Course Description

Introduces non-technical applications of mathematics in the modern world. Cultivates an appreciation of the significance of mathematics in daily life and develop students’ mathematical reasoning. Subjects include quantitative information in real-world situations, geometry, statistics, and probability.

Course Textbook


Course Learning Outcomes

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

1. Apply mathematical principles used in real-world situations.
2. Relate number theory, integer computation, and rational number concepts to problem-solving applications.
3. Perform computations involving exponents, scientific notations, and sequences within the real number system.
4. Apply geometric principles and formulas to solve problems.
5. Demonstrate counting techniques.
6. Calculate basic statistical measures and analyze distribution graphs.

Credits

Upon completion of this course, the students will earn three (3) hours of college credit.

Course Structure

1. **Study Guide**: Each unit contains a Study Guide that provides students with the learning outcomes, unit lesson, required reading assignments, and supplemental resources.
2. **Learning Outcomes**: Each unit contains Learning Outcomes that specify the measurable skills and knowledge students should gain upon completion of the unit.
3. **Unit Lesson**: Each unit contains a Unit Lesson, which discusses unit material.
4. **Reading Assignments**: Each unit contains Reading Assignments from one or more chapters from the textbook.
5. **Unit Videos**: Instructional videos are provided for Units I–VII. Each video includes several examples that discuss the unit material.
6. **Learning Activities (Non-Graded)**: A non-graded Learning Activity is provided in Unit VIII to aid students in their course of study.
7. **Unit Assessments**: This course contains seven Unit Assessments, one to be completed at the end of Units I–VII. Assessments are composed of multiple-choice, fill-in-the-blank, and show work questions. Specific information and instructions regarding these assessments are provided below.
8. **Unit Assignments**: Students are required to submit for grading Unit Assignments in Units I–VIII. Specific information and instructions regarding these assignments are provided below. A grading rubric is included for use with the Unit I–VIII Homework assignments. Specific information about accessing this rubric is provided below.
9. **Final Exam (Proctored):** Students are to complete a Final Exam in Unit VIII. All Final Exams are proctored—see below for additional information. You are permitted four (4) hours to complete this exam in the presence of your approved proctor. This is an open book exam. The course textbook, a blank Excel document, and a calculator, are allowed when taking the proctored exam. The Final Exam is composed of multiple-choice and fill-in-the-blank questions.

10. **Ask the Professor:** This communication forum provides you with an opportunity to ask your professor general or course content related questions.

11. **Student Break Room:** This communication forum allows for casual conversation with your classmates.

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**CSU Online Library**

The CSU Online Library is available to support your courses and programs. The online library includes databases, journals, e-books, and research guides. These resources are always accessible and can be reached through the library webpage. To access the library, log into the myCSU Student Portal, and click on “CSU Online Library.” You can also access the CSU Online Library from the “My Library” button on the course menu for each course in Blackboard.

The CSU Online Library offers several reference services. E-mail (library@columbiasouthern.edu) and telephone (1.877.268.8046) assistance is available Monday – Thursday from 8 am to 5 pm and Friday from 8 am to 3 pm. The library’s chat reference service, *Ask a Librarian*, is available 24/7; look for the chat box on the online library page.

Librarians can help you develop your research plan or assist you in finding relevant, appropriate, and timely information. Reference requests can include customized keyword search strategies, links to articles, database help, and other services.

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**Unit Assignments**

Units I-VIII each contain a homework assignment to be completed in the MyMathLab. Homework counts as 32% of your grade. You must earn a minimum of 70% on your homework before you will be allowed to take each Unit Assessment. In Unit VIII, you must earn a minimum of 70% before you will be allowed to take the Final Exam.

The homework assignments in Units I-VII contain several instructional videos to help you understand each concept. You must click on the video link within your homework assignment in order to access the homework questions. Please see your course syllabus for more information on how to access and navigate the instructional videos.

Note: You have unlimited homework attempts.

To save your homework, click on the “Save” button at the bottom of the homework. This will save your work so that you may return to the homework at a later time.

Click [here](#) for a rubric that explains how your homework will be graded.

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**Unit Assessments**

Units I-VII contain an assessment to be completed in the MyMathLab. Assessments count as 49% of your grade. Assessments are composed of multiple-choice, fill-in-the-blank, and show work questions.

Once you have earned a minimum of 70% on your homework, you will be able to take your unit assessment.

For ‘Show Work Questions’ you will show your work in the pop-up show work window using a step-by-step process. If the Show Work window does not automatically pop up, click on the show work button. After you complete your work in the Show Work window, click YES below the question to verify that you have shown your work and go on to the next question. All unit assessments must show your work in a step-by-step process that is a mirror image of the examples in the book and study guide. Answers only or no answers will result in zero points. Copying the problem and then giving an answer without showing the steps will be equal to zero points. The Show Work assessment questions will contain clickable links that will lead to examples for you to view.
You are not required to view the assessment examples, but feel free to do so if needed. The unit assessments do not have to be completed all at once. You may close a unit assessment out and return to where you left off at a later time. Do not hit submit until you are ready for the assessment to be graded.

**APA Guidelines**

The application of the APA writing style shall be practical, functional, and appropriate to each academic level, with the primary purpose being the documentation (citation) of sources. CSU requires that students use APA style for certain papers and projects. Students should always carefully read and follow assignment directions and review the associated grading rubric when available. Students can find CSU’s Citation Guide by clicking here. This document includes examples and sample papers and provides information on how to contact the CSU Success Center.

**Grading Rubrics**

This course utilizes analytic grading rubrics as tools for your professor in assigning grades for all learning activities. Each rubric serves as a guide that communicates the expectations of the learning activity and describes the criteria for each level of achievement. In addition, a rubric is a reference tool that lists evaluation criteria and can help you organize your efforts to meet the requirements of that learning activity. It is imperative for you to familiarize yourself with these rubrics because these are the primary tools your professor uses for assessing learning activities.

Rubric categories include: (1) Assessment (Written Response) and (2) Assignment. However, it is possible that not all of the listed rubric types will be used in a single course (e.g., some courses may not have Assessments).

The Assessment (Written Response) rubric can be found embedded in a link within the directions for each Unit Assessment. However, these rubrics will only be used when written-response questions appear within the Assessment.

Each Assignment type (e.g., article critique, case study, research paper) will have its own rubric. The Assignment rubrics are built into Blackboard, allowing students to review them prior to beginning the Assignment and again once the Assignment has been scored. This rubric can be accessed via the Assignment link located within the unit where it is to be submitted. Students may also access the rubric through the course menu by selecting “Tools” and then “My Grades.”

Again, it is vitally important for you to become familiar with these rubrics because their application to your Assessments and Assignments is the method by which your instructor assigns all grades.

**Final Examination Guidelines**

Final Exams are to be administered to students by an approved Proctor. CSU approves two, flexible proctoring options: a standard Proctor, who is chosen by the student and approved by the university, or Remote Proctor Now (RP Now), an on-demand, third-party testing service that proctors examinations for a small fee.

Students choosing RP Now must have an operational webcam/video with audio, a high-speed internet connection, and the appropriate system rights required to download and install software.

To review the complete Examination Proctor Policy, including a list of acceptable Proctors, Proctor responsibilities, Proctor approval procedures, and the Proctor Agreement Form, go to the myCSU Student Portal from the link below.

http://mycsu.columbiasouthern.edu

You are permitted four (4) hours to complete this exam in the presence of your approved Proctor. This is an open book exam. Only course textbooks, writing utensils, and a calculator, if necessary, are allowed when taking proctored exams. Other materials are not permitted unless specified in the examination instructions and only the sources identified in the instructions may be used as source material.

Online calculators or other software may be utilized, with the approval of the course professor. Therefore, it is a requirement to have the online calculator site approved prior to taking the final. Browsing other websites or use of the Internet to access any site other than the Blackboard Learning Management System and MyMathLab is not allowed.
Using an unapproved calculator or browsing other sites will result in an Academic Integrity Violation which could result in a zero on the Final Exam.

You may use only your textbook as source material for your response. All source material must be referenced (paraphrased and quoted material must have accompanying citations). You may use the Publication Manual of the American Psychological Association (APA Style Guide) or the CSU Citation Guide for reference.

Communication Forums

These are non-graded discussion forums that allow you to communicate with your professor and other students. Participation in these discussion forums is encouraged, but not required. You can access these forums with the buttons in the Course Menu. Instructions for subscribing/unsubscribing to these forums are provided below.

Once you have completed Unit VIII, you MUST unsubscribe from the forum; otherwise, you will continue to receive e-mail updates from the forum. You will not be able to unsubscribe after your course end date.

Click here for instructions on how to subscribe/unsubscribe and post to the Communication Forums.

Ask the Professor

This communication forum provides you with an opportunity to ask your professor general or course content questions. Questions may focus on Blackboard locations of online course components, textbook or course content elaboration, additional guidance on assessment requirements, or general advice from other students.

Questions that are specific in nature, such as inquiries regarding assessment/assignment grades or personal accommodation requests, are NOT to be posted on this forum. If you have questions, comments, or concerns of a non-public nature, please feel free to email your professor. Responses to your post will be addressed or emailed by the professor within 48 hours.

Before posting, please ensure that you have read all relevant course documentation, including the syllabus, assessment/assignment instructions, faculty feedback, and other important information.

Student Break Room

This communication forum allows for casual conversation with your classmates. Communication on this forum should always maintain a standard of appropriateness and respect for your fellow classmates. This forum should NOT be used to share assessment answers.

Grading

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Homework (8 @ 4%)</td>
<td>32%</td>
</tr>
<tr>
<td>Assessments (7 @ 7%)</td>
<td>49%</td>
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<tr>
<td>Final Exam</td>
<td>19%</td>
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<tr>
<td>Total</td>
<td>100%</td>
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Course Schedule/Checklist (PLEASE PRINT)

The following pages contain a printable Course Schedule to assist you through this course. By following this schedule, you will be assured that you will complete the course within the time allotted.
<table>
<thead>
<tr>
<th>Unit I</th>
<th>Number Theory and the Real Number System</th>
</tr>
</thead>
<tbody>
<tr>
<td>Review:</td>
<td>✔️ Unit Study Guide</td>
</tr>
</tbody>
</table>
| Read: | ✔️ Chapter 6: Number Theory and the Real Number System: Understanding the Numbers All Around Us  
  - Section 6.1: Number Theory, pp. 233-244  
  - Section 6.2: The Integers, pp. 245-252  
  - Section 6.3: The Rational Numbers, pp. 253-264 |
| Submit: | ✔️ MyMathLab Homework  
  ✔️ MyMathLab Assessment |
| Notes/Goals: |

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<thead>
<tr>
<th>Unit II</th>
<th>Consumer Mathematics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Review:</td>
<td>✔️ Unit Study Guide</td>
</tr>
</tbody>
</table>
| Read: | ✔️ Chapter 8: Consumer Mathematics: The Mathematics of Everyday Life  
  - Section 8.1: Percents, Taxes, and Inflation, pp. 379-387  
  - Section 8.2: Interest, pp. 388-398  
  - Section 8.3: Consumer Loans, pp. 399-407  
  - Section 8.6: Looking Deeper: Annual Percentage Rate, pp. 424-430 |
| Submit: | ✔️ MyMathLab Homework  
  ✔️ MyMathLab Assessment  
  ✔️ Proctor Approval Form |
<p>| Notes/Goals: |</p>
<table>
<thead>
<tr>
<th>Unit III</th>
<th>Number Theory and the Real Number System</th>
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<tbody>
<tr>
<td>Review:</td>
<td>Unit Study Guide</td>
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<tr>
<td>Read:</td>
<td>Chapter 6: Number Theory and the Real Number System: Understanding the Numbers All Around Us</td>
</tr>
<tr>
<td></td>
<td>- Section 6.4: The Real Number System, pp. 265-274</td>
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<td></td>
<td>- Section 6.5: Exponents and Scientific Notation, pp. 275-284</td>
</tr>
<tr>
<td></td>
<td>- Section 6.6: Looking Deeper: Sequences, pp. 285-294</td>
</tr>
<tr>
<td>Submit:</td>
<td>MyMathLab Homework</td>
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<td></td>
<td>MyMathLab Assessment</td>
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Notes/Goals:

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<thead>
<tr>
<th>Unit IV</th>
<th>Geometry</th>
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<tbody>
<tr>
<td>Review:</td>
<td>Unit Study Guide</td>
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<tr>
<td>Read:</td>
<td>Chapter 9: Geometry: Ancient and Modern Mathematics Embrace</td>
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<tr>
<td></td>
<td>- Section 9.1: Lines, Angles, and Circles, pp. 437-445</td>
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<td>- Section 9.2: Polygons, pp. 446-455</td>
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<td>- Section 9.3: Perimeter and Area, pp. 456-467</td>
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<tr>
<td></td>
<td>- Section 9.5: The Metric System and Dimensional Analysis, pp. 477-487</td>
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<tr>
<td>Submit:</td>
<td>MyMathLab Homework</td>
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<td>MyMathLab Assessment</td>
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Notes/Goals:
<table>
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<tr>
<th>Unit V</th>
<th>Counting</th>
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<tbody>
<tr>
<td>Review:</td>
<td>□ Unit Study Guide</td>
</tr>
</tbody>
</table>
| Read:       | □ Chapter 12: Counting: Just How Many Are There?  
|             | ▪ Section 12.1: Introduction to Counting Methods, pp. 606-613  
|             | ▪ Section 12.3: Permutations and Combinations, pp. 622-634 |
| Submit:     | □ MyMathLab Homework  
|             | □ MyMathLab Assessment |

Notes/Goals:

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<th>Unit VI</th>
<th>Probabilities</th>
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<tr>
<td>Review:</td>
<td>□ Unit Study Guide</td>
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</table>
| Read:        | □ Chapter 13: Probability: What Are the Chances?  
|             | ▪ Section 13.2: Complements and Unions of Events, pp. 659-667  
|             | ▪ Section 13.3: Conditional Probability and Intersections of Events, pp. 668-681 |
| Submit:      | □ MyMathLab Homework  
|             | □ MyMathLab Assessment |

Notes/Goals:
### Unit VII

**Title:** Descriptive Statistics

**Review:**
- Unit Study Guide

**Read:**
- Chapter 14: Descriptive Statistics: What a Data Set Tells Us
  - Section 14.1: Organizing and Visualizing Data, pp. 702-713
  - Section 14.2: Measures of Central Tendency, pp. 714-726
  - Section 14.3: Measures of Dispersion, pp. 727-737

**Submit:**
- MyMathLab Homework
- MyMathLab Assessment
- Request to take Final Exam

**Notes/Goods:**

### Unit VIII

**Title:** Review for the Final: Chapters 6, 8, 9, 12, 13, and 14

**Review:**
- Unit Study Guide
- Learning Activities (Non-Graded): See Study Guide

**Read:**
- Review: Required Reading Units I–VII to prepare for the comprehensive Final Exam.

**Submit:**
- MyMathLab Homework
- MyMathLab Final Exam

**Notes/Goods:**