Robotics Engineering
Curriculum Plan 2022-2023

Dayton PUBLIC SCHOOLS
Career Technical Education

Area of Concentration: R7   **CTSO:** SkillsUSA

Program Courses and Required WebXams

EMIS Course Code	Course Name	Grade	Is this course a CTAG?
175003	Manufacturing Operations	10	Yes
176025	Industrial Robotics	11	No
176020	Industrial Maintenance	11	No
176007	CNC	12	Yes
176008	Manufacturing Capstone	12	No

Industry Credentials/Certifications

Industry Credentials Offered	ODE Points Available	Completed during Grade
FANUC Handling & Tool Operation & Programming	6	11
Motoman Basic Programming with Material Handling	6	11
Allen Bradley/ Rockwell Automation PLC	6	12
FANUC Certified CNC Machining Center Programming, Setup, and Operation	4	12
Certified Solid Works Associate (CSWA)	4	10
OSHA 10-Hour Certificate	1	10

College Credit Opportunities

Course Name	College	Credit Hours	Completed during Grade
CTMET004 Manufacturing Processes	CTAG	3	10
CTMET006 CNC Programming/ Machining	CTAG	3	12
MET 1301 SolidWorks Basics	Sinclair Community College	4	10

Work-Based Learning Opportunities

On the job placement opportunities senior year
Special projects

Tasks

- Assemble equipment or components.
- Maintain electromechanical equipment.
- Repair electronic equipment.
- Determine causes of operational problems or failures.
- Program robotic equipment.
- Maintain operational records or records systems.
- Calibrate scientific or technical equipment.
- Evaluate characteristics of equipment or systems.
- Test performance of electrical, electronic, mechanical, or integrated systems or equipment.
- Train personnel on proper operational procedures.
- Fabricate products or components using machine tools.
- Design electromechanical equipment or systems.
- Document design or operational test results.
- Prepare procedural documents.
- Install production equipment or systems.
- Inspect facilities or sites to determine if they meet specifications or standards.
- Maintain inventories of materials, equipment, or products.
- Create graphical representations of industrial production systems.
- Operate industrial equipment

Robotics Engineering
Program of Study
Aligned with Sinclair – Automation & Control Technology with Robotics
AMCT.S.AAS

Secondary

Grade						
9	English 9	Algebra I or Geometry	Physical Science	World History	PE/PE	Health/ Career Exploration	Elective
10	English 10	Geometry or Algebra II	Biology	U.S. History	Elective	**Manufacturing Operations 175003**	
11	English 11	Algebra II or Pre-Calculus	Chemistry or Environmental Science	American Government	Elective	Industrial Robotics 176025	Industrial Maintenance 176020
12	English 12	Adv Math	Elective	Elective	Elective	**CNC 176007**	Manufacturing Capstone 176008

Post-Secondary

Term					
Fall Year 1	COM 2211 Effective Public Speaking	EET 1120 Intro to DC & AC Circuits	EET 1139 Electrical Machinery	MAT 1580 Precalculus	ENG 1101 English Comp I
Spring Year 1	EET 2281 Programmable Logic Controllers	EET 1166 Industrial Machine Wiring	EET 1198 Digital Technology Or EET 1131 Digital Electronics		EGR 1106 Basic Mechanical & Electrical Skills
Summer Year 1	EGR 1128 Robotics in Computer Integrated Manufacturing	PHY 1141 College Physics I	MET 1101 Introduction to Engineering Drafting Or MET 1371 CAD Concepts using AutoCAD		Social & Behavioral Sciences Elective
Fall Year 2	EET 2282 Advanced Programmable Logic Controllers	EGR 1144 Sensors & Vision Systems	EET 2157 RFID Technology Or EGR 2250 Electromechanical Repair		EGR 1217 Fluid Power & Control
Spring Year 2	EGR 2231 Troubleshooting of Automated Systems	EGR 2252 Teach Pendant Robot Programming	MET 2711 Ethics for Engineering Technology Professionals	EGR 2275 Automation Control Technology Internship Or Engineering Elective	EGR 2278 Automation & Control Capstone

Key	Required Course	Recommended Elective Courses	High School Career- Technical Courses **Bold =College Credit Opportunity**