



U.S. INTERNATIONAL CHRISTIAN ACADEMY

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LESSON PLAN

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) LESSON PLAN 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) LESSON PLAN 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
- 4.

D) LESSON PLAN Contents:

Chapter 1 (Weeks:1-4)

Linear Relations and Functions

Chapter 2 (Weeks: 5-7)

Systems of Equations and Inequalities

Chapter 3 (Weeks: 8-10)

The Nature of Graphs

Chapter 4 (Weeks: 11-14)

Polynomial and Rational Functions

Chapter 5 (Weeks: 16--16)

The Trigonometric Functions

Chapter 6 (Weeks: 17-20)

Graphs of Trigonometric Functions

Chapter 7 (Weeks: 21-23)

Trigonometric Identities and Equations

Chapter 8 (Weeks: 23-25)

Vectors and Parametric Equations

Chapter 9 (Weeks: 26-28)

Polar Coordinates and Complex Numbers

Chapter 10 (Weeks: 29- 31)

Conics

Chapter 11 (Weeks: 31-34)

Exponential and Logarithmic Functions

Chapter 12 (Weeks: 35-37)

Sequences and Series

Chapter 13 (Weeks: 38-39)

Combinations and Probability

Chapter 14 (Week: 40)

Statistics and Data Analysis

F) LESSON PLAN Reference, Website, Journal, Magazine and Book

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.)

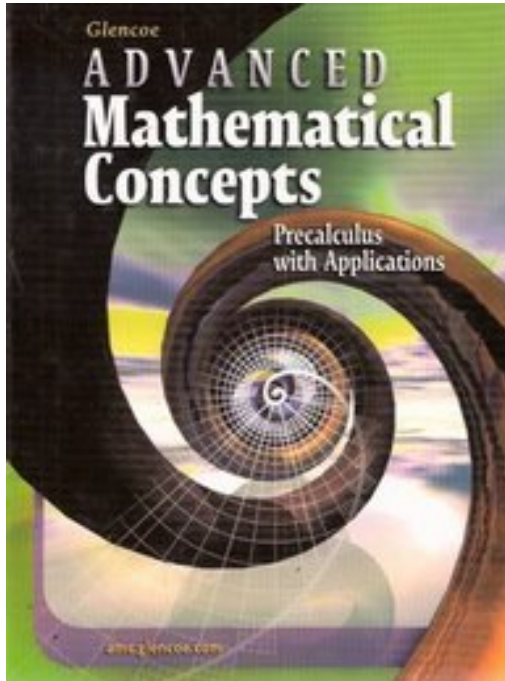
M. Comprehensive Reading Plan

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.

BOOK:



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