Helena College Mission:
Helena College supports our diverse community by providing the paths and tools necessary to assist learners in achieving their educational and career goals.

Advisory Council Meeting Minutes

Industrial Welding and Metal Fabrication

February 18th, 2025 (1 p.m. – 2 p.m.)

Attendees:

COMMUNITY MEMBERS:

Austin Brooks – Sletten Inc.
John McClernan – AFFCO Construction and Fabrication
Casey Howery – Applied Materials, Inc.
Brent Eades – Spika Design and Manufacturing

HELENA COLLEGE MEMBERS:

Cody Torres – Welding Technology Instructor
Glen Zeigler – Industrial Welding and Metal Fabrication Instructor
Stephanie Hunthausen – Executive Director of Career Technical Education
Kathy Mortimore – Skilled Trades Advisor
Melissa Mousel – Program Manager of CTE

Program/Department Updates

Enrollment Updates:

- Welding Technology (CAS) Enrollment:
  - Currently 12 out of 15 capacity
- Industrial Welding & Metal fabrication (AAS) Enrollment:
  - Currently 9 out of 15 capacity
- Although our numbers have been very consistent overall for the last 10 years, the IWMF faculty have set a goal to boost enrollment in the program to 40-45 students, aligning with the average of 43 students from AY 2010 to AY 2017 in our Academic Program Review.

Equipment Updates:

- Continued partnerships with Miller Electric have provided access to their newest technology in industrial welding machines. Delta Weld Machines with the Field-Pro Feeders that are capable of Pulse Welding along with RMD features.

Success Stories:

- The IWMF program has seen a significant increase in enrolled students obtaining employment within the welding industry in the last couple of years along with a significant increase of industry employment after graduating as well.

Topics for Discussion

1. We would like to focus today on exploring a second-year class and getting feedback:

   WLDG 227- Advanced Joining Processes Theory and Practical Application
   6 Credits- 135 credit hours
   Course Outcomes:

   1: Explain the GMAW process along with the proper set up of GMAW equipment used to weld aluminum, stainless steel and carbon steel with various transfer modes.
   2: Perform various aluminum, stainless steel and carbon steel welds using the GMAW process.
   3: Perform various carbon steel welds using the FCAW-S process.
   4: Identify different SAW process variables.
   5: Identify the fundamentals of soldering and brazing.

   Different Electrodes Covered in this Course:

   - E71T-11 – self shielding flux core - FCAW
   - E70C 6M H4 – metal core using GMAW and GMAW-P
   - E70S – 6 – solid wire using GMAW and GMAW-P - RMD
   - ER4043, ER5356 – Aluminum using GMAW, GMAW-P and GMAW-PP
   - 309LT1/4 – dual shield stainless steel – FCAW
   - 309LSi/308L – stainless steel using GMAW and GMAW-P
   - ERCUSi – silicon bronze - using GMAW and GMAW-P - GTAW
   - EMK12S – Submerged Arc
   - Electrical Soldering/Torch Brazing
   -

2. Questions for advisory board:

- Which welding processes are primarily used for your industry?
  - Sletten works primarily with structures. They primarily use the following: Flux core soft-shielding, 71 T11, T8, Dual Shield Stainless, D1-5, D1-6.
  - Applied Materials works within very tight tolerances. They primarily use the following: pulse, stainless-TIG welded, and possibly looking at using Dual Shield (they have a need to keep the heat out).
  - Spika Design and Manufacturing works primary with aluminum. They primarily use the following: 4043 Pulse MIGs, everything needs to be at code for D1-2.
  - AFFCO is 80% structure so they use mainly flux-core. They also do a lot of maintenance on older metal, so they use stick welding, air arcing, and gouging.

- Which electrodes are primarily used for your industry?
  - Silicon bronze is used
  - Sub arc isn't used in Montana
  - Possibly RMD
  - TIG welding is used in a tight tolerance
  - Dual Shield
  - Keep pulse, stainless, aluminum

- Are any changes needed in our curriculum or program offerings? What additional training/skills would be useful for students?
  - Pipe welding is currently based off of the API 1104 code; it was suggested that we look at ASME Section 9 for pipe welding.
  - Computer skills
  - Blueprints reading
  - Reading skills/comprehensive necessary
  - WPS reading
  - Other note: testing for qualifications is expensive and time consuming

- What are your anticipated workforce needs? In 1 year, 3 years, 5 years?
  - Spika needs 2 welders by end of year.
  - Sletten wants to double their workforce within the next year to increase up to around 1500 employees.
  - AFFCO is currently at 80 and wants to be at 150 employees.

Wrap Up and Summary of Takeaways:

1. Based on feedback from the advisory board, we can make some adjustments to the WLDG 227 outcomes to focus efforts on the most common processes used in industry.

2. We continue to see a need for students to apply critical thinking on the job which presents and opportunity to think about how we incorporate reading and interpretation into welding classes.
3. We would like to continue to build partnerships with employers and industry to keep the trend of students entering the welding field.