ASU Arizona State University

MAT 266 Calculus II Spring 2014

Instructor: XXXXX	**Office:** XXXXX
SLN : XXXX	**Time/Day:** M W F
Telephone: (480)-XXX-XXXX	**Hours:** XXXXXX , or by appt.
Instructor Web Page: XXXX	**E-mail:** XXXXXX
Text: *Essential Calculus, Early Transcendentals, 2nd Edition,* by James Stewart (Brooks/Cole)	
Test reviews: http://math.asu.edu/first-year-math/mat-266-calculus-engineers-ii	

Tentative Lecture and Test Schedule

Week	Section	Concepts/Comments
1/13 – 1/17	5.5	Introduction; Review of the Definite and Indefinite Integral; Substitution
1/20 – 1/24	6.1	*MLK (Mon. 1/20)*, Integration by Parts
1/27 – 1/31	6.2, 6.3	Trigonometric Integrals and Substitutions; Partial Fractions
2/3 – 2/7	6.4, 6.6	Integration with Tables & CAS; Improper Integrals
2/10 – 2/14	6.5	Test 1 review, **Test 1** (Wed. 2/12), Numerical Integration
2/17 – 2/21	7.1, 7.2	Area Between Curves; Volumes (Slicing, Disks and Washers)
2/24 – 2/28	7.3, 7.4, 7.6	Volume (Shells); Arc Length; Applications to Physics and Engineering (Work)
3/3 – 3/7	7.6, 8.1, 8.2	Applications to Physics and Engineering (cont.); Sequences; Series
3/10 – 3/14		*Spring Break*
3/17 – 3/21	8.2	Series (cont.), Test 2 Review, **Test 2** (Fri. 3/21)
3/24 – 3/28	8.4, 8.5	Convergence Tests (Ratio Test); Power Series
3/31 – 4/4	8.6, 8.7	Representing Functions as Power Functions; Taylor and Maclaurin Series
4/7 – 4/11	9.1, 9.2	Parametric Curves; Calculus with Parametric Curves
4/14 – 4/18	9.2	Calculus with Parametric Curves (cont.), Test 3 Review, **Test 3** (Fri. 4/18)
4/21 – 4/25	9.3, 9.4	Polar Coordinates, Tangents to Polar Curves; Areas in Polar Coordinates
4/28 – 5/2	9.4	Areas and Lengths in Polar Coordinates (cont.), Final Exam Review
5/5 – 5/6		The Final Exam is Tuesday, May 6 from 7:10-9:00pm (room t.b.a.)

Important Dates and Points Allocations

Testing Schedule			Grade Allocations		Min. % for Grades	
Test	*Covering through*	*Date*	Tests*	50%	A	90%
1	5.5, 6.1-6.4, 6.6	2/12	Homework & Quizzes	25%	B	80%
2	6.5, 7.1-7.4, 7.6, 8.1-8.2	3/21	Final Exam	25%	C	70%
3	8.4-8.7, 9.1, 9.2	4/18	Total	100%	D	60%
Final	Comprehensive, including 9.3, 9.4	5/6	* No test will be dropped		E	<60%

Prerequisite: MAT 265 or MAT 270 (Calculus I) with a grade C or better.

Catalog Description

Methods of integration, applications of calculus, elements of analytic geometry, improper integrals, Taylor series.

Course Overview

The purpose of the course is to gain a working understanding of methods of integration, applications of calculus, elements of analytic geometry, improper integrals and series, to include Taylor Series. All the standard methods of techniques of integration are covered. Applications of calculus include general methods where the goal is for the student to divide a quantity into small pieces, estimate with Riemann sums and recognize the limit as an integral. Taylor Series and Taylor Polynomials are covered. Parametric and polar curves are introduced and methods of calculus are applied to them.

Learning Outcomes

At the completion of this course, students will be able to:

- Evaluate an integral using the substitution method, integration by parts, trigonometric substitution or partial fractions.
- Use tables to match the form of a given integral to a form given on the table to evaluate the integral.
- Approximate the definite integral using the Midpoint, Trapezoidal or the Simpson's Rule.
- Evaluate an improper integral where either the definite integral is extended to cover the case where the interval is infinite or where f has an infinite discontinuity on $[a, b]$.
- Determine the area of a region enclosed by given curves.
- Determine the volume of the solids of revolution obtained by rotating a region about a line using washer, disc or shell method.
- Determine the arc length of a curve.
- Solve applied problems involving work, including the work to stretch a spring, the work to empty a tank of liquid, and the work to raise an object that has a changing mass.
- Determine if a sequence converges or diverges and find the limit.
- Determine if a series converges or diverges using geometric series or test for divergence.
- Find a radius and interval of convergence for a power series.
- Perform differentiation and integration on known power series to create new power series.
- Find a power series representation and the interval of convergence for a given a function.
- Find either a Taylor Series or Maclaurin Series for a given a function.
- Convert between Cartesian and parametric form and sketch a curve defined parametrically.
- Determine the tangent line at a point on a curve defined parametrically
- Find the area below a parametric curve and the arc length along a curve.
- Convert between Cartesian and polar form and sketch a curve defined in polar coordinates.
- Find the area made by a polar curve.

Text: *Essential Calculus, Early Transcendentals, 2nd Edition*, by James Stewart (Brooks/Cole). The used version of the textbook is fine. The new version of the textbook at the bookstore comes bundled with WebAssign at no added cost.

Homework & Quizzes: Homework will be collected and graded. Students may work together on homework, but each individual student is required to write-up and turn in their own work. **No late homework is accepted**. Students will also submit homework online through WeBWorK. (Click on your instructor's name at http://webwork.asu.edu.) Students are also responsible for reading each section *before* it is taught in class. Quizzes are given at the discretion of the instructor and frequently reflect material that has recently been discussed in class.

Exams: There will be three midterm exams given during the semester. All exams will be taken in the classroom on the dates indicated on the given table. Non CAS graphing calculators are allowed on the exams, but graphing calculators that do symbolic algebra are not allowed on the exams (see below). **Your calculator may be viewed during exams and it will be taken away if it is a CAS calculator or have its memory cleared if anything suspicious is written therein.** The Instructor has the right to regard any suspicious material in your calculator memory as cheating. Makeup exams are given at the discretion of the instructor and only in the case of verified medical or other emergency, which must be documented. The instructor must be notified before the test is given. Call the instructor or the Math Department Office (480-965-3951) and leave a message or directly notify your instructor.

Final Exam: Tuesday. May 6th, **7:10-9:00 pm**. Location: to be announced. The final exam is comprehensive through section 9.4.

Tutoring:

- The Math Tutor Center (free of charge) **North** in PSA 116, **South** in BAC 16, will be open the following hours:
  - 8:00 a.m. - 8:00 p.m. Monday through Thursday
  - 8:00 a.m. - 3:00 p.m. Friday
- The Engineering Tutor Center (free of charge) in ECF 100 will be open approximately the same hours Mon – Fri. as the Math Tutor Center.
- Online tutoring: https://studentsuccess.asu.edu/onlinetutoring .
- Many residence halls and the Memorial Union also offer evening or weekend free tutoring to all ASU students enrolled in math courses as part of the Student Success Centers.

Come in for help before it is too late, and several days before an exam day to strengthen your preparation. In order to be admitted to the Tutor Center each student must present their valid ASU Sun Card.

Graphing Calculator: A graphing calculator is required for this course. If you already have a graphing calculator, you may use it. Examples of highly recommended models are the TI-*n*spire & TI 83/84 or Casio 9850GB Plus. Calculators that do symbolic algebra, such as the Casio FX2, Casio 9970Gs,TI-89, TI-92, or TI- *n*spire CAS **cannot** be used in class or during an exam.

ATTENDANCE: Attendance is mandatory! Your instructor reserves the right to take attendance and to incorporate your attendance as part of your overall grade. For classes that meet two days a week, the maximum number of absences is four. For classes that meet three days a week, the maximum number of absences is six. Students who exceed the number of allowed absences will receive a grade of **EN.** Your instructor reserves the right to take attendance and to incorporate your attendance as part of your overall grade.

Classroom behavior: Under no circumstances should you allow your cell phone to ring during class. Any disruptive behavior, which includes ringing cell phones, listening to your mp3 player, text messaging, constant talking, eating food noisily, reading a newspaper will not be tolerated. *Laptops, tablets and cell phones should be off and put away (out of sight) so as not to distract you and those around you.*

Note: This syllabus is tentative and should not be considered definitive. The instructor reserves the right to modify it (including the dates of the tests) to meet the needs of the class. It is the student responsibility to attend class regularly and to make note of any change. The Instructor also reserves the right to create class policies in regards to homework due date, late assignments, etc.

Practice Problems

SECTION	PROBLEMS FROM TEXTBOOK
5.5	1-19 odd, 33, 35, 37, 39, 40, 45, 46, 48
6.1	1, 2, 5, 9-12, 17, 20, 22, 23
6.2	2, 4, 5, 7, 9, 17, 18, 19, 20, 39-44
6.3	1-3, 7-10, 15, 17, 19, 21, 23
6.4	3-6, 10, 19, 21
6.6	3, 5, 6, 8, 9, 13, 16, 17, 21, 23, 24, 30, 32
6.5	1, 2, 3, 8, 15, 29, 33
7.1	1-4, 8, 9, 12, 15, 29
7.2	2-5, 9, 12, 13, 14, 32, 33, 38, 41, 42, 43
7.3	2-6, 10, 11, 15, 17
7.4	2, 3, 7, 9, 12, 15
7.6	1, 2, 5, 6, 9, 10, 12, 15, 16, 17, 18
8.1	3, 4, 6, 8, 9, 11, 14, 17, 18, 24, 27, 29
8.2	7-10, 15, 18, 21, 25, 26, 31, 32, 39
8.4	2, 19, 20, 21, 24, 25, 26
8.5	3, 5, 7, 8, 9, 11, 14, 15, 18
8.6	3-8, 13, 15, 16, 26, 28, 29
8.7	2, 4-7, 11-14, 18, 23- 25, 27, 32, 36, 37, 41, 47, 48, 52, 53, 54
8.8	3, 6, 7 (optional section)
9.1	5-8, 11-18
9.2	3-5, 9-11, 13, 14, 16, 17, 18, 26, 28, 29, 37, 39
9.3	3, 5, 7, 10, 13, 16, 17, 46, 47, 49, 51, 52
9.4	1, 2, 5-8, 11, 15, 33, 34, 35

(problems may be added or deleted at the instructor's discretion)

The School of Mathematical and Statistical Sciences Policies and Procedures

Course Withdrawal Deadline	**April 6th, 2014**
Complete Withdrawal Deadline	**May 2nd, 2014**

Withdrawal: A student may withdraw from a course with a grade of **W** during the withdrawal period. The instructor's signature is not required. A complete withdrawal must be done in person and that it involves withdrawing from all ASU classes, not just Math 266. Students will not be withdrawn if they merely stop coming to class. It is a student's responsibility to verify whether they have in fact withdrawn from a class.

The grade of Incomplete: A grade of incomplete will be awarded only in the event that a documented emergency or illness prevents the student who is doing acceptable work from completing a **small** percentage of the course requirements. The guidelines in the current general ASU catalog regarding a grade of incomplete will be strictly followed.

Instructor-Initiated Drop: At the instructor's discretion, a student who has not attended any class during the first week of classes may be administratively dropped from the course. However, students should be aware that non-attendance will NOT automatically result in their being dropped from the course. Thus, a student should not assume they are no longer registered for a course simply because they did not attend class during the first week. It is the student's responsibility to be aware of their registration status.

Final Exam Make-up Policy: The final exam schedule listed in the Schedule of Classes will be strictly followed. Except to resolve those situations described below, no changes may be made in this schedule without prior approval of the Dean of the College of Liberal Arts and Sciences. Under this schedule, if a conflict occurs, or a student has more than three exams on one day, the instructors may be consulted about an individual schedule adjustment. If necessary, the matter may be pursed further with the appropriate dean(s). This procedure applies to conflicts among any combination of Downtown Phoenix campus, Tempe campus, Polytechnic campus, West campus, and/or off campus class. Make-up exams will NOT be given for reasons of a non-refundable airline tickets, vacation plans, work schedules, weddings, family reunions, and other such activities. Students should consult the final exam schedule before making end-of-semester travel plans.

Honor Policy: Academic honesty is expected of all students in all examinations, papers, laboratory work, academic transactions and records. The possible sanctions include, but are not limited to, appropriate grade penalties, course failure (indicated on the transcript as a grade of E), course failure due to academic dishonesty (indicated on the transcript as a grade of XE), loss of registration privileges, disqualification and dismissal. For more information, see http://provost.asu.edu/academicintegrity.

Disability Accommodations: Qualified students with disabilities who will require disability accommodations in this class are encouraged to make their requests to me at the beginning of the semester either during office hours or by appointment. **Note:** Prior to receiving disability accommodations, verification of eligibility from the Disability Resource Center (DRC) is required. Disability information is confidential.

Establishing Eligibility for Disability Accommodations: Students who feel they will need disability accommodations in this class but have not registered with the Disability Resource Center (DRC) should contact DRC immediately. Their office is located on the first floor of the Matthews Center Building. DRC staff can also be reached at: 480-965-1234 (V), 480-965-9000 (TTY). For additional information, visit: www.asu.edu/studentaffairs/ed/drc. Their hours are 8:00 AM to 5:00 PM, Monday through Friday.