MATH 261 - Calculus I

COURSE SYLLABUS

INSTRUCTOR: Travis Dirle
E-MAIL ADDRESS: tdirle@olemiss.edu
OFFICE: Hume 208
OFFICE HOURS: Mon 9-10 or by apt.

SOFTWARE/TEXT:

• Mathematica (do not purchase) – available on the computers in Hume & Weir Hall or install on your computer using the university site license; installation instructions at: Mathematica Download

DESCRIPTION AND LEARNING OUTCOMES:

• This course covers differentiation and its applications. We will cover Chapters 2, 3, and 4. The content includes, but is not limited to, limits and rates of change, continuity, derivatives, derivative rules, higher derivatives, implicit differentiation, and applications of differentiation. Our goals are to enable students to understand the concepts and rules of differentiation, to learn different techniques for finding derivatives, and to develop problem-solving skills. We expect students to apply concepts and theories learned in class to solve application problems that include optimization and curve sketching. Math 261 will prepare students for higher level calculus along with other courses and enhance critical thinking and analytical reasoning abilities.

HOMEWORK

• Online homework will be assigned for each section we cover this semester and will be a total of 100 points.
• Online homework must be submitted by 11:59 pm on the due date to get full credit. Any late MyMathLab assignments may be submitted by 11:59 pm on Friday, May 4th, 2018 for half-credit.
• Homework can be repeated until 100% completion. No homework assignments will be dropped.

TESTS and PRACTICE TESTS

• There will be four major tests during the semester. Each test will count 100 points (400 points total). The test questions will be similar in format to the examples in class and the homework problems. These exams will test your ability to solve problems similar to those discussed in class. The tests will not be multiple choice.
• The lowest test grade will be replaced by the final exam percentage, if the score on the final exam is greater than the lowest test grade.
• If a test is missed for ANY reason, a grade of 0 will be given. There will be absolutely NO make up tests given for ANY reason. The replacement grade policy is in place to protect any student who has to miss a test due to an emergency.
• Any student who will miss one of the four tests because of an official University function must reschedule and take this test at a time BEFORE the test is scheduled. NO OTHER rescheduling will be allowed.
• Each test, including the Final Exam, will have an associated Practice Test to be taken through the MyMathLab website to prepare for the in class Tests. The Practice Tests are due by the beginning of class on the associated test day (Practice Test 1 is due by the start of class on the day Test 1 is taken).
• Each Practice Test is worth 25 points. The lowest Practice Test grade will be dropped giving a total of 100 points for the Practice Tests.
• Practice Tests can be taken an unlimited number of times.
• The purpose of each Practice Test is to gauge your preparation for the high-stake, in-class Tests. As such, the Practice Tests are locked based on topic mastery. The MyMathLab software will recognize the concepts you are finding difficult and require you to practice those concepts before accessing the Practice Tests. You must allow yourself plenty of time to prove mastery over the topics in the course before attempting the Practice Tests.

FINAL EXAM

• The final exam is comprehensive and will count 200 points.
• Any student having three or more final exams scheduled for the same day will arrange with the instructor to take either the 12:00 p.m. OR the 7:30 p.m. exam on some other mutually satisfactory date.
• An Incomplete grade (grade of I) will not be given without the permission of the Department of Mathematics.
• Students must show ALL work for each test question and arrive at a correct answer.
• Every student must take the final exam at the time scheduled. The only exceptions are those students affected by an official University function.

FINAL GRADE:

• The cumulative total for the course is 800 points. The following point scale will be used to determine your final grade:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Points Necessary for Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>720 to 800</td>
</tr>
<tr>
<td>A-</td>
<td>704 to less than 720</td>
</tr>
<tr>
<td>B+</td>
<td>688 to less than 704</td>
</tr>
<tr>
<td>B</td>
<td>640 to less than 688</td>
</tr>
<tr>
<td>B-</td>
<td>624 to less than 640</td>
</tr>
<tr>
<td>C+</td>
<td>608 to less than 624</td>
</tr>
<tr>
<td>C</td>
<td>560 to less than 608</td>
</tr>
<tr>
<td>C-</td>
<td>544 to less than 560</td>
</tr>
<tr>
<td>D</td>
<td>480 to less than 544</td>
</tr>
<tr>
<td>F</td>
<td>below 480</td>
</tr>
</tbody>
</table>

ATTENDANCE POLICY:

• Students are allowed five (5) absences in a MWF section without penalty.
• Students are allowed three (3) absences in a TTh or MW section without penalty.
• Students who accumulate more absences than are allowed for their specific section will have ten (10) points deducted from their final point total FOR EACH absence above the limit for their respective section.
• Students must take the responsibility of telling the instructor in advance if they must leave early, and must discuss with the instructor immediately after class if they entered the classroom after class has begun. It is the student’s responsibility to make sure that their attendance record is correct.
• Attendance fraud is a form of academic dishonesty. Students engaging in fraud will fail the class and be reported to the university for further disciplinary action. If a student must leave class after signing in, it is the responsibility of the student to communicate with the instructor before class begins.
• If an emergency arises and a student must leave class after scanning in, then the student must notify the instructor within 24 hours of the end of class.
• Random attendance checks will be made in the form of role call at some point in class. If a student has been scanned into class using his or her student identification card but is not present for random role call, then that student will be found to have fraudulently attended class.

• Cellphone use will not be allowed during class. Any student using a cellphone for any purpose in class will be counted absent – no questions asked.

CALCULATORS:

• There will be no calculators used during any test, exam, or in class assignment under ANY circumstances. Any student caught using a calculator or cell phone during a test, exam, or in class assignment will be considered cheating.

CHEATING:

• The following statement is the policy of the Department of Mathematics regarding cheating:

  Offenses: Cheating on any exam or quiz, theft or attempted theft of exam questions, possession of exam questions prior to an examination, or the use of an illegal calculator on tests shall all be offenses subject to appropriate penalties.

  Penalties: The penalty for commission of any offense set out above is failure in the course and, subject to the approval of the Chancellor, dismissal or suspension from the University.

WITHDRAWAL DEADLINE: Friday, March 2

• After the Course Withdrawal Deadline, courses dropped will be recorded on University records and the grade of W will be recorded if the student is not failing the course at the time of withdrawal; otherwise, the grade of F will be recorded. After the course withdrawal deadline, a student may drop a course only in cases of extreme and unavoidable emergency, as determined by the academic dean. Dropping a course after the deadline will not be permitted because of dissatisfaction over an expected grade or because the student is changing his/her major.

ACADEMIC NEEDS:

• It is the responsibility of any student with a disability who requests a reasonable accommodation to contact the Office of Student Disability Services (915-7128). Contact will then be made by the Office of Student Disability Services through the student to the instructor of this class. The instructor will then work with the student so that a reasonable accommodation of any disability can be made.

PRACTICE PROBLEMS:

I. Test 1
   Section 2.2:  7-10, 21-24  
   Section 2.3:  9-36, 39-42, 45-47, 68, 69, 77-79 
   Section 2.4:  8-12, 17-38 
   Section 2.5:  9, 10, 12, 15-34, 52, 53, 57 
   Section 2.6:  9-26, 41-46 
   Section 3.1:  9-36, 49-52, 57-60 

II. Test 2
   Section 3.3:  7-24, 35, 36, 39-46, 50, 52 
   Section 3.4:  8, 9, 13, 14, 19, 21, 26, 27, 33-36, 43-45 
   Section 3.5:  17-22, 62, 63, 66, 67 (Section 1.4 for trig review) 
   Section 3.6:  11-17 
   Section 3.7:  7-25, 27-29, 31-33, 35, 36, 41-44, 48, 50, 79, 80
III. Test 3
Section 3.8:  5-30, 37-39
Section 3.9:  9-30, 77-82  (Section 1.3 for exp & log review)
Section 3.10:  7-13, 15, 16, 18, 22, 25, 26, 31, 32
Section 3.11:  5-13
Section 4.7:  13-21, 26, 35, 36

IV. Test 4
Section 4.1:  23-34, 37-42, 56, 61
Section 4.2:  17-24, 31, 34, 39, 40, 57-59
Section 4.3:  9-20  (also slant asymptotes from Section 2.5: 35-40)
Section 4.4:  12, 13, 24, 25, 30a
Section 4.9:  11-15, 39-48

V. Final Exam
All Previous Sections   All Previous Problems
To register for Dirle calc 261 section 1:

2. Under Register, select Student.
3. Confirm you have the information needed, then select OK! Register now.
4. Enter your instructor’s course ID: dirle07966, and Continue.
5. Enter your existing Pearson account username and password to Sign In.
   You have an account if you have ever used a MyLab or Mastering product.
   - If you don’t have an account, select Create and complete the required fields.
6. Select an access option.
   - Enter the access code that came with your textbook or that you purchased separately from the bookstore.
   - If available for your course,
     • Buy access using a credit card or PayPal.
     • Get temporary access.
7. From the You’re Done! page, select Go To My Courses.
8. On the My Courses page, select the course name Dirle calc 261 section 1 to start your work.

To sign in later:

2. Select Sign In.
3. Enter your Pearson account username and password, and Sign In.
4. Select the course name Dirle calc 261 section 1 to start your work.

To upgrade temporary access to full access:

2. Select Sign In.
3. Enter your Pearson account username and password, and Sign In.
4. Select Upgrade access for Dirle calc 261 section 1.
5. Enter an access code or buy access with a credit card or PayPal.
<table>
<thead>
<tr>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/22/18</td>
<td>1/23/18</td>
<td>1/24/18</td>
<td>1/25/18</td>
<td>1/26/18</td>
</tr>
<tr>
<td>Syllabus and General Information</td>
<td></td>
<td></td>
<td></td>
<td>Section 2.2/2.3</td>
</tr>
<tr>
<td>1/29/18</td>
<td>1/30/18</td>
<td>1/31/18</td>
<td>2/1/18</td>
<td>2/2/18</td>
</tr>
<tr>
<td>Section 2.3: Techniques for Computing Limits</td>
<td></td>
<td></td>
<td></td>
<td>Section 2.4/2.5</td>
</tr>
<tr>
<td>Section 2.2 HW Due</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2/5/18</td>
<td>2/6/18</td>
<td>2/7/18</td>
<td>2/8/18</td>
<td>2/9/18</td>
</tr>
<tr>
<td>Section 2.5: Limits at Infinity</td>
<td></td>
<td></td>
<td></td>
<td>Section 2.6/3.1</td>
</tr>
<tr>
<td>Section 2.4 HW Due</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2/12/18</td>
<td>2/13/18</td>
<td>2/14/18</td>
<td>2/15/18</td>
<td>2/16/18</td>
</tr>
<tr>
<td>Section 3.1: Introducing the Derivative</td>
<td>Test 1 Review</td>
<td>Test 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>----------------------------------------</td>
<td>--------------</td>
<td>--------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Section 2.6 HW Due</td>
<td>Section 3.1 HW Due</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2/19/18</td>
<td>2/20/18</td>
<td>2/21/18</td>
<td>2/22/18</td>
<td>2/23/18</td>
</tr>
<tr>
<td>Section 3.3: Rules of Differentiation</td>
<td>Section 3.3/3.4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2/26/18</td>
<td>2/27/18</td>
<td>2/28/18</td>
<td>3/1/18</td>
<td>3/2/18</td>
</tr>
<tr>
<td>Section 3.5: Derivatives of Trigonometric Functions</td>
<td>Section 3.6: Derivatives as Rates of Change</td>
<td>Section 3.6/3.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Section 3.4 HW Due</td>
<td>Section 3.5 HW Due</td>
<td>Withdrawal Deadline</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Section 3.7: The Chain Rule</td>
<td>Test 2 Review</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Section 3.6 HW Due</td>
<td>Section 3.7 HW Due</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3/11/18</td>
<td>3/12/18</td>
<td>3/13/18</td>
<td>3/14/18</td>
<td>3/15/18</td>
</tr>
<tr>
<td>Date</td>
<td>Date</td>
<td>Date</td>
<td>Date</td>
<td>Date</td>
</tr>
<tr>
<td>------------</td>
<td>------------</td>
<td>------------</td>
<td>------------</td>
<td>------------</td>
</tr>
<tr>
<td>3/12/18</td>
<td>3/13/18</td>
<td>3/14/18</td>
<td>3/15/18</td>
<td>3/16/18</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spring Break</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3/19/18</td>
<td>3/20/18</td>
<td>3/21/18</td>
<td>3/22/18</td>
<td>3/23/18</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Section 3.8: Implicit Differentiation</td>
<td></td>
<td>Section 3.9: Derivatives of Log. And Exp. Functions</td>
<td></td>
<td>Section 3.10: Derivatives of Inverse Trigonometric Functions</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Section 3.8 HW Due</td>
<td>Section 3.9 HW Due</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Section 3.11: Related Rates</td>
<td></td>
<td>Section 4.7: L'Hopital's Rule</td>
<td></td>
<td>Good Friday Holiday</td>
</tr>
<tr>
<td>Section 3.10 HW Due</td>
<td></td>
<td></td>
<td></td>
<td>Sec. 4.7 HW Due</td>
</tr>
<tr>
<td>Date</td>
<td>Section 4.1: Maxima and Minima</td>
<td>Section 4.2: What Derivatives Tell Us - Increasing and Decreasing Concavity</td>
<td>Section 4.3: Graphing Functions</td>
<td>Section 4.4/4.9 Optimization Problems</td>
</tr>
<tr>
<td>-------</td>
<td>--------------------------------</td>
<td>-------------------------------------------------</td>
<td>-------------------------------</td>
<td>-------------------------------------</td>
</tr>
<tr>
<td>4/9/18</td>
<td>4/10/18</td>
<td>4/11/18</td>
<td></td>
<td>4/13/18</td>
</tr>
<tr>
<td>4/16/18</td>
<td>4/17/18</td>
<td>4/18/18</td>
<td></td>
<td>4/20/18</td>
</tr>
<tr>
<td>4/27/18</td>
<td></td>
<td></td>
<td>Test 4</td>
<td>Section 4.9 HW Due</td>
</tr>
</tbody>
</table>

**Test 3**

**Section 4.1 HW Due**

**Section 4.2 HW Due**

**Section 4.3 HW Due**

**Section 4.4 HW Due**

**Section 4.9 HW Due**

**Test 4 Review**
<table>
<thead>
<tr>
<th>4/30/18</th>
<th>5/1/18</th>
<th>5/2/18</th>
<th>5/3/18</th>
<th>5/4/18</th>
</tr>
</thead>
<tbody>
<tr>
<td>Final Exam Review</td>
<td>Final Exam Review</td>
<td></td>
<td>Final Exam Review</td>
<td></td>
</tr>
<tr>
<td>5/7/18</td>
<td>5/8/18</td>
<td>5/9/18</td>
<td>5/10/18</td>
<td>5/11/18</td>
</tr>
</tbody>
</table>

**Final Exam Week**