

Math – IMP 4

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Course Description IMP 4 is an integrated, investigative math course. Students will build upon skills from previous years as well as approach new topics. Students will be able to answer “How do we know for sure?” by the end of the course.

Skill Objectives and Outcomes: Students will:
Use the unit circle and radians to express trigonometric ratios.
Use basic Newtonian kinematic equations.
Make geometric transformations both algebraically and graphically.
Perform operations with functions.
Use the central limit theorem.
Design a proper polling experiment.
Have the tools to find answers to further math questions.

Course Content: The year is broken down into 5 units:
High Dive-- Circular functions
As the Cube Turns- Transformations
Know How- Complex numbers, finding information
The World of Functions- Combination and transformation of functions
The Pollster’s Dilemma- Statistical inference

Grades/Credit: Grades will be based on student’s progress towards understanding the topics for the class. Students are expected to keep a notebook with their assignments, notes and homework. There are five categories of assignments:

Notebooks, including classwork and homework

Notebooks should be single subject spiral bound. All notes, classwork and homeworks are kept in the notebook. Students are expected to keep a log of assignments in the front. Notebooks are collected once a week.

Tests and quizzes

Quizzes are given at random times, about once a week. There will be one or two tests over the course of the unit. There is a cumulative final for each semester.

Journal entries

Journal writes will occur about once a week and will be kept in the notebook, but are graded separately from the classwork and homeworks. This is an opportunity to reflect on classroom practices and what you have learned. The end of unit cover letter and self assessment is part of this grade.

POWs and major presentations

Problems of the week will occur about once a month. Major presentations will be announced as such when assigned.

“Being a student”

This may be thought of as a participation grade. Everyone starts out with a 75/100. You can earn points by answering questions, presenting problems and solutions to the class, helping other classmates and the teacher. You can lose points by talking while others are addressing the class, being disruptive to other students, eating during class, taking excessively long bathroom breaks and being disrespectful to other students. A basic rubric

could be thought of as:

F = Student who is disruptive and off task

D = Student who is off task, personally unproductive

C = Student who is on task, but does not participate with the class

B = Student who frequently participates and presents

A = Student who participates and helps others

Grades will be assigned on a 4 point scale for each of the five categories. The lowest category will be dropped. Grades will be an average of the remaining 4 categories.

Students will receive regular feedback and an opportunity to correct and improve a minimum of once a month.

Instructional Materials: Students are expected to bring a writing implement, preferably pencil, their books and their notebooks to class every day. A single subject 80 page notebook is best for each unit. Notebooks with graph paper are wonderful. Composition books are ok. If a student is in need of any of the items, please contact me.

Suggestions for Additional Work: Opportunities to go above and beyond the basic level of each assignment are nearly always available. Please contact me if you are interested, or have an idea on how to extend the assignment we are working on. Do not wait, last minute extra work at the end of a term is not often possible.

Late Policy: Students are expected to check the website, the unit board and to ask the teacher and other students for support when class is missed.

Major Assignments will be downgraded 10% for each day of lateness and will not be accepted after three days without an excused absence. Extensions for excused absences must be arranged with the teacher immediately upon return.

Tests: Tests are to be made up in an efficient manner. Students are expected to schedule a make up time outside of class within 3 days of their return to school. Tests not made up 2 weeks after testing date may not qualify for full credit.