

**Docket Item:**

Community College Approval: Rogue Community College, Associate of Applied Science in Mechatronics, within 14.4201- Mechatronics, Robotics, and Automation Engineering.

**Summary:**

Rogue Community College proposes a new AAS degree in Mechatronics. Higher Education Coordinating Commission (HECC) staff completed a review of the proposed program. After analysis, HECC staff recommends approval of the degree as proposed.

**Staff Recommendation:**

The HECC recommends the adoption of the following resolution:  
RESOLVED, that the Higher Education Coordinating Commission approve the following degree: AAS in Mechatronics.



Rogue Community College seeks the Oregon Higher Education Coordinating Commission's approval to offer an instructional program leading to a degree in Mechatronics.

### Program Summary

The Mechatronics degree program trains students to be proficient in troubleshooting mechanical, electrical, pneumatic, and hydraulic equipment and the digital systems that control them. It prepares students for positions in the highly technical manufacturing environment installing, troubleshooting, programming, and maintaining a variety of types of production equipment. Today's manufacturing environment uses an extensive array of programmable controls, including programmable logic controllers (PLCs), as well as other single function controls using firmware and analog applications. Students learn foundational skills in math, fabrication, and repair as well as hydraulics, electronics, troubleshooting and programming, preparing students for numerous positions in a wide variety of manufacturing facilities. Elective options allow students to focus on either a mechanical or electronics emphasis.

1. *Describe the need for this program by providing clear evidence.*

For the past five years the college has experienced an ever increasing demand for technicians able to program, repair, and maintain computer controlled equipment in a variety of automated manufacturing settings. Manufacturers of specialty foods, wood products, and medical supplies/devices are among the regional industries using robotics and programmed controllers. RCC offers training in electronics, manufacturing and welding. Mechatronics is a combination of all these skills as well as troubleshooting and programming of digital controls. The Mechatronics program is a direct response to advisory input from all of the individual existing college program advisory committees. Because no one program can offer the combination of skills required of a mechatronics technician, this program is the next logical step. RCC has letters from industry and advisory committee minutes that support the need for the program. In addition to regional demand, both anecdotal and documented, there is state and national demand for mechatronics technicians. According to ONET, the future demand for this occupation in Oregon is much higher than average with growth over the next ten years with growth rates well over 20%.

2. *Does the community college utilize systemic methods for meaningful and ongoing involvement of the appropriate constituencies?*

The college holds regularly scheduled advisory committee meetings as a formal method of ensuring input from program stakeholders including industry, secondary education and four-year institutions.

These meetings are part of an ongoing dialogue with constituencies that form a feedback loop for program effectiveness. Examples include internship performance feedback, joint projects with industry, assessment of incoming high school student skills, and feedback from other college programs. The college holds skills contests, STEM participation demonstrations, employer panel discussions and other events that bring together all stakeholders.

Currently three local manufacturing firms are assisting with curriculum development and workforce training topics. Other industry partners are helping address work ethics issues and one additional college/industry project is focusing on the transfer of knowledge from experienced workers to new hires using a mentor/mentee model.

3. *Is the community college program aligned with appropriate education, workforce development, and economic development programs?*

RCC is a partner in regional workforce, education, and economic development organizations,

and agencies including Rogue Workforce Partnership, WorkSource Rogue Valley, Southern Oregon Regional Economic Development, Inc., and Rogue Advanced Manufacturing Partnership. The college has multiple ongoing projects with these organizations.

4. ***Does the community college program lead to student achievement of academic and technical knowledge, skills, and related proficiencies?***

The Mechatronics program requires completion of academic courses in math, writing, communications, and research that not only support the technical topics, but prepare students to continue onto additional academic and employment goals. Attainment of technical skills is tested by clearly defined assessment tied directly to course outcomes that in turn support program outcomes.

Attainment of program outcomes for each student is assessed directly through course learning outcome assessment and indirectly by the feedback loop consisting of internships, employer input, and combined college/industry projects.

5. ***Does the community college identify and have the resources to develop, implement, and sustain the program?***

The bulk of instruction, faculty, and equipment is shared among three existing programs and many of the courses are currently offered. Additional equipment has been funded by state and federal grants. Course delivery for most of the new courses is blended using online instruction and lab hands-on learning, an efficient use of both instruction time and equipment.

#### ***Assurances***

Rogue Community College has met or will meet the four institutional assurances required for program application.

1. ***Access.*** The college and program will affirmatively provide access, accommodations, flexibility, and additional/supplemental services for special populations and protected classes of students.
2. ***Continuous Improvement.*** The college has assessment, evaluation, feedback, and continuous improvement processes or systems in place. For the proposed program, there will be opportunities for input from and concerning the instructor(s), students, employers, and other partners/stakeholders. Program need and labor market information will be periodically re-evaluated and changes will be requested as needed.
3. ***Adverse impact and detrimental duplication.*** The college will follow all current laws, rules, and procedures and has made good faith efforts to avoid or resolve adverse *intersegmental* and *intra*segmental impact and detrimental duplication problems with other relevant programs or institutions.
4. ***Program records maintenance and congruence.*** The college acknowledges that the records concerning the program title, curriculum, CIP code, credit hours, etc. maintained by the Office are the official records and it is the college's responsibility to keep their records aligned with those of the Office. The college will not make changes to the program without informing and/or receiving approval from the Office.