



**BRANDMAN**  
University Chapman University  
System

## School of Arts & Sciences Course Syllabus

**Course Number/Title/Credits:** MATU 103 Applied Mathematics, 3 credits

**Catalog Course Description:** This course presents contemporary and historical topics in mathematics from problem solving, humanities, and business. Students will explore mathematical concepts by applying quantitative problem solving methods to sets, cryptanalysis, number systems, geometry, art, probability, statistics, voting methods, fair division, economics, and finance topics in a real-world context.

### **LEARNING OUTCOMES and ASSESSMENT:**

Learning Outcomes are statements that specify what learners will know, understand, or be able to demonstrate at the end of a learning experience.

Types of Learning Outcomes include:

- ✓ Course Learning Outcome – Result of finishing a course.
- ✓ Program Learning Outcome – Result of finishing a program.
- ✓ Institutional Learning Outcome – Result of finishing a degree at an institution, reflecting the core learning values and experiences of all graduates.

A Signature Assignment is an assignment used to measure a student's mastery of a program or institutional learning outcome. If a course you are taking includes a Signature Assignment, it will be clearly marked (\*\*SIGNATURE ASSIGNMENT\*\*).

Access the following link(s) for information on the Program Learning Outcomes (PLOs) and Curriculum Map related to this course:

[Click Here for Learning Outcomes](#)

Access the following link(s) for information on the Institutional Learning Outcomes (ILOs) and Curriculum Map related to this course:

[Click Here for Learning Outcomes](#)

**Prerequisites:** None

**Restrictions:** None

**Essential Equipment and Facilities:** By the end of the first week of class, students must have the ability to access MyBrandman, the Blackboard portal to their class site, and other key locations necessary to meet course requirements. Individual browser preferences vary, and, at times, some work with Blackboard better than others. Therefore, if you try one browser, such as Firefox, and you have difficulty, try another browser, such as Internet Explorer. Since versions of Microsoft Office vary, students who do not use the most recent version may need the free conversion software available via the Microsoft.com website. Java is also required for courses. Students who do not have Java may download it for free at java.com. Students will also need:

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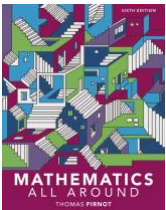
- MyMathLab access code
- Scientific calculator (free online versions available)
- MyMathLab login and requested software installation

**Academic Integrity:** As a learning community of scholars, Brandman University emphasizes the ethical responsibility of all members to seek knowledge honestly and in good faith. Students are responsible for doing their own work. Academic dishonesty of any kind will not be tolerated. Violations of academic integrity include, but are not limited to, cheating, plagiarism, or misrepresentation of information in oral or written form. Plagiarism means presenting someone else's idea or writing as if it were your own. If you use someone else's idea or writing, be sure the source is clearly documented. Further information may be found in the *Brandman University Catalog* available under Academic Resources in MyBrandman.

**Americans with Disabilities Act Statement:** According to the Americans with Disabilities Act (ADA) of 1990, an individual with disability is defined as having functional limitations resulting from a diagnosed disability and applies to an individual who has a physical or mental impairment that substantially limits one or more of the individual's major life activities; has a record of such an impairment; or is regarded as having such an impairment. In compliance with ADA guidelines, students who have any condition, either permanent or temporary, that may impair or impact their ability to successfully complete assignments, tasks or satisfy course criteria are requested to notify their Advisor or Campus Director in order to understand how to apply for Student Disability Services. If and when the student is granted formal approval by the Director of ADA Services, both the student and professor will be notified. It is highly suggested that the student contact their professor to discuss the accommodations during the first week of the session. The granting of accommodations will not be retroactive and cannot jeopardize the academic standards or integrity of the course.

**University Policies:** Students are responsible for complying with university policies including, but not limited to: incompletes, course drops, and student conduct. Information may be found in the *Brandman University Catalog* available under Academic Resources in MyBrandman.

**Required Text:** Mathematics All Around, 6<sup>th</sup> ed., Pirnot. Pearson. 2017.



ISBN: 9780134800165

This textbook must be purchased with MyMathLab Access Code

**Texts are available at the Brandman Online Bookstore:** See “Bookstore” under Academic Resources in MyBrandman. Digital version of this textbook comes with the purchase of a MyMathLab Access Code at [www.mymathlab.com](http://www.mymathlab.com). It is not necessary to buy the hardcopy of the textbook, but you must buy at least the MyMathLab Access Code.

**Online Brandman Library Resources:** Click on red “Library” button in Blackboard.

### Course Learning Objectives:

**By the end of the course, students should be able to:**

1. Analyze a mathematical problem and determine the optimal solutions.
2. Analyze, interpret, and create graphs.

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3. Explain graph theory techniques to solve real-world problems.
4. Apply number theory techniques to solve real-world problems.
5. Evaluate and solve algebraic equations and inequalities and apply algebraic models to real world problems.
6. Apply concepts from probability and statistics to solve real-world problems.
7. Understand and execute financial modeling methods to solve real-world problems.
8. Understand and apply mathematical equations applied to apportionment and voting.
9. Integrate mathematical ideas into a final project by describing how mathematical knowledge and skills are applied to work or community issues, as well as used to interpret social or economic trends.

**Major Study Units:**

1. Problem Solving and Set Theory
2. Graph Theory and Number Theory
3. Algebraic Models
4. Consumer Mathematics
5. Apportionment and Voting
6. Counting and Probability
7. Statistics

**Instructional Strategies:** This class includes readings, textual and video instruction, exercises, discussions, and projects. Instructional Strategies may be further explained in the course Blackboard site.

**Attendance Policy**

Requirements for students' attendance and participation will be defined by each instructor based on the following policy:

- Monday of the first week is considered the first day of class for online and blended instruction. This includes instruction for fully online classes and online instruction supporting blended classes.
- Regular onsite attendance is expected for student success. If a student misses more than one onsite class or one week of engagement in an online class, the student may, at the discretion of the instructor, fail the course. Students are expected to attend all classes, particularly the first night of class.
- Students should consider withdrawing from a course if they will be absent more than once. Instructors may, but are not obligated to, accommodate students under extraordinary circumstances, but the student must request

accommodation and provide requested supporting documentation. Students enrolled in blended courses must attend at least one class during the first two weeks of classes.

- If a student misses a portion (e.g., arriving late or leaving early) of an onsite course, the student’s grade may be adversely affected. Students who are not in attendance for at least 75 percent of any scheduled class may be considered absent for that class. Students should discuss missing portions of a class with their instructor to determine how their grade may be affected.
- Regular online attendance/participation and engagement is expected for student success in both fully online and blended courses. Online participation is evident through posting to a discussion board, blog, completing assignments including journal entries, or taking quizzes and exams.
- Schools and programs may have different attendance policies. Refer to school and program specific information for additional attendance policies.

**Letter Grade/Percentage Equivalents:**

<b>Grade Point System</b> (Rounded up at .5 and up)			
A = 93%-100%	B = 83%-86%	C = 73%-76%	D = 63%-66%
A- = 90%-92%	B- = 80%-82%	C- = 70%-72%	D- = 60%-62%
B+ = 87%-89%	C+ = 77%-79%	D+ = 67%-69%	F=59% and below

**Methods of Evaluation for Determining Grades:**

**Assignment Detail for Blended and Online courses:**

<b>Assignments for Blended and Online course - Refer to Rubric(s) in Course Information on Blackboard</b>	<b>Number of Assignments</b>	<b>Points per Assignment</b>	<b>Total Possible Points</b>
<b>Introduction Discussion Board</b>	<b>1</b>	<b>20</b>	<b>20</b>
<b>Topic Discussion Boards</b>	<b>8</b>	<b>40</b>	<b>320</b>
<b>MyMathLab Orientation</b> (Posted with its due date on MyMathLab)	<b>1</b>	<b>20</b>	<b>20</b>
<b>MyMathLab Homework</b> (Posted with their due dates on MyMathLab)	<b>7</b>	<b>40</b>	<b>280</b>
<b>MyMathLab Final Exam</b> (Posted with its due date on MyMathLab)	<b>1</b>	<b>100</b>	<b>100</b>
<b>Signature Assignment Outline</b> (Due in Week 4)	<b>1</b>	<b>60</b>	<b>60</b>
<b>SIGNATURE ASSIGNMENT</b> (Due in Week 8)	<b>1</b>	<b>200</b>	<b>200</b>
			<b>Total: 1000</b>

**Class by Class Outline for Blended and Online courses:**

<b>Week</b>	<b>Topics</b>	<b>Assignments</b>
<b>Week 1</b>	Problem Solving and Set Theory	<ul style="list-style-type: none"><li>● Reading Chapters 1 and 2</li><li>● Introduction Discussion Board</li><li>● Discussion Board</li><li>● MyMathLab Orientation</li><li>● MyMathLab Homework 1</li></ul>
<b>Week 2</b>	Graph Theory and Number Theory	<ul style="list-style-type: none"><li>○ Reading Chapters 4 and 6</li><li>○ Discussion Board</li><li>○ MyMathLab Homework 2</li></ul>
<b>Week 3</b>	Algebraic Models	<ul style="list-style-type: none"><li>● Reading Chapters 7</li><li>● Discussion Board</li><li>● MyMathLab Homework 3</li></ul>
<b>Week 4</b>	Consumer Mathematics	<ul style="list-style-type: none"><li>○ Reading Chapters 8</li><li>○ Discussion Board</li><li>○ MyMathLab Homework 4</li><li>○ Signature Assignment Outline</li></ul>
<b>Week 5</b>	Apportionment and Voting	<ul style="list-style-type: none"><li>● Reading Chapters 10 and 11</li><li>● Discussion Board</li><li>● MyMathLab Homework 5</li></ul>
<b>Week 6</b>	Counting and Probability	<ul style="list-style-type: none"><li>○ Reading Chapters 12 and 13</li><li>○ Discussion Board</li><li>○ MyMathLab Homework 6</li></ul>
<b>Week 7</b>	Statistics	<ul style="list-style-type: none"><li>● Reading Chapters 14</li><li>● Discussion Board</li><li>● MyMathLab Homework 7</li></ul>
<b>Week 8</b>	Final	<ul style="list-style-type: none"><li>○ Discussion Board</li><li>○ MyMathLab Final Exam</li><li>○ Signature Assignment</li></ul>