

MHS Course Proposal Form

Part 1: General Information

Title of New Course: Technical Mathematics

Proposed by: Andra Prom

Department: Mathematics

Class Length (trimesters): 2 ▾

What grade level(s) is the course intended to target? 11-12th Graders

Does it replace an existing course? Yes ▾

If yes, what course? Consumer Math which was a senior only class with only 12 students in the class this school year.

Does it change department/graduation requirements? No ▾

If yes, explain:

Are there any prerequisites? Yes ▾

If yes, what? Pass Algebra 1 and Geometry

How will students be graded? Unweighted (standard) ▾

Will students receive dual-credit? Yes, students will be able to get college credit through CCC for MTH 50 and hopefully MTH 80 if we can cover all the required content for a total of 7 credits (4 credits for MTH 50 and 3 credits for MTH 80).

Part II - Budget: Estimated Costs

Please estimate any projected costs related to this course. In addition, please indicate if this is a one-time start-up expense or an annual expense (textbook adoption is considered a startup expense) by placing an "X" in the appropriate column.

| Area/Item | Brief Description | Startup Expense | Annual Expense | Total Cost |
|--|---|-----------------|----------------|---|
| FTE addition | None | | | \$0 |
| Curriculum Development | 1-2 teachers for 20 hours total | X (~\$39.97/hr) | | \$799.40 |
| Staff Development | - Sub to observe Sandy HS (maybe) - Industry Externship | X (\$272.16) | | \$272.16 <i>(maybe, still trying to set something up with Sandy)</i> |
| Textbooks | CCC has an open resource book that they use and I have requested free copies of textbooks just for the teacher to use to help build lessons | Unsure | | |
| Other Instructional Materials / Supplies | | Unsure | | |
| Technology Needs | None | | | |
| Additional Expenses | None | | | |
| Proposed Student Fees | ACC credit for MTH 50 (4 credits) and MTH 80 (3 credits) <i>(if they want to sign up for the class)</i> | | | \$70 <i>(if they want to sign up for the class)</i> |

Part III - Course Details

Course Description (to be used in the Curriculum Guide, please limit to 100 words):

Designed for career-technical students. Topics focus on critical thinking, problem-solving, and mathematical communication, using applications of arithmetic, measurement with conversions, algebra, geometry, trigonometry, statistics, and probability. **College credit through CCC is available for this class, but you must earn at least a C for both sections.**

Rationale for proposing the course:

To graduate high school, students need 2 required courses of Algebra 1 and Geometry, and then a +1 of their choice based on their post-secondary plan. Given that we offer 41 CTE classes this year with a total of 555 students registered for those courses, and about 75% of students say they are going to college or a trade school, it seems like our school needs a math class supporting industry and the trades. This class will provide students with knowledge and skills in math that they will use within specific trades. The course is eligible for students to receive college credit (up to 7 credits) through CCC for different programs including the Welding Technology Associate's Degree. This class will replace Consumer Math, which is a senior-only class that covers real-life concepts that they are learning already in Algebra 1, Geometry, and Financial Literacy and Economics. Therefore, this new class will be available to a larger proportion of our student population.

Student Learning Outcomes:

- Demonstrate rigorous and analytical thinking by reading, writing, and utilizing the technical and logical language and symbolism necessary to do mathematics and be effective problem solvers
- Evaluate formulas using the correct order of operations regardless of the field or discipline associated with the application
- Convert within and between the U.S. and metric systems of measurement, including units of length, mass, capacity, area, and volume
- Solve applied problems using scientific notation and engineering notation, as well as small and large prefixes
- Solve applied problems involving geometrical figures, including angle measures, perimeter, area, and volume
- Solve applied problems using basic statistics such as mean, median, mode, independent probability, and the 68-95-99.7 standard deviation rule
- Use estimation to determine whether a result is reasonable, round a result based on either significant figures or place value, and determine whether a result is within an acceptable margin of error or tolerance
- Read, comprehend, and communicate technical information and translate phrases into algebraic expressions
- Use linear equations to model and solve applications
- Use right-triangle trigonometry to model and solve problems and applications.

Any additional information and/or comments:

This will give us an additional third-year math option that will meet state requirements and the needs of our students. Currently, we only offer Algebra 2 and Math Modeling as our third-year options, which both cover the same topics but approach the learning differently. Therefore, this would provide them with a different type of math compared to what is currently being offered.