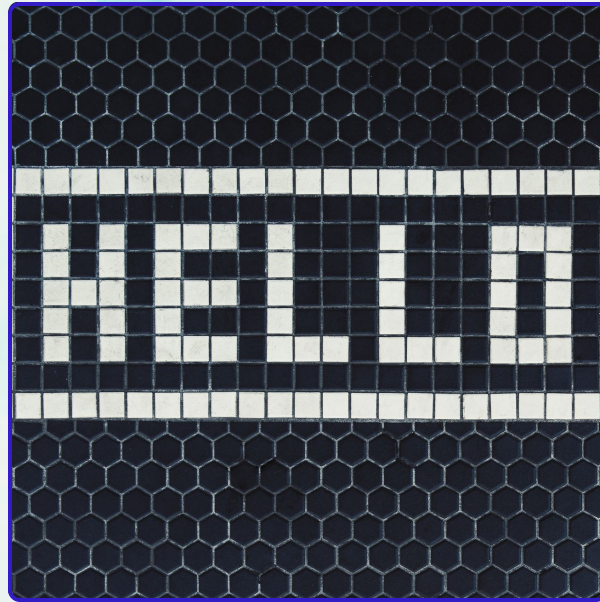




Machine Technology and Welding Advisory Committee Meeting

December 7, 2021



Welcome!

Who are you?

Please share your name, role, organization.

AGENDA

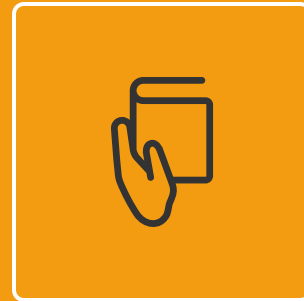
Where We Are. Where We're Going.



Career Education Overview

Alina Varona, Dean of Career Education and Workforce Development

College Updates and COVID Impact.



PROGRAMS



ENROLLMENT



STUDENT
OUTCOMES

CAREER EDUCATION AND WORKFORCE DEVELOPMENT GOALS

Prepare students and individuals with skills for 21st century jobs, careers, and the future of work.

Degrees and Certificates

- **Create Pathways & Support Momentum**

Short Training & Workforce Development

- **Respond In-Time to Labor Market Needs and Connect to Employment**

Non Credit Education

- **Ladder and Bridge to Basic Skills, Work, and Credit**

HELP STUDENTS BUILD AN ENTREPRENEURIAL MINDSET

Career Education: Programs

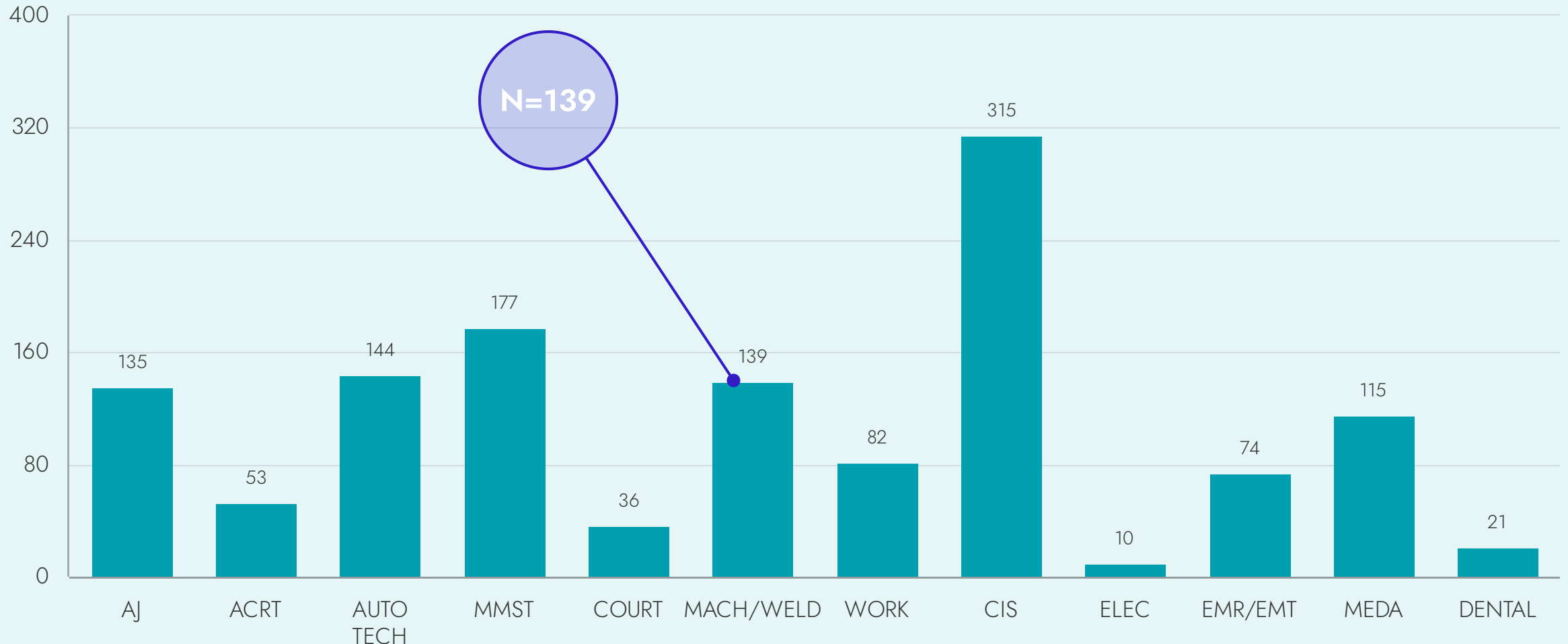
<http://cte.marin.edu>



- Administration of Justice
- Auto & Industrial
 - Auto Collision Repair; Auto Technology; Electronics; **Machine & Metals; Welding**
- Computers & Multimedia
 - Computer Information Systems; Graphic Design; 3D, Video, Game Dev; Web Design and Development; MS Office Specialist Certification
- Court Reporting
- Health Sciences
 - Dental Assisting; Emergency Medical Technician Training; Medical Assisting
- Organic Farming
- Education 2 Career (E2C)
- Summer Career Academies
- Short-Term Career Training Programs (12 Weeks)
 - Office Technology; Marketing; Business Management; Accounting

Unique Enrollments by Program

2019-2020 Unduplicated Headcount by Program

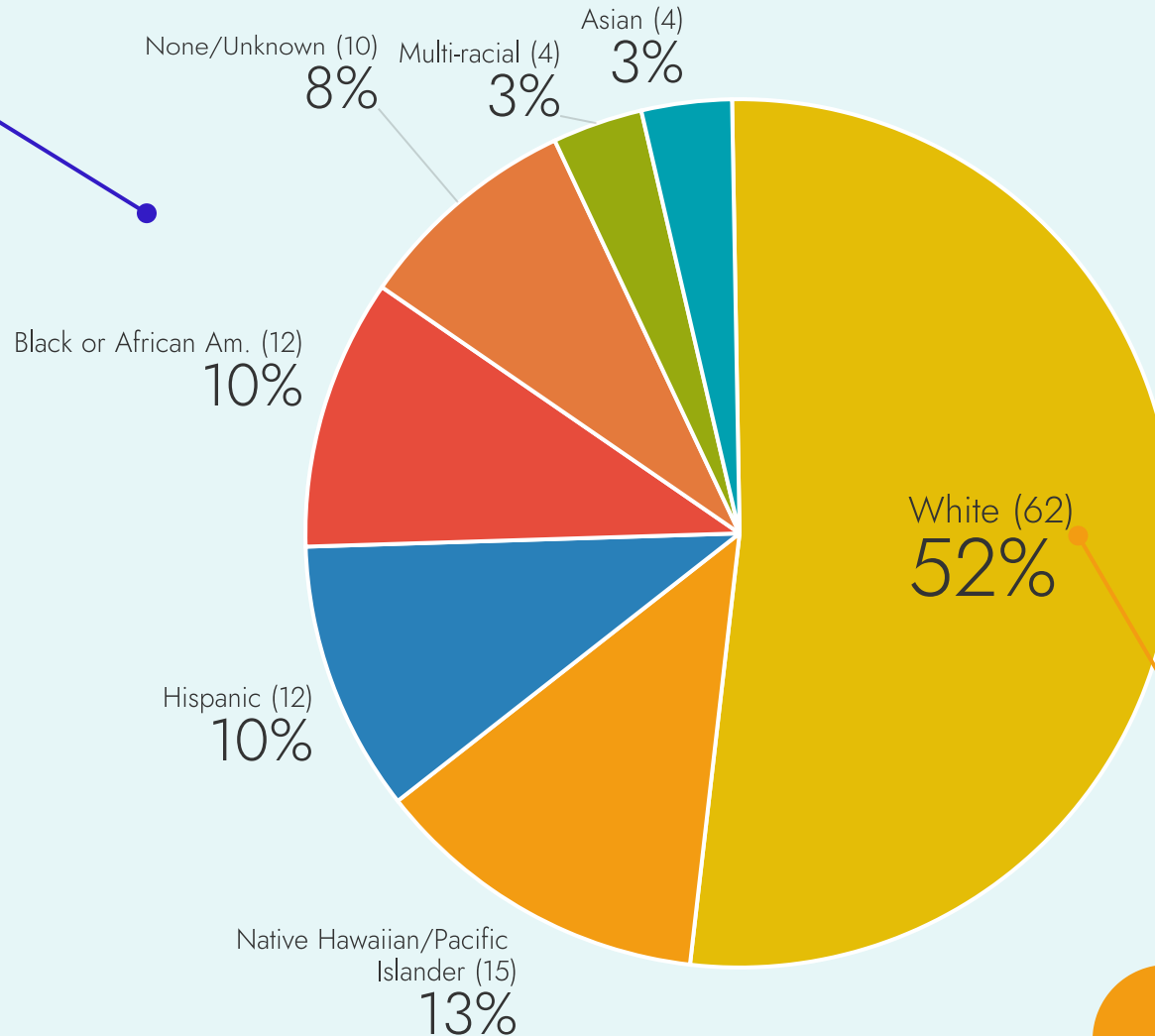


N=28 for 2020-21 Welding Only; N=1301 Total Student Count

Student Demographics

Machine Metals Technology 2018 - 2020 **Average**

82% Male (98)
9.4% Female (11)



COLLEGE OF MARIN CREDIT STUDENT CHARACTERISTICS

Gender: Male 39% Female 60%;
Median Age: 23
Race/Ethnicity:
Asian: 487 (7%)
Black/African American: 207 (3%)
Hispanic: 1,985 (30%)
Multi-racial: 408 (6%)
Native American: 14 (0.2%)
Native Hawaiian/Pacific Islander: 13 (0.2%)
White: 3,211 (48%)

Ave. number count in parenthesis

Program Outcomes

Machine Metals Technology 2018 - 2021

Persistence - First Time Students

Fall 2017 to Fall 2019

Program: **77%** average

College: **73%** average

- MACH classes closed in Spring 2020 due to COVID-19

Course **Retention** by
Gender (%)

Fall 2018 - Spring 2021

- Women 82% in program
- Men 88% in program

**Program
Retention
Overall:**

85%

Aligned with College
average as a whole

Program Success -

Awards in Machine and Metals
Technology

Fall 2018 - Spring 2021

- **AS Degrees: 1**
- **Certificates: 2**

Course Success -

Overall course success rate is:

84%

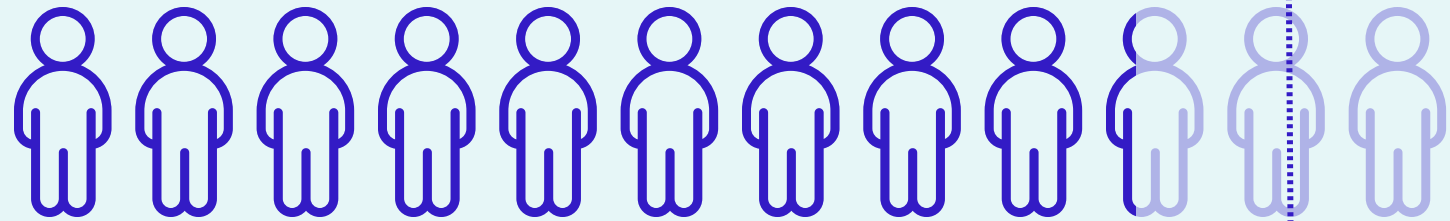
which is above COM's actual
rate at 77% in 2019 - 20

EMPLOYMENT DATA

18 Months after College Completion

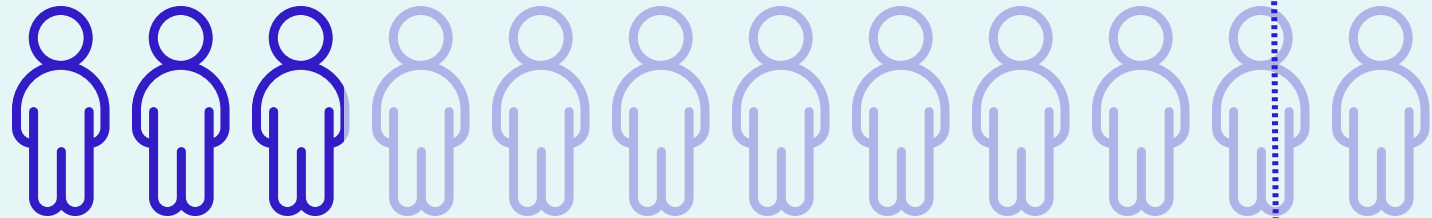
85% Target

77%



Found a job very closely or closely related to their field.

23%



Reported job is not closely related to their field.

Labor Market Overview

Heather Rahman, Workforce Specialist

Regional Labor Market Information

Sources: Centers of Excellence Demand Tables
and O*Net Online

Regional Counties:
Marin, Napa, Sonoma,
Solano, San Francisco
and San Mateo, Contra
Costa, Alameda

Some Bay area
companies pay
entry-level employees
starting at \$20-26 per
hour with medical
benefits, and top-level
positions pay at \$40
per hour. (MACH)

Occupation	Average Annual Earnings	Annual Job Openings projected through 2028
CNC Machine Tool Operators	\$49,480	89
CNC Machine Tool Programmers	\$82,900	26
Machinists	\$56,950	494
Welders, Cutters, Solderers and Brazers	\$55,520	341
Welders, Soldering and Brazing Machine Setters, Operators and Tenders	\$45,660	29

Knowing different
techniques for
welding and CAD
will qualify a
welder for higher
paying jobs.

<http://coeccc.net/>
<https://www.onetonline.org/>

Open Discussion

PRIORITIES AND CURRENT LANDSCAPE

Advisory Member Share Outs & Discussion

What has this last year looked like for your field?



Staffing and Recruiting

- Where do you find your candidates?
- What wages can be expected for entry level positions?
- Has there been an increase in number of entry level opportunities?
- Are wages increasing/decreasing since 2020?



Needs and Priorities

- What are your current priorities and needs for hiring?

PRIORITIES AND CURRENT LANDSCAPE

Advisory Member Share Outs & Discussion

What will the next year(s) look like for your field?



Training & Professional Development

- What are the skills required? For which levels?
- Any emerging technology skills that should be considered?



Community Partnership & Impacts

- How should we best prepare our students to qualify them as viable candidates for companies/organizations you belong to?
- What will better ensure employee retention in the market as a whole?

Machine Metals Technology Program

Ron Palmer, Department Chair, Automotive Faculty

Grant Kerr, MACH Instructor

Curriculum - Revisions Overview



COURSES - RECENTLY REVISED

- MACH 100 - Career, Precision Measurement, and Math for Industry; about to release; cross-listed
- MACH 101 - Introduction to Machine Technology
- MACH 102 - Intermediate Machine Technology
- MACH 103 - Machine Tool Processes
- MACH 104 - CAD 3D Modeling and Drafting
- MACH 105 - CAD/CAM Production
- MACH 106 - Introduction to CNC Machining
- MACH 107 - CNC Programming for Mills and Lathes

COURSE CONTENT RESOURCES

- Precision Machining Technology, Hoffman (Cengage Publisher)
- Machining Fundamentals, Walker (G-W Publisher)
- CNC Programming Handbook, Smild (Industrial Press)
- CNC Machining, Gizelbach (G-W Publisher)
- Fusion360 implementation for teaching CAD (design) and CAM (programming)

PROGRAM GOALS

- 10 month program to connect to employment
- 20 - 30 students per year, ideally
- Students will be able to program and operate CNC
- High school friendly; alternative STEM pathway
- Attract a more diversified student body
- Align with NIMS certification standard
- Provide avenue for employment advancement

Equipment Assessment and Updates

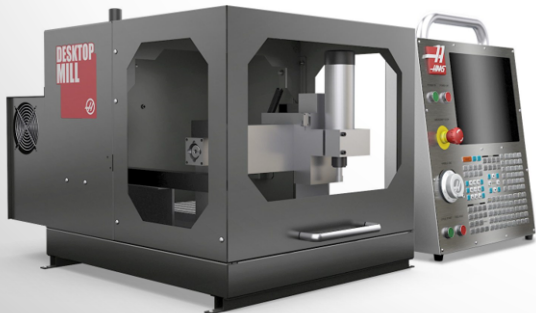
- Found most recent machines purchases were 1991
- Maintenance on old equipment still in service set for Spring 2022
 - referral for technician?
 - Bridgeport with Crusader Control
 - DYNA CNC Lathe
- Purchased 2019 - new HAAS Machines

Links for TM2P and TL-1 to be installed

- <https://www.haascnc.com/machines/vertical-mills/toolroom-mills/models/tm-1.html>
- <https://www.haascnc.com/machines/lathes/toolroom-lathe/models/tl-1-edu.html>

Link for desired Desktop Mill and Control Unit

- <https://www.haascnc.com/machines/vertical-mills/desktop-mill.html>



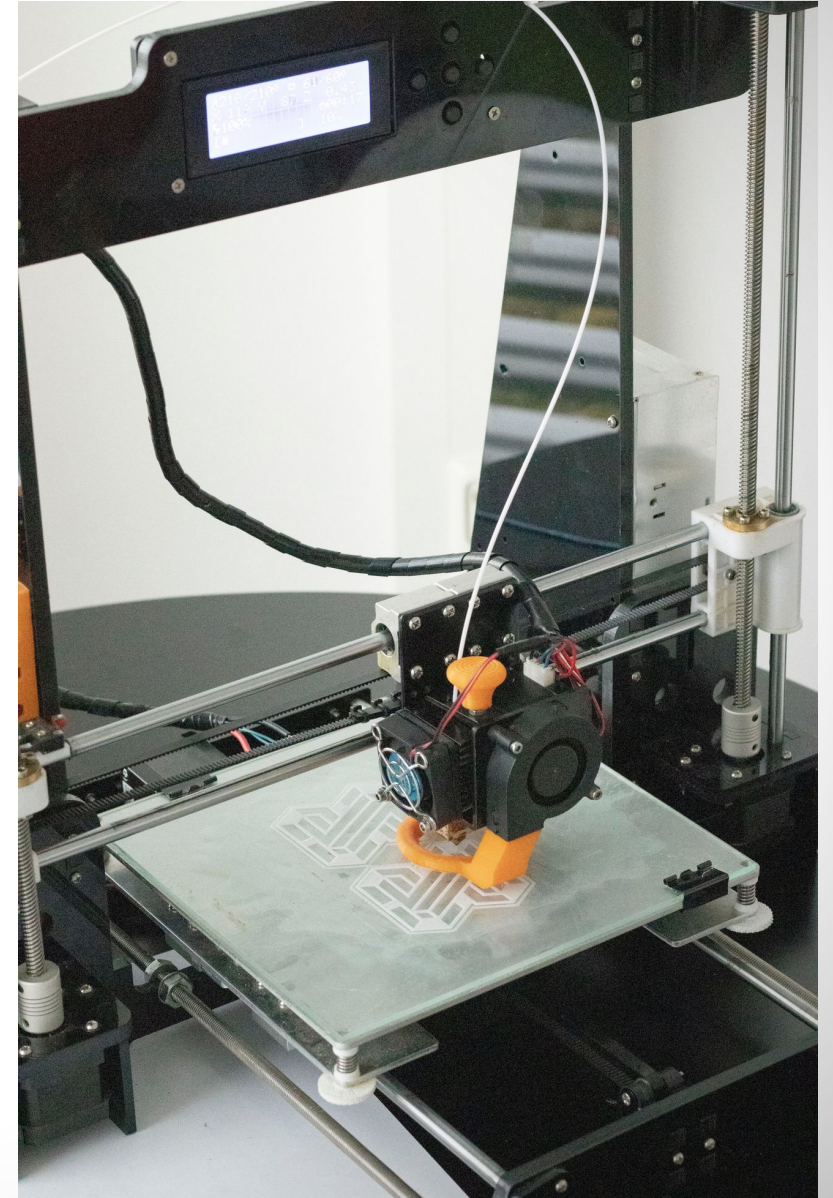
Workspace

RENOVATION

- Currently organizing shop space, tools and disposing of clutter
- Removing excess equipment to clear space
- Workshop building will be undergoing HVAC upgrades - FALL 2022

FUTURE MAKERSPACE/FAB SPACE

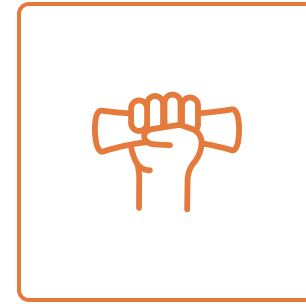
- Located at IVC, Pomo Building 5S
- Using Existing Fabrication Equipment
- Utilize Fusion 360, 3D Printer, Laser Cutting Machine, HAAS Desktop Mill
- Work with other COM Education Sectors
- Work with High Schools



Machine and Metals Technology Education Offerings



Certificate of
Achievement,
Machine Metals
Technology



A.S. Degree,
Machine and
Metals Technology

Open Discussion

Questions?

Thoughts?

Suggestions.

New Educational Pathways?

Welding Technology Overview and Updates

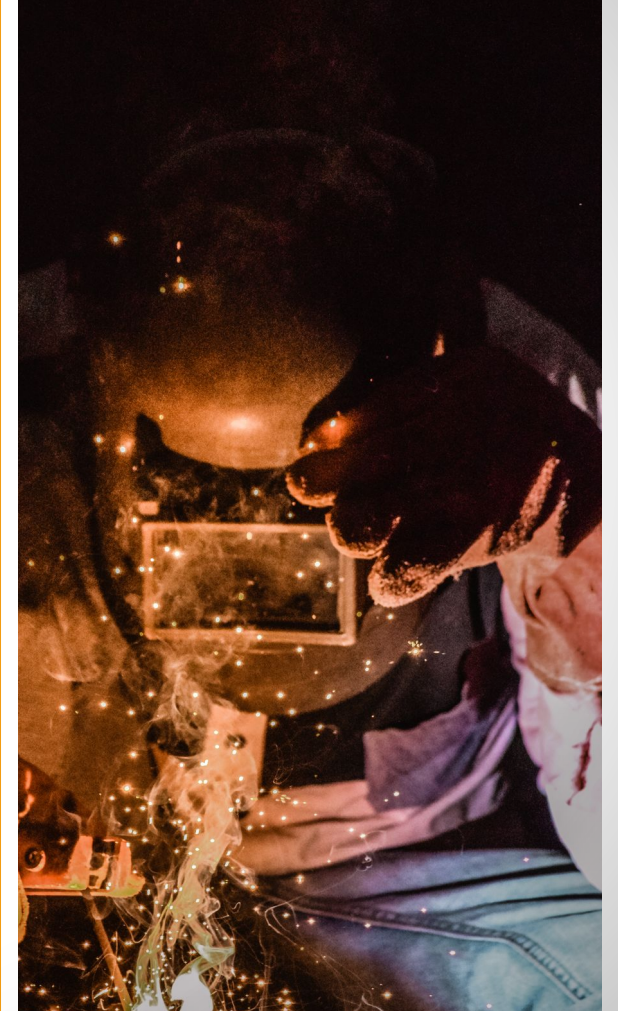
Padraig McGee, Welding Instructor

Ron Palmer, Career Ed Chair and Instructor

Curriculum

COURSE INCLUSIONS/REVISIONS - CURRENTLY UNDERWAY

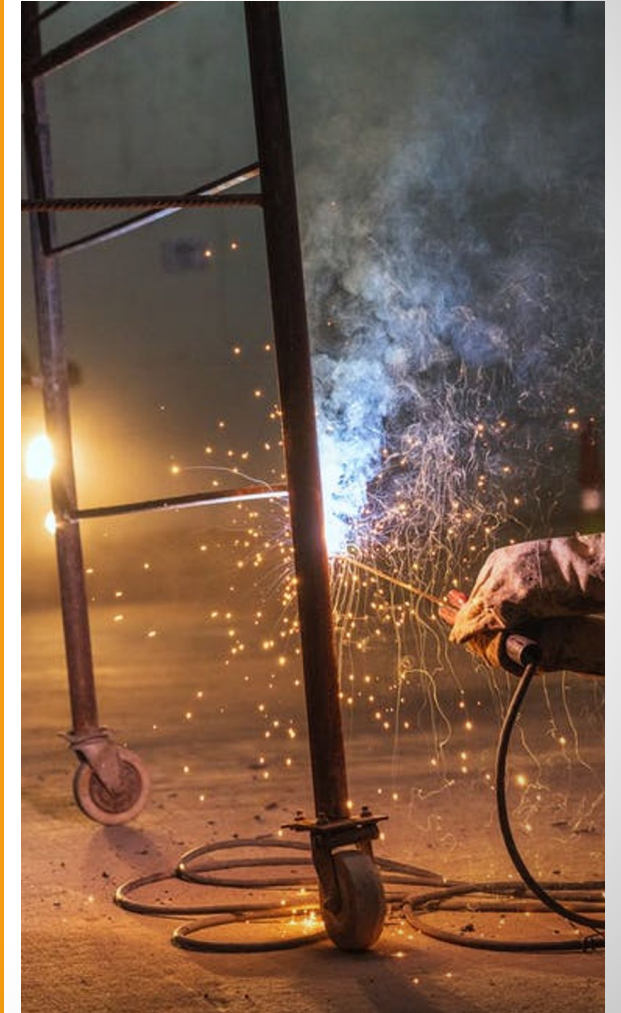
- Welding courses will be identified with WELD, separated from MACH courses
- Incorporating 232 wire welding
- MIG and TIG welding included (tube and pipe)
- 3-position plate skills/dual-shield
- Training on Regulated Metal Deposition
- Blue Print reading included
- Considering advanced welding training using orbital machine
- Incorporating oxy-acetylene
- CAD Fusion/CAM
- *WELD 100 - Career, Precision Measurement, and Math for Industry; about to release; cross-listed*



Curriculum

COURSES

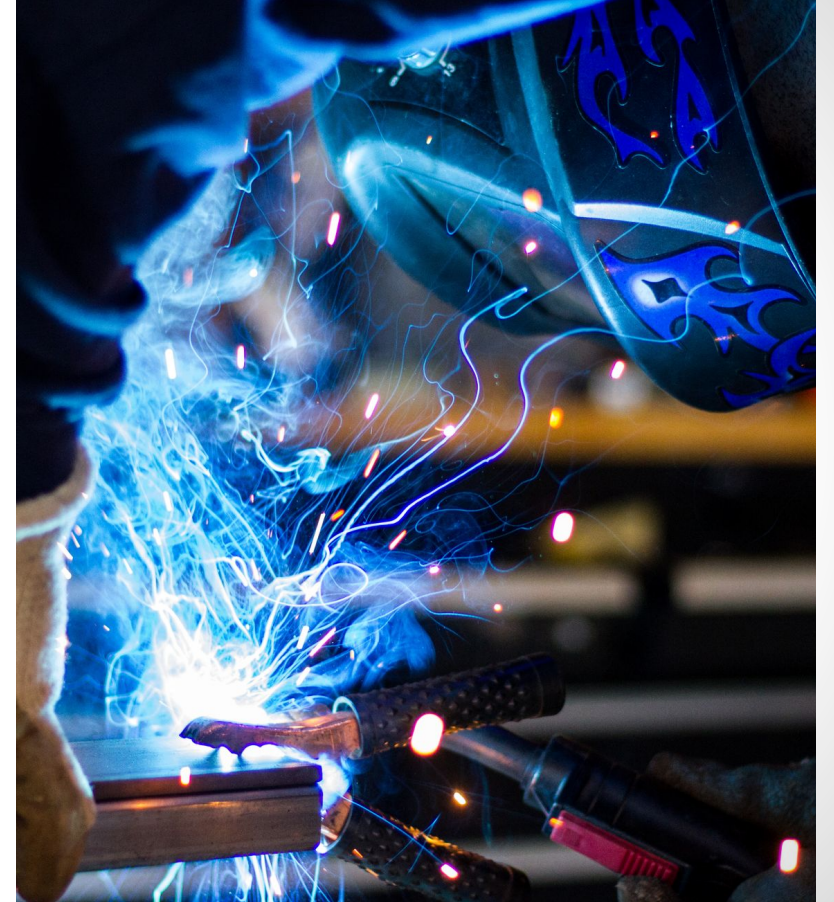
OLD COURSES	updated and changed to -->	NEW COURSES	
MACH 106A	Metal Fabrication Fundamentals	WELD 101	Intro to Welding
MACH 130	Welding I	WELD 102	Interm. GMAW/MIG Weld
MACH 130A	Welding I	WELD 103	Advanced GMAW/MIG Weld
MACH 131	Welding II	WELD 104	Interm. GTAW/TIG Weld
MACH 131A	Welding II	WELD 105	Advanced GTAW/TIG Weld
MACH 230	Advanced Welding	WELD 106	SMAW Weld
MACH 230A	Advanced Welding	WELD 107	OFW and Welding Fabrication



Equipment/Workspace

UPDATES

- Equipment and upgrades
- Building renovations and space available



Possibilities for the Future in Welding

POSSIBLE EDUCATIONAL PATHWAYS

- Pre-apprenticeship
- High School pathway
- Certificate of Achievement
- Other Ideas

PROGRAM GOALS

- Grow awareness among communities and other students
- Diversify the student body
- Make the program cost effective
- Build direct job alignment



Open Discussion

Questions?

Thoughts?

Suggestions.

New Educational Pathways?

Action Items

Ron Palmer, Career Ed Chair and Instructor

Heather Rahman, Workforce Program Specialist

Action Items: WELD/MACH Changes

Program Action Item: COM to offer a Certificate of Achievement offering in Welding

- Reasons
- Impact
- Discuss
- Vote?

- Motion to vote on action item?



Open Discussion

Questions?

Thoughts?

Suggestions.

Approval?

Summary/Wrap-up
Next Steps



Thank You!



<http://cte.marin.edu>

Happy Holidays!!

Indian Valley Campus

