

## MATH 148 – Calculus/Precalculus I

**Course Description from Bulletin:** Review of algebra and analytic geometry. Functions, limits, derivatives. Trigonometry, trigonometric functions and their derivatives. Chain rule, implicit and inverse functions, and inverse trigonometric functions. (4-0-4)

**Enrollment:** This course does not count for graduation in any engineering, mathematics, natural science or computer science degree program

**Textbook(s):** Cohen, *Pre-calculus*, 6<sup>th</sup> ed., Thompson; and Stewart, *Calculus*, 6<sup>th</sup> ed., Brooks/Cole.

**Other required material:** None

**Prerequisites:** None

### Objectives:

1. Students will be able to use the Cartesian coordinate system and analytic geometry to investigate functions.
2. Students will be able to perform algebraic and numeric operations with functions.
3. Students will be able to solve linear, quadratic, and rational equations and inequalities.
4. Students will be able to use trigonometry and fundamental trigonometric identities.
5. Students will be able to compute limits of simple functions.
6. Students will be able to differentiate polynomial, rational and trigonometric functions by using the definition and by using formulae.

**Lecture schedule:** Three 67 minute lectures per week

### Course Outline:

	Hours
1. Real Number System, Absolute Value, Polynomials	4
2. Properties of Polynomials, Inequalities	4
3. Cartesian Coordinate System, Graphs of Equations	4
4. Analytic Geometry of Lines, Symmetry, Translations	4
5. Functions	4
6. Limits	4
7. Continuity, Tangents, Rates	4
8. Definition of the Derivative, Differentiation Rules	4
9. Rates of Change, Trigonometric Functions	4
10. Right Triangle Trigonometry	4
11. Trigonometric Functions of Real Numbers	4
12. Trigonometric Identities	4
13. Derivatives of Trigonometric Functions, Chain Rule	4
14. Rational Exponents, Higher Derivatives	4
15. Review	

<b>Assessment:</b>	Homework	5-10%
	Quizzes	10-15%
	Tests	50%
	Final Exam	25-30%

**Syllabus prepared by:** Sue Sitton and Patrick McCray

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