Instructor Contact Information
Name: Meredith Boyajian
Study Hours: Tuesdays and Thursdays 11:00 am – 11:30 am
E-mail: mboyajian524@uri.edu

Are you planning to take MTH 131 soon? Remember that the MTH131 prerequisite is a C- or better grade in MTH103.

Course Materials:

Text
McCallum, Connally, Hughes-Hallett, et.al., *Algebra: Form and Function, 2nd Edition*, with WileyPLUS. You will automatically gain access to the textbook once you sign up for a subscription for WileyPLUS.

Calculators
A scientific calculator or a basic graphing calculator is required for this course. Below is a short list of acceptable graphing calculators and a short list of strictly forbidden graphing calculators. There are many different models of graphing calculators out there. If you do not see your model listed here and you are unsure if it is approved for use in MTH 103, you MUST consult your instructor for verification. The use of a forbidden calculator on any exam or quiz will be considered cheating and will result in a grade of 0 for that assessment.

**ACCEPTABLE GRAPHING CALCULATORS**
- TI-83 series
- TI-84 series
- TI-85 series
- TI-86 series
- Casio fx-9750GII
- Casio fx-9860GII
- HP 48 series

**FORBIDDEN GRAPHING CALCULATORS**
- any graphing calculator with a QWERTY keypad and/or wifi capability
- TI-Nspire CX, TI-Nspire CX CAS
- TI-89, TI-89 Titanium
- TI-92
- Casio ClassPad II fx-CP400, Casio ClassPad 330 PLUS
- Casio ALGEBRA FX 2.0 PLUS
- HP Prime
- HP 49 series
- HP 50 serie

MTH 103 Catalog Description
(3 crs.) Linear, quadratic, power, exponential, logarithmic and periodic functions - their graphs and properties. Emphasis on interpretation and real-life applications, examples and modeling. Not for
major credit in mathematics. Not intended for students planning to take MTH 111 or MTH 141. (Lec. 3) (A1) (B3)

About the Course

The language of science is mathematics, and functions and modeling are an indispensable part of science, technology, engineering, and other fields. MTH 103 is intended for students in life sciences and any other areas where applications of mathematics are important. This course will make precise and deepen your understanding of fundamental concepts such as algebraic expressions, equations, graphs, and functions, in particular, linear, quadratic, exponential, logarithmic and trigonometric functions. You will master these functions in the context of applied problems and learn how to use them to model real-life processes. This course will help you to become an effective mathematics problem solver. In particular: understand concepts rather than merely mimic techniques, demonstrate understanding through explanation, explore the relationship between a process and the corresponding inverse process, and select the proper mathematical tool or tools for the task at hand.

Expectations

- View every lecture, and to submit your work on time.
- Attend office hours. Come prepared and be punctual.
- Ask questions when needed.
- It is your responsibility to communicate clearly when writing up solutions for assignments, quizzes, or exams. Your results must display your understanding well and be written in a correct, complete, coherent, and well organized fashion.
- The rules of language still apply in mathematics, and they apply even when symbols are used in formulas, equations, etc.
- The rapid pace of the class requires that you spend time every day doing homework, reviewing notes, reading the textbook, and working out extra problems, all in addition to the time spent in class.
- I will devote time each day during office hours to addressing any problems or concerns you might have. You are also always welcome to email me to ask questions.
- Be respectful of yourself and your classmates. This means the work that you submit must be your own (unless otherwise stated). In support of honest students, those discovered cheating on assignments or exams will receive a grade of zero on the assignment or exam.
- Use of unauthorized aids such as cheat sheets or information stored in calculator memories will be considered cheating. The Mathematics Department and the University strongly promote academic integrity. All class materials (e.g. notes, projects, exams, lectures, etc.) are property of URI and the instructor. Copying, video taping, taking pictures, or posting this material is not allowed without consent of the instructor and URI.
- There is no alternate or extra credit in this course.

Make-Up Policy

- Quizzes and the final exam will not be made up unless you have a documented emergency that you have told me about prior to the date of the quiz or exam. A make-up quiz or exam will be created for you that you must take within one week of the original quiz or exam date.
- The group project will not be made up.
- The final project will not be made up.
- Being punctual, therefore, is critical.
Grading Scale

I will use the following scale for your grade in this course:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Range</th>
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<th>Range</th>
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<tbody>
<tr>
<td>A</td>
<td>93 – 100</td>
<td>C</td>
<td>73 – 76</td>
</tr>
<tr>
<td>A-</td>
<td>90 – 92</td>
<td>C-</td>
<td>70 - 72</td>
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<tr>
<td>B+</td>
<td>87 – 89</td>
<td>D+</td>
<td>67 – 69</td>
</tr>
<tr>
<td>B</td>
<td>83 – 86</td>
<td>D</td>
<td>63 – 66</td>
</tr>
<tr>
<td>B-</td>
<td>80 - 82</td>
<td>D-</td>
<td>60 - 62</td>
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<tr>
<td>C+</td>
<td>77 - 79</td>
<td>F</td>
<td>&lt; 60</td>
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</table>

Grading Policy:

<table>
<thead>
<tr>
<th>Category</th>
<th>Worth</th>
<th>Notes</th>
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<tbody>
<tr>
<td>Discussions</td>
<td>10%</td>
<td>You will need to participate in weekly discussions. This is where you will submit your group presentation and respond to others. <strong>All discussions are due on Saturdays at 12pm.</strong> The rubric can be found on the Brightspace site. <strong>Please read below in order to find general directions for submitting a discussion post.</strong></td>
</tr>
<tr>
<td>Group Presentation</td>
<td>10%</td>
<td>You will be part of a group in which you need to submit one group presentation. <strong>All presentations are due Thursdays at 12pm.</strong> Your group assignments and rubric can be found on the Brightspace site. <strong>Please read below in order to find general directions for submitting a group presentation.</strong></td>
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</table>
| Quizzes          | 40%   | 10% each  
You will take each quiz on WileyPLUS  
*The quizzes must be completed in the time frame listed below:*  
**Quiz 1:** 5/21 12pm - 5/23 11pm  
Chapter 1  
**Quiz 2:** 5/28 12pm - 5/30 11pm  
Chapters 2 and 3  
**Quiz 3:** 6/4 12pm - 6/6 11pm  
Chapters 4 and 5  
**Quiz 4:** 6/11 12pm - 6/13 11pm  
Chapters 6 and 7 |
| Final Project    | 20%   | **The final project is due 6/18 at 12pm.** The rubric and directions can be found on the Brightspace site. **Please read below in order to find general directions for submitting your final project.** |
| Final Exam       | 20%   | The final exam will cover sections 1.1 - 7.4  
You will take the exam on WileyPLUS |
The final exam must be completed in the time frame stated below:
6/18 12pm - 6/20 11pm

<table>
<thead>
<tr>
<th>NON-GROUP MEMBERS</th>
<th>GROUP MEMBERS</th>
<th>FINAL PROJECT - ALL STUDENTS</th>
</tr>
</thead>
</table>
| Group presentation Week ‘x’  
→ Click the “Week ‘x’ Chapter ‘x’” topic  
→ Click “Chapter ‘x’ Presentation”  
→ Read the presentation  
→ Go back and click the blue button that says “Start a New Thread”  
→ Write a post reflecting on the presentation (rubric attached).  
→ Read and respond to someone else’s thread. | **Group ‘x’ Presentation**  
■ Submit presentation  
→ Go to “Content”  
→ Go to Week ‘x’  
→ Click on “Week ‘x’ Chapter ‘x’”  
→ Click “Start a New Thread”  
→ Write “Chapter ‘x’ Presentation” in the subject line.  
→ Write the names of the group members in the post box.  
→ Check “Pin Thread”  
→ Click on the arrow next to “Add Attachments”  
→ Upload your presentation.  
→ Click the blue “Post” button. | **Submit project**  
→ Go to “Content”  
→ Go to Week 5  
→ Click on “Applications Project”  
→ Click “Start a New Thread”  
→ Write your name in the subject line.  
→ Write a brief description of your project in the post box.  
→ Click on the arrow next to “Add Attachments”  
→ Upload your project.  
→ Click the blue “Post” button. |

**MTH 103 Learning Objectives**

At the end of the course you should be able to...

- **Functions.** Use functions defined algebraically, numerically and graphically, to determine properties and behaviors of those functions.

- **Linear Functions.** Recognize the relationship between linearity and constant rate of change, identify slope and intercepts of a linear function, derive equations of straight lines and linear functions, and model real life processes by using linear functions.

- **Quadratic Functions.** Identify different forms of quadratic functions, their geometric properties and graphs, and solve quadratic equations.

- **Power Functions.** Relate basic properties of a power function to the properties of the exponent, use the laws of exponents to put functions in a form where the exponent can be clearly recognized, and model real life processes by using power functions.

- **Exponential Functions.** Interpret different forms of an exponential function in terms of properties of the function, model real life processes by using exponential functions.

- **Logarithmic Functions.** Use properties of logarithms to solve exponential equations, and use logarithms in applied problems.
• **Periodic Functions.** Determine period and amplitude of a periodic function from a formula or the graph, or a verbal description of the function, use families of sinusoidal functions for modeling.

• **Written Mathematical Communication.** Communicate effectively in written form mathematical ideas and solutions, by stating in a complete, clear, concise, and organized manner steps, calculations, solution strategy, conclusions, and when appropriate, interpreting results in practical or applied terms.

**Religious Holidays:**
Per policy of the URI, on an individual basis, the student has the opportunity to observe their traditional religious holidays. However, a written notification to each instructor is required.

**Illness Due to Flu or COVID-19**
If any of you develop flu-like symptoms, please stay home until the fever has subsided for 24 hours. So if you exhibit such symptoms, please do not come to class. Notify me at mboyajian524@uri.edu of your status, and we will communicate through email. We will work together to ensure that the course instruction and work is completed for the semester. The Centers for Disease Control and Prevention have posted simple methods to avoid transmission of illness. These include: covering your mouth and nose with a tissue when coughing or sneezing; frequent washing or sanitizing your hands; avoiding touching your eyes, nose, and mouth; and staying home when you are sick. For more information please view www.cdc.gov/flu or flu.gov. URI Health Services web page, www.health.uri.edu, will carry advice and local updates.

**University of Rhode Island’s Civility Policy**
The University of Rhode Island is committed to developing and actively protecting a class environment in which respect must be shown to everyone in order to facilitate the expression, testing, understanding, and creation of a variety of ideas and opinions. Rude, sarcastic, obscene or disrespectful speech and disruptive behavior have a negative impact on everyone’s learning and are considered unacceptable. The course instructor will have disruptive persons removed from class if necessary.

**Accommodations**
If you have a documented disability that may require individual accommodations, please make an appointment with me as soon as possible and provide written documentation so that, together, we may work out reasonable accommodations to support your success in this course. For further information or assistance, please contact URI’s Disabilities Services for Students, Office of Student Life, Room 330 of the Memorial Union, or at (401) 874-2098.

**URI’s Academic Honesty policy**
Students are expected to be honest in all academic work. A student’s name on any written work, quiz or exam shall be regarded as assurance that the work is the result of the student’s own independent thought and study. Work should be stated in the student’s own words, properly attributed to its source. Students have an obligation to know how to quote, paraphrase, summarize, cite and reference the work of others with integrity. The following are examples of academic dishonesty.

- Using material, directly or paraphrasing, from published sources (print or electronic) without appropriate citation
- Claiming disproportionate credit for work not done independently
● Unauthorized possession or access to exams
● Unauthorized communication during exams
● Unauthorized use of another’s work or preparing work for another student
● Taking an exam for another student
● Altering or attempting to alter grades
● The use of notes or electronic devices to gain unauthorized advantages during exams
● Fabricating or falsifying facts, data or references
● Facilitating or aiding another’s academic dishonesty
● Submitting the same paper for more than one course without prior approval from the instructors.

Academic Enhancement Center
The Academic Enhancement Center helps URI students succeed through three services: Academic Coaching, Subject-Based Tutoring, and The Writing Center. To learn more about any of the services below, please visit https://web.uri.edu/aec/ or call 401-874-2367 to speak with reception staff.
<table>
<thead>
<tr>
<th>WEEK</th>
<th>WEEK OF</th>
<th>CHAPTER/SECTION/TOPICS</th>
<th>ASSIGNMENTS DUE</th>
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<tbody>
<tr>
<td>1</td>
<td>5/18</td>
<td>Course Introduction</td>
<td>ASSIGNMENT:</td>
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<tr>
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<td>- Syllabus</td>
<td>For group members only!!</td>
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<td>- Brightspace</td>
<td>Group 1 Presentation due 5/21 12pm</td>
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<td>- Expectations</td>
<td>DISCUSSIONS:</td>
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<td>Chapter 1: Functions (1.1 - 1.4)</td>
<td>Course Introductions due 5/18 11am</td>
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<td>- Function notation</td>
<td>For non-group members only!!</td>
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<td>- Definition of a function</td>
<td>Group presentation Week 1 Chapter 1 due 5/23 12pm</td>
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<td>- Graphs of functions</td>
<td>QUIZ:</td>
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<td>- Expressions and equations</td>
<td>WileyPLUS Quiz 1 due 5/23 11pm</td>
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<td>- Rate of change</td>
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<td>5/25</td>
<td>Chapter 2: Linear Functions (2.1 - 2.4)</td>
<td>ASSIGNMENT:</td>
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<td>- Forms of linear functions</td>
<td>For group members only!!</td>
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<td>- Slope-intercept</td>
<td>Group 2 Presentation due 5/28 12pm</td>
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<td>- Point-slope</td>
<td>Group 3 Presentation due 5/28 12pm</td>
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<td>- Standard</td>
<td>DISCUSSIONS:</td>
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<td>- Slopes and intercepts</td>
<td>For non-group members only!!</td>
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<td>- Solving equations</td>
<td>Group presentation Week 2 Chapter 2 due 5/30 12pm</td>
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<td>- Parallel and perpendicular lines</td>
<td>QUIZ:</td>
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<td>Chapter 3: Quadratic Functions (3.1, 3.2, 3.4)</td>
<td>WileyPLUS Quiz 2 due 5/30 11pm</td>
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<td>- Forms on quadratic functions</td>
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<td>- Standard</td>
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<td>- Quadratic Formula</td>
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<td>- Discriminant</td>
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</tbody>
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| 3 | 6/1 | **Chapter 4: Power Functions (4.1 - 4.4)**  
- Graphs  
  - Positive exponents  
  - Negative exponents  
  - Fractional exponents  
- Expressions  
- Equations | **ASSIGNMENT:**  
For group members only!!  
Group 4 Presentation due 6/4 12pm  
Group 5 Presentation due 6/4 12pm  
**DISCUSSIONS:**  
For non-group members only!!  
Group presentation Week 3 Chapter 4 due 6/6 12pm  
Group presentation Week 3 Chapter 5 due 6/6 12pm  
**QUIZ:**  
WileyPLUS Quiz 3 due 6/6 11pm |
|---|---|---|
| 4 | 6/8 | **Chapter 5: More on Functions (5.1 - 5.4)**  
- Domain of a function  
- Composing functions  
- Decomposing functions  
- Shifting and scaling functions  
  - Horizontal  
  - Vertical  
- Inverses  
  - Operations  
  - Functions | **ASSIGNMENT:**  
For group members only!!  
Group 6 Presentation due 6/11 12pm  
Group 7 Presentation due 6/11 12pm  
**DISCUSSIONS:**  
For non-group members only!!  
Group presentation Week 4 Chapter 6 due 6/13 12pm  
Group presentation Week 4 Chapter 7 due 6/13 12pm  
**QUIZ:**  
WileyPLUS Quiz 3 due 6/12 11pm |
| 5 | 6/15 | **Trig Functions (H1 - H4)**  
- Periodic functions  
  - Graphs  
    - Period  
    - Amplitude  
    - Midline  
- Unit Circle  
  - Angles  
    - Degrees  
    - Radians  
    - Sine & Cosine  
- Writing functions | **ASSIGNMENT:**  
Final Applications Project due 6/18 12pm  
**DISCUSSIONS:**  
Applications project Week 5 due 6/20 12pm  
**FINAL EXAM:**  
WileyPLUS Final Exam due 6/20 11pm |