



## Course Syllabus – Contemporary Mathematics

### MATH 1332.272 – Fall 2019

**Department:** Mathematics and Engineering

**Discipline:** Mathematics

**Course Number:** Math 1332

**Course Title:** Contemporary Mathematics

**Credit MATH 1332:** 3 **Lecture:** 3 **Lab:** 0

**Lubbock Center Office Hours:** MTWTh 10-11am, TTh 3-5pm, F 9-11am, or by appointment

**Prerequisites:** A grade of C or better is required from MATH0332, MATH0337, or MATH0320.

**Course Description:** Intended for Non STEM (Science, Technology, Engineering, and Mathematics) majors. Topics include introductory treatments of sets and logic, financial mathematics, probability and statistics with appropriate applications. Number sense, proportional reasoning, estimation, technology, and communication should be embedded throughout the course. Additional topics may be covered.

#### **Student Learning Outcomes/Competencies:**

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

1. Apply the language and notation of sets. (CH 2)
2. Determine the validity of an argument or statement and provide mathematical evidence. (CH 3)
3. Solve problems in mathematics of finance. (CH 13)
4. Demonstrate fundamental probability/counting techniques and apply those techniques to solve problems. (CH 10, 11)
5. Interpret and analyze various representations of data. (12.1, 12.2)
6. Demonstrate the ability to choose and analyze mathematical models to solve problems from real-world settings, including, but not limited to, personal finance, health literacy, and civic engagement. (2.4, CH 6, 7, 8, 9, 10, 11, 12.1, 12.2, 13, Trigonometry Appendix, Metric System Appendix)

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7. Be able to manipulate and solve polynomial, radical, exponential, and logarithmic expressions and apply these techniques to practical problems. (CH 7, 8)
8. Use the six trigonometric functions to solve right triangles and oblique triangles, and be able to apply these techniques to practical problems. (Trigonometry Appendix)

### Core Objectives:

#### Communication Skills:

effective development, interpretation, and expression of ideas through written, oral, and visual communication.

- Develop, interpret, and express ideas through written communication
- Develop, interpret, and express ideas through oral communication
- Develop, interpret, and express ideas through visual communication

#### Critical Thinking:

creative thinking, innovation, inquiry, analysis, evaluation, and synthesis of information.

- Generate and communicate ideas by combining, changing, and reapplying existing information
- Gather and assess information relevant to a question
- Analyze, evaluate, and synthesize information

#### Empirical and Quantitative Competency Skills:

the manipulation and analysis of numerical data or observable facts resulting in informed conclusions.

- Manipulate and analyze numerical data and arrive at an informed conclusion
- Manipulate and analyze observable facts and arrive at an informed conclusion

**Physical Textbook (Optional):** *Mathematical Ideas*, Miller/Heeren/Hornsby/Heeren, 2020, 14<sup>th</sup> Edition, Prentice Hall/Pearson Education.

**Supplies (Required):** MyMathLab access required (Course ID: **johansen21414**); a non-graphing scientific calculator (such as a TI-30) that is NOT your phone will be allowed on most activities.

#### Technology Required:

Working, reliable internet access

MyMathLab website. Login at [MyMathLab.com](https://www.mymathlab.com)

**Course Requirements:** To maximize the potential to complete this course, a student should attend all class meetings, take notes and participate in class, login to MyMathLab at least 3 times a week, read the required textbook sections, watch the required lecture videos,

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thoroughly complete all homework assignments, and prepare well for examinations including the final examination.

**Contacting Your Instructor:** I am available by phone or face-to-face visit in my office on the Lubbock Center campus during my posted office hours; you can email me or text my cell at any time. I can also be reached by phone using my cellphone number (513-227-0095) during reasonable hours. If you have to leave a message, my response time is 1 business day or less.

**Learning Materials/Activities:** To be successful in this course, you will use the following materials and complete the given activities for each section of the textbook that we will cover.

- Textbook reading – Read the section in your textbook, whether you use a physical book or the eText inside MyMathLab. As you read, you should write notes on any new vocabulary words (usually in boldface type), formulas, theorems, and calculator commands. The reading may be your first introduction to the concepts.
- Explore assignment - Explore assignments for each section will be posted in MyMathLab under the Assignments button and will contain video lectures and vocabulary/concept check questions. As you view the videos/animations, you should add any new information to your textbook notes and copy into your notes any examples worked for you in the video, just as if you were sitting in class with that instructor. The exploration assignment is like a guided practice—concepts are still very new, but you should be getting more familiar with them.
- In-Class assignment – On most days that we meet for class, we will take some time to practice what you've learned and/or to apply the concepts to lab exercises.
- Homework assignment – Homework assignments for each section will be posted in MyMathLab under the Assignments button and will contain questions that may be multiple choice or fill-in-the-blank, but are primarily open-ended questions for problems that you work out. The questions generally give you 3 chances to get the question right before marking the problem wrong. You will then have access to a Similar Question button that will give you a new question and 3 more chances to get the question right. You have unlimited attempts on homework questions, so if you are persistent, do your work on time, and learn from your mistakes, you can earn 100% on all homework assignments. Also, every homework question has a Question Help button in the top right corner that will walk you through the solution, show you a similar example, link to the textbook section, sometimes links to a video example, or gives you a button to Ask My Instructor which sends me an email with your question. The purpose of homework is to practice, practice, practice! This is where you actually are learning the concepts, not just watching someone else work problems.

### Course Evaluation:

- Daily Explore assignments will be posted, worth 5% of your grade. These are due before the class where the section will be discussed.

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- There will be in-class assignments collected daily. By their very nature, in-class assignments can NOT be made up. The in-class average is worth 10% of your grade, and the lowest 3 in-class grades will be dropped.
- Daily online homework assignments will be due weekly, usually on Tuesday before class. The homework average is worth 10% of your grade, and the lowest 3 homework grades will be dropped.
- There will be 11 online Quizzes (1 per “chapter” we cover) posted in MyMathLab under the Assignments button. You may prepare ONE 3”x5” handwritten notecard for your reference for each quiz, but other than that notecard and your calculator, each quiz is to be **completed on your own and without references**—no using your text, no Google, no Phone a Friend. The purpose of each quiz is to help you review the chapter and start to see the “bigger picture”, rather than just one section at a time. Quizzes are TIMED and help get you ready for the Exams. You have two attempts on each quiz (I HIGHLY recommend taking your first attempt early enough that you have time to review your errors before taking the quiz again), and only the highest of your two attempts will count in your average. The Quiz Average is worth 10% of your grade, and the 2 lowest quiz grades will be dropped.
- There will be 3 in-class exams, each worth 15% of your grade. For each of these exams, you are allowed ONE 3”x5” handwritten, front and back, notecard. If an exam is missed for a legitimate reason, a makeup exam may be given. It is your responsibility to contact me to schedule a makeup exam.
- There will be 1 in-class cumulative final exam on **Tuesday, December 10<sup>th</sup> from 5:30pm-7:30pm**, worth 20% of your grade.
- **Late work:** Late work on Explore and Homework assignments will be accepted in MyMathLab with a 10% deduction **per day** late. This means that if an assignment has 10 questions, and you get 9 of them correct and on time, you earned a 90% on the assignment. If you get the same 9 of them correct, but 2 days late, you have earned 80% of 90%, which is only 72%. PLEASE do your assignments on time; don't shoot yourself in the foot!
- **Final letter grades:** Because this course is a merger of the support course and the college-level course, you will get the same grade for both MATH 0332 and MATH 1332. If you decide to drop the course, you will drop both MATH 0332 and MATH 1332.

#### Grading Policy:

Explore average	5%
Homework average	10%
In-Class average	10%
Quiz average	10%
Exams (3*15%)	45%
Final exam	20%

#### Letter Grades:

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

**How your work is graded:** MyMathLab grades online assignments as a percentage based on how many parts of a question were answered correctly, and these grades are immediately included in your class average and in your MyMathLab Gradebook. For the In-Class assignments and Exams that I grade, I give a percentage of points based on how many parts of the question

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were answered correctly. I will upload In-Class and Exam grades into MyMathLab within 48 hours of their due dates, and MyMathLab will update your Gradebook and current class average to include those scores.

### Response times for grading:

- Explore/Homework - Graded immediately by MyMathLab, reviewed by me within 1 business day if you contact me with a specific question/issue.
- In-Class - Graded by me and returned to you, usually by the next class meeting.
- Quiz - Graded immediately by MyMathLab, reviewed by me within 48 hours of due date.
- Exams - Graded by me and returned to you within 48 hours. Exception: the final exam is not returned to you, but you can come by the office to see it after grading.

**Attendance Policy:** Students are expected to attend all classes in order to be successful in a course. The student may be administratively withdrawn from the course when absences become excessive as defined in the course syllabus. ***[Absences for this course are considered excessive if you have 4 in a row or a total of 8. If you reach 4 consecutive absences or a total of 8 absences, you will be administratively withdrawn from the class with a grade of 'X' or 'F'.]***

When an unavoidable reason for class absence arises, such as illness, an official trip authorized by the college or an official activity, the instructor may permit the student to make up work missed. It is the student's responsibility to complete work missed within a reasonable period of time as determined by the instructor. Students are officially enrolled in all courses for which they pay tuition and fees at the time of registration. Should a student, for any reason, delay in reporting to a class after official enrollment, absences will be attributed to the student from the first class meeting.

Students who enroll in a course but have "Never Attended" by the official census date, as reported by the faculty member, will be administratively dropped by the Office of Admissions and Records. A student who does not meet the attendance requirements of a class as stated in the course syllabus and does not officially withdraw from that course by the official census date of the semester, may be administratively withdrawn from that course and receive a grade of "X" or "F" as determined by the instructor. Instructors are responsible for clearly stating their administrative drop policy in the course syllabus, and it is the student's responsibility to be aware of that policy.

It is the student's responsibility to verify administrative drops for excessive absences through MySPC using his or her student online account. If it is determined that a student is awarded financial aid for a class or classes in which the student never attended or participated, the financial aid award will be adjusted in accordance with the classes in which the student did attend/participate and the student will owe any balance resulting from the adjustment.

**Last day to drop is Thursday, November 14<sup>th</sup>.**

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### **SPC School Holidays:**

Monday, 9/2, Labor Day Holiday

Friday, 10/11, Fall Break

Wednesday-Friday, 11/27-11/29, Thanksgiving Holidays

**Academic Integrity:** It is the aim of the faculty of South Plains College to foster a spirit of complete honesty and a high standard of integrity. The attempt of any student to present as his or her own any work which he or she has not honestly performed is regarded by the faculty and administration as a most serious offense and renders the offender liable to serious consequences, possibly suspension.

**Cheating:** Dishonesty of any kind on examinations or on written assignments, illegal possession of examinations, the use of unauthorized notes during an examination, obtaining information during an examination from the textbook or from the examination paper of another student, assisting others to cheat, alteration of grade records, illegal entry or unauthorized presence in an office are examples of cheating. Complete honesty is required of the student in the presentation of any and all phases of course work. This applies to quizzes of whatever length, as well as to final examinations, to daily reports and to term papers. Students caught cheating will receive a 0 on that assignment and face disciplinary action that can include being dropped from the class with a grade of 'F' and suspension from school.

**Cellphones:** To limit disruptions to the class and distractions to yourself, please put your cellphone on silent mode or airplane mode. If you feel a call is an emergency that you must answer, please take the phone out in the hall before answering to minimize the disruption to the class. If you feel you must leave class, please do so as quietly as possible.

**Dress Code:** Reasonable standards of decency apply to the college community. The student should dress in a manner which does not distract from the academic atmosphere. Revealing attire or clothing carrying obscene or offensive slogans is not permitted. In all academic buildings, classrooms, offices, the Student Center, and dining facilities, students are required to wear shirts and shoes.

**Language:** Please be respectful of others and use language that is appropriate to the workplace.

### **Diversity Statement**

In this class, the teacher will establish and support an environment that values and nurtures individual and group differences and encourages engagement and interaction. Understanding and respecting multiple experiences and perspectives will serve to challenge and stimulate all of us to learn about others, about the larger world and about ourselves. By promoting diversity and intellectual exchange, we will not only mirror society as it is, but also model society as it should and can be.

**Disability Statement:** Students with disabilities, including but not limited to physical, psychiatric, or learning disabilities, who wish to request accommodations in this class should notify the Special Services Office early in the semester so that the appropriate arrangements may be made. In

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accordance with federal law, a student requesting accommodations must provide acceptable documentation of his/her disability to the Special Services Coordinator. For more information, call or visit the Disability Services Office at Levelland (Student Health & Wellness Office) 806-716-2577, Reese Center (Building 8) 806-716-4675, or Plainview Center (Main Office) 806-716-4302 or 806-296-9611. The Disability Services website is at <http://www.southplainscollege.edu/health/disabilityservices.php>, and email is [dvalles@southplainscollege.edu](mailto:dvalles@southplainscollege.edu).

**Title IX Pregnancy Accommodations Statement:** If you are pregnant, or have given birth within six months, Under Title IX you have a right to reasonable accommodations to help continue your education. To activate accommodations you must submit a Title IX pregnancy accommodations request, along with specific medical documentation, to the Director of Health and Wellness. Once approved, notification will be sent to the student and instructors. It is the student's responsibility to work with the instructor to arrange accommodations. Contact [Crystal Gilster, Director of Health and Wellness](mailto:cgilster@southplainscollege.edu) at 806-716-2362 or email [cgilster@southplainscollege.edu](mailto:cgilster@southplainscollege.edu) for assistance.

**Non-Discrimination Statement:** South Plains College does not discriminate on the basis of race, color, national origin, sex, disability or age in its programs and activities. The following person has been designated to handle inquiries regarding the non-discrimination policies: Vice President for Student Affairs, South Plains College, 1401 College Avenue, Box 5, Levelland, TX 79336. Phone number 806-716-2360.

**Campus Concealed Carry Statement:** Texas Senate Bill - 11 (Government Code 411.2031, et al.) authorizes the carrying of a concealed handgun in South Plains College buildings only by persons who have been issued and are in possession of a Texas License to Carry a Handgun. Qualified law enforcement officers or those who are otherwise authorized to carry a concealed handgun in the State of Texas are also permitted to do so. Pursuant to Penal Code (PC) 46.035 and South Plains College policy, license holders may not carry a concealed handgun in restricted locations. For a list of locations and Frequently Asked Questions, please refer to the Campus Carry page at: <http://www.southplainscollege.edu/campuscarry.php>

Pursuant to PC 46.035, the open carrying of handguns is prohibited on all South Plains College campuses. Report violations to the College Police Department at 806-716-2396 or 9-1-1.

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### COURSE OUTLINE / CALENDAR\*

Problems are assigned online for each section of the textbook that we cover. To access online assignments, you must have an access code (you can buy a code for MyMathLab bundled with your textbook or you can buy just the code at the SPC bookstore or [www.mymathlab.com](http://www.mymathlab.com)) and register for our course (Course ID: **Johansen21414**) at [www.mymathlab.com](http://www.mymathlab.com). Assignments have due dates, and you will lose 10% per day for work completed after the due date passes. To master the material and prepare for the exams, you **MUST** work extra problems!

\* Assignments and deadlines are subject to change at instructor's discretion, and all changes will be announced in class and posted in MyMathLab.

Date	Content	Assignments
Week 1 8/27  8/29	<b>Syllabus, Basic Concepts of Set Theory (Part 1)</b> <ul style="list-style-type: none"> <li>• Syllabus Overview</li> <li>• 2.1 Symbols and Terminology</li> <li>• 2.2 Venn Diagrams and Subsets</li> <li>• 2.3 Set Operations</li> </ul>	Read Sections 2.1-2.3 MML Orientation MML Explore 2.1-2.3 MML Hwk 2.1-2.3  <b>Due 5pm, 9/3</b>
Week 2  9/3  9/5	<b>Basic Concepts of Set Theory (Part 2) &amp; Introduction to Logic (Part 1)</b> <ul style="list-style-type: none"> <li>• 2.4 Surveys and Cardinal Numbers</li> <li>• 3.1 Statements and Quantifiers</li> <li>• 3.2 Truth Tables and Equivalent Statements</li> <li>• 3.3 The Conditional and Circuits</li> </ul>	Read Sections 2.4, 3.1-3.3 MML Explore 2.4, 3.1-3.3 MML Hwk 2.4, 3.1-3.3  <b>MML Quiz 1 (Ch. 2)</b>  <b>Due 5pm, 9/10</b>
Week 3  9/10  9/12	<b>Introduction to Logic (Part 2), The Real Numbers and Their Representations (Part 1), &amp; The U.S. and Metric Systems of Measurement</b> <ul style="list-style-type: none"> <li>• 3.4 The Conditional and Related Statements</li> <li>• 3.6 Analyzing Arguments with Truth Tables</li> <li>• 6.3 Rational Numbers and Decimal Representation</li> <li>• U.S. and Metric Systems of Measurement</li> </ul>	Read Sections 3.4, 3.6, 6.3, Metric Appendix MML Explore 3.4, 3.6, 6.3, Metric Appendix MML Hwk 3.4, 3.6, 6.3, Metric Appendix  <b>MML Quiz 2 (Ch. 3)</b>  <b>Due 5pm, 9/17</b>

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<p>Week 4</p> <p>9/16</p> <p>9/18</p>	<p><b>The Real Numbers and Their Representations (Part 2) &amp; Exam 1</b></p> <ul style="list-style-type: none"> <li>• 6.4 Irrational Numbers and Decimal Representation</li> <li>• Review for Exam 1</li> </ul> <p>• <b>Exam 1 (Chapters 2, 3, 6, and Measurement)</b></p>	<p>Read Section 6.4MML Explore 6.4 MML Hwk 6.4</p> <p><b>MML Quiz 3 (Ch. 6)</b></p> <p><b>Due 5pm, 9/24</b></p>
<p>Week 5</p> <p>9/24</p> <p>9/26</p>	<p><b>The Basic Concepts of Algebra (Part 1)</b></p> <ul style="list-style-type: none"> <li>• 7.2 Applications of Linear Equations</li> <li>• 7.3 Ratio, Proportion, and Variation</li> </ul> <p>• 7.4 Linear Inequalities</p> <p>• 7.5 Properties of Exponents and Scientific Notation</p>	<p>Read Sections 7.2-7.5 MML Explore 7.2-7.5 MML Hwk 7.2-7.5</p> <p><b>Due 5pm, 10/1</b></p>
<p>Week 6</p> <p>10/1</p> <p>10/3</p>	<p><b>The Basic Concepts of Algebra (Part 2) &amp; Graphs, Functions, and Systems of Equations and Inequalities (Part 1)</b></p> <ul style="list-style-type: none"> <li>• 7.6 Polynomials and Factoring</li> <li>• 7.7 Quadratic Equations and Applications</li> </ul> <p>• 8.1 The Rectangular Coordinate System and Circles</p> <p>• 8.2 Line, Slope, and Average Rate of Change</p>	<p>Read Sections 7.6-7.7, 8.1-8.2 MML Explore 7.6-7.7, 8.1-8.2 MML Hwk 7.6-7.7, 8.1-8.2</p> <p><b>MML Quiz 4 (Ch. 7)</b></p> <p><b>Due 5pm, 10/8</b></p>
<p>Week 7</p> <p>10/8</p> <p>10/10</p>	<p><b>Graphs, Functions, and Systems of Equations and Inequalities (Part 2) &amp; Geometry (Part 1)</b></p> <ul style="list-style-type: none"> <li>• 8.3 Equations of Lines</li> <li>• 8.4 Linear Functions, Graphs and Models</li> </ul> <p>• 8.8 Applications of Linear Systems</p> <p>• 9.2 Curves, Polygons, Circles, and Geometric Constructions</p>	<p>Read Sections 8.3, 8.4, 8.8, 9.2 MML Explore 8.3, 8.4, 8.8, 9.2 MML Hwk 8.3, 8.4, 8.8, 9.2</p> <p><b>MML Quiz 5 (Ch. 8)</b></p> <p><b>Due 5pm, 10/15</b></p>



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<p>Week 12 11/12</p> <p>11/14</p>	<p><b>Personal Financial Management</b></p> <ul style="list-style-type: none"> <li>• 13.1 The Time Value of Money</li> <li>• 13.2 Consumer Credit</li> <li>• 13.4 The Costs and Advantages of Home Ownership</li> <li>• 13.5 Financial Investments</li> </ul>	<p>Read Sections 13.1, 13.2, 13.4, 13.5 MML Explore 13.1, 13.2, 13.4, 13.5 MML Hwk 13.1, 13.2, 13.4, 13.5</p> <p><b>MML Quiz 10 (Ch. 13)</b></p> <p><b>Due 5pm, 11/19</b></p>
<p>Week 13 11/19</p> <p>11/21</p>	<p><b>Exam 3</b></p> <ul style="list-style-type: none"> <li>• Review for Exam 3</li> <li>• <b>Exam 3 (Chapters 10-13)</b></li> </ul>	
<p>Week 14 11/26</p> <p>11/28</p>	<p><b>Trigonometry (Part 1) &amp; Thanksgiving Holidays</b></p> <ul style="list-style-type: none"> <li>• 14.1* Angles and Their Measures</li> <li>• 14.2* Trigonometric Functions of Angles</li> <li>• 14.4* Right Triangles and Function Values</li> <li>• <b>Thanksgiving Holiday – No Classes!</b></li> </ul> <p>*NOTE: Trigonometry sections are only found in online supplement and are labeled as Chapter 14.</p>	<p>Read Sections 14.1*, 14.2*, 14.4* MML Explore 14.1*, 14.2*, 14.4* MML Hwk 14.1*, 14.2*, 14.4*</p> <p><b>Due 5pm, 12/3</b></p>
<p>Week 15 12/3</p> <p>12/5</p>	<p><b>Trigonometry (Part 2) &amp; Review for Final Exam</b></p> <ul style="list-style-type: none"> <li>• 14.5* Applications of Right Triangles</li> <li>• 14.6* The Laws of Sines and Cosines</li> <li>• Review for Final Exam</li> </ul>	<p>Read Sections 14.5*-14.6* MML Explore 14.5*-14.6* MML Hwk 14.5*-14.6*</p> <p><b>MML Quiz 11 (Ch. 14*)</b></p> <p><b>Due 5pm, 12/10</b></p>
<p>Week 16 12/10</p>	<p><b>Cumulative Final Exam</b></p> <ul style="list-style-type: none"> <li>• <b>Final Exam (Chapters 2, 3, 6-13, Measurements, &amp; Trigonometry)</b> <b>5:30pm-7:30pm</b></li> </ul>	

\* Assignments and deadlines are subject to change at instructor's discretion, and all changes will be announced in class and posted in MyMathLab.