



Industrial Systems Technology Associates Degree Diploma & Certificates

ADMISSION

Program Outcomes

The Industrial Systems Technology curriculum is designed to prepare or upgrade individuals to safely service, maintain, repair, or install equipment. CCC&TI offers several different educational programs in this area:

- A.A.S: Industrial Systems Technology: Machining Processes Track
- A.A.S: Industrial Systems Technology: Mechatronics Track
- Diploma: Industrial Systems Technology
- Certificate: Industrial Systems Technology
- Certificate: Machining Certificate
- Certificate: Mechatronics Certificate

Program Information

Machining Processes Track

In the Machining Processes Track, students learn machining operations of the metal working industry. They focus on the concepts and capabilities of computer numerical control machine tools and study the programming, setup, and operation of a CNC milling and turning center.

Mechatronics Track

Mechatronics combines electrical, mechanical, computer, and industrial engineering. Mechatronics teaches students about product design, instrumentation, manufacturing methods, and computer integration in process and device control.

What You Will Learn

Instruction includes theory and skill training needed for performing the following tasks on industrial systems:

- diagnosing
- inspecting
- testing
- troubleshooting
- Students will learn multi-craft technical skills in:
 - diagnostic and repair procedures
 - electricity
 - hydraulics/pneumatics
 - machining or fabrication
 - mechanical systems maintenance
 - print reading
 - welding

Practical application in these industrial systems will be emphasized and additional advanced course work may be offered. Upon completion of this curriculum, graduates should be able to individually, or with a team, safely install, inspect, diagnose, repair, and maintain industrial process and support equipment. Students will also be encouraged to develop their skills as life-long learners.

Occupational Outlook

According to the [Bureau of Labor Statistics](#) website, the median annual wage for industrial machinery mechanics, machinery maintenance workers, and millwrights was \$50,440 in May 2017.

Job Outlook

The Department of Labor's [Occupational Outlook Handbook](#) states, "Overall employment of industrial machinery mechanics, machinery maintenance workers, and millwrights is projected to grow 7 percent from 2016 to 2026, about as fast as the average for all occupations. Employment growth will vary by occupation." (Visited 2018).

There are no additional costs for this program outside of tuition, fees, books, and supplies.

Admission Steps

- Complete CCC&TI admissions application online at cccti.edu
- Submit official high school/GED/AHS transcripts and college transcripts
- Complete FASFA online at www.studentaid.gov
- Meet placement testing requirements
- Meet with advisor to register for classes
- Pay for classes and purchase books bundle bookstore

Important Contact Information

Admissions

Contact Sara Greene, Admissions Specialist, at 828.726.2706 or sgreene@cccti.edu for more information and how to complete the enrollment and registration process.

Financial Aid

Contact Financial Aid at 828.726.2713 as soon as possible to inquire and complete your FAFSA. Check your CCC&TI student email frequently to monitor your Financial Aid status.

Program Director

Contact Susan Deal, Director, Mechanical Engineering and Industrial Systems Technologies Career and Technical Education, at 828.726.2497 or sdeal@cccti.edu.

PROGRAM OFFERINGS – Machining Processes Track

Associate Degree Program (A50240A)

Fall Semester I					
ACA	115	Success & Study Skills	F/S/SS		1 Credit
BPR	111	Print Reading	Fall Only		2 Credits
ELC	131	Circuit Analysis I	Fall Only	Corequisite: ELC 131A	4 Credits
ENG	111	Writing and Inquiry	F/S/SS	Prerequisite DRE-098 or ENG-002	3 Credits
HYD	110	Hydraulics/Pneumatics I	Fall Only		3 Credits
ISC	112	Industrial Safety	Fall Only		2 Credits
WLD	112	Basic Welding Processes	Fall Only		2 Credits
				Total	17 credits
Spring Semester I					
ELC	128	Introduction to Programmable Logic Controller	Spring Only		3 Credits
MAT	121	Algebra/Trigonometry I	Spring Only	Prerequisite: DMA 010, DMA 020, DMA 030, DMA 040, DMA 050, DMA 060, or MAT-003	3 Credits
MEC	145	Manufacturing Materials I	Spring Only		3 Credits
MNT	110	Intro to Maint Procedures	Spring Only		2 Credits
MNT	165	Mechanical Industrial Systems			2 Credits
				Total	13 credits
Summer Semester I					
COM	120	Intro to interpersonal Communication	F/S/SS		3 Credits
MNT	240	Indust. Equip Troubleshoot	Summer Only		2 Credits
Student Choice		Social/Behavioral Science Elective			3 Credits
				Total	8 credits
Fall Semester II					
DFT	121	Intro to GD&T	Fall Only		2 Credits

DFT	151	CAD I	Fall Only		3 Credits
MAC	121	Into to CNC	Fall Only		2 Credits
MAC	141	Machining Applications I	Fall Only		4 Credits
MAC	110	Intro to CAD/CAM	Fall Only		2Credits
Student Choice		Humanities/Fine Arts Elective			3 Credits
				Total	16 credits
Spring Semester II					
MAC	122	CNC Turning	Spring Only		2 Credits
MAC	124	CNC Milling	Spring Only		2 Credits
MAC	142	Machining Applications II	Spring Only		4 Credits
MEC	241	Jigs & Fixtures I	Spring Only		4 Credits
MNT	160	Industrial Fabrication	Spring Only		2 Credits
WBL	110	Work of Work	On Demand		1 Credit
OR					
WBL	111	Work-Based Learning I	F/S/SS		1 Credit
				Total	15 credits
Total Hours: 69					

PROGRAM OFFERINGS – Mechatronics Track Associate Degree Program (A50240E)

Fall Semester I					
ACA	115	Success & Study Skills	F/S/SS		1 Credit
BPR	111	Print Reading	Fall Only		2 Credits
ELC	131	Circuit Analysis I	Fall Only	Corequisite: ELC 131A	4 Credits
ENG	111	Writing and Inquiry	F/S/SS	Prerequisite DRE-098 or ENG-002	3 Credits
HYD	110	Hydraulics/Pneumatics I	Fall Only		3 Credits
ISC	112	Industrial Safety	Fall Only		2 Credits

WLD	112	Basic Welding Processes	Fall Only		2 Credits
				Total	17 credits
Spring Semester I					
ELC	128	Introduction to Programmable Logic Controller	Spring Only		3 Credits
MAT	121	Algebra/Trigonometry I	Spring Only	Prerequisite: DMA 010, DMA 020, DMA 030, DMA 040, DMA 050, DMA 060, or MAT-003	3 Credits
MEC	145	Manufacturing Materials I	Spring Only		3 Credits
MNT	110	Intro to Maint. Procedures	Spring Only		2 Credits
MNT	165	Mechanical Industrial Systems			2 Credits
				Total	13 credits
Summer Semester I					
COM	120	Intro to interpersonal Communication	F/S/SS		3 Credits
MNT	240	Indust. Equip Troubleshoot	Summer Only		2 Credits
Student Choice	Social/Behavioral Science Elective				3 Credits
				Total	8 credits
Fall Semester II					
ATR	112	Intro to Automation	Fall Only		3 Credits
ELC	228	PLC Applications	Fall Only		4 Credits
ELN	231	Industrial Controls	F/S/SS	Prerequisite: ELC 112 or ELC 131 (L)	3 Credits
MAC	141	Machining Applications I	Fall Only		4 Credits
Student Choice	Humanities/Fine Arts Elective				3 Credits
				Total	17 credits
Spring Semester II					
ATE	282	Robotics and CIM	Spring Only		4 Credits
CIS	115	Intro. To Programming & Logic	Spring Only		3 Credits
ELN	133	Digital Electronics	Spring Only		4 Credits

MNT	160	Industrial Fabrication	Spring Only		2 Credits
WBL	110	Work of Work	On Demand		1 Credit
OR					
WBL	111	Work-Based Learning I	F/S/SS		1 Credit
				Total	14 credits
Total Hours: 69					

PROGRAM OFFERINGS – Diploma – Industrial Systems Technology (D50240)

Fall Semester I					
ACA	115	Success & Study Skills	F/S/SS		1 Credit
BPR	111	Print Reading	Fall Only		2 Credits
ELC	131	Circuit Analysis I	Fall Only	Corequisite: ELC 131A	4 Credits
HYD	110	Hydraulics/Pneumatics I	Fall Only		3 Credits
ISC	112	Industrial Safety	Fall Only		2 Credits
MAC	141	Machining Applications I	Fall Only		4 Credits
WLD	112	Basic Welding Processes	Fall Only		2 Credits
				Total	18 credits
Spring Semester I					
ELC	128	Introduction to Programmable Logic Controller	Spring Only		3 Credits
MAT	121	Algebra/Trigonometry I	Spring Only	Prerequisite: DMA 010, DMA 020, DMA 030, DMA 040, DMA 050, DMA 060, or MAT-003	3 Credits
MEC	145	Manufacturing Materials I	Spring Only		3 Credits
MNT	110	Intro to Maint Procedures	Spring Only		2 Credits
MNT	165	Mechanical Industrial Systems			2 Credits

*Student Choice		Humanities/Fine Arts Elective			3 Credits
				Total	16 credits
Summer Semester I					
COM	120	Intro to interpersonal Communication	F/S/SS		3 Credits
MNT	240	Indust. Equip Troubleshoot	Summer Only		2 Credits
Student Choice		Social/Behavioral Science Elective			3 Credits
				Total	8 credits
Total Hours: 42					

PROGRAM OFFERINGS – Certificate: Industrial Systems Technology

Fall Semester I					
BPR	111	Print Reading	Fall Only		2 Credits
ELC	131	Circuit Analysis I	Fall Only	Corequisite: ELC 131A	4 Credits
HYD	110	Hydraulics/Pneumatics I	Fall Only		3 Credits
MAC	141	Machining Applications I	Fall Only		4 Credits
WLD	112	Basic Welding Processes	Fall Only		2 Credits
				Total	15 credits
Spring Semester I					
MNT	110	Intro. to Maint. Procedures	Spring Only		2 Credits
				Total	2credits
Total Hours: 17					

PROGRAM OFFERINGS – Certificate: Industrial Systems Technology – Machining (C50240A)

Fall Semester I					
MAC	121	Intro to CNC	Fall Only		2 Credits
MAC	141	Machining Applications I	Fall Only		4 Credits
MEC	110	Intro to CAD/CAM	Fall Only		2 credits
				Total	8 credits
Spring Semester I					
MAC	122	CNC Turning	Spring Only		2 Credits
MAC	124	CNC Milling	Spring Only		2 Credits
				Total	4 credits
Total Hours: 12					

PROGRAM OFFERINGS – Certificate: Industrial Systems Technology – Mechatronics (C50240E)

Fall Semester I					
ATR	112	Intro to Automation	Fall Only		3 Credits
ELC	131	Circuit Analysis I	Fall Only	Corequisite: ELC 131A	4 Credits
HYD	110	Hydraulics/Pneumatics I	Fall Only		3 Credits
				Total	10 credits
Spring Semester I					
ELC	128	Introduction to Programmable Logic Controller	Spring Only		3 Credits
ELN	133	Digital Electronics	Spring Only		4 Credits
				Total	10 credits
Total Hours: 17					

COST

	Associate	Diploma	Certificates
Tuition (\$76/credit hour)	Fall Semester I \$1,292 Spring Semester I \$988 Summer Semester I \$608 Fall Semester II \$1,292 - \$1,368 Spring Semester II \$988 - \$1,064 Tuition Total \$5,168 - \$5,320	Fall Semester I \$1,368 Spring Semester I \$1,216 Summer Semester I \$608 Tuition Total \$3,192 This program is designed to be completed in 12 months	*Depending on certificate, price will vary* \$912 - \$1,292 This program is designed to be completed in 6 – 12 months depending on certificate.
Additional Fees	\$35 campus activity fee (each semester) \$2/per course (max \$10 per semester) campus service fee \$2 (per semester) student accident insurance Total (per semester) \$47	\$35 campus activity fee (each semester) \$2/per course (max \$10 per semester) campus service fee \$2 (per semester) student accident insurance Total (per semester) \$47	\$35 campus activity fee (each semester) \$2/per course (max \$10 per semester) campus service fee \$2 (per semester) student accident insurance Total (per semester) \$47
Textbooks (purchased from CCC&TI Bookstore)	varies	varies	varies
Graduation Fee	\$25	\$25	\$25
Total	approximately \$5,533	approximately \$3,405	approximately \$984 – 1,411