MTH 103 – SUMMER 2019

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Course website	:	(visit Sakai)

Course Description

All pertinent information about the course can be found here or on Sakai. Announcements, useful resources and course grades will also be available on Sakai. You are expected to check your MTH 103 Sakai site and your URI email frequently.

MTH 103 satisfies the A1 - science, technology, engineering, and mathematical (STEM) and B3 - mathematical, statistical, or computational general education outcomes.

Lecture topics:. 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. **A detailed course schedule will be announced soon.**

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 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 semester 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.

Are you planning to take MTH 131 soon? Remember that the MTH 131 pre-requisite is a C- or better grade in either MTH 103 or MTH 111.

Required Materials

* Textbook

The textbook for this class is *Algebra: Form & Function (2nd Edition)* by McCallum, Connally, Hughes-Hallett et. al.

* WileyPlus code

You will be given weekly homework assignments via the WileyPlus Online Homework System. Typically homework assignments will be made available the Monday of the week that the corresponding sections are scheduled to be covered and will be due at 11:00pm on the Wednesday following the lecture week. Late submissions will not be accepted.

To sign up for this system, you will need a WileyPlus registration code.

- If you buy a new text book, make sure to buy the book bundled with WileyPlus code.
- If you buy a used book, you need to buy the WileyPlus registration code separately. You can directly purchase the code from the WileyPlus website; you should also be able to buy the code alone from URI book store.
- Your WileyPlus code comes with an electronic version of the text book in your WileyPlus account.

You register for the WileyPLUS system by going to the URL that is unique to your term/section of MTH 103 which will be announced before the term starts.

* Calculators

A scientific calculator and/or a basic graphing calculator (such as the TI-83, TI-84, or TI-86) is required for this course. Graphing calculators such as the TI-89, TI-Nspire, or similar are forbidden.

A scientific calculator costs approximately $10; it has buttons that say ln, log, sin, cos, etc and does not have the ability to graph.

Graphing calculators are more expensive at approximately $45-$100, but you will be required to have one in the next applied course MTH 131. If you intend to take that course in one of the coming semesters, it is recommended to make the investment to obtain one now and get comfortable with using it (if you are not already).

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 Series.

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.

Grading

Much of the learning of this course will happen outside the classroom time: by reviewing the lecture notes daily, completing homework assignments and preparing for quizzes. You are encouraged to start working on assignments and practice problems right away, and seek help from your instructor whenever you feel like you are stuck. It is very important that you do not let "problems" pile up.

Final grades will be based on quizzes, online homework assignments on WileyPlus, two midterm exams, and a comprehensive final exam at a date/time TBA. Total points available is 600 with points distributed as follows:

	Points available
WileyPlus	100 points – see details above, under Required Materials,
Quizzes	100 points – see details below.
Exams	200 points (100 points each) • **Tuesday, June 3, 2019** • **Thursday, June 13, 2019**
Final Exam	200 points – **Thursday, June 20, 2019.**

All of the exams will be held in the classroom. The policy regarding make-up exams can be found under the Policies below.

Quizzes

We will have quizzes in class every Thursday starting from May 21, 2019 – except on the exam days. Each will take 10 minutes and be worth 10 points maximum. For preparation, you might find the practice problems (listed in the calendar) and homework assignments useful.

There is no alternative credit in this course. Assignments will not be graded on a curve nor will any extra credit be made available.

Letter Grade Distribution

Final grades will be determined according to the following scale.

$93 - 100$	A
$90 - 92.99$	A-
$87 - 89.99$	B+
$83 - 86.99$	B
$80 - 82.99$	B-
$77 - 79.99$	C+
$73 - 76.99$	C
$70 - 72.99$	C-
$67 - 69.99$	D+
$60 - 66.99$	D
$0 - 59.99$	F

Expectations

- You are expected to attend every lecture, and to submit your homework on time. We cover a great deal of information at a rapid pace; missing a class will result in a large amount of material missed. Students are responsible for all missed work, regardless of the reason for absence. It is also the absentee's responsibility to get all missing notes or materials.
- 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 day doing homework, reviewing notes, reading the textbook, and working out extra problems, all in addition to the time spent in class.

General Exam Policies

- No notebooks, textbooks or cheat sheets are allowed in the exam.
- During the exam, you may not leave the room for any reason. Please remember to use the bathroom before the exam.
- No cell phones, MP3 players, smart watches, or any electronic devices of any kind (with the exception of an acceptable calculator) may be used or even accessible to you at any time during the exam. Any student found with any electronic device for any reason during the exam will be considered to be cheating.

Exam and Quiz Make Up Policy

Makeup exams/quizzes may be scheduled in the event you are unable to attend exams/quizzes 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. See University Manual sections 8.51.10 and 8.51.14 for guidelines.

- 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), (ii) a responsibility to an employer that cannot be rescheduled (with documentation from your employer), or (iii) Religious holidays, 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. No exceptions. 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 few weeks of the semester.
- If your circumstances do not meet either of the above (no documentation, a non-emergency excuse without sufficient notice, etc.), then you will receive a zero for the missed exam. No exceptions.

Electronic Devices

Cell phones should be kept on silent mode during class. All other electronic devices (ipads, ipods, laptops, etc.) should be turned off during class. They can be a distraction to you and your classmates. Excepted from this are tablets used for note-taking.

Academic Honesty Policy

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. Students are expected to be honest in all academic work. The following are examples of academic dishonesty:

- 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 an unauthorized advantage during exams
- Facilitating or aiding another's academic dishonesty

The resolution of any charge of cheating or plagiarism will follow the guideline set forth in the University Manual sections 8.27.10-8.27.21.

Furthermore, course content and outlines, exams, and assignments created by instructors shall be considered the instructors' intellectual property. Course materials shall not be distributed, shared in any public domain or third party website, or sold without prior written consent of the instructor. See the University Manual section 8.27.22.

Special Needs

Any student with a documented disability may contact the instructor early in the semester so that reasonable accommodations may be arranged. Students can contact Disability Services for Students: Office of Student Life, 330 Memorial Union, 874-2098. They will determine with you what accommodations are necessary and appropriate. All information and documentation is confidential.

Incomplete Grade

University of Rhode Island regulations concerning incomplete grades will be followed. See University Manual sections 8.53.20 and 8.53.21 for details.

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 who plan to be absent from classes or examinations for religious holy days that traditionally preclude secular activity shall discuss this with the appropriate instructor(s) in advance of the holy day. See University Manual section 8.51.11 for details.

Standards of Behaviour

Students are expected to treat faculty and fellow classmates with dignity and respect. 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 web.uri.edu/studentconduct/university-student-handbook/