

Washington County Technical High School

Applied Manufacturing Engineering



Advanced Manufacturing and Production

JUNIOR & SENIOR 2-YEAR CURRICULUM

MANUFACTURING SKILLS STANDARDS COUNCIL

www.msscusa.org / www.amatrol.com / testing@nocti.org / [certified test per credential](#)

MSSC: CPT Safety

MSSC: CPT + Skill Boss - Safety

MSSC: CPT Quality & Measurement

MSSC: CPT + Skill Boss - Quality & Measurement

MSSC: CPT Process & Production

MSSC: CPT + Skill Boss - Process & Production

MSSC: CPT Maintenance Awareness

MSSC: CPT + Skill Boss - Maintenance Awareness

MSSC: CPT Green Production

AUTODESK INVENTOR USER & PROFESSIONAL CREDENTIALS

www.autodesk.com / www.certiport.com

Course I – Introduction to Engineering Design

Course III – Essentials Plus

Course II – Parametric Modeling

Course IV – Modeling, Assembly, Analysis

[*Certified User Exam](#)

[*Certified Professional Exam](#)

SMART AUTOMATION CERTIFICATIONS ALLIANCE

www.saca.org / www.amatrol.com / [certified silver & gold tests per credential](#)

SACA C-200 CERTIFIED INDUSTRY 4.0 AUTOMATION SYSTEMS SPECIALIST I

SACA C-200 CORE CREDENTIALS

C-201 Electrical Systems I

C-209 Pneumatic Systems I

C-202 Electric Motor Control Systems I

C-210 Mechanical Power Systems I

C-203 Variable Frequency Drive Systems I

C-211 Industry 4.0 Total Prod. Mtn. Mgmt.

C-204 Motor Control Troubleshooting I

C-212 Ethernet Communications I

C-205 Sensor Logic Systems I

C-213 Smart Sensor & Identification Systems I

C-206 Electrical System Installation I

C-214 Smart Factory Systems I

C-207 Programmable Controller Systems I

C-215 Robotic Operations I (Fanuc Robot)

C-208 Programmable Control Troubleshooting I

C-216 Robotic Systems I (Fanuc Robot)

[Silver Certification by Course = Certified Test + Online Simulator](#)

[Gold Certification by Course = Silver + Amatrol Hands-On Trainer Test](#)

MICROSOFT OFFICE SPECIALIST CREDENTIALS

www.certiport.com

Excel Associate Certification

Excel Professional Certification

[*Certified Associate Exam](#)

[*Certified Professional E](#)

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SMART AUTOMATION CERTIFICATIONS ALLIANCE

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CNC, CAM, & ROBOT PROGRAMMING & OPERATIONS

INCLUDING: MATERIALS, HEAT TREATING, & QUALITY CONTROL

CNC-101 Measurement Tools & Processes	CNC-102 Inspection Tools & Techniques
CNC-104 Principles of CNC	CNC-105 Fanuc CNC Machine Control
CNC-106 Principles of Turning	CNC-107 Principles of Work Holding
CNC-108 Principles of Tooling	CNC-109 Tooling for Turning
CNC-110 Principles of Oils & Coolant for CNC	CNC-111 CNC Lathe Programming
CNC-112 Principles of CNC Machining Centers	CNC-113 Tooling Up CNC Machining Centers
CNC-114 Tapping Tools for CNC Machines	CNC-115 CNC Mills & Programming I
CNC-117 CNC Mills & Programming II	CNC-118 Computer Aided Manufacturing – CAM I
CNC-119 Robotics, Programming, Flexible Machining Cells, Quality Control, & Production Control	CNC-121 Principles of Materials – Ferrous
CNC-120 Materials Engineering I	CNC-123 Principles of Materials – Plastics
CNC-122 Principles of Materials – Non-Ferrous	CNC-125 Principles of Materials – Ceramics
CNC-124 Principles of Materials – Composites	
CNC-126 Principles of Heat Treating	

SACA C-200 ELECTIVE COURSES FOR CREDENTIALS

C-251 Mechanical Power Troubleshooting	C-256 Hydraulic Maintenance
C-252 Laser Shaft Alignment	C-257 Process Control Systems I
C-253 Electrical Motor Troubleshooting I	C-258 Process Control System Troubleshooting I
C-254 Pneumatic Troubleshooting I	C-259 Rigging Systems I
C-255 Hydraulic Systems I	C-260 Rigging Systems II

INSTRUCTOR'S CREDENTIALS

TIM HILL – hilltim@wcps.k12.md.us

Instructor for FANUC Robot Operations Course, Handling Tool Operations & Programming Course, & ROBOGUIDE
SACA Certifications: Instructor for C-200 College Curriculum–4.0 Automation Systems Specialist I–Using Amatrol Trainers
MSSC Certified Instructor in CPT+ Using the Amatrol Skill Boss Trainer
MSSC Certified Instructor in CPT & Green Production
Autodesk Inventor Certification Instructor – User & Professional Exam Levels
PLTW Certified Instructor in EDD - Engineering Design & Development Capstone
PLTW Certified Instructor in CIM - Computer Integrated Manufacturing
PLTW Certified Instructor in IED - Introduction to Engineering Design
GASD Gifted & Talented Coordinator Responsible for Writing/Meeting 75 GIEP's Annually for 6-12th Grade
HACC College in the High School in Mechanical Drawing
10th Year Instructing Mechanical Engineering, PLTW, & Business
30 Years Part-Owner Mfg. Rock Drilling Tools for Mining/Aggregate/Water & Gears for Heavy Equipment
& Certified to ISO-9001 & ISO-14001 for Domestic & International Distribution
Certified Praxis Credentials in 5 Subject Areas from Princeton University
Post Masters 60 Graduate Credits from Colorado State University at Pueblo
Masters' Degree in Business Education from Shippensburg University
Bachelors' Degree in Accounting/Marketing, B.S. Ed. from Shippensburg University