U.S. INTERNATIONAL CHRISTIAN ACADEMY

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U.S.I.C.A. Course Outline/Syllabus

Grade/Course: ALGEBRA II 1200330
Grade Level: 10TH High School

A)TEXT BOOK: Advanced Mathematical Concepts: Pre-calculus with Applications, Student Edition [Hardcover] McGraw-Hill (Author)
ISBN-10: 0078608619 | ISBN-13: 978-0078608612

Order No.: 1	**Code:** MAT1001	**Class Type:** Online
Resources: Text book Teacher works CD Teacher interactive online Links Sky Conference	**Length:** 1 year	**Instructional Supports:** Textbook, Magazines, Journals, Websites Links, Blackboard, Conference, Comprehensive Reading Plan
Area: Mathematics	**Credits:** 1	**Total Numbers of class hours**: 300 hrs
Type: Mandatory	**Standards:** Florida Sunshine State Standards	**Prerequisite:** Students must have successfully passed a pre-algebra and Algebra.

B) Description:

Algebra II is a full-year, high school math course intended for the student who has successfully completed the prerequisite course Algebra I. This course focuses on algebraic techniques and methods in order to develop student understanding of advanced number theory, concepts involving linear, quadratic and polynomial functions, and pre-calculus theories. This course also integrates geometric concepts and skills throughout the units, as well as introducing students to basic trigonometric identities and problem solving. By the end of the course, students will be expected to do the following: • Understand set notation and the structure of mathematical systems. • Know how to use functional notation and operations on functions. • Simplify and solve algebraic fractions. • Perform operations on polynomials, including factoring, long division, and synthetic division. • Solve algebraic word problems involving mixtures, money, integers, and work. • Evaluate and solve radical expressions and equations. • Solve systems of equations with graphing, substitution, and matrices. • Graph and solve quadratic equations, including conic sections. • Graph and solve exponential and logarithmic equations. • Calculate permutations, combinations, and complex probabilities.

C) Objectives:

1. To develop in all students an appreciation, curiosity and understanding for Advanced Mathematics Concepts
2. to develop in all students mathematics using numerous examples, real-world applications, Graphs, diagrams, and illustrations are used throughout to help students visualize concepts.
3. to promote an awareness of Advance Mathematics Concepts

D) Contents

Chapter 8
Vectors and Parametric Equations
Chapter 9
Polar Coordinates and Complex Numbers
Chapter 10
Conics
Chapter 11
Exponential and Logarithmic Functions
Chapter 12
Sequences and Series
Chapter 13
Combinations and Probability
Chapter 14
Statistics and Data Analysis

E. Methodology

E)Academic Methodology:	
Tests	30%
Writing Reports	5%
Homework	20%
Class Work	20%
Reading Assignment	25%

F) Book Reference:

1. Mathematical Proofs: A Transition to Advanced Mathematics (3rd Edition) (Featured Titles for Transition to Advanced Mathematics) [Hardcover]
2. Advanced Mathematical Concepts [Hardcover] Berchie W. Gordon-Holliday, L. E. Yunker, Glen D. Vannatta and F. Joe Crosswhite (Authors)
3. Mathematical Reasoning: Writing and Proof Paperback– by Ted Sundstrom(Author)

H) Web Reference:

www.math.com
http://www.calculatorsoup.com/calculators/math/
www.math.tamu.edu/mathlinks.html
www.mathworld.wolfram.com
www.warez-files.com/Advanced-Engineering-Mathematics
www.testprepreview.com/modules/mathematics3.htm
www.webmath.com
www.homeschoolmath.net
http://www.homeworksimplified.com
www.homeschoolmath.net
http://school.discoveryeducation.com/homeworkhelp/webmath/
http://www.cut-the-knot.org/content.shtml
http://tutorial.math.lamar.edu/Extras/AlgebraTrigReview/AlgebraTrigIntro.aspx
http://www.sosmath.com/
http://www.ams.org/mathscinet
http://www.aaamath.com
http://www.algebrahelp.com

I. Journals:

Advances in Applied Mathematics
Advances in Difference Equations
Advances in Differential Equations
Advances in Mathematics
Advances in Theoretical and Mathematical Physics
Algebra & Number Theory
Algebraic & Geometric Topology
American Journal of Mathematics
American Mathematical Monthly
Analysis and Applications

J. Magazines:

Math Horizons
Millennium Mathematics

K. Organizations:

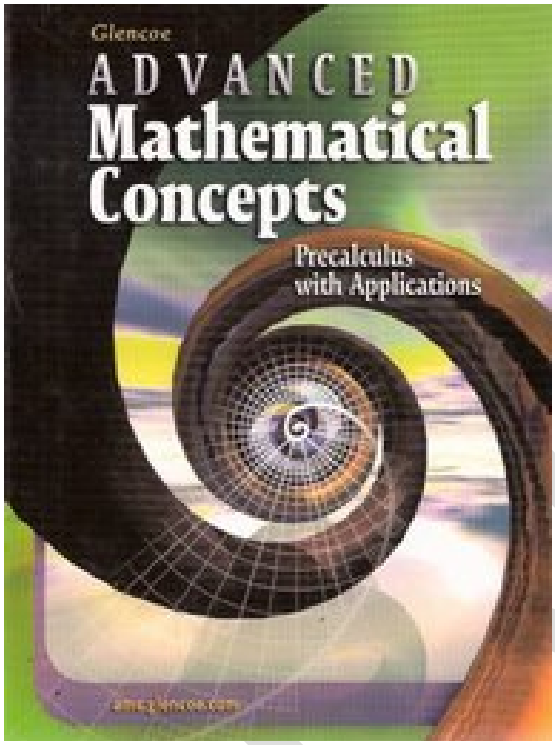
National Council of Teachers of Mathematics (N.C.T.M.)

M. Comprehensive Reading Plan

Students are required to read at least 1 book or their equivalent during each class as independent reading at-home. Students must also read for 30 minutes at home as part of their daily homework assignment in all subjects. Check your Class Reading Assignment at www.USICAhs.org/CURRICULUM and check free ebooks at www.openlibrary.org .

Text Book Description

Publication Date: May 9, 2003 | ISBN-10: 0078608619 | ISBN-13: 978-0078608612 | Edition: 6
Advanced Mathematical Concepts provides comprehensive coverage of all the topics covered in a full-year Pre-calculus course. Its unique unit organization readily allows for semester courses in Trigonometry, Discrete Mathematics, Analytic Geometry, and Algebra and Elementary Functions. Pacing and Chapter Charts for Semester Courses are conveniently located on page T4 of the Teacher Wraparound Edition.



ACADEMIC MISCONDUCT:

Academic misconduct includes cheating (using unauthorized materials, information, or study aids in any academic exercise), plagiarism, falsification of records, unauthorized possession of examinations, intimidation, and any and all other actions that may improperly affect the evaluation of a student's academic performance or achievement, or assisting others in any such act or attempts to engage in such acts. Academic misconduct in any form is inimical to the purposes and functions of the school and therefore is unacceptable and prohibited.
Any faculty member, administrator or staff member may identify an act of academic misconduct and should report that act to the department head or administrative supervisor.
Students violating the standards of academic honesty are subject to disciplinary action including reduction of a grade(s) in a specific course, assignment, paper, or project; a formal or informal reprimand at the professorial, dean, or academic vice president level; expulsion from the class in which the violation occurred; expulsion from a program; or expulsion from the school.