Engineering and Robotics

2 YEAR PROGRAM   **HARKNESS**

PROGRAM SUMMARY

- Through hands on learning projects and skill based competitions, Engineering and Robotics students prepare for the future by learning how to develop their ideas from concept to reality.
- Throughout the Design Process, we can take an idea and create just about anything you can conceptualize.
- Spend some time with us and learn how to build a trebuchet, help us to develop the technology necessary to create a 3D printed "bobblehead", or create 3D printable parts and artwork from black and white pictures.
- Utilizing classroom technology, we build a pumpkin-throwing trebuchet for annual competition, and a variety of robots for competitions within the classroom, at Tech Wars, and for First Robotics, held annually at RIT.

COLLEGE CREDIT CONNECTIONS

- Bryant and Stratton
- Rochester Institute of Technology - PLTW
- SUNY Canton
- SUNY Erie
- University of Northwestern Ohio

PROGRAM ELIGIBILITY

- Technical Endorsement
- 3.75 Credits per Year
- Pathways to Graduation (CTE and CDOS)

Career Paths

PROFESSIONAL CAREERS

Aerospace Engineer
Architect
Chemical Engineer
Civil / Structural / Environmental Engineer
Computer Science Engineering
Design Engineer
Electrical Engineer
Engineering Manager
Industrial Engineer
Mechanical Engineer
Professional Engineer
R&D Engineer
Robotics Engineer
Stationary Engineer

TECHNICAL CAREERS

Application Developer
Computer-Control Programmers
   and Operators
Data Analyst
Database Administrator
Electrical Engineering Technologist
Electrical Technologist
Manufacturing Technologist
Mechanical Engineering Technologist
Technology Project Manager

ENTRY LEVEL CAREERS

Advanced Manufacturing
CAD Designer
CNC Programmer
Production Scheduler
Repair Technician
Robotics Programmer
Software Developer
Web Developer

INTRODUCTION TO ENGINEERING DESIGN (IED)

- Learn 3D Solid Modeling
- Utilize the Design Process
- Learn How to Communicate Using Words, Pictures, Sketches and Drawings
- Learn How to Research and Document Your Work

PRINCIPLES OF ENGINEERING (POE)

- Engineering Design Problems and Solutions
- Develop Problem - Solving Skills
- Create Solutions to Various Challenges
- Employ Engineering and Scientific Concepts

VEX ROBOTICS

- Learn the Basics of Design, Building and the Control of Robotic Systems
- Learn to Program Robots Using RobotC
- Utilize Motors and Sensors to Navigate Obstacles
- Utilize Robotics to Perform Tasks

COMPUTER INTEGRATED MANUFACTURING (CIM)

- Find Answers to: How Are Things Made?
- Create an Assembly Line
- Learn About the History of Manufacturing

ENGINEERING DESIGN AND DEVELOPMENT (EDD)

- Develop Your Own Ideas to Solve Common Problems
- Build a Trebuchet From Scratch
- Create a Full Size Autonomous and Remote Controlled Robot for Competition

erie boces