MTH 103 Summer 2018

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About the course:

The language of science is mathematics. Functions and modeling are indispensable in science, technology, engineering, and other fields. MTH103 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, functions, and modeling. You will apply these concepts to problems in the physical and biological sciences involving change, motion, and growth. You will also receive an introduction to exponential, logarithmic, and periodic functions and their applications. At the end of the term you will be able to calculate with and apply these concepts and methods, including functions that are linear, quadratic, exponential, logarithmic, and periodic. You will become comfortable working with algebraic expressions in the context of real life applications.

Exams and evaluations:

There will be three in class exams plus a cumulative final exam on the last day of class.

<table>
<thead>
<tr>
<th>Exam</th>
<th>Date</th>
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<tbody>
<tr>
<td>Exam I</td>
<td>Thursday July 5</td>
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<tr>
<td>Exam II</td>
<td>Monday July 16</td>
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<tr>
<td>Exam III</td>
<td>Tuesday July 24</td>
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<td>Final Exam</td>
<td>Thursday July 26</td>
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Your final course grade will be weighted as follows:

- Three semester exams  45%
- Final exam  30%
- Wiley-Plus homework  15%
- Quizzes  10%

SAKAI:

SAKAI will be used for class announcements, messaging with your instructor, and for accessing your current grade. If you have not already become familiar with SAKAI you should sign on and do so.
Please take note of the following rules:

- A graphing calculator is required in class and during exams.
- You must have a URI Photo ID with you to take an exam, and show it to the proctor as you hand in your exam.
- No cellphones, MP3 players, or any electronic devices except for your graphing calculator may be used during the exam.
- Major Test Makeup Policy is specified below in a separate section.

Your letter grade will be based on the usual scale:

A (92% - 100%), A- (90% - 91%), B+ (87% - 89%), B (82% - 86%), B- (80% - 81%),
C+ (77% - 79%), C (72% - 76%), C- (70% - 71%), D+ (67% - 69%), D (60% - 66%),
F (0% - 59%).

WileyPLUS Online Homework System

We will be using WileyPLUS online homework system in this course. To sign up for the WileyPLUS system, you will need a WileyPLUS registration code.

If you buy a copy of our textbook at the URI Bookstore, a registration code for WileyPLUS will be included with the book at no additional cost.

If you buy a copy of our textbook somewhere else and it does not include WileyPLUS code, you will need to purchase a WileyPLUS code separately from the WileyPLUS site. A code purchased separately gives you access to an electronic version of the textbook, so it is a cheaper option to consider. The WileyPLUS website contains instructions, tutorials, technical support etc.

Once you have a code and you decided which section of the course you are taking, you can register by going to the WileyPLUS site or by using the URL specific to your section that your instructor will provide.

MTH103 Learning Outcomes

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.
- **Trigonometric 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 trigonometric 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.

Course Goals

The goals of the course are:

- Provide an introduction to applied mathematics, which is essential to natural and mathematical sciences, and other areas.
- Expose students to mathematical concepts and provide mathematical skills needed in their area of specialization through use of applied problems.
- Provide a bridge for the student from high-school or lower-division mathematics courses to applied calculus courses.
- Help students to become effective mathematics problem solvers. In particular: understand concepts rather than merely mimic techniques, demonstrate understanding through explanation, understand the relationship between a process and the corresponding inverse process, and select the proper mathematical tool or tools for the task at hand

Special Needs

Any student with a documented disability is welcome to contact the instructor as early in the semester as possible so that reasonable accommodations may be arranged (contact Disability Services for Students Office at 330 Memorial Union 401-874-2098).

Expectations

- You are expected to attend every lecture, and to submit your homework on time.
- It is your responsibility to communicate clearly in writing up solutions for homework, quizzes, and 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. Precise communication and neatness count!
- The pace of the class requires that you spend enough time every week doing homework, reviewing notes, reading the textbook, and working out extra problems, all in addition to the time spent in class.
Academic Honesty

Cheating is defined in the University Manual section 8.27.10 as the claiming of credit for work not done independently without giving credit for aid received, or any unauthorized communication during examinations (of course, this includes use of the "internet"). Students are expected to be honest in all academic work. The resolution of any charge of cheating or plagiarism will follow the guidelines set forth in the University Manual 8.27.10 - 8.27.20.

Incomplete Grade

URI regulations concerning incomplete grades will be followed to the letter. See sections 8.53.20 and 8.53.21 of the university manual.

Tutoring Help

In addition to your instructor's office hours, there is help available from the Math Department, Monday through Friday, 12 - 4pm in Lippitt 206, and from the Academic Enhancement Center (AEC). The Academic Enhancement Center (AEC) offers three types of help: Supplemental Instruction, Math Walk-In Tutoring Center, and Appointment-Based Math Tutoring.

Standards of Behavior

Students are responsible for being familiar with and adhering to the published "Community Standards of Behavior: University Policies and Regulations" which can be accessed in the University Student Handbook. Behavior that persistently or grossly interferes with classroom activities is considered disruptive behavior and may be subject to disciplinary action. Such behavior inhibits other students' ability to learn and an instructor's ability to teach. A student responsible for disruptive behavior may be required to leave class pending discussion and resolution of the problem and may be reported to the Office of Student Judicial Affairs for disciplinary action.

Religious Holidays

It is the policy of the University of Rhode Island to accord students, on an individual basis, the opportunity to observe their traditional religious holidays. Students desiring to observe a holiday of special importance must provide written notification to each instructor.

Grading Disagreements

Rarely, issues arise that may require arbitration. If such an issue does occur, and only after you have initially tried to resolve the issue with your instructor — in a professional and respectful manner— please contact the coordinator of MTH 103.

Electronic Devices

Cell phones, ipads, ipods, etc. should be turned off during class. Excepted from
this are electronic pads used for notetaking. Your instructor may tell you about other exceptions. "texting" is not allowed.

In class

Please ask questions at any time. We will make an effort to clarify difficult concepts, or to explore any interesting ideas you may offer. Class participation has a positive impact on the student's learning, and we encourage it.

Tardiness, leaving early

If you must come in late or leave early, let the instructor know before the class.

Major Test Makeup Policy

Makeup exams may be scheduled in the event you are unable to attend the evening exams under the following conditions. In particular, if you must miss the exam because of a scheduling conflict, you must notify your instructor before, not after, the exam, and emergencies require you to contact your instructor within 24 hours.

If your reason for missing the exam as scheduled is (i) a University sanctioned event for which verifiable documentation can be provided (including another scheduled class), or (ii) a responsibility to an employer that cannot be rescheduled (with documentation from your employer), then you MUST INFORM YOUR INSTRUCTOR 48 HOURS IN ADVANCE OF THE EXAM AND PROVIDE DOCUMENTATION IF REQUESTED. Makeup exams will be scheduled after the actual exam, and preferably before the class period when exams are to be handed back, but no later than one week after the original date.

If the reason for missing the exam as scheduled is due to (i) illness (with verifiable documentation from a medical provider), or (ii) an emergency (with appropriate documentation), then you MUST INFORM YOUR INSTRUCTOR WITHIN 24 HOURS OF THE EXAM and provide documentation upon your return. Failure to notify your instructor within 24 hours will result in a 0 for the exam. Makeup exams may be scheduled no later than a week after the original date, unless the illness or emergency precludes this, in which case the makeup exam will be given on a common date during the last two weeks of the semester.

Are you planning to take MTH 131 soon?

Recall that a MTH131 pre-req. is C- or better grade in MTH103 or MTH111.

Calendar and Syllabus

The link to the syllabus is at the top of this page. For your convenience, here it is again:

  Click Here for Calendar and Syllabus