



River Valley School District
New Course Proposal

If you are processing a new course for registration, please complete the form and attach the required documents. All course proposals should first be submitted to the building principal.

Staff Member / Department proposing the new course: ROBBY JACOBSON
School: River Valley High School
Title of Course: Mechatronics I & II

Credits and/or Semester or Full Year: Full
Grade level(s) to whom the course will be offered: 9, 10, 11, 12
How often will this course be offered: Every year

What need will this course fulfill?
This course will help prepare our students with skill sets that are needed in smart manufacturing

What impact would offering this course have on other grade levels/departments?
This course has topics in Science Technology Engineering & Math (STEM) Related areas, so some skills will crossover

Please list courses being impacted that the new course is replacing, if any:
New Not Replaces, but is a prerequisite for Mechatronics II

Please attach the following:

- A brief course description for the student course handbook (on template)
- Materials needed and cost for initiation of course
- List of drafted units and topics that will be covered
- Within the documentation, please include the academic standards that will be covered in the course.

Approvals:

Principal: _____ Approved / Not Approved Date: _____
Building Counselor: _____ Approved / Not Approved Date: _____
District Administrator: _____ Approved / Not Approved Date: _____
School Board Representative: _____ Approved / Not Approved Date: _____

Mechatronics 1 - 1 yr

This class is designed to introduce students to the fundamental technologies and skills needed in today's smart factories. Students work through a rotation of interactive course topics and use hands-on skills on authentic industrial equipment, with technology from brands like FANUC, Rockwell, Honeywell, Johnson Controls, Siemens, SMC, and more.

This course is designed to prepare learners to earn industry-recognized credentials from the Smart Automation Certification Alliance (SACA) when Available.

In this course, students will be introduced to the following topics:

- Introduction to Industry 4.0
- Safety
- Hand tools
- Measurement
- Print reading
- Precision Measurement
- Mechanical Drives
- Fluid power
- AC/DC electricity
- Electrical relay Control
- Electronics Sensors

Mechatronics 2 - 1 yr

This class is the second course, of the Industry 4.0 curriculum and a follow-up to the Introduction to Mechatronics course. In this course, students will continue to learn the skills needed in today's smart factories.

In this course, students will be exposed to the following topics:

- Industry 4.0 principles
- Mechanical Drives
- Hydraulics fluid power
- Pneumatics
- Robotics Programming
- Electrical Relay Control
- Electronic Sensors
- Ethernet Network Communications
- Programming controls
- CNC Programming
- Mechatronic Systems

Prerequisites: Mechatronics 1