics	3		
ETD228	Engineering Special Topics	4		
ETD229	Engineering Special Topics	5		
MST227	Metallic Inert Gas Welding	3	MST127	
ABC110	Electrical Applications I	6		
ABC120	Electrical Applications II	5		
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		

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ADDITIONAL TECHNICAL ELECTIVES

Course Number	Course Title	Credits	Pre- and Co-Requisites	Completed Sem./Year
PIP164	Compressors, Condensers, Evaporators and Expansion Devices	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		
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		
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		
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		
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		
BTA100	Core Skills 1	6		
BTA101	Welding Skills SMAW/GMAW	5		
BTA103	Plumbing Core and Code	2		
BTA106	Advanced Fitting	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		
BTA115	Electric Controls	2		
BTA116	Hydronics	2		
BTA117	Refrigeration Controls	2		
BTA118	Sheet Metal Layout	2		
BTA120	Start, Test, and Balance	2		
BTA121	Schematics and Diagrams	4		
BTA123	Supermarket Refrigeration	3		
BTA124	Solar Systems	2		
BTA125	Rigging, Signal, Shop Project	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- or Co-requisites</u>
SSC101	Student Success Seminar^^	1	<i>Take first semester</i>
AIT101	Basic Machines	2	
ITD122	Computer Applications for Professionals^	3	ITD100 or Proficiency
ENG124	College Composition^	3	Co-ENG024 or Co-ENG011 or Proficiency
MTH107	Industrial Math^	3	(MTH021 or Proficiency) or Pre-Co- MTH007
IET270	Dimensional Metrology and Inspection I^	<u>3</u>	(MTH025 or Proficiency) or MTH107
		15	
<u>Second Semester</u>			
MST121	Blueprint Reading	2	
MST134	Hydraulic and Pneumatic Systems^	4	MTH022 or MTH023 or Proficiency
EST230	Electrical Circuits and Devices^	4	(MTH025 or Proficiency) or MTH107
IET121	Industrial Management Concepts	2	
MET123	Material Science	<u>3</u>	
		15	
<u>Third Semester</u>			
ENG221	Technical Report Writing	3	ENG124
PHY101	Principles of Physics^	4	(MTH024 or MTH025 or Proficiency) or MTH105 or MTH107 and (IDS102 or Proficiency)
COM121	Effective Speaking	3	
or	or	or	
COM123	Small Group Communication^	3	IDS102 or Proficiency
AIT139	Introduction to Robotics	2	
MET225	Manufacturing Processes	3	
<i>Arts & Humanities and/or Social & Behavioral Sciences Elective¹</i>		<u>3</u>	<i>Check for prerequisites</i>
		18	
<u>Fourth Semester</u>			
MST221	Mechanical Drive Components	3	
<i>Technical Electives² ##</i>		7	<i>Check for prerequisites</i>
MST125	Basic Pumps	3	
<i>Arts & Humanities and/or Social & Behavioral Sciences Elective¹</i>		<u>3</u>	<i>Check for prerequisites</i>
		16	
TOTAL CREDITS		64	

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^^To promote student success, this course should be taken in the first semester

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