

### **Mathematics – Grade 12 – Advanced Functions – University Preparation MHF4UP**

This course extends students' experience with functions. Students will investigate the properties of polynomial, rational, logarithmic, and trigonometric functions; broaden their understanding of rates of change; and develop facility in applying these concepts and skills. Students will also refine their use of the mathematical processes necessary for success in senior mathematics. This course is intended both for students who plan to study mathematics in university and for those wishing to consolidate their understanding of mathematics before proceeding to any one of a variety of university programs. Advanced Placement Calculus deals with both Differential and Integral Calculus. The course prepares students for university engineering and sciences and it covers all the topics discussed in a first year university course. Advanced placement has two prongs thrust - 80% of the course is based on theoretical concepts of Calculus and 20% deals with Calculus based on advanced technology – T189 calculator is strongly recommended for students who will study engineering and computer sciences in university. Students have the option to write the May AP Exam which is administered from New York. All U.S. universities recognize AP calculus as first year Calculus credit for university studies. Students and parents are reminded of an exam fee. Visit [www.collegeboard.com/apstudents](http://www.collegeboard.com/apstudents) for more information. The AP Calculus course deals with differential and integral calculus discussed in first year university courses.

**Prerequisite: MCR3U1 or MCR3UP \*\* The MHF4UP course is only offered in Semester 1. Students will undertake guided independent study of integrals during semester 2 and will have the opportunity to write the Advanced Placement in May of the academic year.**