

# PFEIFFER TECHNOLOGY & INNOVATION LAB

The Pfeiffer Technology and Innovation Lab was designed to foster and support collaborations between education and the advanced technology and manufacturing industry. It is located on the College's main campus in Stone Ridge in Hardenbergh Hall.

The Pfeiffer Technology and Innovation Lab houses training and testing equipment used by SUNY Ulster students in STEM disciplines including engineering, advanced manufacturing, AutoCAD, 3D printing and web development.

In addition to providing hands-on learning for STEM students, the lab is designed to serve as a resource to the manufacturing industry, providing valuable real-world interaction for students while supporting the competitive advantage of local manufacturing and technology companies.

In keeping with this mission, courses that advance students in these technologies are offered for both the credit and the non-credit student.

This past fall, SUNY Ulster was able to add two 3D scanners and a laser cutter to the lab. This new equipment will allow students from the Fashion Design, Engineering, Advanced Manufacturing, Visual Arts and Entrepreneurship programs to work collaboratively on projects.

## 3D PRINTING

This advanced solid modeling course is designed to familiarize the students with the techniques of designing and printing using additive manufacturing (3D Printing). Students will be designing objects or assemblies of objects and printing them using 3D Printers. Students will be using industry software associated with the 3D printers. Prerequisite: CAD 102 (Solid Modeling I) or permission of instructor

**CAD 103 R 1/24-5/17 10am-2:30pm SRC**

## FUNDAMENTALS OF ELECTRICITY

This algebra based electricity fundamentals course is geared towards those looking to understand electricity as it relates to a manufacturing career. Topics covered will include basic electrical principles, Ohm's Law, Watt's Law, power and energy, series, parallel and combination circuits, wire size and ampacity, magnetism and inductors, alternating current, capacitors, three-phase power, motors, and troubleshooting. This course includes a lab component.

**MEC 102-51 R 1/24-5/17 5-8pm SRC**

## REVIT ARCHITECTURE

This course is an introduction to Autodesk Revit. Students should be able to build a virtual model of a house and generate the construction documents from the model. The virtual model the students will be creating has architectural components commonly found in residential buildings. Related topics include template construction, wall customization, roofs, sectioning, stair generation, structural components, perspectives, renderings, sheet layout and printing.

**DCB 2257-01 W 1/23-3/6 5-8pm SRC \$299**

## CNC OPERATOR THEORY & LAB

This hybrid course covers the fundamentals needed to qualify for an entry level CNC operator position. Students will use an online CNC Learning System to be introduced to the fundamentals of the operation of CNC machines. Once per week, students will meet with an instructor for a hands-on lab to reinforce what was learned online. This course is geared for students looking to take the course for credit but is also available to other students. Students looking for NIMS credential at the end of the program should register for DCB 2256-01. See page 6. Required textbook: *CNC Set-up & Operate Mill*, ISBN: 978-19927359976 and *CNC Setup & Operate Lathe*, ISBN: 978-1927359976

**MFG 104 M 1/28-5/13 6-9pm CT**

No class 2/18, 3/11

**DCB 2258-01 M 1/28-5/13 6-9pm CT \$1,299**

No class 2/18, 3/11 • Price includes textbooks

## AUTOCAD

Students are introduced to the AutoCAD drawing platform. AutoCAD commands are taught using the following drafting methods: Geometric Construction, Orthographic Projection, Sectioning and Isometric Views. Special emphasis is placed on dimensioning, white space layout, GUI customization, scaling, and line weight. After successful completion of this course, students will be proficient with the AutoCAD software and have an understanding of the fundamentals of drafting.

**DCB 1600-01 W 3/20-5/8 5-8pm SRC \$299**

## INTRODUCTION TO PROGRAMMABLE LOGIC CONTROLLERS (PLCS)

This course will provide the fundamentals of a programmable logic controller (PLC). Hands-on instruction and industrial-type applications of PLCs requiring relay ladder logic control and a study of automated manufacturing and the functions of PLCs in an industrial environment will be provided. Topics include components of a PLC, memory organization, discrete I/O, numbering systems, logic gates, Boolean algebra, relay ladder logic, timers, counters, word level logic and troubleshooting.

**Required textbook. Please inquire when registering.**

**MEC 103 T 1/22-5/14 5-9pm SRC \$596**

**DCB 2155-01 T 1/22-5/14 5-9pm SRC \$596**

No class 3/12



**PETER FENWICK, PRESIDENT**  
COMMUNITY MANUFACTURING SOLUTIONS, LLC

THE SKILLS AND RELATIONSHIPS THAT I ACQUIRED DURING MY TIME AT SUNY ULSTER WERE INSTRUMENTAL IN REACHING MY CAREER GOALS. THE FUNDAMENTAL DESIGN PRINCIPLES I LEARNED IN THE SUNY ULSTER GRAPHICS DESIGN PROGRAM HAVE HELPED IN SO MANY AREAS OF MY LIFE AND BUSINESS. SUNY ULSTER WAS THE RIGHT CHOICE FOR ME.

# ADVANCED MANUFACTURING APPRENTICESHIP

SUNY Ulster is registered as a Related Instructor provider with the New York State Education Department. Under the Council of Industry, SUNY Ulster supports apprenticeship programs in CNC Machinist, Toolmaker, Maintenance Mechanic, Welder, Electronics Technician, Electromechanic Technician, Quality Assurance Auditor and Industrial Manufacturing Technician.

**PROGRAM BEGINS JANUARY 2019**

## ADVANCED MANUFACTURING PRE-APPRENTICESHIP PROGRAM

Pre-apprenticeship programs can play a valuable role in preparing qualified entry-level workers for Registered Apprenticeship careers while contributing to the development of a diverse and skilled workforce. Students completing this series of courses may qualify for credit towards an apprenticeship program. Ask how you can start this 52-hour program to prepare for an apprenticeship position in one of the many local manufacturing companies here in Ulster County.



**Department of Labor**

Support provided by the 2016/17 SUNY Performance Improvement Fund.

## INTRODUCTION TO MANUFACTURING

Learn about the different manufacturing companies in Ulster County and the types of jobs that are available.

DCB 2252-01

## MATHEMATICS FOR MANUFACTURING

Strengthen mathematical skills needed for the set-up and operation of machine tools and computer numerical control (CNC) programming. Mathematical operations including fractions, exponents, basic algebra and trigonometry will be reviewed. Prerequisite: Basic Mathematics.

Instructor: R. Eckmann

DCB 2064-01 W 1/30-2/27 6-8:30pm KSU \$199

## BLUEPRINT READING FOR MANUFACTURING

Participants will learn to identify the essential details and interpret the dimensions and tolerances found on engineering drawings. Course is geared for machine operators, quality control inspectors, shop supervisors, metalworking manufacturing personnel, engineering managers, and other manufacturing persons interested in learning to read manufacturing prints or updating their knowledge in this area. Co-requisite: Basic Mathematics

Instructor: T. Parisian

DCB 1259-01 R 1/31-2/28 6:00-8:30pm KSU \$199

## HANDS-ON MANUFACTURING LAB

Apply the skills you learned in this series of courses to the manufacturing process.

DCB 2268-01

## WORKPLACE SUCCESS SKILLS

Workplace skills, often called employability skills, are the basic skills a person must have to succeed in any workplace. They are the core knowledge, skills and attitudes that allow workers to understand instructions, solve problems and get along with co-workers and customers.

DCB 2253-01

## RELATED INSTRUCTION COURSES for REGISTERED APPRENTICES

NYS Registered apprentices need to take 144 hours per year of related instruction.

SUNY Ulster offers the following courses that are approved for related instruction.

Funding may be available for registered apprentices to take this training at no cost.

For more information contact Barbara Reer  
reerb@sunyulster.edu • 845-802-7171

**Mathematics for Manufacturing**

**Fundamentals of Electricity for Technicians**

**Blueprint Reading for Manufacturing**

**Certified Production Technician (Introduction to Modern Manufacturing and Production)**

**Geometric Dimensioning and Tolerancing**

**Programmable Logic Controllers (PLC)**

**Auto CAD**

**CNC**

M - MONDAY • T - TUESDAY • W - WEDNESDAY • R - THURSDAY • F - FRIDAY • S - SATURDAY • U - SUNDAY

# COMPUTER NUMERICAL CONTROL (CNC) OPERATOR CREDENTIAL PROGRAM

The local demand for CNC Operators is on the rise as the current workforce ages out and manufacturing jobs steadily increase here in the Hudson Valley. Some of the local companies that employ CNC operators include LoDolce Machine Co., Inc., AMETEK Rotron, Arconic Fastening Systems, Selux, FALA Technologies and Innovative Products of America (IPA). Learn the skills needed to successfully qualify as an entry level CNC operator. See individual course schedules below. Contact Barbara Reer at reerb@sunyulster.edu or 845-802-7171 to learn how you can tailor specific programs for your employees.

## MATHEMATICS FOR MANUFACTURING

Strengthen mathematical skills needed for the set-up and operation of machine tools and computer numerical control (CNC) programming. Mathematical operations including fractions, exponents, basic algebra and trigonometry will be reviewed. Prerequisite: Basic Mathematics. Required textbook: *Mathematics for Machine Technology*. ISBN: 978-1133281450.

Instructor: R. Eckmann

DCB 2254-01 W 1/30-6/19 6-8:30pm KSU \$450  
No class 3/13, 4/24 & 5/1

## BLUEPRINT READING FOR MANUFACTURING

Participants will learn to identify the essential details and interpret the dimensions and tolerances found on engineering drawings. Course is geared for machine operators, quality control inspectors, shop supervisors, metalworking manufacturing personnel, engineering managers, and other manufacturing persons interested in learning to read manufacturing prints or updating their knowledge in this area. Pre-requisite: Basic Mathematics. Required textbook: *Basic Blueprint Reading & Sketching*.

ISBN: 978-1435483781. Instructor: T. Parisian

DCB 2255-01 R 1/31-6/6 6-8:30pm KSU \$450  
No class 3/14

## CNC OPERATOR CREDENTIAL

This hybrid course covers the fundamentals needed to qualify for an entry level CNC operator position. Students will use an online CNC Learning System to be introduced to the fundamentals of the operation of CNC machines. Once per week, students will meet with an instructor for a hands-on lab to reinforce what was learned online. Students will test for the NIMS credential at the end of the program. Course price includes textbook NIMS registration & NIMS exam.

DCB 2256-01 T 2/5-6/25 6-9pm CT \$1,399

## ESSENTIAL SKILLS FOR SUCCESS IN THE WORKPLACE

This is an interactive preparatory course designed to provide ASD young adults with the tools needed to enter and be successful in the work force. Participants will engage in speed interviewing with professionals to practice answering questions and presenting themselves professionally as well as becoming familiar/comfortable with the process. Opportunities to engage with local business professionals to ask questions and network will also be provided. ASD young adults interested in this program should express their interest with their ACCES-VR counselor. This course along with the three Entry Level CNC Operator courses listed above was designed to create a career pathway to capitalized on strengths of ASD young adults and move them into gainful employment. Instructor: The ARC of Ulster-Greene

No class 3/14 W 1/30-5/15 5-6pm KSU

## MASTERCAM 2019 MILL & LATHE ASSOCIATE CERTIFICATION

This course covers the fundamentals of Mastercam Mill 2D and Lathe. Classroom instruction will be led by a certified Mastercam instructor.

DCB 2271-01 • Call 845-802-7171 for course start date.

## GD&T: INTRODUCTION TO BLUEPRINT BASICS, SYMBOLS & INSPECTION TECHNIQUES

Geometric Dimensioning and Tolerancing (GD&T) is a system for defining and communicating engineering dimensions and tolerances using a symbolic language on mechanical drawings and computer generated three-dimensional solid models. In this introductory course, use and interpretation of drawings, drawing features, first and third angle projections, concepts of using linear tolerancing vs. GD&T tolerance zones, introduction to concepts of implied constraints will be discussed. Course will include a hands-on component. Required textbook: *Fundamentals of Geometric Dimensioning and Tolerancing*. ISBN: 978-1111129828

DCB 2272-01 R 3/28-4/25 3:30-5:30pm \$299

Course location: FALA Technologies

## GD&T: FEATURE CONTROL FRAME, TRUE POSITION & PROFILE CONCEPTS & INSPECTION TECHNIQUES

Course will continue on where GD&T: Introduction to Blueprint Basics, Symbols and Inspection Techniques leaves off. Course will cover application and inspection techniques using control frames and true position. Required textbook: *Fundamentals of Geometric Dimensioning and Tolerancing*.

ISBN: 978-1111129828

DCB 2273-01 R 5/2-30 3:30-5:30pm \$299

Course location: FALA Technologies



### ALETHEA SHUMAN

STRATEGY & COMMUNICATION COORDINATOR, USHECO, INC.

WHILE AT SUNY ULSTER I WAS FORTUNATE TO VISIT LOCAL MANUFACTURERS WHERE I GAINED AN UNDERSTANDING OF MECHANICAL PROCESSES OUTSIDE OF MY PRACTICAL KNOWLEDGE FROM WORKING IN MANUFACTURING. THE INTRODUCTIONS I GAINED FROM THESE VISITS COUPLED WITH THE EDUCATION I RECEIVED FROM SUNY ULSTER HELPED ME TO SUCCEED IN ALL MY PROFESSIONAL ENDEAVORS. I CURRENTLY WORK AS THE STRATEGY & COMMUNICATION COORDINATOR WHERE I HAVE RESPONSIBILITIES IN OPERATIONS MANAGEMENT, PROCUREMENT, TECHNICAL SALES, ENGINEERING AND QUOTATIONS. THERE IS A LOT TO BE SAID FOR SUNY ULSTER'S MOTTO "START HERE, GO FAR" AND I THINK I AM JUST ONE EXAMPLE WHERE THIS COULDN'T BE TRUER!

Engineering students and CNC students are eligible to apply for the Gene Haas Foundation scholarship.