



TRAININGS OFFERED BY CCAT

Online Training with Mentor Support

Smart Manufacturing – Industrial Internet of Things

This program is designed for those with some manufacturing experience and an affinity for and solid experience with computers and all things digital. The program is **online based** utilizing the industry recognized Tooling University platform and requires the ability to work independently. Progress will be **monitored and supported** by CCAT.

Ask the Mentor

Students will be provided with access to a **CCAT content mentor** via email during the course. A specially provided email address will be active for this purpose during the program providing the opportunity to ask any questions that may arise about the course material and its application.

Timing/ Program Length: *Participants can begin immediately.*
Overall length – Six Weeks. Designed to fit into a work schedule. Training modules are brief and self-paced.

Topics (Each area/module is about an hour in length):

Cybersecurity for Manufacturing Basics 101
Cybersecurity for Manufacturing: Malware Overview 102
Introduction to the Industrial Internet of Things 111
Data Collection Fundamentals 121
Automatic Identification Technology 141
Cybersecurity for Manufacturing: Hacking Overview 201
Cybersecurity for Manufacturing: Wireless Networks 202
Introduction to Digital Networks 221
Data Collection: Inventory and Maintenance 231
Introduction to Digital Twin 241
Introduction to Digital Thread 242
Introduction to Machine Learning and Artificial Intelligence 301
Machine Learning and Artificial Intelligence Applications 302

Course Objectives:

Provides a solid grounding on key topics related to the industrial internet of things & smart manufacturing for those aiding with the transition to these technologies or seeking an enhanced understanding of them.

Trainee Skill Level:

Training runs to the intermediate level. Potential candidates should have strong computer skills.

Instructor-Led Training

Industrial Robotics - Programming I for Material Handling

This program is designed to teach students how to operate and program an industrial robot. The class will include pre and post testing of all students to ensure that the objectives are met, and that students have genuinely learned the subject matter. Reports will be issued about the student's progress, and if they have met the course requirements, a certificate of completion will be received.

A fully certified ABB (ASEA Brown Boveri) instructor will conduct formal training remotely with a **mix of live online instruction** at CCAT and **VR based tools** to provide significant practice time.

Timing/Program Length: 4.5 Days (Mon-Thr 9-5, Fri 9-1)
Estimated to launch Aug/Sept 2023
CCAT - East Hartford (Pitkin St)

Topics:

Safety precautions used while programming and program execution · System Description · Event messages · Positioning the robot by use of joystick control · Program creation procedures · Program modification techniques · Backup and Restore · Tool Center Points · Work Objects · Program Flow · Working with numbers · Operator Communications · Circles and Offsets · Clocks and Hot Editing

Course Objectives:

After completing the course, participant will be able to:

- Practice all areas of safety as they pertain to the robot
- Properly startup, operate, and shut down the robot
- Properly identify and recover from robot errors
- Perform program storage and retrieval
- Manual and program control of inputs and outputs
- Create Tool Center Point data
- Edit programmed positions
- Create a program with subroutine structure
- Perform editing techniques
- Program instructions, such as, output control, decision making, operator dialog, and clock
- Name I/O and data with proper names
- Identify system parameters
- Define Work Objects

Trainee Skill Level:

This course is intended for personnel chosen to become responsible for operating a robot, creating programs and editing programs, such as: Technicians, Manufacturing Engineers and Service Personnel



TRAINING OPTIONS OFFERED BY CCAT

Industrial Sales Training [+ One-on-One Coaching]

This training is designed to prepare trainees for a sales or closely related role in manufacturing. It includes structured industrial sales training paired with exposure to current and emerging technologies including areas such as industrial automation & robotics and additive manufacturing. In addition, the student will receive one on one sales coaching and guidance from a seasoned sales professional during the six weeks following completion of training.

Timing/Program Length

Offered spring and fall 2023.

Six hours of classroom instruction

Five hours of self-paced online instruction

Six hours of online 1:1 sales coaching

First Program

- ✓ Classroom portion: May 23-24, 2023, 9 am - 12 pm at CCAT, 222 Pitkin Street, E. Hartford
- ✓ Online training: self-paced and follows classroom training (*login information will be issued following the classroom session*)
- ✓ Coaching begins once the participant begins active sales or related work.

Topics

- | | |
|---|--|
| <ul style="list-style-type: none">• Building Your Client Base• The CRM• Developing Opportunities• Prospecting• Cultivating Relationships• Communications | <ul style="list-style-type: none">• Your Pitch• Closing Effectively• Campaign Creation and Execution• Collateral Materials• Program Administration |
|---|--|

Objectives

Help to prepare attendees for a sales or closely related role in manufacturing or increase the skill level of individuals in such a role looking to optimize their performance.

Suggested background

Suitable for those with sales or customer service backgrounds or those with a sales/customer service mindset moving into such a role.



TRAININGS OFFERED BY CCAT

Metal 3D Printing Forum

May 24, 8 am - 2 pm

CCAT Advanced Technology Center, East Hartford

- > Informative presentations on the state of metal additive manufacturing adoption
- > Technical discussion on hybrid additive manufacturing for new parts and repair processes
- > Panel discussion from Connecticut companies that have begun using metal additive manufacturing
- > High deposition rate technologies for building and repairing large parts
- > Technologies that many companies are using to get started in metal additive manufacturing

CCAT technical staff and industry experts will be available to discuss participant questions and the applications around metal additive manufacturing. Participants can also tour CCAT's Advanced Technology Center and see additive equipment in action.

Industry 4.0 Forum – Applications of Artificial Intelligence for Smart Manufacturing

June 7, 8 am - 2 pm

CCAT Advanced Technology Center in East Hartford, Connecticut.

Participants will discover current AI technologies driving production efficiencies and get a glimpse of what lies ahead on the horizon of AI innovation. AI-powered applications are transforming data preparation, visualization, predictive modeling, and bringing not only heightened efficiency but cost reductions, superior quality, and minimal downtime as well. Participants will gain valuable insights that can help their organization to thrive.

NX Mill Manufacturing Fundamentals

June 13-16

CCAT Advanced Technology Center, East Hartford

This 4-day NX Mill Manufacturing Fundamentals class is perfect for those new to Siemens NX CAM and trying to become CAM certified. NC programmers new to NX CAM will understand how to create CAM certified tool paths for 2 and 3 axis milling/drilling centers within the software. Also covered: cutting / non-cutting motions and other NX operations. Upon completion the user will have the capability to create and modify output verified 3-axis NC programs for milling machines. The manufacturing user interface, coordinate systems, tools, and milling operations are discussed during this beginner NX Manufacturing Fundamentals training course.

Prerequisites:

Must have NC/CNC programming methods, machinery knowledge and thorough understanding of NC/CNC programming principles.

Day 1 – NXCAM 101

Day 1 of training covers NX CAM's user interface and the machining environment. Topics include:
Creating Programs | Tips to Ease Use | Navigator Views | Coordinate Systems

Day 2 – NXCAM 102 (18 topics)

On Day 2, Master Model concepts, cavity milling, and face milling principles are covered. Other topics include:
Assemblies | Tool Creation | Tool Path Creation | Mill Geometry

Day 3 – NXCAM 103

Over 21+ topics on Visualization, Planar Milling, and Hole Making are lined up for class. Topics include:
3D Dynamics | Machine Control | Machine Cycle | Cutting Parameters

Day 4 – NXCAM 104

Final day of class. We'll send you back to the real world with basic to intermediate techniques, including
Adaptive Milling | Fixed Axis Contouring | Z Level Milling | Post Processing | Shop Documentation

REV-UP!

TRAININGS OFFERED BY CCAT



Your REV-UP employees can learn essential technical and professional skills on their own schedule. Select from a library of over 700 online competency-based courses. Choose from the topics and learning pathways below, developed by Connecticut's manufacturing community. Or reach out and we'll work with you to customize your own training plan. Contact [Marianne Martinez](#) or [Eileen Candels](#) for more information or to register.

Health & Safety

Introduction to OSHA	SAF-1001
Making Work a Safer Place	SAF-1002
Help! What to Do in an Emergency	SAF-1003
Personal Protective Equipment	SAF-1004
Eye and Face Protection	SAF-1005
Work Area Safety	SAF-1016
Hazardous Materials	SAF-1012
Lockout/Tagout	SAF-1021
Fire Extinguishers	SAF-1023

Additive Manufacturing

Introduction to 3D Metal Printing	ADM-1002
Introduction to Powder Bed Fusion	ADM -1003
Introduction to Binder Jetting	ADM -1004
Introduction to Directed Energy Deposition	ADM -1005
Introduction to Bound Powder Extrusion	ADM -1006
3D Metal Printing Safety	ADM -1007

Non-Destructive Examination

Standard Inspection Techniques	NDE-3006
Visual Testing Equipment	NDE-3007
Visual Testing of Castings	NDE -3010
Visual Testing of Welds	NDE-3012
Materials	NDE-3039
Metals Manufacturing and Processes	NDE-3040
Testing of Material Properties	NDE-3041



Logistics for Manufacturing	Introduction to Logistics	LOG-1001
	Logistics Technology	LOG-1002
	Inventory	LOG-1003
	Distribution and Transportation	LOG-1004
	Safety, Quality, and the Environment in Logistics	LOG-1005
	Successful Logistics	LOG-1006
Technical Documents	Schematics & Prints	DWG-1001
	Engineering Drawing Terminology	DWG-1002
	Engineering Drawing Views	DWG-1003
	Engineering Drawing Lines	DWG-1004
	Dimensions and Tolerances	DWG-1005
	Threads and Fasteners	DWG-2003
Customer Service For Manufacturing	Focusing on Your Customers	CUS-1001
	Providing Friendly, Courteous, and Efficient Service	CUS-1002
	Communicating Effectively with Customers	CUS-1003
	Identifying and Meeting Customer Needs	CUS-1004
	Building Customer Relationships	CUS-1005
	Advanced Customer Service	
	Respecting Diversity in Your Customers	CUS-1006
	Better Serving Customers with Disabilities	CUS-1007
	Dealing with Difficult Customers	CUS-1008
	Responding to Customer Complaints	CUS-1009
Managing Conflict with Internal Customers	CUS-1010	

* These learning pathways are created to help Connecticut employers create, grow, and retain their workforce.

Additional 180 Skills Online Courses

There are hundreds of 180 Skills Online courses to choose from. Contact us to learn about the options that would work best for your REV-UP employees. Contact [Marianne Martinez](#) or [Eileen Candels](#) to for more information or to register.

A sample of other skill building courses

- Understanding Conflict
- Project Management
- Diversity Equity and Inclusion
- Communicating with Others
- Working as a Team
- Spreadsheets
- Personal Finances
- Shop Math Skills

Some intermediate and advanced skills courses & programs

- **3D Printing**
- Quality Management
- **Composites**
- CNC Machining - Milling
- **Non-Destructive Examination**
- Maintenance Electrical
- **Advanced Manufacturing**
- Maintenance Pneumatics
- Maintenance PLC
- **Automation**
- Statistical Process Control
- **Robotics**