Course Description

Introduces non-technical applications of mathematics in the modern world. The course is designed to cultivate 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. **Unit Learning Outcomes**: Each unit contains Unit Learning Outcomes that specify the measurable skills and knowledge students should gain upon completion of the unit.
2. **Unit Lesson**: Each unit contains a Unit Lesson, which discusses unit material.
3. **Reading Assignments**: Each unit contains Reading Assignments from one or more chapters from the textbook.
4. **Learning Activities (Non-Graded)**: A non-graded Learning Activity is provided in Unit VIII to aid students in their course of study.
5. **Key Terms**: Key Terms are intended to guide students in their course of study. Students should pay particular attention to Key Terms as they represent important concepts within the unit material and reading.
6. **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 questions and written-response questions.
7. **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.
8. **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. Only course textbooks and a calculator, if necessary, are allowed when taking proctored exams. The Final Exam is composed of multiple-choice questions.
9. **Ask the Professor**: This communication forum provides you with an opportunity to ask your professor general or course content related questions.
10. **Student Break Room**: This communication forum allows for casual conversation with your classmates.
**CSU Online Library**

There is a virtual library with resources, including both journals and ebooks, to support your program and your course at Columbia Southern University. eResources are accessible 24 hours a day/7 days a week from the CSU Online Library gateway page. To access the library, log into myCSU, and then click on CSU Online Library. Resources are organized in the library by title, but if you click on Research Guides, you will find eResources arranged by subject.

The Library Reference service is available 7 days a week; you can reach CSU's virtual librarians by emailing thevirtuallibrarian@columbiasouthern.edu. These professional librarians will be glad to help you develop your research plan or to assist you in any way in finding relevant, appropriate, and timely information.

Librarian responses may occur within minutes or hours, but it will never take more than 24 hours for a librarian to send a response to the email address you have provided. Replies to reference requests may include customized keyword search strategies, links to videos, research guides, screen captures, attachments, a phone call, live screen sharing, and meeting room appointments, as well as other forms of instruction.

**Unit Assignments**

**Homework**

Units I-VIII each contain a homework assignment to be completed in the MyMathLab. Homework counts as 24% of your grade. You must earn a minimum of 70% on your homework before you will be allowed to take the Unit Assessment.

*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.

**APA Guidelines**

CSU requires that students use APA style for papers and projects. Therefore, the APA rules for formatting, quoting, paraphrasing, citing, and listing of sources are to be followed. Students can find CSU’s Citation Guide in the myCSU Student Portal by clicking on the “Citation Resources” link in the “Learning Resources” area of the myCSU Student Portal. This document includes examples and sample papers and provides information on how to contact the CSU Success Center.

**CSU Grading Rubrics for Papers/Projects and Assessments**

The Learning Resource area of the myCSU Student Portal provides the rubrics, and information on how to use them, for written response questions in Unit Assessments, and Research Papers/Projects.

The course writing assignments will be graded based on the CSU Grading Rubric for all types of writing assignments, *unless otherwise specified within assignment instructions*. In addition, all papers will be submitted for electronic evaluation to rule out plagiarism. Course projects will contain project specific grading criteria defined in the project directions.

To view the rubrics, click the Academic Policies link on the Course Menu, or access it through the CSU Grading Rubric link found in the Learning Resources area of the myCSU Student Portal.

**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 utensil, and a calculator, if necessary, are allowed when taking proctored exams.

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**

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<tr>
<th>Component</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Unit Homework (8 @ 3%)</td>
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<td>Unit Assessments (7 @ 8%)</td>
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<td>Final Exam</td>
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<td><strong>Total</strong></td>
<td><strong>100%</strong></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.
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<thead>
<tr>
<th>Unit I</th>
<th>Number Theory and the Real Number System</th>
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<td>Review:</td>
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<tr>
<td>Read:</td>
<td>☐ <strong>Chapter 6</strong>: Number Theory and the Real Number System: Understanding the Numbers All Around Us</td>
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<tr>
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<td>• Section 6.1 Number Theory, pp. 233-244</td>
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<td>• Section 6.2 The Integers, pp. 245-252</td>
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<td>• Section 6.3 The Rational Numbers*, pp. 253-264</td>
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<td>Submit:</td>
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<td>Notes/Goals:</td>
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<tr>
<th>Unit II</th>
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<td>Read:</td>
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<td>• Section 8.1 Percents, Taxes, and Inflation, pp. 379-387</td>
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<td>• Section 8.6 Looking Deeper: Annual Percentage Rate, pp. 424-430</td>
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<td>☐ Proctor Approval Form</td>
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<td>Notes/Goals:</td>
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### Unit III: Number Theory and the Real Number System

#### Review:
- Unit Study Guide

#### Read:
- **Chapter 6**: Number Theory and the Real Number System: Understanding the Numbers All Around Us
  - Section 6.4 The Real Number System, pp. 265-274
  - Section 6.5 Exponents and Scientific Notation, pp. 275-284
  - Section 6.6 Looking Deeper: Sequences, pp. 285-294

#### Submit:
- MyMathLab Homework
- MyMathLab Assessment

### Notes/Goals:

### Unit IV: Geometry

#### Review:
- Unit Study Guide

#### Read:
- **Chapter 9**: Geometry: Ancient and Modern Mathematics Embrace
  - Section 9.1 Lines, Angles, and Circles, pp. 437-445
  - Section 9.2 Polygons, pp. 446-455
  - Section 9.3 Perimeter and Area, pp. 456-467
  - Section 9.5 The Metric System and Dimensional Analysis, pp. 477-487

#### Submit:
- MyMathLab Homework
- MyMathLab Assessment

### Notes/Goals:
## Course Schedule

### Unit V: Counting

**Review:**
- Unit Study Guide

**Read:**
- **Chapter 12:** Counting: Just How Many Are There?
  - Section 12.1 Introduction to Counting Methods, pp. 606-613
  - Section 12.2 The Fundamental Counting Principle, pp. 614-621
  - Section 12.3 Permutations and Combinations, pp. 622-634

**Submit:**
- MyMathLab Homework
- MyMathLab Assessment

### Unit VI: Probabilities

**Review:**
- Unit Study Guide

**Read:**
- **Chapter 13:** Probability: What Are the Chances?
  - Section 13.1 The Basics of Probability Theory, pp. 644-658
  - 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
### 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/Goals:

### Unit VIII
### 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/Goals: