MTH 142: Calculus II
Section 1001 – Summer 2018

Instructor:	Dr. Vasilije Perović
Email:	perovic@uri.edu (*preferred way of communication*)
Email Policy:	You should **only** use your URI email account for communication.
Office:	Lippitt Hall, 200B ☏ (401) 874–4463
Office Hours:	**M/T/W/R: 8:30am – 9:30am**. You may also see me at other times by appointment.
Classroom:	Chaffee Hall 219; M/T/W/R: 10:00am – 12:30pm.
Class Website:	This course will use **SAKAI** which should be checked regularly for announcements, grades, updates, lecture notes, etc! You might also find the following website helpful http://math.uri.edu/~perovic/Teaching/Summer2018/MTH142_Sum18.html
Prerequisite:	C- or better in MTH 141 or permission of an instructor.
Textbook:	Deborah Hughes-Hallett, Andrew Gleason, William McCallum, et al., *Calculus: Single Variable*, 7th Edition. ISBN: 1119379334; ISBN-13: 978-1119379331.

Bring the textbook to each class, since we will refer to it frequently. It is essential to read the text regularly, and read material before we cover it in class!

Course Description: MTH 142 continues the study of calculus where MTH141 left off. Topics include techniques and applications of integration, improper integrals, calculus using polar coordinates, sequences and series, Taylor polynomials, Fourier series*, and differential equations.

Syllabus: We will cover most of the sections in Chapters 7 – 10, and Sections 11.1–11.4. An approximate schedule for the semester is attached at the end of this document and is also posted on SAKAI.

Course Goals and Learning Outcomes: The main goal of MTH 142 is to prepare students for further study in mathematics, basic sciences, or engineering by introducing them to techniques of integration, sequences, and series, and how to apply these to solve real-world problems and thereby develop new problem solving and critical reasoning skills. The goals of MTH 142 are:

- To provide a thorough introduction to methods of integration, infinite sequences and series.

- To provide a thorough introduction to applications of integration, especially in Physics.

- To provide an introduction to differential equations, mathematical modeling and numerical issues.

Calculators: A graphing calculator is NOT required and you will to be allowed to use it during quizzes and exams.

Suggested Problems: Regularly assigned, but not collected or graded. Do problems promptly so that you establish a baseline for your understanding of the material. By default, *all solutions must include reasoning expressed in complete sentences. Suggested problems, together with the material presented during lectures, will be the main sources for problems on quizzes and exams.*

Video Lectures/Notes: In case our class is canceled for any reason, I might post a link on SAKAI to a video lecture (resp., handout) that you will be responsible for watching (resp., reading).

Attendance: Regular, on-time attendance is expected! Attendance will be taken regularly. Should you miss class, your first step should be to get notes from a reliable fellow student.

General Advice: In higher level math classes, the *concepts* are as important as the *computations*. To master the concepts, you will have to read and reread the text carefully. Effort is expected outside of class to keep up with the material. A general rule of thumb is to work at least two to three hours on the course outside the classroom for each credit hour of class. You are encouraged to form study groups. Talking about mathematics, and critiquing each other's solutions is a very effective way to learn the subject.

How to succeed in MTH 142: MTH 142 has a reputation for being a very challenging course, but you *can* succeed – it just takes hard work and persistence. Here are some things you can do to help yourself out:

- **Come to class!** This means every day! Missing Monday's class will make it much harder to follow Tuesday's lecture, and before you know it, things may have snowballed out of control.

- **Do the homework right away!** Working through the homework immediately after the corresponding lecture will help solidify your comprehension of the material – which will make it much easier to follow the next lecture.

- **Visit your instructor's office hours!** You don't need to make an appointment; just stop by and ask questions. They're there to help!

- **Find or start a study group!** Many students find studying in a group more effective than studying alone. The AEC also provides assistance for students who would like group tutoring; see below for details.

Evaluation and Grading: The course grade will be based on quizzes, daily homework, WileyPlus, 2 in-class exams, and a final exam, weighted as follows:

Quizzes	16.5%	
Daily Homework	6%	
WileyPlus	16.5%	
Exams	33%	(16.5% each)
Final Exam	28%	**(Thursday, June 21, 10:00am - 12:30pm)**

Letter grades for the course will be determined by considering your overall weighted percentage according to the following scale:

A: 93.00% and above		**A-:** 90.00% − 92.99%
B+: 87.00% - 89.99%	**B:** 83.00% − 86.99%	**B-:** 80.00% − 82.99%
C+: 77.00% − 79.99%	**C:** 73.00% − 76.99%	**C-:** 70.00% − 72.99%
D+: 67.00% − 69.99%	**D:** 60.00% − 66.99%	
F: 59.99% and below		

Any questions or concerns regarding your course grade should be discussed well before the final exam. Once the final exam is administered, your grade is final and no makeups or extra credit will be offered. Additionally, incompletes will not be given to students who are dissatisfied with their grades at the end of the semester, and grades of NW will not be given to students who have completed even a single assignment.

Incomplete Grade: University of Rhode Island regulations concerning incomplete grades will be strictly followed (see University Manual sections 8.53.20 – 8.53.21 for details). Note that a student must be passing the course before an incomplete is even an option.

Quizzes: There will be seven in-class quizzes. Specifics about each quiz will be given during the preceding class period. Together the quizzes are worth as much as an exam so it is important to study for each quiz. The lowest quiz score will be dropped, and so **no make-up quizzes** will be given for any reason.

Daily Homework: One or two problems will be assigned each day and collected the following day. Two lowest homework grades will be dropped, and so **no make-up assignments** will be allowed for any reason.

WileyPLUS: Homework for this course will be submitted through the online system WileyPLUS. WileyPLUS requires a registration code, which comes with each new copy of the textbook. If you wish to purchase a used textbook, you may also buy a registration key directly from Wiley. If you purchased the textbook last semester for use in MTH 141, your registration key should still work for MTH 142. ***You are responsible for registering for WileyPLUS in a timely fashion.***

You can register for the WileyPLUS system by going to the URL that is unique to our section of MTH 142.

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`http://www.wileyplus.com/class/646373`

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All homework assignments are due at 11:00 pm on the specified due date. Five attempts will be given for each problem. Late homework submissions will be accepted for two days after the deadline at a 20% penalty and through the end of the semester at a 50% penalty.

Exams: During the course of the semester there will be two unit exams (Exams 1 & 2) as well as a cumulative final examination (all held during class time). The content of Exams 1 & 2 will be announced in class and will be dependent on the material covered prior to the date of the exam. Below are the dates for the exams, which will be held in our regular classroom.

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Exam 1: Wednesday, May 30th
Exam 2: Monday, June 11th
Final Exam: Thursday, June 21st

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General Exam Policies:

- You must bring your URI Photo ID with you to each exam, and you must show it to a proctor as you hand in your exam.

- No books, bags, papers, binders, or extra scrap paper can be visible around your desk. Prior to the exam place all of your belonging out of sight under your desk.

- Proctors will not answer any questions regarding the content of the exam.

- During the exam, you may not leave the room for any reason. Please remember to use the bathroom before the exam!

- No calculators of any kind may be used on exams.

- No cell phones, MP3 players, or any electronic devices of any kind 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.

Makeup Exam Policy: Makeup exams may be given for students who miss an exam due to an emergency or to an approved scheduling conflict (see below). Makeup exams must be scheduled after the original exam and will be administered as soon as is reasonably feasible.

If you miss any exam due to illness or emergency, you **must** contact your instructor **within 24 hours**. If you know that you will need to miss an evaluation due to religious observances or University-sanctioned events (including another class's exam), then you **must** contact your instructor **at least 48 hours** before the relevant evaluation.

Important Dates: Please pay close attention to the following dates:

> **May 28** – No classes (Memorial Day).
> **June 1** – Monday classes meet.
> **June 1** – Last day to DROP course.
> **June 21** – Last day of instruction *for this class*!

Accommodations: Any student with a documented disability (e.g., physical, learning, vision, hearing, etc.) who needs to arrange reasonable accommodations should contact me as soon as possible. At the beginning of the semester students should contact Disability Services for Students Office at 330 Memorial Union, (401) 874-2098, `http://www.uri.edu/disability/dss/`.

Academic Integrity: You are responsible for making yourself aware of and understanding the policies and procedures in the University Manual that pertain to Academic Honesty. These policies include cheating, fabrication, falsification and forgery, multiple submission, plagiarism, complicity and computer misuse. Further information can be found in the UNIVERSITY MANUAL sections on Plagiarism and Cheating at

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`http://web.uri.edu/manual/chapter-8/chapter-8-2/`

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MTH 142 – 1001 Course Calendar

The following calendar gives a timetable for the course. This class may be slightly
ahead or behind this schedule at any given time.

Dates	Sections Covered & Events	Suggested Practice Problems
05/21 − 05/24	**Introduction** **§7.1** – Integration by Substitution **§7.2** – Integration by Parts **§7.3** – Table of Integrals **§7.4** – Algebraic Identities and Trig. Substitutions **§7.5** – Numerical Methods for Definite Integrals **§7.6** – Improper Integrals **§7.7** – Comparison of Improper Integrals **QUIZ #1** on Wednesday, May 23 **QUIZ #2** on Thursday, May 24	**§7.1:** 4, 9, 13, 15, 19, 29, 31, 32, 33, 34, 35, 39, 41, 59, 61, 63, 71 160, 161. **§7.2:** 7, 11, 17, 27, 31, 39, 41, 43, 45. **§7.3** Only WileyPlus problems. **§7.4:** 5, 12, 15, 27, 31, 33, 35, 47, 49, 55, 61, 63. **§7.5:** 17, 11, 13, 24, 25. **§7.6:** 9, 11, 15, 19, 21, 23, 25, 29, 35. **§7.7:** 3, 5, 7, 9, 10, 11, 17, 19, 25, 31, 37, 41.
05/29 − 06/01	**§8.1** – Areas and Volumes **§8.2** – Applications to Geometry **§8.3** – Area and Arc Length in Polar Coordinates **§8.4** – Density and Center of Mass **§8.5** – Applications to Physics **§8.7** – Distribution Functions **§8.8** – Probability, Mean and Median No class on Monday, May 28 (Memorial Day) **EXAM 1** on Wednesday, May 30 Friday, June 1 - Makeup day (Monday classes met) **QUIZ #3** on Friday, June 1	**§8.1:** 1, 3, 7, 11, 21, 39, 41. **§8.2:** 1, 3, 13, 17, 23, 29, 31, 33, 35, 51. **§8.3:** 1, 3, 5, 7, 11, 13, 15, 25, 29 31, 33. **§8.4:** 3, 5b, 17, 24, 27, 31. **§8.5:** 13, 19, 21, 23, 41, 44 **§8.7:** 15, 21, 37.　　　(time permitting) **§8.8:** 4, 5, 6, 7, 17.　　(time permitting)
06/04 − 06/07	**§9.1** – Sequences **§9.2** – Geometric Series **§9.3** – Convergence of Series **§9.4** – Tests for Convergence **§9.5** – Power Series and Interval of Convergence **§10.1** – Taylor Polynomials **Quiz #4** on Tuesday, June 5 **Quiz #5** on Thursday, June 7	**§9.1:** 5, 11, 15, 20, 23, 25, 65. **§9.2:** 1, 3, 5, 13, 15, 21, 23, 25 29, 35, 64, 65. **§9.3:** 1, 7, 11, 17, 27, 33, 34, 49, 50. **§9.4:** 11, 13, 17, 21, 25, 29, 41, 46, 75, 79, 81, 87, 89, 113, 123. **§9.5:** 9, 15, 21, 23, 25, 30, 37. **§10.1:** 3, 5, 13, 21, 39, 45.
06/11 − 06/14	**§10.2** – Taylor Series **§10.3** – Finding and Using Taylor Series **§10.4** – Error in Taylor Polynomial Approximation **§10.5** – Fourier Series **§11.1** – What is a Differential Equation? **EXAM 2** on Monday, June 11 **Quiz #6** on Thursday, June 14	**§10.2:** 1, 2, 7, 15, 21, 23, 29, 31, 47, 49, 61, 65. **§10.3:** 5, 9, 15, 25, 41, 61, 63. **§10.4:** 1, 8, 19, 20. **§10.5:** 9, 10, 15　　　(time permitting) **§11.1:** 9, 11, 13, 25.
06/18 − 06/21	**§11.2** – Slope Fields **§11.3** – Euler's Method **§11.4** – Separation of Variables **Quiz #7** on Tuesday, June 19 **FINAL EXAM** on Thursday, June 21	**§11.2:** 1, 11, 21, 25. **§11.3:** 1, 5, 17. **§11.4:** 1, 7, 13, 21, 23, 29.