Master Syllabus

MAT 1290 - Technical Mathematics II

Division: Science, Mathematics and Engineering

Department: Mathematics

Credit Hour Total: 4.0   **Lecture Hrs:** 4.0

Prerequisite(s): MAT 1280

Other Prerequisite(s): AND Other with a grade of C or better or satisfactory score on math placement test

Date Revised: August 2017

Course Description:

Trigonometric functions of angles, radian measure, vectors, solving oblique triangles, graphs of trigonometric functions, inverse trigonometric functions, fractional exponents, complex numbers, exponential and logarithmic functions, systems of equations, theory of equations and fundamental trigonometric identities. Scientific calculator required.

General Education Outcomes:

▫ Critical Thinking/Problem Solving Competency

Course Outcomes:

Perform Operations
Demonstrate the ability to perform operations involving vectors in the plane; graphically and analytically; perform operations in solving non-linear systems of equations and in simplifying exponential and logarithmic expressions, complex numbers and expressions involving fractional exponents.

Assessment Method: Locally developed exams
Performance Criteria: Passing grade on exams with a score of 70% or better

Evaluate Formulas and Functions
Demonstrate the ability to evaluate formulas to solve problems involving angles, vectors and trigonometry. Evaluate exponential, logarthmic and radical functions and systems of non-linear equations, graphically and analytically.

Assessment Method: Locally developed exams
Performance Criteria: Passing grade on exams with a score of 70% or better.

Solve Equations
Demonstrate the ability to solve polynomial, exponential, logarithmic, trigonometric and radical equations.

Assessment Method: Locally developed exams
Performance Criteria: Passing grade on exams with a score of 70% or better

Perform Operations
Demonstrate the ability to perform operations involving vectors in the plane; graphically and analytically; perform operations in solving non-linear systems of equations and in simplifying exponential and logarithmic expressions, complex numbers and expressions involving fractional exponents.

Assessment Method: Locally developed exams
Performance Criteria: Passing grade on exams with a score of 70% or better

Outline:

Trigonometric functions of any angleRadian measure - arc length, area of a sector, angular & linear velocityIntroduction to vectors - add vectors graphically & by componentsOblique triangles, Law of Sines & CosinesGraphical representation of complex numbers (polar & rectangular)Graph exponential and logarithmic functions with applicationsSimplify exponential & logarithmic expressionsSimplify expressions involving fractional exponentsSolve exponential, logarithmic & radical equationsSolve systems of equations involving nonlinear equationsFundamental trigonometric identitiesGraph trigonometric functions & solve trigonometric equationsInverse trigonometric functions