### I. Team Members

<table>
<thead>
<tr>
<th>Name</th>
<th>Member Type</th>
<th>Email</th>
<th>Contact Phone</th>
<th>Responsible for what part</th>
<th>Signature</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steve Peterson</td>
<td>Team Member</td>
<td><a href="mailto:steve.peterson@marin.edu">steve.peterson@marin.edu</a></td>
<td>415-497-0199</td>
<td>Welding</td>
<td></td>
<td></td>
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### II. Program Review Committee

<table>
<thead>
<tr>
<th>Name</th>
<th>Committee (Chairs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chris Schultz</td>
<td>Curriculum Committee Chair</td>
</tr>
<tr>
<td>Blaze Woodlief</td>
<td>Educational Planning Committee</td>
</tr>
<tr>
<td>V-Anne Chernock</td>
<td>Facilities Committee Co-Chairs</td>
</tr>
<tr>
<td>Yolanda Bellisimo</td>
<td>Facilities Committee Co-Chairs</td>
</tr>
<tr>
<td>Nick Chang</td>
<td>Planning and Resource Allocation Committee Co-Chair/Academic Senate President</td>
</tr>
<tr>
<td>Sara McKinnon and Becky Brown</td>
<td>Planning and Resource Allocation Committee Co-Chair/Instructional Equipment Committee Chair</td>
</tr>
<tr>
<td>Chris Schulz</td>
<td>Program Review Committee Chair and SLO Coordinators</td>
</tr>
<tr>
<td>Michael Irvine</td>
<td>Student Access and Success Committee Chair</td>
</tr>
</tbody>
</table>

### III. Vice President of Academic Affairs

<table>
<thead>
<tr>
<th>Name</th>
<th>Signature</th>
<th>Date</th>
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</thead>
<tbody>
<tr>
<td>Nick Chang</td>
<td></td>
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</table>

### IV. Board of Trustees President

<table>
<thead>
<tr>
<th>Name</th>
<th>Signature</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eva Long</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Program Overview—Introduction

MACH-2009

Instructions: Use this form to quickly outline your program at College of Marin. Briefly answer each of the questions and use bullet points whenever possible. Provide any attachments that substantiate or expand on the questions below.

I. Program Definition
Outline the unique qualities that define the importance of your program.

Study in the field of machine and metals technology is designed as preparation for entrance into metalworking occupations. Graduates may enter the fields dealing with industrial production, prototype construction, special die work, or research and development. The courses in welding are designed to provide opportunity for the development of skills, knowledge, and experience for employment in the occupation and as auxiliary experience for persons in other majors.

II. Program Purpose
Pathway:
Career Tech. Ed.

Briefly describe how your program fits into the pathways you have chosen.

The program provides instruction in the theory and practical operation of lathes, milling machines, welding and related industrial machine tools. All credits may be applied toward the Associate of Science Degree and are transferable for baccalaureate degree credit at the California State University. Additionally, the program provides state-of-the-industry training in a modern, well equipped facility. The program content and equipment insures a training program that is relevant to professionals upgrading their skills as well as the student entering the profession.

III. Students Served
Briefly outline what students are served in your program.

Students wishing to develop skills and knowledge in the occupations as welders, lathe operators, machinists, mechanics, technicians, tool and die makers and tool company representatives.

IV. Program History
Briefly outline the recent history of your program.

The welding course has been offered by the college for the last 26 years. During that time it has enjoyed the support of the college and the local business communities. We continue to provide the bay area industries with highly skilled welding professionals. The welding building at Indian Valley campus, Pomo Cluster, received a new roof which was part of the rebuilding program.

Attachments:
List and briefly describe any attachments
Five Pathways
A description of how you serve students in the five pathways as described in the Educational Master Plan.
MACH-2009

I. Please refer to the table of estimates of how many students are in each pathway for your program/discipline over the past four years.

1. Basic Skills
Students on the Basic Skills pathway seek to improve day-to-day functioning, enhance job performance, enter new careers, and/or acquire pre-collegiate fundamental skills in order to successfully complete college level courses. The Basic Skills pathway includes English as a Second Language courses offered in both credit and non-credit divisions as well as courses in developmental mathematics and English as well as basic skills courses in computers and Library.

Our program serves students in this pathway: To a great extent/ a majority of the students

2. Career and Technical Education
Students on the Career and Technical Education pathway pursue knowledge, technical and skill training necessary for career placement, career advancement and career changes or for creative endeavors that require technical skills. Their educational goals are either an associate degree or certificate. For some degrees/ certificates, such as Nursing, the course of study is defined by external professional regulations or licensing criteria.

Our program serves students in this pathway: A good proportion of the students, but not a clear majority

3. Cultural Enrichment
Students on the Cultural Enrichment pathway focus on acquiring and expanding aesthetic abilities. Students broaden their intellectual and artistic skills through participation in creative opportunities including exhibitions, performances, or publishing work.

Our program serves students in this pathway: Some students

4. Lifelong Learning
Students on the Lifelong Learning pathway focus on intellectual and physical enrichment. Some Lifelong students may have already completed degrees and/or may be in significantly advanced positions in their careers.

Our program serves students in this pathway: Some students

5. Transfer
Students on the Transfer pathway seek successful matriculation from College of Marin to four-year institutions, universities, colleges or specialized educational institutions by completing courses that fulfill requirements for the baccalaureate degree or admission to specialized programs such as nursing. In the process of completing transfer requirements, these students may also earn an associate degree.

Our program serves students in this pathway:
Transfer GE: Some students
Transfer Major: None

II. What are your program’s goals for each pathway?

1. Basic Skills: NA

2. Career and Technical Education: The course provides the students, through course projects and written and manual skill tests, the technical skills necessary to enter the welding
professions.

3. Cultural Enrichment: NA

4. Lifelong Learning: The course offers those who already have some knowledge and skills in welding to expand upon that knowledge and continue their learning experience.

5. Transfer: NA

III. How does your program/discipline help students meet these goals?
The program helps our students meet these goals by providing hands on experience in the different welding processes.

IV. How do you measure your success?
Success is measured by the advancement of the student's skill sets as they progress through the course.

V. How do you make sure your students are able to get through your program in a timely fashion?
The course is structured to give the students a weekly skill project with each week preparing them for the next level of advancement.
I. Access
Based on the enrollment numbers and demographic breakdown for your courses, what significant factors or barriers are influencing student access to your courses or program?

There are no significant barriers influencing students.

II. Student Success
Based on the student success and retention rates breakdown for your courses, what significant factors or barriers are influencing student success in your courses or program measured by completion of course and grade earned?

Note: Success Rate is the percentage if students who received a passing grade of A, B, C, or P at the end of the semester.

Note: Retention Rate is the percentage of students retained in a class at the end of the semester. In Progress and Report Delayed grades are excluded. Cancelled classes and classes with no grades shown are excluded.

There are no significant barriers influencing students.

III. Student Retention
Based on the student success and retention rates breakdown for your courses, what significant factors or barriers are influencing the ability for the student to succeed at more advanced courses for which your course is a prerequisite.

The one significant factor affecting student success is the limited number of welding machines available to the advanced students.

IV. Improving Student Success and Retention
What key factors would further improve your student success and retention or support your current level of success? Please check any applicable statements below and then provide additional details/explanation on your choices below.

- Access to student support services (counseling, tutoring, etc.)
- Curriculum change
- Course scheduling for students needs
- New offerings/additional sections
- Articulation for transfer or COM GE
- Recruitment/outreach
- Student/job market demand change
- Faculty availability
- Facilities & technology

Other:

V. Please explain and provide additional details regarding your choices above:

The need to upgrade equipment to reflect real world working conditions.
Facilities Questionnaire
MACH-2009

What are the existing facilities issues that impact student access and success, or health and safety? (address any of the following: Size, location, conditions, maintenance, features, a/c, lighting, adjacencies, other.)

None
Curriculum
MACH-2009

1. Course Outlines of Record must be updated every 5 years to remain current for content, texts, student learning outcomes as well as for articulation purposes. Are you aware of the dates on your course outlines? If not, contact OIM to check. If you have courses that are over 5 years old, are you planning on updating them? Please list.

The welding courses will be updated as needed to reflect changes in workplace requirements, industry standards and will include new reference materials, course outlines and SLO's.

2. Are you planning on changing, updating or revising and degree or certificate requirements? If so, please explain how it will improve student learning, student success and/or access.

No

3. Are you collaborating (or thinking about collaborating) with other departments to develop joint curriculum for learning communities? If so, please describe briefly and explain how it will improve student learning, student success and/or access.

Yes. Working with the the Machine and Auto Body departments to expose the students to the use of welding technology in the support of these different disciplines.

4. Do you plan to develop any new curriculum? If so, please describe briefly and explain how it will improve student learning, student success and/or access.

No

5. Do you plan to develop any new Distance Ed courses or develop Distance Ed versions of existing courses? If so, please describe briefly and explain how it will improve student learning, student success and/or access.

No

6. Do you plan to add or increase your material fees for any of your classes? If so, please list the classes and the proposed new or revised material fees for the respective classes.

No
Student Learning Outcomes
MACH-2009

Five College Learning Outcomes:
1. Written, Oral and Visual Communication: Communicate effectively in writing, orally and/or visually using traditional and/or modern information resources and supporting technology.
2. Scientific and Quantitative Reasoning: Locate, identify, collect, and organize data in order to then analyze, interpret or evaluate it using mathematical skills and/or the scientific method.
3. Critical Thinking: Differentiate between facts, influences, opinions, and assumptions to reach reasoned and supportable conclusions.
4. Problem Solving: Recognize and identify the components of a problem or issue, look at it from multiple perspectives and investigate ways to resolve it.
5. Information Literacy: Formulate strategies to locate, evaluate and apply information from a variety of sources - print and/or electronic.

I. Degrees and Certificates
1. What degrees and certificates does your discipline offer?

We do not offer degrees or certificates but students can apply for a Welding Certification through the local unions or by making an appointment with a Certified Welding Inspector to take the test(s).

2. Keeping in mind the five College Learning Outcomes above as well as what your discipline specifically requires of your graduating students, what should students be able to do when they have completed your discipline's requirements for each degree or certificate?

Students should be able to pass a Welding Certification test.

3. How do students in your program demonstrate that they meet each of the college-wide learning outcomes? What courses, activities, and/or projects are students required to complete that relate to each outcome?

i. Written, Oral and Visual Communication

Students must pass a written test as well as oral question and answer sessions during class room instruction. Visually the must be able to identify the various types of welds, welding equipment and welding supplies.

ii. Scientific and Quantitative Reasoning

The students are taught the various types of welding gasses and electrical components of the welding equipment and how to recognize and solve any issues regarding these items.

iii. Critical Thinking

To understand the critical factors of materials and welding techniques and processes to produce professional results.

iv. Problem Solving

Understanding of the physical properties of various metals and welding processes to produce the desired welds.

v. Information Literacy

Research into various materials and venders to make informed decisions of the job requirements.

II. General Education:
1. Does your discipline offer any classes which count for general education requirements?
   No

2. Which General Education courses in your discipline address the each of the five College Learning Outcomes? Please list courses for each of the following:
   i. Written, Oral and Visual Communication
      NA
   ii. Scientific and Quantitative Reasoning
      NA
   iii. Critical Thinking
      NA
   iv. Problem Solving
      NA
   v. Information Literacy
      NA

III. Course Level Outcomes:
1. Do all of your Course Outlines of Record include Student Learning Outcomes? If not, are you revising them?
   Yes

2. What percentage of faculty members in your discipline include SLOs in their course syllabi?
   100 %

3. Assessment:
   i. How often do you assess these SLOs?
      Every year

3. Assessment:
   ii. In the last two years every discipline developed SLOs specifically related to College Learning Outcome #3: Critical Thinking. Have you assessed this or any of the stated Student Learning Outcomes in your course outlines over the last year? If so, please summarize the results.
      Yes. The results were that the SLO's are appropriate for the current curriculum

3. Assessment:
   iii. What improvements have you made or do you plan to make in the future?
      Continue to review the course and modify the curriculum and SLO's as necessary to provide the students with the best information and guidance in achieving their goals.

3. Assessment:
   iv. What do you plan to assess this year? Who will you assess? How will you assess?
      We will be assessing the course to identify areas of improvement including budget, materials, testing and student progress. This will be done by staff review and feedback from students at the end of the semester.
Instructional Equipment
MACH-2009

This section will be filled out by faculty and reviewed by the Department Chair, the Ace Dean, the Instructional Equipment Committee, IPC and Budget. Please enter items that will be used over a period of semesters BY STUDENTS. (Note: These should be NEW items that you are requesting one time only - not ongoing or consumable. Ongoing and consumable requests go under "Other Instructional Equipment". Technology-related requests should go under "Technology Requests".) Select whether the item is less than or more than $200 each. If you are a large discipline with several areas, please include which area this item is for. Include Tax, Shipping and Handling in the total cost for each item.

I. Instructional Equipment/Materials Requirements

<table>
<thead>
<tr>
<th>Priority</th>
<th>To Support</th>
<th>Category</th>
<th>Discipline Area</th>
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</thead>
<tbody>
<tr>
<td>01</td>
<td>40 Students</td>
<td>Over $200 Each</td>
<td>Welding</td>
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</table>

Description and part number for ordering:
Mig Welder, Millermatic® 140 Auto-Set

<table>
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<tr>
<th>Qty.</th>
<th>Unit Cost:</th>
<th>Tax:</th>
<th>Shipping:</th>
<th>Total:</th>
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<td>$808.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$808.00</td>
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</table>

One-time expenses: (e.g. construction, electrical, installation)

On-going Expenses: (e.g. maintenance, repairs, staffing, and/or upgrades)

Item to be shared with the following Department/Program: (Include any shared expenses)

Do you have space for this equipment?  Yes

Justification for Item (See Rating Rubric)
1. Indicate how important this item is to the life of your discipline.
   - 'A' means that your discipline cannot teach your course(s) without the requested equipment.
   - 'B' means that your course(s) would be greatly enhanced with the requested equipment.
   - 'C' means that you would like this piece of equipment for your course(s) but can wait for a future academic year.

   Rated 'B'. First time request.

2. Is this equipment required to meet Title 5 and/or Ed Code? If so, how? (Cite code)
   Is this equipment required to meet any local, state or federal Health and Safety Code? If so, how? (Cite code)

3. How will the quality of instruction be improved for student learning and success? Is it necessary for students to succeed in a series of courses?
   This equipment represents what the students will be using in most welding shops and on site jobs.

4. How will access for students be improved? How many students (annually) will benefit from this request? Is it required to accommodate existing students? Would it be vital to attracting new students?

5. What student learning or other outcomes are expected? Is it important to the achievement
of student goals?
This type of welding process (MIG) is the most common used in the welding profession.

6. How will these outcomes be measured for future planning? What data or evidence supports your request?

Additional Justification for this item:
This is replacement for an old (1987) Lincoln MIG welder that died last semester. The cost of repairing it (if it could be repaired) would come close to the list price of the Miller welder.
I. Consumable Instructional Operating Supplies
This section will be filled out by faculty and reviewed by the Department Chair, the Area Dean, the Technology Committee, IPC and Budget.

Note: Please group requests into broad categories of items required to teach a class. Make ONE entry for each category.

Note: These are generally ongoing costs. One-time items go under Instructional Equipment.

<table>
<thead>
<tr>
<th>Priority:</th>
<th>To Support:</th>
<th>Discipline Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>100 Students</td>
<td>Machining</td>
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</table>

Broad Category (for example in Chemistry - "Chemicals")
Instructional Supplies - ANNUAL GIVING - Supplies Machining, Machine Tools

<table>
<thead>
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<th>Annual Cost</th>
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<th>Amount of Increase</th>
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<tbody>
<tr>
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<td>Ongoing/Recurring</td>
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</table>

Item to be shared with the following Department/Program: (Include any shared expenses)

Justification for Item (See Rating Rubric)
1. Indicate how important this item is to the life of your discipline.
   • 'A' means that your discipline cannot teach your course(s) without the requested equipment.
   • 'B' means that your course(s) would be greatly enhanced with the requested equipment.
   • 'C' means that you would like this piece of equipment for your course(s) but can wait for a future academic year.

   In addition, how many times have you requested this item, but you have not received it?

   A

2. Is it necessary for students to succeed in a series of courses?
   Yes. These supplies are needed to teach the students all aspects the Machining processes they will be learning during the course of the year from beginning the student to the advanced student.

3. How will access for students be improved? How many students (annually) will benefit from this request? Is it required to accommodate existing students? Would it be vital to attracting new students?
   Access will be improved by allowing student full access to all levels of each Machining discipline.
   This will benefit 100 student per semester.
   It is required to accommodate existing students and returning students.

   The closing or cut backs in other community college's Machining courses has increased the number of student choosing the College of Marin's Machining course.

4. What student learning or other outcomes are expected? Is it important to the achievement of student goals?
   It is important to the student's achievement to pass the required course Machining tests which will enable them to move into the Machining industries.
5. How will these outcomes be measured for future planning? What data or evidence supports your request?

These outcomes will be measured through monitoring of class size and materials used during the course of the year. The fact that the Machining classes continue to grow and demands of the Machining industry to replace the (shrinking) pool of qualified Machinest.

I. Consumable Instructional Operating Supplies

This section will be filled out by faculty and reviewed by the Department Chair, the Area Dean, the Technology Committee, IPC and Budget.

Note: Please group requests into broad categories of items required to teach a class. Make ONE entry for each category.

Note: These are generally ongoing costs. One-time items go under Instructional Equipment.

<table>
<thead>
<tr>
<th>Priority:</th>
<th>To Support:</th>
<th>Discipline Area</th>
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<tbody>
<tr>
<td>01</td>
<td>100 Students</td>
<td>Machining</td>
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Broad Category (for example in Chemistry - "Chemicals")

Instructional Supplies - LOTTERY - Supplies Machining, Machine Tools

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Type: None

How Long? Ongoing/Recurring

Item to be shared with the following Department/Program: (Include any shared expenses)

Justification for Item (See Rating Rubric)

1. Indicate how important this item is to the life of your discipline.
   - ‘A’ means that your discipline cannot teach your course(s) without the requested equipment.
   - ‘B’ means that your course(s) would be greatly enhanced with the requested equipment.
   - ‘C’ means that you would like this piece of equipment for your course(s) but can wait for a future academic year.

In addition, how many times have you requested this item, but you have not received it?

A

2. Is it necessary for students to succeed in a series of courses?

   Yes. These supplies are needed to teach the students all aspects the Machining processes they will be learning during the course of the year from beginning the student to the advanced student.

3. How will access for students be improved? How many students (annually) will benefit from this request? Is it required to accommodate existing students? Would it be vital to attracting new students?

   Access will be improved by allowing student full access to all levels of each Machining discipline.

   This will benefit 100 student per semester.

   It is required to accommodate existing students and returning students.

   The closing or cut backs in other community college's Machining courses has increased the number of student choosing the College of Marin's Machining course.

4. What student learning or other outcomes are expected? Is it important to the achievement
of student goals?
It is important to the student's achievement to pass the required course Machining tests which will enable them to move into the Machining industries.

5. How will these outcomes be measured for future planning? What data or evidence supports your request?
These outcomes will be measured through monitoring of class size and materials used during the course of the year. The fact that the Machining classes continue to grow and demands of the Machining industry to replace the (shrinking) pool of qualified Machinest.

I. Consumable Instructional Operating Supplies
This section will be filled out by faculty and reviewed by the Department Chair, the Area Dean, the Technology Committee, IPC and Budget.
Note: Please group requests into broad categories of items required to teach a class.
Make ONE entry for each category.
Note: These are generally ongoing costs. One-time items go under Instructional Equipment.

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<tr>
<th>Priority</th>
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<th>Discipline Area</th>
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<tbody>
<tr>
<td>01</td>
<td>100 Students</td>
<td>Machining</td>
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Broad Category (for example in Chemistry - "Chemicals")
Other Contract Services Supplies Machining, Machine Tools

<table>
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<th>Annual Cost</th>
<th>Previous Cost</th>
<th>Amount of Increase</th>
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<tbody>
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</tbody>
</table>

Type: None
How Long? Ongoing/Recurring

Item to be shared with the following Department/Program: (Include any shared expenses)

Justification for Item (See Rating Rubric)
1. Indicate how important this item is to the life of your discipline.
   • 'A' means that your discipline cannot teach your course(s) without the requested equipment.
   • 'B' means that your course(s) would be greatly enhanced with the requested equipment.
   • 'C' means that you would like this piece of equipment for your course(s) but can wait for a future academic year.
   In addition, how many times have you requested this item, but you have not received it?
   A

2. Is it necessary for students to succeed in a series of courses?
   Yes. These supplies are needed to teach the students all aspects the Machining processes they will be learning during the course of the year from beginning the student to the advanced student.

3. How will access for students be improved? How many students (annually) will benefit from this request? Is it required to accommodate existing students? Would it be vital to attracting new students?
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   This will benefit 100 student per semester.
   It is required to accommodate existing students and returning students.
The closing or cut backs in other community college's Machining courses has increased the number of student choosing the College of Marin's Machining course.

4. What student learning or other outcomes are expected? Is it important to the achievement of student goals?
It is important to the student's achievement to pass the required course Machining tests which will enable them to move into the Machining industries.

5. How will these outcomes be measured for future planning? What data or evidence supports your request?
These outcomes will be measured through monitoring of class size and materials used during the course of the year. The fact that the Machining classes continue to grow and demands of the Machining industry to replace the (shrinking) pool of qualified Machinest.

I. Consumable Instructional Operating Supplies
This section will be filled out by faculty and reviewed by the Department Chair, the Area Dean, the Technology Committee, IPC and Budget. 
Note: Please group requests into broad categories of items required to teach a class. Make ONE entry for each category.
Note: These are generally ongoing costs. One-time items go under Instructional Equipment.

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<tr>
<td>01</td>
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Broad Category (for example in Chemistry - "Chemicals")
Laundry Supplies Machining, Machine Tools

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<td>Ongoing/Recurring</td>
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Item to be shared with the following Department/Program: (Include any shared expenses)

Justification for Item (See Rating Rubric)
1. Indicate how important this item is to the life of your discipline.
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I. Consumable Instructional Operating Supplies

This section will be filled out by faculty and reviewed by the Department Chair, the Area Dean, the Technology Committee, IPC and Budget.

Note: Please group requests into broad categories of items required to teach a class. Make ONE entry for each category.

Note: These are generally ongoing costs. One-time items go under Instructional Equipment.

<table>
<thead>
<tr>
<th>Priority:</th>
<th>To Support:</th>
<th>Discipline Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>100 Students</td>
<td>WELD</td>
</tr>
</tbody>
</table>

Broad Category (for example in Chemistry - "Chemicals")

Instructional Supplies - LOTTERY

<table>
<thead>
<tr>
<th>Annual Cost</th>
<th>Previous Cost</th>
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</tr>
</thead>
<tbody>
<tr>
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<table>
<thead>
<tr>
<th>Type</th>
<th>How Long?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increasing Cost</td>
<td>Ongoing/Recurring</td>
</tr>
</tbody>
</table>

Item to be shared with the following Department/Program: (Include any shared expenses)

Justification for Item (See Rating Rubric)

1. Indicate how important this item is to the life of your discipline.
   • 'A' means that your discipline cannot teach your course(s) without the requested equipment.
   • 'B' means that your course(s) would be greatly enhanced with the requested equipment.
   • 'C' means that you would like this piece of equipment for your course(s) but can wait for a future academic year.

   In addition, how many times have you requested this item, but you have not received it?
   
   A

2. Is it necessary for students to succeed in a series of courses?

   Yes. These supplies are needed to teach the students all aspects the welding processes they will be learning during the course of the year from beginning the student to the advanced student.
3. How will access for students be improved? How many students (annually) will benefit from this request? Is it required to accommodate existing students? Would it be vital to attracting new students?

Access will be improved by allowing student full access to all levels of each welding discipline. This will benefit 100 student per semester.

It is required to accommodate existing students and returning students.

The closing or cut backs in other community college's welding courses has increased the number of student choosing the College of Marin's welding course.

4. What student learning or other outcomes are expected? Is it important to the achievement of student goals?

It is important to the student's achievement to pass the required course welding tests which will enable them to move into the welding industries.

5. How will these outcomes be measured for future planning? What data or evidence supports your request?

These outcomes will be measured through monitoring of class size and materials used during the course of the year. The fact that the welding classes continue to grow and demands of the welding industry to replace the (shrinking) pool of qualified welders.

---

I. Consumable Instructional Operating Supplies

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Make ONE entry for each category.

Note: These are generally ongoing costs. One-time items go under Instructional Equipment.

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<tr>
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<th>To Support:</th>
<th>Discipline Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>100 Students</td>
<td>WELD</td>
</tr>
</tbody>
</table>

Broad Category (for example in Chemistry - "Chemicals")

Other Contract Services Welding Technology

<table>
<thead>
<tr>
<th>Annual Cost</th>
<th>Previous Cost</th>
<th>Amount of Increase</th>
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</thead>
<tbody>
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<table>
<thead>
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<th>Type</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Increasing Cost</td>
<td>Ongoing/Recurring</td>
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</tbody>
</table>

Item to be shared with the following Department/Program: (Include any shared expenses)

Justification for Item (See Rating Rubric)

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   • ‘A’ means that your discipline cannot teach your course(s) without the requested equipment.
   • ‘B’ means that your course(s) would be greatly enhanced with the requested equipment.
   • ‘C’ means that you would like this piece of equipment for your course(s) but can wait for a future academic year.

In addition, how many times have you requested this item, but you have not received it?

A

http://programreview.marin.edu/IEReportPart4.jsp
2. Is it necessary for students to succeed in a series of courses?
Yes. These supplies are needed to teach the students all aspects the welding processes they will be
learning during the course of the year from beginning the student to the advanced student.

3. How will access for students be improved? How many students (annually) will benefit from
this request? Is it required to accommodate existing students? Would it be vital to attracting
new students?
Access will be improved by allowing student full access to all levels of each welding discipline.
This will benefit 100 student per semester.

It is required to accommodate existing students and returning students.

The closing or cut backs in other community college's welding courses has increased the number of student choosing the College
of Marin's welding course.

4. What student learning or other outcomes are expected? Is it important to the achievement
of student goals?
It is important to the student's achievement to pass the required course welding tests which will
enable them to move into the welding industries.

5. How will these outcomes be measured for future planning? What data or evidence supports
your request?
These outcomes will be measured through monitoring of class size and materials used during the
course of the year. The fact that the welding classes continue to grow and demands of the welding
industry to replace the (shrinking) pool of qualified welders.

I. Consumable Instructional Operating Supplies
This section will be filled out by faculty and reviewed by the Department Chair, the Area
Dean, the Technology Committee, IPC and Budget.
Note: Please group requests into broad categories of items required to teach a class.
Make ONE entry for each category.
Note: These are generally ongoing costs. One-time items go under Instructional
Equipment.

<table>
<thead>
<tr>
<th>Priority:</th>
<th>To Support:</th>
<th>Discipline Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
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<td>WELD</td>
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</tbody>
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Broad Category (for example in Chemistry - "Chemicals")
Instructional Supplies Welding Technology

<table>
<thead>
<tr>
<th>Annual Cost</th>
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<th>Amount of Increase</th>
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<tbody>
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<td>1050.0</td>
</tr>
</tbody>
</table>

Type | How Long?
--- | ---
Increasing Cost | Ongoing/Recurring

Item to be shared with the followng Department/Program: (Include any shared expenses)

Justification for Item (See Rating Rubric)
1. Indicate how important this item is to the life of your discipline.
   • 'A' means that your discipline cannot teach your course(s) without the requested equipment.
   • 'B' means that your course(s) would be greatly enhanced with the requested equipment.
- 'C' means that you would like this piece of equipment for your course(s) but can wait for a future academic year.
In addition, how many times have you requested this item, but you have not received it?

**Priority:** A

**To Support:** All Welding classes (5)

**Discipline Area:** Welding

**Broad Category:** Welding rods, MIG welding wire, TIG Electrodes, MIG and TIG welding gases, Steel and aluminum sheets and bar stock

**Annual Cost:** $4050

**Previous Cost:** $3000

**Amount of Increase:** 35%

**Justification for Item:** This increase is to cover the rising cost of materials over the last two years. There has been no increase in the instructional budget for the last three years however the cost of steel alone has increase over 35%.

2. **Is it necessary for students to succeed in a series of courses?**
Yes. These supplies are needed to teach the students all aspects the welding processes they will be learning during the course of the year from beginning the student to the advanced student.

3. **How will access for students be improved? How many students (annually) will benefit from this request? Is it required to accommodate existing students? Would it be vital to attracting new students?**
Access will be improved by allowing student full access to all levels of each welding discipline.

This will benefit 100 student per semester.

It is required to accommodate existing students and returning students.

The closing or cut backs in other community college's welding courses has increased the number of student choosing the College of Marin's welding course.

4. **What student learning or other outcomes are expected? Is it important to the achievement of student goals?**
It is important to the student's achievement to pass the required course welding tests which will enable them to move into the welding industries.

5. **How will these outcomes be measured for future planning? What data or evidence supports your request?**
These outcomes will be measured through monitoring of class size and materials used during the course of the year. The fact that the welding classes continue to grow and demands of the welding industry to replace the (shrinking) pool of qualified welders.

---

I. **Consumable Instructional Operating Supplies**
   
   This section will be filled out by faculty and reviewed by the Department Chair, the Area Dean, the Technology Committee, IPC and Budget.
   
   Note: Please group requests into broad categories of items required to teach a class. Make ONE entry for each category.
   
   Note: These are generally ongoing costs. One-time items go under Instructional Equipment.
Priority: To Support: Discipline Area
None 0 None Machine

Broad Category (for example in Chemistry - "Chemicals")
Other Supplies Machining, Machine Tools

<table>
<thead>
<tr>
<th>Annual Cost</th>
<th>Previous Cost</th>
<th>Amount of Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000.0</td>
<td>2000.0</td>
<td>0.0</td>
</tr>
</tbody>
</table>

Type How Long?
None Ongoing/Recurring

Item to be shared with the following Department/Program: (Include any shared expenses)

Justification for Item (See Rating Rubric)
1. Indicate how important this item is to the life of your discipline.
   • 'A' means that your discipline cannot teach your course(s) without the requested equipment.
   • 'B' means that your course(s) would be greatly enhanced with the requested equipment.
   • 'C' means that you would like this piece of equipment for your course(s) but can wait for a future academic year.
   In addition, how many times have you requested this item, but you have not received it?
   A

2. Is it necessary for students to succeed in a series of courses?
   Yes. These supplies are needed to teach the students all aspects the Machining processes they will be learning during the course of the year from beginning the student to the advanced student.

3. How will access for students be improved? How many students (annually) will benefit from this request? Is it required to accommodate existing students? Would it be vital to attracting new students?
   This will benefit 100 student per semester.
   It is required to accommodate existing students and returning students.

4. What student learning or other outcomes are expected? Is it important to the achievement of student goals?
   It is important to the student’s achievement to pass the required course Machining tests which will enable them to move into the Machining industries.

5. How will these outcomes be measured for future planning? What data or evidence supports your request?
   These outcomes will be measured through monitoring of class size and materials used during the course of the year.
## Non-Instructional Requests

### Part I: Non-Instructional Equipment and Supplies

This section will be filled out by the Department Chair

**MACH-2009**

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### I. Non-Instructional Equipment and Supplies

This section will be filled out by the Department Chair, and reviewed by the Area Dean, IPC and Budget.

<table>
<thead>
<tr>
<th>Priority:</th>
<th>To Support:</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>3 Classes</td>
<td>Office Computer</td>
</tr>
</tbody>
</table>

**Type**

- New

**Status**

- None

**Description and part number for ordering:**

Either a desktop or laptop computer and printer.

<table>
<thead>
<tr>
<th>Qty.</th>
<th>Unit Cost:</th>
<th>Tax:</th>
<th>Shipping:</th>
<th>Total:</th>
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<tbody>
<tr>
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<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
</tr>
</tbody>
</table>

If this is an upgrade or replacement, please briefly describe your existing equipment in terms of age and capability or lack thereof:

**Item to be shared with the following Department/Program:** (Include any shared expenses)

**Justification for Item (See Rating Rubric)**

1. **Who will use these supplies or equipment?**

   To facilitate communications with department heads, track budgets and supplies, P.O.'s, class enrollment and tracking, research into vendors and cost analysis of materials and usage.

2. **How will access for students be improved?**
## Faculty Members

### MACH-2009

#### I. Program Faculty

List of Faculty Members and Total faculty Units separately for Fall, Spring and Summer

<table>
<thead>
<tr>
<th>Last Name</th>
<th>First Name</th>
<th>MI</th>
<th>Year Retired:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barrall</td>
<td>Mark</td>
<td></td>
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</table>

**Status:**
- Adjunct, ETCUM Yes

**Shared W/other program(s):**

### Summer 2009 TU

<table>
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<tr>
<th>Fall 2009 TU</th>
<th>Spring 2010 TU</th>
<th>Reassigned (Total)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>8.1</td>
<td>00.000</td>
</tr>
</tbody>
</table>

**Years of Service:**
- 3

**Specialty:**
- Degreed Electrical Engineer, UCSB

**Leadership:** List involvement in committees or other service
- 2005 National Thunderbird Newsletter Gold Award Winner
- 2006 National Thunderbird Newsletter Silver Award Winner
- 2007 National Thunderbird Gold Medallion Winner - Best in the Nation
- 2007 National Thunderbird Technical Article 2nd Place
- 2007 National Thunderbird Technical Article Honorable Mention (2)
- 2006 Selected to Umpire ASA National Tournament
- 2007 Selected to Umpire ASA National Tournament

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<table>
<thead>
<tr>
<th>Last Name</th>
<th>First Name</th>
<th>MI</th>
<th>Year Retired:</th>
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</thead>
<tbody>
<tr>
<td>Brady</td>
<td>Stephen</td>
<td></td>
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</table>

**Status:**
- Adjunct, ETCUM No

**Shared W/other program(s):**

### Summer 2009 TU

<table>
<thead>
<tr>
<th>Fall 2009 TU</th>
<th>Spring 2010 TU</th>
<th>Reassigned (Total)</th>
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</thead>
<tbody>
<tr>
<td></td>
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</table>

**Years of Service:**
- 3

**Specialty:**

**Leadership:** List involvement in committees or other service

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<table>
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<th>First Name</th>
<th>MI</th>
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<tbody>
<tr>
<td>Cooper</td>
<td>Kyle</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Status:**
- Adjunct, ETCUM No

**Shared W/other program(s):**
### Deines Mark
- **Status:** Shared W/other program(s): 
- **Years of Service:** 0.5
- **Specialty:** Welding
- **Leadership:** List involvement in committees or other service

### Lutz Arthur
- **Status:** Full-time, tenured
- **Years of Service:** 22
- **Specialty:** Machine Technology; Metals Technology;
- **Leadership:** List involvement in committees or other service

### Peterson Stephen R
- **Status:** Adjunct, ETCUM
- **Years of Service:** 2.5
- **Specialty:** Welding
Leadership: List involvement in committees or other service

Additional Teaching Unit Requests

III. FT Faculty Needs (Please fill this out ONLY if you are stating a need for new full time faculty in your area.)
1. Please indicate if there are NO FT faculty in your discipline. Please provide data regarding the length of time this discipline has been without a full time instructor.

2. Non-availability of part-time instructors in a subject area. Please provide evidence demonstrating the difficulty in finding part-time instructors to teach in the subject area.

3. RETCUM Faculty: How many FT faculty have retired in the past ten years. How many units are now taught by RETCUM faculty each year?

4. New FT Faculty: How many NEW FT faculty have been hired in past 10 years? Please list each faculty name and the year of employment. If this instructor is shared with another department, please list the equivalent FTE% for your department. Please list instructional equivalencies as necessary and if faculty member was the result of retreat rights.

5. Reduction in department TUs as a result of FT Faculty retirements or other significant causes? Please provide data that illustrates a change in teaching unit allocation as a direct result of FT faculty retirements within your department and how this may change in the coming year(s).

6. Other reasons: Have there been other causes for a reduction in units in your discipline? If so, please explain and provide evidence.

7. Changes in Student Demand: Recent or forthcoming growth as a result of added sections due to enrollment demands. Provide evidence that illustrates the need for additional faculty due to increased student demand such as numbers of sections added and/or courses with waitlist totals showing a need for additional sections. What is the % of FTEF for this increase in units? If there has been a decline in student growth, please explain why.

8. Current of forthcoming changes that illustrate the immediate need of additional FT faculty within this department. Please outline all relevant circumstances that justify the priority of a FT hire in addition to those already outlined above. Consider changes in the field, changes in the job market and population shifts.

9. Program Review Findings: Indicate what trends you identified in your last program review that support the need for full time faculty hires. Tie these to the department and college mission.

10. Other considerations: Include such information as matriculation needs, changes in student demand or community and job market needs, response to legislation, or rapid growth of the discipline.

11. Shared Resources: If you have requested FT faculty that will be used by more than one department, please indicate here. Please indicate which disciplines and/or departments and the number of combined students/faculty or classes he/she would serve. Please indicate how it will improve access or outcomes and if it is needed for health and safety concerns or required by law.
Program Summary
MACH-2009

Instructions: after reviewing your data and reports from all other sections of your program review, use this form to briefly summarize all of the information you have provided by closing with your concluding remarks (e.g. an executive one-page summary) for your entire program review.

I. Program Excellence (Best Practices)
Please address any of the following areas:
Overall Program structure, contextualized learning/learning communities, reputation of faculty, faculty collaboration, staff, retention and success, how you maintain a supportive environment, how you address issues of diversity, any specific student learning outcomes.

Students in the Machine Metals program are being provided with a well rounded theoretical background in the operation of 21st Century conventional and digitally controlled machine tools. They are also being taught to apply this knowledge to hands-on operation of lathes, milling machines, grinding machines, related industrial machine tools, welding equipment and welding processes. They are being trained on the use of precision hand tools, measuring instruments and the techniques of precision machining. The instructors in the Program are industry trained and the curriculum is monitored by an industry advisory council to assure adherence to current industry standards. This ensures that the program is relevant to today's manufacturing marketplace. The Program maintains an extensive database of local and regional employment opportunities and graduates are currently employed throughout the Bay Area.

II. Program Resources (Responsiveness)
Briefly summarize examples of key resources required for your program to meet or exceed the college goals (as cited in this review).

We need to continually upgrade and/or retrofit our manual machines with digital measuring devices. We need to continually upgrade our digitally controlled machine tools. We need to continually upgrade our welding equipment. All modern machine and welding shops use this type of equipment and it is important for our students to be conversant with current state-of-art mode of measurement and machines.

III. Moving Forward Objectives (Planning)
Please summarize any data-driven coordinated planning has your department done to improve enrollment, student learning, access and success?

This program provides a vocational career path for many rewarding careers. It also meets the needs of the current professional who wishes skills updating. Through the use of the advisory council, we intend to continually upgrade and revise the program to meet the needs of the next century. With the addition of a recently donated state-of-the-art machining center, this program will be able to attract additional students who need this upgrade training. This training will assist many in the current workforce with employment and technical upgrading. This program also intends to continue to encourage women to enter this field of study.

IV. Assessment of 2008 Program Reviews:
1. What resources have you been granted from your previous program reviews?
2. Please assess how these resources have been used to improve access, learning outcomes and student success in your program?
3. What changes have you implemented based on previous program reviews?
4. What results have you found?

The Machine Metals Program is a "hidden gem" at College of Marin. While statewide data shows a steady decline of enrollment in Machine Metals (approx 25% since Fall 2002). COM Machine Metals has remained constant over this same time period. Both retention and success rate are higher than both State-wide data and COM during this time period. COM Machine Metals Retention Rate has seen a steady increase from 84% in Fall 2002 to
high of 91% in Spring of 2007. The Machine Metals Program has shown a steady increase in success rate from 80% to 85%. The overall State success rate in Machine Metals is 80% during that time period. COM success rate has been at 73-74% during that time period. The quality of the instruction and the upgrading of the equipment has met the challenges during the years and will continue to do so in the future.

V. Fall 2009 Requests Summary:
1. Please summarize the main requests you have made in this program review in order of your priority starting with the most important one.
2. Summarize briefly why you want each one.
3. Summarize your overall rationale.

None

VI. Other concluding remarks.
None
Department Chair Comments
MACH-2009

1. Please make any comments on the Five Pathways, Student Access and Success, Facilities, Curriculum and SLO sections.

All five pathways are addressed in Machine Metals Technology. Students have the option of following one of the multiple pathways when going through the program. Most of the students choose the career path while others choose to further their education at a four year institution. There are also students in the program taking courses in the program for cultural enrichment or life long learning. Basic skills such as math, measurement, critical thinking and problem solving are a key component of the Machine Metals curriculum. There are no barriers influencing student access and success but the Machine Metals program does need to continually work towards updating equipment and curriculum to meet real world work conditions. The facilities are well maintained with good working equipment. The building had a new roof put on it last year. There may be a need to address some of the heating and lighting systems in the future.

2. Please comment on the instructional equipment requests, technology requests and other instructional materials requests sections. Please comment especially on any specific priorities without which this program cannot function.

There is a need to update equipment and continuously maintain equipment to stay current with industry standards. As the facility and machinery age, it may require additional funds to keep the current machinery operating.

3. Please comment on the faculty and staff sections.

The Machine Metals program has one full time instructor and three part time instructors. The full time instructor teaches machining and the part time instructors teach the welding courses. The Machine Metals program is running smoothly because the full time and part time instructors work cooperatively.

4. Other comments
Area Directors and Deans Comments

MACH-2009

1. Please make any comments on the Five Pathways, Student Access and Success, Facilities, Curriculum and SLO sections.

The students in this program tend to include mature workers in the field who take classes to improve and maintain a level of excellence as required for this precise work. Constant skill development is critical in this field. The very high success rate of 83% represents a highly disciplined cohort of students guided by talented instructors.

2. Please comment on the instructional equipment requests, technology requests and other instructional materials requests sections. Please comment especially on any specific priorities without which this program cannot function.

A mig welder has been requested to replace a mig welder that has stopped working after decades of service. The cost to repair is about the same as replacement for the newer model that is currently used in industry. This welder will cost $808. It is equipment that program students are expected to use as entry-level employees in this industry.

3. Please comment on the faculty and staff sections.

It is difficult to identify instructors who possess the minimum qualifications to teach in the ACRT program:

- At least an AA degree
- Excellent technical skills
- Excellent skill for instructing adults.

We are very fortunate to have a well respected and highly skilled instructor as full time faculty in this area.

4. Please itemize expenses currently covered by external funds that may revert back to general funds.

The Machine Metals and Welding programs expends all funds available to the program every year. The program expenses have increased along with rising prices. In order to maintain the instructional quality of the program, Lottery of about $2,650 are expended annually. Those funds cover expenses for supplies and materials.

5. Other comments

Two courses from this program have just been articulated with Tomales High School in the Shoreline (West Marin) District. That articulation is expected to positively impact the number of younger students entering the program.