# Academic Program Review Recommendations:
## 2025-26 Annual Progress Report

The purpose of the Annual Progress Report is to facilitate the tracking of progress made on program recommendations/goals and to identify and explain the addition of any new program goals not listed in the most recent Review.

### 1. Name of Program: EM-Tech

2023 RET/EM-Tech  Program Review

2023-24 EM-Tech Program Review Update

2024-25 EM-Tech Program Review Update

### 2. List goals from most recent Program Review and report on progress for each goal. For goals that have not yet been met, please describe your department's plans for moving those goals towards completion. (Label each goal as Completed, Ongoing, Cancelled, or Postponed [include anticipated term/year for resuming activity]):

**1. Expand Power Generation and Transmission class:**
Rationale: Employers at the EM-Tech Advisory committee involved in renewable energy production and transmission strongly recommended expand the existing RET223 Power Generation to include PM synchronous generators, DFIG, HVDC transmission, protective relays, and industrial wind power.

**2023-24 Update:  Ongoing -** Instructor developed instructional modules on DFIG and 3 phase transformers. Pilot tested 3 phase transformers with the Fall 2023 second year students. Need to develop and pilot test additional instructional modules. Need to consolidate Digital 1 and 2 and PLCs before this class is formally expanded.

**2024-25 Update –** Expanded modules for Power Generation and Transmission have been created, students have gone through the modules, and we are awaiting student feedback from this pilot group to see how the modules landed with them. Content for this goal has nonetheless been generated, so the goal is complete.

**Goal status: Complete**

**2. Consolidate PLCs, digital, and industrial control into a cohesive 3 course series:**

Rationale: No regional employers make use of TTL or FPGA digital logic hardware on a technician level however a majority of them do make use of PLCs. For this reason, the digital logic course should be taught using the PLC platform with occasional use of alternate platforms. Additionally, the PLC can be used in the industrial controls course. This series will allow students to be exposed to not only LAD but also SFC, STL, FBD, and HMI programming.

**2023-24 Update: Ongoing -** PLC Instructor shadowed EET251 class in Fall 2024 with the goal of incorporating this material into the consolidated digital and PLC class. Same instructor assumed responsibility for EET252 in Winter 2025 with little notice. This content will be used to develop consolidated 2 course digital series using the PLC as an instructional platform.

**2024-25 Update –** The consolidation EET251, EET252, and EET219 has been completed. EET219 has been merged with EET251, and this fall/winter/spring of the 2025/26 school year is the first pilot run of this new consolidated digital electronics and PLC course series. The content of this series has been adjusted to reflect hardware used in regional industry, with the course being taught mostly on the PLC platform, with some use of TTL chips and FPGAs.

**Goal status: Complete.**

**3. Adopt hybrid format for second year courses**

Rationale: Building off the success of adopting the hybrid format for the first-year courses, the EM-Tech program needs to adopt this same format for the second-year classes. Classes should incorporate video lectures, interactive online quizzes, take home exercises, and well-organized hardware labs.

**2023-24 Update: Ongoing -** Instructor developed several online instructional modules for Semiconductor Devices and Circuits 1 and 2 and PLCs classes. More resources will be developed over time to reflect the consolidation and reorganization of courses.

**2024-25 Update –** This goal continues to be an ongoing process. Most of EET221 (Semiconductor Devices and Circuits I) content now has video modules to support the flipped classroom approach. EET231 and EET273 still need online modules developed, so this goal is ongoing.

**Goal status: Ongoing.**

**2025-26 Update –** Ongoing. Roughly 90% of the instructional modules used to teach EET221 have been developed. Roughly 50% of the instructional modules used to teach EET231 have been developed. Roughly 15% of the instructional modules used to teach EET273 have been developed. Roughly 80% of the instructional modules used to teach EET251 have been developed. Roughly 40% of the instructional modules used to teach EET252 have been developed.

**4. Incorporate Electro-Mechanical simulation software into instruction:**

Rationale: As part of the insurance settlement the EM-Tech program purchased an electro-mechanical simulation software program, Automation Studio. This software allows a student to remotely build and simulate electrically controlled systems. The intent would be incorporate this tool into a majority of classes and labs to allow more exposure to electro-mechanical applications.

**2023-24 Update: Ongoing -** Pilot tested Automation Studio simulation software with MEC120 class in Winter 24. Students seemed to benefit from simulations prior to lab. Will do so for EET141 and MEC124.

**2024-25 Update –** The mechatronics, hydraulics, and pneumatics courses make use of this simulation software. This software could be integrated further into the PLCs course, however hands-on instruction continues to be more useful than instruction based in simulation. This goal is ongoing. Software simulation has its place (general concepts, exposure to schematics, good for snow days or campus closures), however increasing its use is not a focus.

**Goal status: Complete**

**5. Increase enrollment in EM-Tech program:**

Course of Action: Work with CGCC marketing and recruitment team and website developers to increase enrollment in EM-Tech program. Host facility tours for local high schools and shop instructors. Research non-traditional enrollment possibilities such as incumbent worker training and Work Source. Collaborate with ESOL and Community Education to develop ESOL classes with regional employers. Recruit female students to the EM-Tech program.

**2023-24 Update: Ongoing -** Academic year 23-24 saw increased enrollment in the EM-Tech program to ⅔ capacity. Established articulation agreements with White Salmon and Maupin high schools for EET111 class taught using the iMEC platform. Conducted outreach events at career and college fairs.

**2024-25 Update –** Efforts toward this goal will be ongoing for the foreseeable future. Em-Tech faculty remains involved with the Gorge STEM Hub, which coordinates tours of commercial facilities, high school CTE classrooms/shops, and the trades areas of CGCC. Em-Tech faculty have also been working with marketing to create videos and picture captures of work Em-Tech students perform, for use with marketing materials. Em-Tech faculty also continues to mentor two local high schools that teach Em-Tech's intro-level electronics course, with the goal of strengthening the pipeline into the Em-Tech program and ultimately regional electrical technician jobs. Outreach to more high schools to increase participation in this dual-credit initiative is ongoing. The portion of this goal that has seen the least movement is the creation of instructional materials in Spanish.

**Goal status: Ongoing**

**2025-26 Update –** Marketing and outreach efforts seem to have paid off. 26 students enrolled in the first year of the program in Fall 2026. Additionally, a new course EET101 – Introduction to Electro-Mechanical Technology was approved by the curriculum committee and will be pilot tested in Spring. This course will serve the new USACE Mechanics certificate as well as be offered to the general public for those interested in learning more about the Electro-Mechanical Technology program. Hopes are that those individuals enrolled in EET101 will enroll in the full Electro-Mechanical Technology program.

**6. Research technical electives:**

Rationale: Employers in the EM-Tech advisory committee represent numerous divergent technical fields. While a majority of the skill set is shared (electrical, mechanical, hydraulics, pneumatics, motor control) different industries require different specialized skills. For this reason, the EM-Tech program should research the feasibility of offering technical electives. The advisory committee

suggested the following possibilities: programming (Python), instrumentation and process control, load handling and forklift certification, Network+ certification, IPC certification, HVAC and refrigeration, robots, 3d modeling software, and welding.

**2023-24 Update: Postponed No Anticipated Date -** Limited time, human, and budget resources prevent achievement of this goal.

**2024-25 Update –** This goal continues to be a pipe dream. Em-Tech faculty load is at or beyond capacity, and so the development of more specialized electives has not been a focus. This goal remains on our radar, as it remains true that a concentration of specialized skillsets/knowledge would benefit our students and local employers.

**Goal status: Ongoing**

**2025-26 Update –** Recent submission to the curriculum committee has reduced the UAS101 course from 5 to 3 credits thereby allowing the substitution of other 3 credit technical electives. This change will not take effect until 2027. Attendees at the upcoming Electro-Mechanical Technology Advisory committee will be offered a chance to decide suitable technical electives.

**7. Develop general electives relevant to technician roles:**

Rationale: Employers in the EM-Tech advisory committee requested general electives relevant to technician roles specifically technical writing, interpersonal communication, business practices, and project management. The EM-Tech program is in close communication with the Business Pathways department to develop these suggested courses. Opportunities exist in both departments to be supportive of these goals. For example EM-Tech students can be tasked to do a presentation in a technical class or asked to write about a technical topic in a general education class.

**2023-24 Update: Ongoing -** Writing instructor identified a majority EM-Tech writing class and incorporated elements of technical writing. BA 101 Introduction to Business was designated as general education. Further efforts to designate these additional recommended courses are ongoing: BA 170 Project Management, BA 206 Management Fundamentals, BA 208 Business Ethics, BA 223 Principles of Marketing, BA 150 Introduction to Entrepreneurship, BA 285 Human Relations in Organizations, BA 205 Business Communication.

**2024-25 Update –** Technical writing remains the only general education elective class that has an option specifically tailored to technicians, focusing on technical writing. Other gen ed electives (for example those in the Business and Communications category) remain generic and not necessarily tailored for technicians. Em-Tech will continue to pursue this goal as time allows.

**Goal status: Ongoing**

**2025-26 Update –** Writing remains the only general education elective with an option to tailor the content for technicians.

**8. Rewrite EM-Tech program outcomes:**

Rationale: With EM-Tech Advisory committee assistance rewrite EM-Tech program outcomes to better reflect the updated course content and outcomes.

**2023-24 Update:** Postponed estimated completion Winter 25

**2024-25 Update –** Program outcomes have been re-written and taken to the Curriculum Committee. These updated outcomes have been approved.

**Goal status: Complete**

## 3. List any additional goals added since the most recent Program Review, include the rationale for each new goal, and describe any actions taken or planned to be taken in the pursuit of each new goal. (Label each goal as Completed, Ongoing, Cancelled, or Postponed [include anticipated term/year for resuming activity]):

Meet with USACE power plant trainee supervisor 23 Nov to discuss new course layout for first year USACE Mechanics certificate to include the new EET101 course.

Rewrite Electro-Mechanical Technology program course layout to allow option of technical electives mentioned in goal 6 above.