

# Robotics I & II

**Timothy Manes**  
**Manest@wlwv.k12.or.us**  
**Voice Mail ext. 4827**



## **Course Description:**

Robotics I & II are project-based courses designed to introduce students to the various aspects of robotics while working in a demanding team environment. Small teams will focus on the FTC (FIRST Tech Challenge) robotics competition which begins at the start of the school year and concludes in the late winter. During the tournament

season, students will assume specific team roles in support of the team's success throughout the various competitions.

There will be a registration fee of \$50 per student that will help cover the tournament registration.

## **Learning Opportunities:**

- Computer programming – Java, specifically for use in robotic control systems with exploration into other applicable languages.
- Project management – Maintain engineering documentation, team objective and timelines, budget, and community outreach through social media and web design.
- Computer Aided Design – Focusing on pre-build conceptualization and simulation as well as custom part design using 3D printing, fabrication and machining.
- Mechanical and Engineering and Design – Build with aluminum robotics kits, raw metal and plastic stock which includes fabrication techniques such as sawing, drilling and milling. Experience working with precision measurement tools and equipment.
- Electrical Engineering and Design – Working with advanced technical components specifically motors, servos and sensors. Opportunities for circuit building, wiring and soldering.
- Teamwork – Exposure to a diverse team environment which requires focused participation, personal organization and collaborative communication.

## **Grading Policy:**

Because Robotics I & II is a project-based course, grades will be based on daily/competition participation and classwork throughout the season. Students not able to participate in the will be required to complete an extensive research project.