

MA 1022 · Term E-01 · 2016

Instructor: Dr. Erin M. Kiley

Office: Stratton Hall, Room 205

E-mail: emkiley@wpi.edu

Telephone: Extension 2305 on campus; from off campus, call +1 (508) 831-5000, and request extension 2305.

Office Hours: Tuesdays and Thursdays, 5:00–6:00 p.m. EDT in SH 205 and by appointment. During these times, I will also be constantly checking my campus e-mail and may use Adobe Connect to talk with remote students (instructions for how to use Adobe Connect to join the office hours will be posted to myWPI; the URL for the meeting room will be: <https://connect.wpi.edu/ma1022e1y2016>). If you need to discuss the course with me in person and cannot come to Olin Hall for my office hours or connect with me remotely, then please e-mail me.

Course Number and Sections: Section E101 (“in-class section”), CRN 30019. Section E196 (“online section”), CRN 30549. Both sections share a single page on myWPI.

Course web page: WPI’s BlackBoard system, called myWPI, is where all course materials and announcements will be posted under the course entitled MA 1022-E16-EK-Master: Calculus II. You can access myWPI at my.wpi.edu.

Text: *Thomas’ Calculus: Early Transcendentals* based on the original by George B. Thomas, Jr., as revised by Maurice D. Weir and Joel Hass. Thirteenth edition, 2014. ISBN 978–0–321–88407–7. Available in the WPI bookstore and at online booksellers. Please obtain your textbook through legal means.

Goal

The goal of this course is to further develop the basic language and techniques of calculus via the study of integration and its applications. By the end of the term, students should be able to compute integrals using basic integration formulas, u -substitution, integration by parts, trigonometric substitution, and partial fractions. Applications that will be studied include areas of surfaces of revolution, arc length, moments and centers of mass. Students will be introduced to the exponential and logarithmic functions defined as integrals, and will study the concepts of Riemann sums and the fundamental theorem of calculus.

Schedule

17 May	<i>Antiderivatives, Finite Sums, the Definite Integral</i>	Sections 4.8 and 5.1–5.3
19 May	<i>Fundamental Theorem of Calculus</i>	Section 5.4
24 May	<i>Substitution Method for Indefinite Integrals</i>	Section 5.5
26 May	<i>Substitution Method for Definite Integrals</i>	Section 5.6
31 May	<i>Volumes using Cross-Sections; Arc Length</i>	Sections 6.1 and 6.3
02 June	<i>Areas of Surfaces of Revolution; Moments and Centers of Mass</i>	Sections 6.4 and 6.6
07 June	<i>Midterm Exam</i>	Sections 4.8, 5.1–5.6, 6.1, 6.3–6.4, 6.6
09 June	<i>The Natural Logarithm as an Integral</i>	Section 7.1
14 June	<i>Exponential Growth and Decay</i>	Section 7.2
16 June	<i>Basic Integration Formulas, Integration by Parts</i>	Sections 8.1–8.2
21 June	<i>Trigonometric Integrals, Trigonometric Substitutions</i>	Sections 8.3–8.4
23 June	<i>Integration by Partial Fractions</i>	Section 8.5
28 June	<i>Numerical Integration</i>	Section 8.7
30 June	<i>Final Exam</i>	Sections 7.1–7.2, 8.1–8.5, 8.7

Meetings

The in-class section will meet on Tuesdays and Thursdays from 6:00–7:50 p.m. EDT in Olin Hall, Room 109. Students from either section are welcome to attend the lectures. “Course captures” (video and audio recordings of the lectures) will be automatically posted to the course’s myWPI page, typically within three hours after the lecture’s end time, and will be available to both in-class and online students. If you have problems viewing the course captures, or if technical issues arise during one of the course captures, please contact Dave Taranto (dtaranto@wpi.edu) in the Academic Technology Center.

The lectures will focus both on delivering course content, and on working complementary practical examples. You are expected to maintain your own notebook, and you will be held responsible for knowing the material presented in each lecture. As necessary, supplemental materials, including worked problems for your perusal, may be uploaded to myWPI.

Grading Scheme

WeBWorK	best $8 \times 2\% =$	16%
Homework	best $4 \times 6\% =$	24%
Exams	$2 \times 30\% =$	60%

Final Grades

You will be assigned a letter grade corresponding to your final course average as follows:

$88\% \leq$	A	
$74\% \leq$	B	$< 88\%$
$60\% \leq$	C	$< 74\%$
$48\% \leq$	D	$< 60\%$
	F	< 48

If you are enrolled in a degree-granting program at WPI, your grade will only be recorded if it is a C or higher; otherwise, a grade of “NR” will be recorded.

WeBWorK

There will be ten short online assignments using the MAA’s WeBWorK platform. If you have taken WPI’s Math Placement Exam, you have already used the WeBWorK portal. These assignments will be due at the following times:

Friday,	20 May 2016,	11:59 p.m. EDT
Monday,	23 May 2016,	11:59 p.m. EDT
Friday,	27 May 2016,	11:59 p.m. EDT
Monday,	30 May 2016,	11:59 p.m. EDT
Friday,	03 June 2016,	11:59 p.m. EDT
Monday,	13 June 2016,	11:59 p.m. EDT
Friday,	17 June 2016,	11:59 p.m. EDT
Monday,	20 June 2016,	11:59 p.m. EDT
Friday,	24 June 2016,	11:59 p.m. EDT
Monday,	27 June 2016,	11:59 p.m. EDT

Only the best eight of these ten grades will be used to compute your final course average. You will have an unlimited number of submission attempts for each problem, and you may complete the problem sets at any time before the deadline. Please find this class’s WeBWorK portal at <https://webwork.wpi.edu/webwork2/MA1022E16/>.

Homework

There will be five written homework assignments in this class, to be distributed on myWPI and to be due at the following times:

Monday,	23 May 2016,	11:59 p.m. EDT
Monday,	06 June 2016,	11:59 p.m. EDT
Monday,	13 June 2016,	11:59 p.m. EDT
Monday,	20 June 2016,	11:59 p.m. EDT
Monday,	27 June 2016,	11:59 p.m. EDT

Only the best four of these five grades will be used to compute your final course average. Your work must be uploaded to myWPI as a .pdf document, and it must be submitted before the deadline. Late work will not be accepted, and make-up assignments will not be given.

It is my expectation that your homework assignments will be completed with great care and presented professionally. You are encouraged to typeset your solutions using L^AT_EX, or to hand-write them very neatly. If you are submitting the solutions online via myWPI, then I expect that you will submit them **as a single PDF document, at a sufficiently high resolution as to be legible** (there are various smartphone apps that can help with this, if you do not have access to a scanner). If the work is not presentable or if it is illegible, you will not receive credit for it.

Your homework and exam solutions should show not only your answer, but should also show a clearly reasoned argument, written using complete English sentences, leading to that solution. You should take the problems that will be worked in class and in the handouts as examples of the level of work I expect from you. Merely giving the correct answer will receive zero credit.

You are welcome to discuss homework problems with one another, but you must write up your homework solutions on your own. Be mindful of your academic integrity.

Exams

There will be two exams, given on the following dates:

Midterm: Tuesday, 07 June 2016 6:00–8:00 p.m. in OH 109

Final: Thursday, 30 June 2016 6:00–8:00 p.m. in OH 109

IMPORTANT: It is the policy of the Department of Mathematical Sciences that all students, regardless of whether they are registered for the in-class or online section, **must be present on campus** to take both of the above-mentioned exams, or may take the exams off campus under the supervision of an approved exam proctor.

I am offering all students the option of delaying their midterm and final exams until they will be back on campus a week before the start of A-Term in August 2016. Please contact me before 02 June if you would like to avail yourself of this option for either exam.

If you will use the services of a proctor for either the midterm or the final exam, you will be responsible for paying for those services if necessary, and you **must** contact me **before 02 June 2016** to make the necessary arrangements. If you fail to contact me to arrange for a proctor for the midterm or the final before 02 June 2016, then you must come to campus to take the exams (either on the exam date itself or a week before the beginning of A-term), or you will forfeit your grade.

Forums

On myWPI under the ‘Discussions’ section, you will find a forum for each week of the course. Please avail yourself of this useful tool for discussing course content with your classmates. I will monitor the threads from time to time, but I strongly encourage you to help your classmates if you can, and to ask for help yourself when you need it.

Important Course Notes

- When completing your homework assignments and exams, remember that you are expected to show a logically reasoned argument, written using complete English sentences, that leads to your solution. For this reason, I do not expect calculators or online computational tools to be very useful to you, except perhaps as a means of *checking* your homework answers. No calculators will be allowed on exams.
- An example of what is meant by the “complete sentences” requirement is given as a downloadable file on myWPI (it is a set of solutions for a homework assignment that I gave in a Calculus course in 2014).
- No late assignments will be accepted for credit. Remember that I will be dropping your lowest homework grade and your two lowest WeBWorK grades.
- Please start the homework early, and discuss the content with me and with your classmates, especially if you’re having difficulty with it. It is important to stay on top of things in this course, because the content will progress relatively quickly.

Students with Disabilities

If you need course adaptations or accommodations because of a disability, or if you have medical information to share with me, please make an appointment with me immediately. My contact information is listed at the top of this syllabus.

Students with disabilities who believe that they may need accommodations in this class, including extra time for exams, are encouraged to contact the Disability Services Office (DSO) as soon as possible, to ensure that such accommodations are implemented in a timely fashion. The DSO is located in Daniels Hall, its telephone number is (508) 831-5235, and its e-mail address is dso@wpi.edu.

Student Development and Counseling Center

The WPI Student Development and Counseling Center (SDCC) is dedicated to promoting the safety, emotional health, and personal growth of all WPI students, as well as cultivating a supportive campus. Services include:

- Mental health counseling and consultation (individual, couples, and group counseling)
- Crisis intervention
- Referrals to local specialists
- Student development
- Community development

All services are confidential and free, and it's perfectly normal to ask for help.

Call +1 (508) 831-5540 to make an appointment, or visit the SDCC at the West Street House, 157 West Street (off Institute Road). Open between 8 a.m. and 5 p.m. daily, with walk-in hours Monday–Friday from 1 p.m. to 2 p.m.

Academic Integrity

Please read the *Student Guide to Academic Integrity at WPI* and all its pages. The page *What Constitutes Academic Dishonesty*, found at <http://www.wpi.edu/offices/policies/honesty/constitutes.html>, gives some examples of academic dishonesty, *i.e.*, acts that interfere with the process of evaluation by misrepresenting the relation between the work being evaluated (or the resulting evaluation) and the student's actual state of knowledge.

Each student is responsible for familiarizing him or herself with academic integrity issues and policies at WPI. All suspected cases of dishonesty will be fully investigated. Contact me if you are in any way unsure whether your proposed actions/collaborations will be considered academically honest.