THE OHIO STATE UNIVERSITY
COLLEGE OF ENGINEERING

Mentorship in Robotics

ENGR 2230

Credit Hours:
1.00

Course Levels:
Undergraduate (1000-5000 level)

Course Components:
Lecture

Course Description:
This course will support students to engage with FIRST Robotics Competition teams by supporting their development as mentors for K-12 robotics teams. Students will learn both mentorship and robotics fundamentals from both the course instructors as well as OSU students engaged with these programs. Class time will be a mix of lecture and interactive and interactive learning modules.

Prerequisites and Co-requisites:
Prereq or Concur: ENGR 1100

Course Goals / Objectives:
- Mentorship: Students will be able to list and describe different learning styles and explain the significance of adapting to different learning styles in mentorship
- Mentorship: Students will develop and demonstrate effective mentorship skills including facilitating team dynamics and creating a supportive and inspiring learning environment
- Mentorship: Students will be able to discuss the benefits of robotics-based STEM education and university student mentorship for K-12 students
- Robotics: Students will be able to identify and explain basic robotics components including wheels and drivetrain, motors and gears, sensors and wiring, robot programming, among others
- Robotics: Students will practice basic tool use and robotics assembly procedures
- Interpersonal skills: Students will be able to identify and describe strategies for interpersonal connection
- Interpersonal skills: Students will be able to define and explain the significance of empathy in engineering for effective mentorship, teamwork, and design

Course Topics:

- •Syllabus review •Introduction to K-12 educational robotics programs •Overview of Engineering and Robotics •Robot CAD Scavenger Hunt CPA
- •Role of Mentorship in FIRST Programs •Educational Technical Communication •Robot Speed Dating Activity •Robot Design CPA
- CPA rotations: •Robot drivetrain build •Electronics basics •Teleoperated robot control
- •Weekly Reading Mentoring Activity •Introduction to final project •Makeup/Finish Missed CPAs
- •Robotics Review Activity •Workday for final project
- •Presentations for final project

Designation:

Elective