



LAMAR UNIVERSITY

MEMBER THE TEXAS STATE UNIVERSITY SYSTEM™

Syllabus

Lamar University, a member of the Texas State University System, is accredited by the commission on Colleges of the Southern Association of Colleges and Schools to award Associate, Baccalaureate, Masters, and Doctorate degrees (more details at <http://www.lamar.edu>).

Department	Mathematics
Course Number	MATH 1332
Course Title	Contemporary Mathematics I
Professor	Kyehong Kang, Ph.D. Adjunct Instructor Department of Mathematics
	E-mail: kyehong.kang@lamar.edu Or Course Mail in Blackboard

MATH 1332 Contemporary Mathematics I

Office Hours

Weekly office hours will be announced in the “Getting Started” area in Blackboard course page.

Course Materials

Required Text (Online access code only; hardcopy is NOT required)

Mathematical Ideas plus MyMathLab -- Access Card Package, 13/e

Miller, Heeren, Hornsby & Heeren

©2016 | Pearson | Cloth Bound with Access Card; 1088 pp | Available

ISBN-10: 0321978269 | ISBN-13: 9780321978264

A free e-Textbook will be available when you purchase a required access code. See below.

There are no additional required readings other than the textbook chapters and problem sets.

Required Online Access to MyMathLab

Students are required to purchase an online access to the course at the website indicated at the Blackboard course site. Students will do homework and take lesson quizzes, tests, and the final exam at the site. Students can have access to the online version of the textbook at the site as well. Follow the link, MyMathLab (Pearson) in the Blackboard course site in order to enroll in the correct course. The MyMathLab course is linked to your course in Blackboard. Please remember that you will be taking an online course at Lamar University at <http://luonline.blackboard.com>, (lectures, discussions, communications, and etc.) but you will be using the e-book, doing homework problems, and taking quizzes, tests, and the final exam at MyMathLab.

The Site: “MyMathLab” link in the Blackboard course site

The Course Name: MATH 1332: Contemporary Math I (AP 5 Fall 1 2017)

Personal Statement

My name is Kye Hong Kang. I earned my Ph.D. degree in mathematics at Virginia Tech in 1994. My research areas had been computational partial differential equations and mathematics education. Recently, my interest has focused on statistics and its applications, in particular statistical data mining in education. Also, in the past decade, I've been fascinated by the possibility that computers can help our students to learn math more effectively. As a result, I developed a number of educational web projects. Creating this course for you was another exciting experience. I hope you enjoy the course as much as I enjoyed creating it.

Course Description

Math1332, Contemporary Mathematics I, is an introductory course for non-science majors that covers a broad spectrum of contemporary mathematics with emphasis on applications. But, applications are presented with the mathematical foundations, including problem solving, sets, logic, number theory, counting, probability, and finance.

Course Objectives and Student Learning Outcomes

Upon completion of the course, students should be able to:

- **Communication Skills:** Use and present quantitative information in connection with an argument or problem solution and explicate it in an effective format.
 - **Empirical and Quantitative:** Construct and present a detailed problem statement with evidence of relevant contextual factors and possible approaches for solving the problem, then implement a solution and review the results.
 - **Critical Thinking:** Develop a logical, consistent plan to solve a problem, recognize consequences of the solution, and articulate a reason for choosing solution method.
1. Use and present quantitative information in connection with an argument or problem solution and explicate it in an effective format.
 2. Construct and present a detailed problem statement with evidence of relevant contextual factors and possible approaches for solving the problem, then implement a solution and review the results.
 3. Develop a logical, consistent plan to solve a problem, recognize consequences of the solution, and articulate a reason for choosing solution method.
 4. Apply the strategies for problem solving method to problems using both inductive and deductive reasoning.
 5. Develop procedures for using sets and visualizing relations among sets with Venn diagrams, and apply them to solve problems that are modeled with sets.
 6. Develop logical arguments and determine validity of arguments using truth tables or Euler diagrams.
 7. Identify patterns in numbers and prove or disprove the patterns.
 8. Find unique prime factorizations of composite numbers.
 9. Describe the fundamental counting principle to solve counting problems.
 10. Solve counting problems involving permutations, combinations, or Pascal's triangle.
 11. Find probabilities with theoretical, empirical probability formulas.
 12. Find probabilities with addition rules.

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13. Apply the conditional probability formula and determine whether the two events are independent.
14. Determine the annual percentage rate for different types of loans.
15. Compute monthly mortgage payments of fixed-rate mortgages and adjustable-rate mortgages.
16. Determine returns on stock investments.

Core Curriculum Outcomes

Upon completion of the course, the student will demonstrate his or her abilities to think critically, communicate quantitative information, and apply mathematical concepts:

- **Critical Thinking:** Develop a logical, consistent plan to solve a problem, recognize consequences of the solution, and articulate a reason for choosing solution method.
- **Communication Skills:** Use and present quantitative information in connection with an argument or problem solution and explicate it in an effective format.
- **Empirical and Quantitative:** Construct and present a detailed problem statement with evidence of relevant contextual factors and possible approaches for solving the problem, then implement a solution and review the results.

Prerequisites

350 TSI, TSI Exempt, TSI Complete

Technology Prerequisites

Students are not required to have advanced technology training or skills in order to be successful in the class. They should, however, feel confident about their ability to navigate through typical online websites and their ability to use common word processing software in order to submit written assignments. The minimum technical skills and the system requirements for this course:

Classroom Response Time and Feedback

Students are expected to receive often immediate feedback on homework, quizzes, and tests. In other times, the feedback is provided after the due dates of the assignments. Student emails posted on the course will be responded within 48 hours. But, often the instructor will respond sooner. The discussion boards will be graded within 7 days after the due date.

System Requirements

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Computer/Technology Requirements

1. Students will need regular access to a computer with a broadband Internet connection. The minimum computer requirements are:
 - Any current Flash-compliant browser (recent versions of Firefox or Safari)
 - Please note that Blackboard may not support Internet Explorer or Chrome.
 - 1GB of RAM, 2 GB or more preferred
 - Broadband connection (cable modem, DSL, or other high speed) required – courses are heavily video intensive
 - Video display capable of high-color 16-bit display – 1024 x 768 or higher resolution
 - A sound card and speakers or headphones
 - Current anti-virus software must be installed and kept up to date.
 - Students will need some additional free software for enhanced web browsing. Be certain to download the free versions of the software.
 - Adobe Reader
 - Adobe Flash Player
 - Most home computers purchased within the last 3-4 years meet or surpass these requirements.
2. At a minimum, students must have Microsoft Office 2003, XP, 2007 or OpenOffice, or Student Office for Mac. Microsoft Office is the standard office productivity software utilized by faculty, students, and staff. Microsoft Word is the standard word processing software, Microsoft Excel is the standard spreadsheet software, and Microsoft PowerPoint is the standard presentation software. Copying and pasting, along with attaching/uploading documents for assignment submission will also be required. If you do not have Microsoft Office or Student Office for Mac, you can check with the bookstore to see if they have any student copies.
3. **Your computer must be compatible with Blackboard.** Please see the [Blackboard Supported Browsers and Operating System](#) page to make sure your system will allow you to use all the tools and features available. You will find a browser checker in the related section of the webpage.

Technology Skills Requirements

You need to be able to:

- Navigate websites, including downloading and reading files from them.
- Download and install software or plug-ins such as Adobe Reader, Window Media Player or Flash.
- Use e-mail, including attaching and downloading documents/files from e-mail.

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- Save files in commonly used word processing formats (.doc, .docx, .rtf).
- Copy and paste text and other items in computer documents.
- Save and retrieve documents and files on your computer.
- Locate information on the Internet using search engines.
- Locate information in the library using the online catalog.

Students with Disabilities

Lamar University is committed to providing equitable access to learning opportunities for all students. The Disability Resource Center (DRC) is located in the Communications building room 105. Office staff collaborate with students who have disabilities to provide and/or arrange reasonable accommodations. If you have, or think you may have, a disability (e.g., mental health, attentional, learning, chronic health, sensory, or physical), please contact the DRC at 409-880-8347 or drc@lamar.edu to arrange a confidential appointment with the Director of the DRC to explore possible options regarding equitable access and reasonable accommodations. If you are registered with DRC and have a current letter requesting reasonable accommodations, we encourage you to contact your instructor early in the semester to review how the accommodations will be applied in the course.

Academic Integrity Statement

Lamar University expects all students to engage in academic pursuits in a manner that is above reproach. Students are expected to maintain complete honesty and integrity in their academic experiences both in and out of the classroom. Any student found guilty of dishonesty in any phase of academic work will be subject to disciplinary action. Disciplinary proceedings may be initiated against a student accused of any form of academic dishonesty including, but not limited to, cheating on an examination or other academic work which is to be submitted, plagiarism, collusion, and the abuse of resource materials.

Plagiarism shall mean the appropriation of another's work or idea and the unacknowledged incorporation of that work or idea into one's own work offered for credit.

Collusion shall mean the unauthorized collaboration with another person in preparing work offered for credit.

Abuse of resource materials shall mean the mutilation, destruction, concealment, theft or alteration of materials provided to assist students in the mastery of course materials.

Academic work shall mean the preparation of an essay, report, problem, assignment, creative work or other project that the student submits as a course requirement or for a grade.

Students are specifically warned against all forms of plagiarism, which include "purchasing, or otherwise acquiring and submitting as one's own work any research paper or other writing assignment prepared by an individual or firm." Plagiarism is defined as, "the appropriation and

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the unacknowledged incorporation of another's work or ideas into one's own offered for credit" (82). Students seeking to avoid plagiarism should consult either the course instructor or the most recent addition of the *MLA Handbook for Writers of Research Papers*. The course instructor will complete a thorough and impartial investigation of any instance of academic dishonesty. A student found guilty of academic dishonesty will be notified in writing by the instructor of the violation, the penalty, and the student's right to appeal the determination of dishonesty and/or the sanction imposed. Penalties for academic dishonesty in this course will result in either a lowered letter grade or failure of the course as determined by the instructor.

Copyright Policy Statement

Copyright is defined as the ownership and control of the intellectual property in original works of authorship which are subject to copyright law. As an institution of higher learning that values intellectual integrity, Lamar University prohibits the distribution of published materials (print or electronic) in violation of copyright law.

Netiquette (Online Etiquette) Statement

Please adhere to the same standards of behavior and professional respect online that you would follow in face-to-face communication with others, but most particularly when writing email and when taking part in collaborative and discussion board activities. Lamar provides access to network resources, including the Internet, in order to support learning and to prepare students for the 21st century world. Students, however, are expected to adhere to the *Lamar University Acceptable Use Policies when Using Networks*

- **Acceptable Use**

Students must respect the integrity and security of LU's computer systems and network, and the privacy and preferences of other users. Responsibility for learning about and complying with LU's Acceptable Use Policy ultimately rests with the individual. The network may be used to download, copy, or store any software, shareware, digital media files or freeware, as long as the use complies with copyright law; licensing agreements, and campus policies such as storage space limitations and network bandwidth restrictions. The network may not be used for any activity, or to transmit any material, that violates United States or local laws.

- **Unacceptable use**

The network may not be used for commercial purposes. Advertising and sponsorships on UW web sites is restricted. In addition, students may not permit other persons to use their usernames, passwords, accounts or disk space, or disclose their usernames, passwords or account information to any third party. Students may not log on to someone else's account, internet address, or other network codes, or attempt to access another user's files. Students may not create false or dummy accounts to impersonate someone else. Students may not try to gain unauthorized access ("hacking") to the files or computer systems of any other person or

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organization. Students may not impersonate another person by forging e-mail, web pages or other electronic media. Students who maliciously access, alter, delete, damage or destroy any computer system, computer network, computer program, or data will be subject to disciplinary action by LU, and criminal prosecution as well. Students may not disrupt or attempt to disrupt network traffic, and they may not attempt to monitor or capture network traffic in any way. Finally, students may not intentionally create, store, display, print or transmit information that violates the university's Sexual Harassment Policy.

General Guidelines to Respect All Participants

- Respect the right of each person to disagree with others.
- Treat people the same as you would face-to-face.
- Respect the time of others

Guidelines When Communicating with Others (email, discussion, blogging, and etc.)

- Always sign your names to any contribution you choose to make.
- Be constructive in your responses to others in the class.
- Do not use all caps. (Doing so may be interpreted as shouting)
- Re-read your postings before sending them.
- Always think before you write.
- Respond respectfully.
- Use appropriate grammar and structure.
- Spell-check your postings.
- Use short paragraphs focused on one idea
- Use appropriate business language at all times

Privacy Policy Statement

Student records maintained by Lamar University comply with the Family Education Rights and Privacy Act of 1974 as amended (PL93-380). Detailed information should be accessed through this link: <https://sacs.lamar.edu/catalog/PrefMaterial/V.GenAcademicPol.htm#edurights>.

Drop Policy: Please make note of the three dates indicated in this drop policy. Any drop will be your responsibility; I will not drop a student from the course.

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Sept. 5, 2017: (Census Date-Six Drop Rule does not apply) A student may drop or withdraw without consulting with the instructor. The Six Drop Rule does not apply to a drop before 5:00 PM.

Sept. 14, 2017: (Six Drop Rule applies) A student may drop or withdraw from the course without academic penalty and receive a Q, however, the Six Drop Rule applies. The student will consult with the instructor and the Records Office to initiate a drop.

Oct. 3, 2017: (Six Drop Rule applies) Last day to drop or withdraw with academic penalty; the student must be passing the course at the time of the requested drop in order to receive a Q. The drop form, including all required signatures, must arrive in the Records Office by no later than 4:00 PM. No drop is allowed after this date except in extreme extenuating circumstances. Any “late drop” must be approved by the instructor, department chair, college dean, and provost.

Course Evaluation. Instruction as well as student performance is subject to evaluation. Procedures for evaluation will be provided at the Grading and Evaluation section below.

MyLamar Portal. (Portal will change near future) Students are asked to obtain a Lamar Electronic Account username and password so they can log into the myLamar Web site. Students may get information on how to get into the myLamar Web site from the University’s homepage (<http://www.lamar.edu>) by clicking on the myLamar link on the left top corner of the screen. Follow the steps to secure your myLamar username and password. Access to library resources is described on the Academic Partnership page, also available through the <http://www.lamar.edu>.

Sexual Harassment. In accordance with administrative policy, sexual harassment is reprehensible and will not be tolerated by the university. Behavior in the course must conform to the university policy.

Syllabus Subject to Change. While information and assurances are provided in this course syllabus, it should be understood that content may change in keeping with events beyond the control of the instructor. Students will be informed of any substantive occurrences that will produce syllabus changes.

Grading and Evaluation

The grade for the course will be based on homework assignments, quizzes and exams. The percentage breakdown of the final grade is as follows.

Discussion board activities: 15%

Homework: 15%

Lesson quizzes: 25%

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Mid-term exam: 20%

Final exam: 25%

Grading Scale

Final grades will be calculated by adding total percentage from each category and by applying the following rule.

100 – 90%	A
89 – 80%	B
79 – 70%	C
69 – 60%	D
59% or below	F

Late Work Policies

No late work on homework and quizzes will be accepted. However, two lowest homework, two lowest quiz grades, and one lowest discussion board grade will be dropped for everyone at the end of the session. You may make up a missing test only under the severe circumstances and a notice before the test. A missing test will result in a zero.

Academic Continuity Statement

In the event of an announced campus closure in excess of four days due to a hurricane or other disaster, students are expected to login to Lamar University's website's homepage (www.Lamar.edu) for instructions about continuing courses remotely.

Tests and the Final Exam

Students will take one mid-term exam and the final exam. The detailed information will be announced in the course website.

Tentative Course Content Outline

Tentative Course Content Outline	
Unit 1	<p>Topic: Problem Solving</p> <p>Lesson Objective</p> <p>Upon the completion of the unit, students will be able to do:</p> <ul style="list-style-type: none"> • Describe and apply the characteristics of inductive and deductive reasoning for solving problems. • Apply the various problem solving strategies to solving problems. <p>Two Homework Assignments and Two Quizzes from the following sections in this unit</p> <ul style="list-style-type: none"> • 1.1 Solving Problems by Inductive Reasoning • 1.2 An Application of Inductive Reasoning: Number Patterns • 1.3 Strategies for Problem Solving • 1.4 Numeracy in Today's World
Unit 2	<p>Topic: Set Theory</p> <p>Lesson Objective</p> <p>Upon the completion of the unit, students will be able to do:</p> <ul style="list-style-type: none"> • Identify if a given collection of objects forms a set or not. • Apply set notations to sets and subsets whether sets are finite or infinite. • Use Venn diagrams to visualize relations among sets and apply them to solve problems modeled with sets. <p>Two Homework Assignments and Two Quizzes from the following sections in</p>

	<p>this unit</p> <ul style="list-style-type: none"> • 2.1 Symbols and Terminology • 2.2 Venn Diagrams and Subsets • 2.3 Set Operations • 2.4 Surveys and Cardinal Numbers
<p>Unit 3</p>	<p>Topic: Logic</p> <p>Lesson Objective</p> <p>Upon the completion of the unit, students will be able to do:</p> <ul style="list-style-type: none"> • Distinguish statements from non-statements including quantifiers. • Find truth values and construct truth tables for compound mathematical statements, conditional and related statements. <p>Two Homework Assignments and Two Quizzes from the following sections in this unit</p> <ul style="list-style-type: none"> • 3.1 Statements and Quantifiers • 3.2 Truth Tables and Equivalent Statements • 3.3 The Conditional and Circuits • 3.4 The Conditional and Related Statements • 3.5 Analyzing Arguments with Euler Diagrams
<p>Unit 4</p>	<p>Topic: Number Theory</p> <p>Lesson Objective</p> <p>Upon the completion of the unit, students will be able to do:</p> <ul style="list-style-type: none"> • Identify prime numbers and composite numbers. • Apply the fundamental theory of arithmetics to find the unique prime factorizations of composite numbers. • Prove or identify special properties with numbers • Find the greatest common factors and the least common multiples. <p>Two Homework Assignments and Two Quizzes from the following sections in this unit</p> <ul style="list-style-type: none"> • 5.1 Prime and Composite Numbers • 5.3 Selected Topics from Number Theory

	<ul style="list-style-type: none">• 5.4 Greatest Common Factor and Least Common Multiple
Unit 5	<p>Topic: Counting Methods</p> <p>Lesson Objective</p> <p>Upon the completion of the unit, students will be able to do:</p> <ul style="list-style-type: none">• Apply the fundamental counting principle to solve counting problems.• Solve counting problems involving permutations or combinations.• Construct and use Pascal's triangle to solve applications involving combinatorics. <p>Two Homework Assignments and Two Quizzes from the following sections in this unit</p> <ul style="list-style-type: none">• 10.1 Counting by Systematic Listing• 10.2 Using the Fundamental Counting Principle• 10.3 Using Permutations and Combinations• 10.4 Using Pascal's Triangle

<p>Unit 6</p>	<p>Topic: Probability</p> <p>Lesson Objective</p> <p>Upon the completion of the unit, students will be able to do:</p> <ul style="list-style-type: none">• Find probabilities with theoretical and empirical probability formula.• Find probabilities with addition rules.• Apply the conditional probability formula and determine whether the two events are independent. <p>Two Homework Assignments and Two Quizzes from the following sections in this unit</p> <ul style="list-style-type: none">• 11.1 Basic Concepts• 11.2 Events Involving “Not” and “Or”• 11.3 Conditional Probability and Events Involving “And”
<p>Unit 7</p>	<p>Topic: Mathematics of Finance</p> <p>Lesson Objective</p> <p>Upon the completion of the unit, students will be able to do:</p> <ul style="list-style-type: none">• Calculate simple and compound interests.• Determine future value and present value.• Determine the annual percentage rate for different types of loans.• Compute monthly mortgage payments of fixed-rate mortgages and adjustable-rate mortgages.• Determine returns on stock investments. <p>Two Homework Assignments and Two Quizzes from the following sections in this unit</p> <ul style="list-style-type: none">• 13.1 The Time Value of Money• 13.3 Truth in Lending• 13.4 The Costs and Advantages of Home Ownership• 13.5 Financial Investments