Math 152 - Calculus II
Fall 2013

Basic Info:

Instructor:	Dr. Nathan Reff
Email:	reff@alfred.edu
Office:	Myers Hall 109C
Phone:	607.871.2818
Office Hours:	TW 10:15AM-11:15AM, WF 1:10PM-2:10PM, or by appointment.
Course Web Page:	http://people.alfred.edu/~reff/MATH152/
Course Meetings:	MTWF 8:20AM-9:10AM in Myers Hall 228
Text:	*Calculus,* 10^{th} *Ed.* by Anton, Bivens and Davis (ISBN: 978-0-470-64772-1)

Prerequisite: You absolutely must have a passing grade in Math 151 (Calculus I) or equivalent to be in this course.

Course Catalog Description: *A continuation of single variable calculus including transcendental functions, methods of integration, and series. Prerequisite MATH 151. Not open to students with credit in MATH 253.*

Course Goals: This course is a continuation of Calculus I where the concept of a limit was introduced in order to study differentiation and integration. In the first part of the course, we will focus on techniques of integration and their applications. In the second part of the course, we will study infinite series and their applications. After completing this course students should be able to:

- Use a variety of techniques to evaluate integrals.
- Use a variety of techniques to determine if a given infinite series converges.
- Find a power series expansion for a given function and answer convergence questions. Furthermore, use the power series expansion as a technique to solve other calculus problems.
- Apply the integration and series techniques to real-world applications.

Technology: A graphing calculator may be used in this course. The TI-84 is recommended, but other calculators may be suitable. You may not use a calculator with a computer algebra system (CAS), such as TI models 89 and above, TI Nspire CAS and higher, HP models 48 and above, etc (Please see me if you have questions about your calculator). If you want to use a calculator, please bring it to every class. You must have your own calculator.

Grade Distribution: Your final grade will be determined as follows:

Classwork and Participation	8%
Homework	20%
Quizzes	10%
Test 1	10%
Test 2	10%
Test 3	10%
Test 4	10%
Comprehensive Final Exam	22%

Participation points can be earned by answering questions, asking relevant questions, working well with your group, etc. Coming to class is expected and will not get you these participation points alone. I would like everyone to be a part of the classroom discussions.

Borderline cases can be adjusted up or down based on your attendance, class participation, homework, and trends. For example, a pattern of steady improvement is good, but a weak final exam is bad.

Grade Conversion:

A	93−100	C	73−76
A−	90−92	C−	70−72
B+	87−89	D+	67−69
B	83−86	D	63−66
B−	80−82	F	0−62
C+	77−79		

Homework: Homework problems will be assigned daily/weekly and posted

on the course website: `http://people.alfred.edu/~reff/MATH152/`.

Homework problems will come in 3 forms:

1) **WeBWork problems**: This is an open-source online homework system where you will login and answer questions. The link to all webwork problems will be provided through the homework link above. To login to WeBWork use your Alfred ID and password (the alternative password is your AU number). The purpose of using WeBWork is to give you instant feedback on homework problems. You will usually have infinitely many opportunities to answer a problem correctly. Even though you will not turn in a physical copy of your work I highly recommend generating a pdf of each of your assignments and writing out your solutions carefully as if they are book problems.

2) **Book problems**: These problems will come right out of your text. You must complete these problems and bring your solutions to the next class day. Homework quizzes will come from these problems (see quizzes below). Every week you will turn in these problems to be graded. The purpose of the book problems is to make sure you are writing out clear step-by-step solutions to prepare you for answering questions on quizzes and tests.

3) **Addition problems**: I will write and assign problems which will generally be more challenging. These problems will be collected with the book problems.

Please make sure your homework is *neat* (legible, not torn out of a spiral bound notebook, etc.) and *stapled* when you turn it in. Treat your homework as if it is a professional document that you would submit in a future workplace. It is *very* important that you keep working on problems throughout the course. There is an old saying that "math is not a spectator sport" and there is definitely a lot of truth to this. I recommend working individually and also with

other classmates (but make sure you are turning in your own work!). If you are working on a problem and get stuck, make a note of it, bring your work and **ask questions**. I encourage *everyone* to come to office hours!

Other than assigned problems you should be reading the text every day and keeping up with the pace of the course. Keep in mind that it your responsibility to read each section before an exam.

Quizzes: There will at least one quiz each week (except when there is an exam). Quizzes may be announced or unannounced. There will be no make up quizzes. The lowest two quizzes will be dropped if you are present and attempt every quiz.

Quizzes will come in 2 forms:

1) **Standard Quiz**: Standard quizzes will usually cover lecture material and homework problems. The questions may even be taken directly from the homework set, or minor perturbations of the homework problems.

2) **Homework Quiz**: A homework quiz is where you will just copy exactly what your have written as a homework solution. These will be 5 minute quizzes of just copying. You may not look at the problem in the text or have a sheet with the problems written on them. **Please bring all of your written homework to every class**.

Classwork: Group worksheets and other classwork will be assigned during the lecture.

Tests: There will be 4 tests during the semester. The tentative test dates are as follows:

Test 1	September 20.
Test 2	October 11.
Test 3	November 8.
Test 4	December 3.

Please see the course website for more details. Tests will be more challenging than the quizzes so you need to study accordingly. However doing the homework and reviewing the quizzes is the best way to prepare yourself.

Quiz/Test/Final Exam Policy: Only your approved calculator may be used (when allowed). Hence, no cell phones, computers, mp3 players, slide rules, abaci, Addiators, Napier's bones, Difference/Analytical Engines, Pascalinas, Antikythera mechanisms, etc. may be used. In other words I want you to only use your brain, calculator and the hard work you put into this course to earn your grade. You may not talk to each other in the classroom while other students are working, even if you are done. Please keep your eyes on your own paper. Do not look at notes, books, etc. while working. Work through the problem on your own and you will do fine (and save us both a lot of trouble).

Cheating and Academic Dishonesty: Academic dishonesty of any kind will not be tolerated. It is disrespectful to the University, your classmates and to me. Any form of academic dishonesty will be dealt with severely. Alfred University's policies on Academic Dishonesty (Unethical Practices) (see Policy 700) can be found at `http://my.alfred.edu/index.cfm/fuseaction/academic_policies.academic_regulation_ug.cfm`.

Attendance Policy: You are expected to attend and be a part of every class meeting. I will keep a record of your attendance, participation and preparation. Excessive absences will noticeably affect your final grade. This course will move rather quickly so I suggest you only miss class for a good reason (meaning an excused absence).

Excused Absences: If you cannot attend one of the exams you should submit a written reason for your absence **in advance** of the exam date. I would appreciate knowing at least 3 days in advance if you are going to miss a class. In emergency situations please send me an email or leave me a voice message. The decision to allow make-up exams will be made on a case by case basis, but proper documentation is always necessary. No make-up exams will be given without advance notice. If you miss a quiz, exam or final with an unexcused absence, you will receive a 0 for that particular assignment.

Students with Disabilities: Alfred University is committed to upholding and maintaining all aspects of the Federal Americans with Disabilities Act of 1990 (ADA) and Section 504 of the Rehabilitation Act of 1973. If you are a student with a disability and wish to request accommodations, please contact Dr. Aubrey Elmore at the Office of Special Academic Services located in Crandall Hall, or call (607) 871-2148. Any information regarding your disability will remain confidential. Many accommodations require early planning, therefore requests for accommodations should be made as early as possible. Any requests for accommodations will be reviewed in a timely manner to determine their appropriateness to this setting.

Tutor Services/Requests: Please take advantage of office hours or email me if you have any questions. I am more than happy to help out!

The Division of Mathematics has drop in help sessions for most math courses during the week. The final schedule will be posted on our course website as soon as it is complete.

The office of Special Academic Services (`sas@alfred.edu`) in Crandall Hall offers personalized help in the form of individual and group tutoring. If you would like to request a tutor for a class, you may fill out the tutor request form found at `http://my.alfred.edu/index.cfm/fuseaction/sas.tutoring.cfm` and then submit it to `tutorus@alfred.edu`. You may also contact Beth Niles (`nilesb@alfred.edu` or (607) 871-2148) for more information. Be aware that getting a tutor can take some time, so please contact me for additional support as mentioned above.

Extra Credit: I will not be giving anyone individual extra credit. This way everyone has the same advantage in the course.

Tentative Schedule:

Monday	Tuesday	Wednesday	Friday
Aug 26th **1** Intro and §4.6, 4.9	27th **2** §4.6, 4.9 Review Integration	28th **3** §4.8 Average Value	30th **4** §5.1 Area Between Curves
Sep 2nd **5** §5.2 Volumes (Disk)	3rd **6** §5.2 Volumes (Disk/Washer)	4th **7** §5.3 Volumes (Shells)	6th **8** §5.3 Volumes (Shells)

Monday	Tuesday	Wednesday	Friday
9th **9** §5.4 Arc Length	10th **10** §5.5 Surface Area	11th **11** §5.6 Work	13th **12** §7.2 Integration by Parts
16th **13** §7.2 Integration by Parts	17th **14** §7.3 Trig. Integrals	18th **15** **Review**	20th **16** **TEST 1**
23rd **17** §7.3 Trig. Integrals	24th **18** §7.4 Trig. Substitution	25th **19** §7.4 Trig. Substitution	27th **20** §7.4 Trig. Substitution
30th **21** §7.5 Partial Fractions	Oct 1st **22** §7.5 Partial Fractions	2nd **23** §7.5 Partial Fractions	4th **24** §7.8 Improper Integrals
7th **25** §7.8 Improper Integrals	8th **26** §9.1 Sequences	9th **27** **Review**	11th **28** **TEST 2**
14th **NO CLASS**	15th **NO CLASS**	16th **29** §9.1 Sequences	18th **30** §9.2 Monotone Sequences
21st **31** §9.3 Series	22nd **32** **Withdraw Deadline** §9.3 Series	23rd **33** §9.3 Series	25th **34** §9.4
28th **35** §9.4 Integral Test	29th **36** §9.5 Comparison Tests	30th **37** §9.5 Limit Comparison Test	Nov 1st **NO MATH CLASS**
4th **38** §9.5 Ratio/Root Tests	5th **39** §9.6 Alternating Series Test	6th **40** **Review**	8th **41** **TEST 3**
11th **42** §9.6 Absolute Convergence	12th **43** §9.6 Conditional Convergence	13th **44** §9.7 Maclaurin/Taylor Polynomials	15th **45** §9.8 Maclaurin/Taylor Series
18th **46** §9.8 Maclaurin/Taylor Series	19th **47** §9.8 Maclaurin/Taylor Series	20th **48** §9.8 Power Series	22nd **49** §9.9 Convergence of Taylor Series
25th **50** §9.10 Applications of Taylor Series	26th **51** §9.10 Applications of Taylor Series	27th **NO CLASS**	29th **NO CLASS**

Monday	Tuesday	Wednesday	Friday
Dec 2nd **52**	3rd **53**	4th **54**	6th **55**
Review	**TEST 4**	Extra Topics and **Review**	Extra Topics and **Review**

Final Exam: Wednesday December 11, 1:15PM-3:15PM in Meyers Hall 228.

Disclaimer: I reserve the right to make changes to this syllabus without prior notice.