University of North Texas at Dallas

Fall 2011
SYLLABUS

MATH 1581.090	**A Survey of Mathematics with Applications**	4Hrs

Department of	Mathematics and Information Sciences	**Division of**	Liberal Arts & Sciences

Instructor Name:	*Dr. Vinod Arya*
Office Location:	*DAL2- 226*
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Office Hours:	**MW 9:00 am – 10:30 am; TR 9 am – 12 pm**
Lab Hours	*R; 11 am – 12 pm*

All students are required to attend Lab on Wednesday in DAL1-201.

Classroom Location:	*DAL2 - 243 & DAL1-201*
Class Meeting Days & Times:	*TR 2:30 - 3:50 pm (DAL2-243)* *W 2:30 – 3:50 pm (DAL1-201)*

Course Catalog Description:	**Survey of Mathematics with Applications and Algebra Review.** **4 hours. (3;1)** An alternate version of MATH1580 for students identified in the mathematics placement process as requiring supplemental instruction to strengthen their algebra skills. A grade of C or better is required for this course to serve as prerequisite. MATH 1580/81 is not intended to prepare students for calculus, science, engineering or business courses. Students may not receive credit for both MATH 1580 and MATH 1581. Satisfies the Mathematics requirement of the University Core Curriculum.

Course Description:	Survey of Mathematics with Applications: Topics include probability, statistics, algebra, logic and the mathematics of finance. Additional topics are selected from geometry, sets, cryptography, fair division, voting theory and graph theory. Emphasis is on applications. Recreational and historical aspects of selected topics are also included. Technology is used extensively.

Required Text:	A Survey of Mathematics with Applications, Expanded 8th Edition, by Angel, Abbott and Runde. MyMathLab (MML) may be purchased packaged with textbook, as a stand-alone or directly online, at www.coursecompass.com. MML is a required online course delivery platform where students access and complete assignments. The MML course ID for this class is: **arya19212**

WEB ACCESS REQUIRED:	Students may access class information via MyMathLab at: [www.coursecompass.com.](http://www.coursecompass.com) Information regarding purchase and access to this site will be provided in the first day of class.

	Students must purchase MyMathLab NOW, course ID is: **arya19212**
Required Homework Assignment Service	My Math Lab is a homework assignment service, providing online versions of the homework problems found at the end of each chapter.

Access to Learning Resources:	UNT Dallas Library:
	    phone: (972) 780-3625;
	    web: http://www.unt.edu/unt-dallas/library.htm
	UNT Dallas Bookstore:
	    phone: (972) 780-3652;
	    e-mail: 1012mgr@fheg.follett.com

Course Objectives:	
	The goal of this course is to introduce students to sets, logic, number theory, algebra, linear programming, probability and statistics.

Course Learning Outcomes:
Upon successful completion of this course, the student will be able to

1	Communicate mathematics and use technology to solve problems
2	Demonstrate understanding of financial mathematics
3	Demonstrate understanding of probability and basic statistics
4	Demonstrate understanding of voting methods, apportionment methods, their theory and uses
5	Demonstrate understanding of basic logic
6	Demonstrate understanding of graph theory basics

Gen Ed Learning Outcomes
Upon successful completion of this course, the students will

#1a	explore English, the arts and humanities, math, the natural sciences, and social and behavioral sciences,
#1b	make connections between different areas of knowledge and different ways of knowing.
#2a	be able to locate, evaluate and organize information including the use of information technologies
#2b	think critically and creatively, learning to apply different systems of analysis.
#2c	develop problem solving skills that incorporate multiple viewpoints and differing contexts in their analysis.
#2d	cultivate intellectual curiosity and self-responsibility, building a foundation for life-long learning.

Course Evaluation Methods: This course will utilize the following instruments to determine student grades and proficiency of the learning outcomes for the course.

- **ALEKS**

- **Online Home Work from My Math Lab:** *Home work will be assigned on a regular basis. You can do it on My Math Lab or simply in a note book. Homework is not part of grades directly, however; all quizzes are designed to check your skills on the assigned homework.*
- **Tests** – *There will be **three in-class tests** to measure knowledge of presented course material.*
- **Final Exam** – *Comprehensive Final Exam.*

Grading Matrix:

Instrument	Value (points or percentages)
ALEKS/Algebra Review Lab	25%
Average of 3 in-class exams	45%
MML Homework/Quizzes	15%
Final Exam (Comprehensive)	15%
Total:	**100%**

Grade Determination:

Grade	Percentage %
A	90 or better
B	80 – 89
C	70 – 79
D	60 – 69
F	less than 60

Calculator Policy: GRAPHING CALCULATOR:

TI 83, TI 83 Plus, TI 84, TI 84 Plus or equivalent. TI 89's, TI 92'2 or any other utility with alphanumeric/CAS capabilities ARE NOT permitted. A calculator may not be shared during an exam.

CONTENT: The following chapters will be covered:

Chapter 3 Logic
3.1 Statements and Logical Connectives
3.2 Truth Tables for Negation, Conjunction, and Disjunction
3.3 Truth Tables for the Conditional and Biconditional
3.4 Equivalent Statements
3.5 Symbolic Arguments
3.6 Euler Diagrams and Syllogistic Arguments

Chapter 11 Consumer Mathematics
11.1 Percent
11.2 Personal Loans and Simple Interest
11.3 Compound Interest
11.4 Installment Buying
11.5 Buying a House with a Mortgage
11.6 Ordinary Annuities, Sinking Funds, and Retirement Investments

Chapter 12 Probability
12.1 The Nature of Probability
12.2 Theoretical Probability
12.3 Odds
12.4 Expected Value (Expectation)
12.5 Tree Diagrams
12.6 Or and And Problems
12.7 Conditional Probability
12.8 The Counting Principle and Permutations
12.9 Combinations
12.10 Solving Probability Problems By Using Combinations
12.11 Binomial Probability

Chapter 14 Graph Theory
14.1 Graphs, Paths, and Circuits
14.2 Euler Paths and Euler Circuits
14.3 Hamilton Paths and Hamilton Circuits
14.4 Trees

Chapter 13 Statistics
13.1 Sampling Techniques
13.2 The Misuses of Statistics
13.3 Frequency Distributions
13.4 Statistical Graphs
13.5 Measures of Central Tendency
13.6 Measures of Dispersion
13.7 The Normal Curve
13.8 Linear Correlation and Regression

Chapter 15 Voting and Apportionment
15.1 Voting Methods
15.2 Flaws of Voting
15.3 Apportionment Methods
15.4 Flaws of the Apportionment Methods

University Policies and Procedures	
Students with Disabilities (ADA Compliance):	
The University of North Texas Dallas faculty is committed to complying with the Americans with Disabilities Act (ADA). Students' with documented disabilities are responsible for informing faculty of their needs for reasonable accommodations and providing written authorized documentation. For more information, you may visit the Office of Disability Accommodation/Student Development Office, Suite 115 or call at 972-780-3632.	
Student Evaluation of Teaching Effectiveness Policy:	
The Student Evaluation of Teaching Effectiveness (SETE) is a requirement for all organized classes at UNT. This short survey will be made available to you at the end of the semester, providing you a chance to comment on how this class is taught. I am very interested in the feedback I get from students, as I work to continually improve my teaching. I consider the SETE to be an important part of your participation in this class.	
Assignment Policy:	
Exams should be taken as scheduled. No makeup examinations will be allowed except for documented emergencies (See Student Handbook). In the case of injury or illness, you need to provide a note from a health care professional affirming date and time of a medical office visit regarding the injury or illness and stating that you should not be in class that day. You must notify me no later than the end of the second working day after the missed exam.	
Exam Policy:	
Exams should be taken as scheduled. No makeup examinations will be allowed except for documented emergencies (See Student Handbook). In the case of injury or illness, you need to provide a note from a health care professional affirming date and time of a medical office visit regarding the injury or illness and stating that you should not be in class that day. You must notify me no later than the end of the second working day after the missed exam.	
Academic Integrity:	
Academic integrity is a hallmark of higher education. You are expected to abide by the University's code of Academic Integrity policy. Any person suspected of academic dishonesty (i.e., cheating or plagiarism) will be handled in accordance with the University's policies and procedures. Refer to the Student Code of Academic	

Integrity at *for complete provisions of this code.*
In addition, all academic work submitted for this class, including exams, papers, and written assignments should include the following statement:
On my honor, I have not given, nor received, nor witnessed any unauthorized assistance that violates the UNTD Academic Integrity Policy.

Attendance and Participation Policy:

*The University attendance policy is in effect for this course. Class attendance and participation is mandatory because the class is designed as a shared learning experience and because essential information not in the textbook will be discussed in class. The dynamic and intensive nature of this course makes it impossible for students to make-up or to receive credit for missed classes. Attendance and participation in all class meetings is essential to the integration of course material and your ability to demonstrate proficiency. Students are responsible for all information given in class, regardless of his/her attendance. It is recommended that each student coordinate with a student colleague to obtain a copy of the class notes, if they are absent. **Excessive absences (more than 4 classes and 2 labs) may result in being dropped from the class or receiving an F for the course.** Starting Wednesday, October 5, students may be administratively dropped from the course for nonattendance with a grade of WF. The last day a student may be dropped for nonattendance is Friday, November 18.*

Diversity/Tolerance Policy:

Students are encouraged to contribute their perspectives and insights to class discussions. However, offensive & inappropriate language (swearing) and remarks offensive to others of particular nationalities, ethnic groups, sexual preferences, religious groups, genders, or other ascribed statuses will not be tolerated. Disruptions which violate the Code of Student Conduct will be referred to the Center for Student Rights and Responsibilities as the instructor deems appropriate.

Copyright Policy:

The handouts used in this course are copyrighted. By "handouts," I mean all materials generated for this course, which include but are not limited to syllabi, lecture notes, quizzes, exams, in-class materials, review sheets, projects, and problems sets. Because these materials are copyrighted, you do not have the right to copy and distribute the handouts, unless I expressly grant permission.

Miscellaneous Policy:

- *Use of Cell Phones & other Electronic Gadgets (such as Laptops) in the Classroom are prohibited.*
- *Food and drinks are not allowed during the lectures.*