Instructor: Richard Reynolds  
E-mail: rich@asu.edu  
Office: ECA 206  
phone: (480) 965-7561  
Web: https://math.la.asu.edu/~rich  
Office Hours: Mon 12:50-1:50 in ECA 206, Wed 12:50-1:50 in ECA 206, Fri 3:00-4:00 in WXLR 118  
Test reviews: https://math.asu.edu/mat265

### Tentative Lecture and Test Schedule

<table>
<thead>
<tr>
<th>Week Of</th>
<th>Section</th>
<th>Concepts/Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aug 22</td>
<td>1.3</td>
<td>Introduction; Limits: Graphical and Numerical</td>
</tr>
<tr>
<td>Aug 26</td>
<td>1.4, 1.5</td>
<td>Limits: One-Sided; Algebraic limits; Continuity</td>
</tr>
<tr>
<td>Sept 2</td>
<td>1.6, 2.1</td>
<td>Labor Day (9/02) Limits involving Infinity, Asymptotes; Derivatives and Rates of Change</td>
</tr>
<tr>
<td>Sept 9</td>
<td>2.2, 2.3</td>
<td>Derivative as a Function; Basic Derivative Formulas – Power Rule</td>
</tr>
<tr>
<td>Sept 16</td>
<td>2.4</td>
<td>Product Rule, Quotient Rule; Test 1 Friday 9/20</td>
</tr>
<tr>
<td>Sept 23</td>
<td>2.5, 2.6</td>
<td>Chain Rule; Implicit Differentiation</td>
</tr>
<tr>
<td>Sept 30</td>
<td>2.7, 2.8</td>
<td>Related Rates; Linear Approximation, Differentials</td>
</tr>
<tr>
<td>Oct 7</td>
<td>3.1-3.3</td>
<td>Exponential, Inverse Functions and Logarithms; Derivatives of Exp. and Log. Functions</td>
</tr>
<tr>
<td>Oct 14</td>
<td>3.5, 3.7</td>
<td>Fall Break: No class Oct 14-15; Inverse Trigonometric Functions; L'Hospital's Rule</td>
</tr>
<tr>
<td>Oct 21</td>
<td>3.7, 4.1</td>
<td>Indeterminate Forms and L'Hospital's Rule; Maximum and Minimum Values (Extrema)</td>
</tr>
<tr>
<td>Oct 28</td>
<td>4.2, 4.3</td>
<td>Mean Value Theorem; Test 2 Wednesday 10/30; Derivatives and the Shapes of Graphs</td>
</tr>
<tr>
<td>Nov 4</td>
<td>4.4, 4.5</td>
<td>Mastery Test Tues-Wed 11/5-6; Curve Sketching; Optimization</td>
</tr>
<tr>
<td>Nov 11</td>
<td>4.7, 5.1</td>
<td>Veteran’s day, 11/11: Antiderivatives; Areas and Distances</td>
</tr>
<tr>
<td>Nov 18</td>
<td>5.2, 5.3</td>
<td>The Definite Integral, Evaluating Definite Integrals</td>
</tr>
<tr>
<td>Dec 2</td>
<td>5.4</td>
<td>The Fundamental Theorem of Calculus; Final Exam Review</td>
</tr>
<tr>
<td>Finals Week</td>
<td></td>
<td>Final Exam: Thursday, December 12th from 7:10-9:00pm (room to be announced)</td>
</tr>
</tbody>
</table>

### Important Dates and Points Allocations

<table>
<thead>
<tr>
<th>Test</th>
<th>Covering through</th>
<th>Date</th>
<th>Location</th>
<th>Grade Allocations</th>
<th>Min. % for Grades</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1.3-1.6, 2.1-2.3</td>
<td>9/20</td>
<td>Classroom</td>
<td>Tests 1-3 and Mastery* 50%</td>
<td>A 90%</td>
</tr>
<tr>
<td>2</td>
<td>2.4-2.8, 3.1-3.3, 3.5, 3.7</td>
<td>10/30</td>
<td>Classroom</td>
<td>WeBWorK 12.5%</td>
<td>B 80%</td>
</tr>
<tr>
<td>3</td>
<td>4.1-4.5, 4.7, 5.1, 5.2</td>
<td>11/25</td>
<td>Classroom</td>
<td>Quizzes 12.5%</td>
<td>C 70%</td>
</tr>
<tr>
<td>M</td>
<td>Mastery of Differentiation</td>
<td>11/5-6</td>
<td>Testing Ctr</td>
<td>Final Exam 25%</td>
<td>D 60%</td>
</tr>
<tr>
<td>Final</td>
<td>Comprehensive, including 5.3, 5.4</td>
<td>12/12</td>
<td>t.b.a.</td>
<td>Total 100%</td>
<td>E &lt;60%</td>
</tr>
</tbody>
</table>

*Mastery is worth ½ a test
Prerequisite: MAT 170 or 171 (pre-calculus) with C or better, OR Mathematics Placement Test with a score of 60% or higher; the Advanced Math Placement Test with a score of 38 or higher, OR ALEKS score of 76 or higher; Credit is allowed for only MAT 265 or MAT 270.

Catalog Description
Limits and continuity, differential calculus of functions of one variable, introduction to integration.

Course Overview
The purpose of the course is to gain a working understanding of differentiation, its definition, general rules and applications, as well as an introduction to antidifferentiation and integration. This begins with an understanding of limits of expressions which is needed in the definition of the derivative as well as for intuition for applications of the derivative. Integration, antiderivatives, and the fundamental theorem of calculus ends calculus I, and will be studied more in depth in calculus II.

Learning Outcomes
At the completion of this course, students should have a mastery of the following concepts to prepare him or her for calculus II:

- **Functions and Limits**
  - Approximate a limit at a point numerically with a calculator.
  - Find a limit at a point rigorously through common algebraic processes or with the squeeze theorem.
  - Continuity of a function at a point.
  - Be able to determine when a limit does not exist, including going to plus or minus infinity and find the limit at infinity.

- **Derivatives**
  - Derivatives and Rates of Change.
  - Find the derivative of a function using the limit definition.
  - Compute the derivative of a function at a point using the limit definition.
  - Find the derivative of all of the basic functions.
  - Use the rules of differentiation (sum/difference, constant multiplier, product, quotient, and chain rule) to differentiate combinations of functions.
  - Find an equation of the line tangent to a curve, whether the curve is given explicitly or implicitly.
  - Related Rates and linear approximations and differentials.

- **Exponential, Logarithmic, and Inverse Trigonometric Functions**
  - Exponential, Logarithmic, Inverse Functions.
  - Derivative of Logarithmic and Exponential Functions.
  - Find the value of the derivative of the inverse of a function at a point.
  - Find the value of a limit using L’Hôpital’s rule.

- **Applications of Derivatives**
  - Use the derivative to graph a function, labeling local extrema and inflection points.
  - The mean value theorem.
  - Solve optimization problems.
  - Find antiderivatives of basic functions.

- **Integrals**
  - Approximate the area or distance traveled of a function (velocity) using a small Riemann sum.
  - Evaluate definite integrals using the fundamental theorem of calculus.
  - Find antiderivatives of functions using the fundamental theorem of calculus.
Class Content, Teacher Expectations, Studying for the Class and Examinations

Textbook: Essential Calculus, Early Transcendentals, 2nd Edition, by James Stewart (Brooks/Cole). You should read each section of the textbook before it is covered in class. A used version of the textbook is fine. The new version of the textbook at the bookstore comes bundled with WebAssign at no added cost.

Note: The materials required for this course and any others using Cengage products are included in ONE Cengage Unlimited subscription. For $119.99 per semester, you get access to ALL Cengage online textbooks, platforms, study tools and more—in one place. $7.99 print textbook rentals are also available. Ask for Cengage Unlimited in the bookstore or visit cengage.com/unlimited.

Attendance is expected and your instructor may take regular attendance.

Homework & Quizzes: Written homework (table shown below) and/or quizzes will be collected and graded. Students may work together on homework, but each individual student is required to write-up and turn in her/his own work. No late homework is accepted. Quizzes are given at the discretion of the instructor and frequently reflect material that has recently been discussed in class. (Homework problems may be added or deleted at the instructor's discretion)

Online Homework will be submitted online through WeBWorK. (Click on your instructor’s name at https://webwork.asu.edu.) Students are also responsible for reading each section before it is taught in class. For best results on the tests (especially the final exam), do not use the work of others (including Wolfram Alpha) to answer the problems.

<table>
<thead>
<tr>
<th>Practice Problems</th>
</tr>
</thead>
<tbody>
<tr>
<td>Section</td>
</tr>
<tr>
<td>1.3</td>
</tr>
<tr>
<td>1.4</td>
</tr>
<tr>
<td>1.5</td>
</tr>
<tr>
<td>1.6</td>
</tr>
<tr>
<td>2.1</td>
</tr>
<tr>
<td>2.2</td>
</tr>
<tr>
<td>2.3</td>
</tr>
<tr>
<td>2.4</td>
</tr>
<tr>
<td>2.5</td>
</tr>
<tr>
<td>2.6</td>
</tr>
<tr>
<td>2.7</td>
</tr>
<tr>
<td>2.8</td>
</tr>
<tr>
<td>3.1</td>
</tr>
<tr>
<td>3.2</td>
</tr>
</tbody>
</table>

Exams: There will be three 50 minute midterm exams given during the semester. Non CAS graphing calculators are allowed on the exams, but graphing calculators that do symbolic algebra are not allowed on the exams (see above). 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. All internet-capable devices such as computers, phones and smart-watches, etc., are to be turned off and made inaccessible for the duration of an exam. Accessing one for any reason will result in an automatic score of 0 for the exam.

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. There are no test retakes or “corrections”, and no lowest test will be dropped, nor will you receive extra credit assignments to erase the consequences of a bad test.
Mastery Test (50 minutes): The mastery test assesses basic differentiation skills (including implicit differentiation) and will be administered after test 2. No calculators are allowed on the mastery test.

- If you earn 90% or higher, a grade of 100% is recorded.
- If you earn less than 90%, then 90% of the score you earn is recorded.

The mastery test is weighted toward the final grade as 50% (that is, one-half) of a midterm exam.

Math Testing Center: The Mathematics Department Testing Center is in WXLR (formerly PSA) 21 (basement).

- On Tuesday 11/5, there will be 4 time slots for the students to sign up for:
  9:15 am to 10:15 am, 10:30 am to 11:30 am, 12:00 pm to 1:00 pm, and 3:00 pm to 4:00 pm
- On Wednesday 11/6, there will be 5 time slots for the students to sign up for:
  9:15 am to 10:15 am, 10:30 am to 11:30 am, 11:45 am to 12:45 pm, 1:00 pm to 2:00 pm and 2:15 pm to 3:15pm

You may leave once you finish your exam.

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-nspire & 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-nspire CAS cannot be used in class or during an exam.

The graphing calculator workshops for the TI 83, 83+, 84 family of calculators will be

<table>
<thead>
<tr>
<th>Thurs. Sept. 5, 2019 at 6 to 8 PM in LSE 104</th>
</tr>
</thead>
<tbody>
<tr>
<td>Friday. Sept. 6, 2019 at 4 to 6 PM in LSA 191</td>
</tr>
</tbody>
</table>

Both workshops will be over similar material and will help you better know how to use these calculators to solve problems in our class. Your verified attendance at either workshop will count as a small amount of required work or extra credit in our class.

Bathroom Breaks during exams policy:
You are not permitted to go to the bathroom during midterm exams or the mastery test. Please use the restroom before you start your exam. If you leave during the exam, that ends your testing period. If you have a medical condition that may require you to go to the bathroom during exams, you must provide documentation to your instructor in advance.

Picture ID requirement for testing: for each exam and the mastery test attempts, you have to bring picture ID.

Reviews: Reviews and old exams are posted on the school’s website at https://math.asu.edu/resources/math-courses/mat265

It would also be a good idea to study a diverse sample of homework problems given in the textbook for additional review.

Tutoring:
- The Math Tutor Center (free of charge) in WXLR 116 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
  - 1:00 p.m. - 6:00 p.m. Sunday
- The Mathematics Community Center (MC²) in WXLR 303
  - Monday – Friday from 10:30 AM – 7:00 PM (no tutors after 4:00pm)
- The Engineering Tutor Center (free of charge) in ECF 100 will be open approximately the same hours Mon – Fri. as the Math Tutor Center.
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.

Video Resources
Videos for the content may be viewed at vidman.asu.edu website and https://math.la.asu.edu/~surgent/video.

Important dates:

<table>
<thead>
<tr>
<th>Course Withdrawal Deadline</th>
<th>November 6, 2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete Withdrawal Deadline</td>
<td>December 6, 2019</td>
</tr>
</tbody>
</table>

Academic Status Report: During the semester you may be issued an academic status report from your instructor if your class grade is failing at that time. Status reports are not a real-time running tally of your grades in the class and are not updated to reflect grades earned after the report has been issued.

COURSE POLICIES

- Students are responsible for assigned material. Students are responsible for material covered in class whether or not it is in the text.
- Working regularly on assigned problems and attending class is essential to success.
- You are expected to read the text, preferably before the material is covered in class.

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 pursued 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.

Classroom behavior, etiquette and academic integrity policies

- Students with Disabilities 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.

- Policy on Threatening Behavior All incidents and allegations of violent or threatening conduct by an ASU student (whether on-or off campus) must be reported to the ASU Police Department (ASU PD) and
the Office of the Dean of Students. If either office determines that the behavior poses or has posed a
dangerous threat to personal safety or to the welfare of the campus, the student will not be permitted to return
to campus or reside in any ASU residence hall until an appropriate threat assessment has been completed
and, if necessary, conditions for return are imposed. ASU PD, the Office of the Dean of Students, and
other appropriate offices will coordinate the assessment in light of the relevant circumstances.

- **Classroom behavior: Make sure you arrive on time for class**  Excessive tardiness will be subject to
  sanctions. **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/iPod player, text messaging,
  constant talking, eating food noisily, reading a newspaper will not be tolerated. The use of laptops (unless
  for lecture note taking), cell phones, MP3, IPOD, etc. are strictly prohibited during class. Students who
  engage in disruptive classroom behavior may be subject to various sanctions. The procedures for initiating
  a disruptive behavior withdrawal can be found at [https://clas.asu.edu/resources/disruptive-behavior](https://clas.asu.edu/resources/disruptive-behavior).

- **Absences related to religious observances/practices:** If you will be absent from class due to a religious
  observance or practice, it is your responsibility to inform the instructor as soon as possible. Your instructor
  will work with you on alternative and reasonable arrangements for any time missed.

- **Absences related to university sanctioned events and activities:** If you will be absent from class due to
  participation in a university sanctioned event/activity, it is your responsibility to inform the instructor as
  soon as possible. Your instructor will work with you on alternative and reasonable arrangements for any
  time missed.

- **Academic Integrity:** 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](http://provost.asu.edu/academicintegrity).

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 265. 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 incomplete is not a “get out of jail free” card and cannot be
used as an alternative to withdrawal, or as a way to re-take the class for free. The guidelines in the current
general ASU catalog regarding a grade of incomplete will be strictly followed.

*Title IX is a federal law that provides that no person be excluded on the basis of sex from participation in, be
denied benefits of, or be subjected to discrimination under any education program or activity. Both Title IX
and university policy make clear that sexual violence and harassment based on sex is prohibited. An
individual who believes they have been subjected to sexual violence or harassed on the basis of sex can seek
support, including counseling and academic support, from the university. If you or someone you know has
been harassed on the basis of sex or sexually assaulted, you can find information and resources at
[https://sexualviolenceprevention.asu.edu/faqs](https://sexualviolenceprevention.asu.edu/faqs).*

As a mandated reporter, I am **obligated to report** any information I become aware of regarding alleged acts of
sexual discrimination, including sexual violence and dating violence. **ASU Counseling Services,**
[https://eoss.asu.edu/counseling](https://eoss.asu.edu/counseling), is available if you wish discuss any concerns confidentially and privately.

**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 all
class meetings and to make note of any changes. The instructor also reserves the right to create class policies in
regards to homework due date, late assignments, etc.