

**University of North Texas at Dallas**  
**Spring 2021**  
**SYLLABUS**

MATH 1580.30	<b>A Survey of Mathematics with Applications</b>		3 Hrs
<b>Department</b>	Mathematics and Information Sciences	<b>Division</b>	Liberal Arts & Sciences
<b>Instructor Name:</b>	<i>Dr. Vinod Arya</i>		
<b>Office Location:</b>	<i>DAL2- 226</i>		
<b>Office Phone:</b>	<i>972 338 1375</i>		
<b>Email Address:</b>	<a href="mailto:vinod.arya@untdallas.edu">vinod.arya@untdallas.edu</a>		
<b>Virtual Office Hours (on Zoom):</b>	M 2 pm – 4 pm; W 4 pm - 6pm; F 6 pm – 8 pm. On zoom and by appointment.		
<b>Class Meeting Days &amp; Times:</b>	<i>Online course.</i>		
<b>Course Catalog Description:</b>	<p>Survey of Mathematics with Applications. 3 hours. 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. Math 1580 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. Prerequisite(s): Two years of high school algebra and one year of high school geometry and consent of department, or MATH 1010 with a grade of C or better.</p>		
<b>Required Text:</b>	<p>Survey of Mathematics with Applications with Integrated Review 10e by Angel - Standalone MML - Access Card ISBN 978032119991. This may also be purchased packaged with textbook from the book store or directly online, at <a href="http://www.coursecompass.com">www.coursecompass.com</a></p>		

<b>WEB ACCESS REQUIRED:</b>	Students may access class information via Canvas (MyLab and Mastering). Information regarding purchase and access to this site is provided there.
<b>Access to Learning Resources</b>	UNT Dallas Library: <b>Resources:</b> phone: (972) 780-3625; <a href="http://www.unt.edu/unt-dallas/library.htm">http://www.unt.edu/unt-dallas/library.htm</a> UNT Dallas Bookstore: phone: (972) 780-3652; e-mail: <a href="mailto:1012mgr@fheg.follett.com">1012mgr@fheg.follett.com</a>

**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 be able to

- #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.

- **Tests** – There will be **two in-class tests** to measure knowledge of presented course material.
- **Final Exam** – **Comprehensive Final Exam.**
- **Homework, Quizzes and Projects**

### Grading Matrix:

#### Instrument; Value (points or percentages)

Quizzes and Tests (2 Each); 40% (10% each)

Homework/Projects/Discussions; 35% (25%+10%)

**Final Exam** (Comprehensive); 25%

**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:

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

**CONTENT:** Tentatively, the following chapters/sections/topics will be covered.

### Course Outline

This schedule is subject to change by the instructor. Any changes to this schedule will be communicated in class or via class email or Canvas announcement. Additional readings and activities may be added, these will be noted in the Canvas Assignments sections.

#### Order of listing: Week; Section; Topics; Due Date

**Week of 1/18** ;6.1, 6.2; Order of operations, Linear Equations;**1/24/21**

**Week of 1/25**;6.3, 6.4; Formulas, Applications of Linear Equations in one variable;**1/31/21** **Week of 2/1** ;6.5, 6.6; Variation, Linear Inequalities;**2/7/21**

**Week of 2/8** ;6.7; Graphing Linear Equations. **Quiz I**;**2/14/21**

**Week of 2/15**;3.1, 3.2; Statements and Logical Connectives, Truth Tables for Negation, Conjunction, and Disjunction;**2/21/21**

**Week of 2/22**;3.3, 3.4; Truth Tables for the Conditional and Biconditional, Equivalent, Statements;**2/28/21**

**Week of 3/1**; 3.5, Review Symbolic Arguments, Review for Mid-Term;**3/5/21**

**Mid-Term Exam**; Chapters 3 and 6; **Mid-Term Exam**; **3/6/21**

**Week of 3/8**;11.1, 11.2; Percent, Loans ;**3/14/21**

**Week of 3/15** ;11.3, 11.4; Compound Interest, Installment Buying;**3/21/21**

**Week of 3/22**;11.5, Quiz; Buying a House with a Mortgage, **Quiz II; 3/28/21**  
**Week of 3/29**;12.1, 12.2; The Nature of Probability, Theoretical Probability;**4/4/21**  
**Week of 4/5**; 12.3, 12.4,; Odds, Expected Value (Expectation);**4/11/21**  
**Week of 4/12**; 12.5,.12.6,, Tree Diagrams AND, OR problems, **4/18/21**  
**Week of 4/19**; 12,11, Binomial Distributions, **Exam II;4/25/21**  
**Week of 4/26**; 13.1, 13.3; Graph Theory; **5/1/21**  
**Final Exam;5/3/21**

Optional Chapters (Time Permitting) – Chapters 14 and 15

### **University Policies and Procedures**

#### **Students with Disabilities (ADA Compliance):**

##### **Chapter (7.004) Disability Accommodations for Students:**

The University of North Texas at Dallas makes reasonable academic accommodation for students with disabilities. Students seeking accommodations must first register with the Disability Services Office (DSO) to verify their eligibility. If a disability is verified, the DSO will provide you with an accommodation letter to be delivered to faculty to begin a private discussion regarding your specific needs in a course. You may request accommodations at any time, however, DSO notices of accommodation should be provided as early as possible in the semester to avoid any delay in implementation. Note that students must obtain a new letter of accommodation for every semester and must meet/communicate with each faculty member prior to implementation in each class. Students are strongly encouraged to deliver letters of accommodation during faculty office hours or by appointment. Faculty members have the authority to ask students to discuss such letters during their designated office hours to protect the privacy of the student. For additional information see the [Disability Services Office website](#). You may also contact them by phone at 972-338-1777; by email at [UNTDdisability@untDallas.edu](mailto:UNTDdisability@untDallas.edu) or in the Student Center Building, 1<sup>st</sup> floor.

##### **Canvas Instructure Accessibility Statement:**

University of North Texas at Dallas is committed to ensuring its online and hybrid courses are usable by all students and faculty including those with disabilities. If you encounter any difficulties with technologies, please contact our ITSS Department. To better assist them, you would want to have the operating system, web browser and information on any assistive technology being used. [Canvas Instructure Course Management System's Accessibility Statement](#) is also provided.

**NOTE:** Additional instructional technology tools, such as Turnitin, Respondus, Panopto, and publisher cartridge content (i.e. MyLab, Pearson, etc.) may NOT be fully ADA compliant. Please contact our Disability Office should you require additional assistance utilizing any of these tools.

##### **Course Evaluation Policy:**

Student's evaluations of teaching effectiveness is a requirement for all organized classes at UNT Dallas. 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 students' evaluations to be an important part of your participation in this class.

**Assignment Policy:** The deadlines for the assignments are given in the course schedule. Late submissions may carry a penalty of 20%. At least one lowest homework grade and the quiz grade will be dropped.

**Exam Policy:** Online exams may be proctored on campus per instructor's discretion. No make up exam for the midterm and final exams will be given except for emergency situations supported by appropriate documentary evidence.

**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 in the [Student Code of Academic Integrity](#) Code 7.002 for complete provisions of this code.

Academic dishonesty includes, but is not limited to, cheating, plagiarizing, fabrication of information or citations, facilitating acts of dishonesty by others, having unauthorized possession of examinations, submitting work of another person or work previously used without informing the instructor, or tampering with the academic work of other students.

Web-based Plagiarism Detection: Please be aware in some online or hybrid courses, students may be required to submit written assignments to Turnitin, a web-based plagiarism detection service, or another method. If submitting to Turnitin, please remove your title page and other personal information.

**Classroom Policies**

**Online Attendance and Participation:**

The University attendance policy is in effect for this course. Class attendance in the Canvas classroom and participation is expected because the class is designed as a shared learning experience, and because essential information not in the textbook will be discussed in the discussion board. Online presence and participation in all class discussions is essential to the integration of course material and your ability to demonstrate proficiency.

Attendance for this online or hybrid course is considered when you are logged in and active in Canvas, i.e., posting assignments, taking quizzes, or completing Discussion Boards. To maintain financial aid award eligibility, activity must occur before the census date of the session or term of the course. Refer to [Registrar's Office](#) for specific dates. If you are absent/not active in the course shell, it is YOUR responsibility to let the instructor know immediately, upon your return, the reason for your absence if it is to be excused. All instructors must follow university policy 7.005 covering excused absences; however, it is the instructor's discretion, as outlined in the course syllabus, of how unexcused absences may or may not count against successful completion of the course.

**Inclement Weather and Online Classes:** Online classes may or may not be effected by campus closures due to inclement weather. Unless otherwise notified by your instructor via e-mail, online messaging, or online announcement, students should assume that assignments are due as scheduled.

**Online “Netiquette”:**

In any social interaction, certain rules of etiquette are expected and contribute to more enjoyable and productive communication. Emails, discussion board forum threads and/or any other forms of written communication in the online environment should use proper “netiquette” (i.e., no writing in all caps (usually denotes yelling), no curse words, and no “flaming” messages (angry, personal attacks).

Racial, ethnic, or gender slurs will not be tolerated, nor will pornography of any kind.

Any violation of online netiquette may result in a loss of points or removal from the course and referral to the Dean of Students, including warnings and other sanctions in accordance with the University’s policies and procedures. Refer to the [Student Code of Student Rights Responsibilities and Conduct](#) Code 7.001. Respect is a given principle in all online communication. Therefore, please be sure to proofread all of your written communication prior to submission.

**Diversity/Tolerance Policy:**

Students are encouraged to contribute their perspectives and insights to class discussions in the online environment. 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 Dean of Students as the instructor deems appropriate.

**Technology Assistance:** In order to successfully access the materials in an online or hybrid course, UNT Dallas advises that your computer be equipped with the minimum system requirements listed on the first page of the syllabus.

If you experience difficulty accessing or using components of the course, try using Google Chrome browser. If you still experience technical difficulties, first, notify your instructor. If the problem is still not resolved, call Canvas 24/7 Help Desk at the phone number listed on the first page of the syllabus. Also, no matter what browser you use, always enable pop-ups. For more information see [Canvas Student Guide](#).