Troy High School
Course Profile

Course Title: Math-IB HL2

Course Prerequisites: Refer To Registration Presentation

Course Description: Taken from District Course Catalog

This is a second year calculus course and an introduction to differential equations. Concepts covered include derivatives and partial derivatives with their application in two and three dimensions, vectors in two and three dimensions, multivariable integration, and application, including Green's Theorem and Stoke's Theorem. The second semester will include topics from linear algebra and differential equations of first and second order, including homogeneous and nonhomogeneous. This course prepares students to take the IB HL Math Series and Differential Equations examinations.

Students entering this course should already have a mastery of the following concepts and possess the following skills:

For first semester:

- Integration, including by parts and partial fractions.
- Differentiation, including product rule, quotient rule, and the chain rule.
- Writing equations in parametric form, including polar form.
- Vectors, including dot product and cross product

For second semester:

- Integration, including by parts and partial fractions.
- Differentiation, including product rule, quotient rule, and the chain rule.
- Matrices, including products, determinants, and Cramer's rule.
- Partial derivatives, including comparing the derivative with respect to x and with respect to y.

Workload Expectations for this course (list typical amount of homework, projects, presentations, papers, etc.):

- Homework is assigned almost every night and should take approximately 20 to 25 minutes to finish, including time allowed to work in class. The following day, students will take a quiz to assess the students learning.
- Approximately once a week, students will be required to collaborate with other students to allow students to discuss difficulties and teach each other.
- Each semester has approximately 6 chapters that are covered and testing is covered in two days. Each semester also has a final exam coordinated through Cal State Fullerton.
- Students that complete the course may sign up for credit through Cal State Fullerton that may be transferable to the next school a student attends. The course is taught to the

expectations of the high school honors program at Cal State Fullerton for Math 250A and Math 250 B courses.