

# SYLLABUS

## MATH 10773 – Algebra for Calculus Stretch I

(3 Credit Hours)

**Catalog Information:** Study of functions in general, factoring, negative and rational exponents; polynomial functions, including quadratic functions; and sequences and series. No credit earned for this course if a student already earned credit for MATH 12001. Students cannot earn credit toward a degree for both this course and either MATH 11010 or MATH 10775.

Prerequisite: Minimum 22 ACT mathematics sub score; or minimum 520 SAT mathematics sub score; or minimum ALEKS® math placement assessment score of 35; or MATH 00022 with a minimum grade of C (2.0).

**Text:** A custom edition of Beecher, Penna, Bittinger (2012). College Algebra, 4th edition. Pearson

First Semester 45 days

Functions in general – 8 days

- Definition; function notation; reading function values from graph
- Images, domain/range (in context and symbolically)
- Increasing/decreasing;
- Piecewise functions
- Operations on functions
  - Adding and subtracting – graphical, numeric, symbolic
  - Multiplying functions – graphical, numeric, symbolic
- Modeling with linear functions

Intermediate and advanced factoring; Negative and rational exponents – 8 days

- Review of simple factoring/exponents
- Grouping
- Special binomial forms
- Quadratic form
- GCF with negative and fractional exponents
- Binomial common factors

Quadratic Functions – 8 days

- The nature of and finding zeros
- Graphing a pure quadratic; graphing pure power functions
- Completing the square
- Quadratic formula
- Non-real zeros/complex numbers

## (MATH 10773 Syllabus, continued)

- Max and Min values
- Modeling with Quadratic Functions

### Polynomial Functions – 8 days

- Graphing
- Synthetic Division/Remainder Theorem/Factor Theorem
- Finding zeros of polynomials
- Solving polynomial inequalities

### Sequences and Series – 6 days

- Sequences – recursive and explicit
- Summation notation and partial sums
- Arithmetic and geometric sequences and series.

4 EXAM DAYS 3 REVIEW DAYS

45 DAYS TOTAL