CALCULUS II

w/ Analytic Geometry

Glendale Community College – Main Campus

Section 12072 & 12069 (honor)

Face-to-face 5 credits course

MTWRF 11:00 - 11:50

# **Spring 2017**

# **MAT 230**

Room MA 102

***Instructor reserves the right to make changes on this syllabus as needed***

*Course webpage***:** [**http://www.phdmathgeek.com**](http://www.phdmathgeek.com)

**Instructor:** Phong Chau, Ph.D. **Office:** MA 161

**Email:** phong.chau@gccaz.edu  **Phone:** (623) 845-4789

**Office Hours**: MWF 1:00 - 1:50 pm and TR 9:00 – 10:00 am

**Prerequisite**: Grade of "C" or better in MAT 220 equivalent or satisfactory score on placement exam.

**Course Objectives and Competencies:**

 1. Analyze the behavior and continuity of functions using limits.

 2. State the definition and explain the significance of the derivative.

 3. Compute the derivative using the definition and associated formulas for differentiation.
4. Solve application problems using differentiation.
5. State and explain the significance of the Fundamental Theorem of Calculus.
6. Compute anti-derivatives, indefinite and definite integrals of elementary functions.
7. Read and interpret quantitative information when presented numerically, analytically or graphically.
8. Compare alternate solution strategies, including technology.
9. Justify and interpret solutions to application problems.
10. Communicate process and results in written and verbal formats.

**Text:** C*alculus: Early Transcendental Functions, 8th Edition*. (with WebAssign code) by Stewart.

**Graphing Calculator:** A TI-83 or TI-84 graphing calculator is required.

**Attendance and Class Participation:**

* Attendance is mandatory. If you miss class, it is your responsibility to obtain any lecture notes, assignments, etc. from another student. At the end of the semester I will assign a grade for attendance and adherence to the conduct and cell phone use policy.
* Participation means coming to class prepared to learn, paying attention to what is going on during class and asking questions. Also, have your homework completed and be ready to ask questions over the homework at the beginning of class. Don’t be afraid to ask me questions and come to me for help. If possible, read the section to be covered that day before you come to class.
* Do not engage in behaviors that disrupt the attention of other students. Examples are **texting**, ***talking during class*,** leaving or packing up before class is over, arriving late to class, etc.
* I reserve the right to withdraw a student with five or more absences, tardies, and/or early departures from class.

**Group work:** A portion of class time will be spent working on group activities in class.  You will be expected to work on assigned problems in group during class once a week. No makeup group work will be allowed for any reason**.**  Credit will be assigned for completion (Honors students will not earn group work credits, instead they will do special projects for credits).  I will also be walking around the room during these activities and expect to see you participating.  If you are not participating, you will not receive credit with your group.

**Homework:**  Online homework will be required via WebAssign. You need to purchase the access code which gives you access to an ebook.

**Tests:** There will be 5 tests during the semester and a cumulative final exam, each worth 100 points. The lowest test score (including the final) will be dropped. I will provide reviews before each exam. Make-up exams will be given only in extreme circumstances.

**Grading Criteria**:

|  |  |  |
| --- | --- | --- |
| **Points Allocation** |  | **Grades** |
| Attendance and Participation | 30 |  |  |
| 14 Group Exercises @ 5 pts each | 70 | A | 630 - 700 |
| Homework Assignments (WebAssign) | 100 | B | 560 - 629 |
| 5 tests and 1 final exam @100 pts each | 500 | C | 490 - 559 |
| (lowest test score will be dropped) |  | D | 420 - 489 |
|  Total | 201 700 | F | 0 - 419 |

Note: Honors students will not earn the 70 points from doing group exercises. Instead, they will do a project (20 pts), a paper (25 pts) and a lecture (25 pts). See the last page of the syllabus for details.

Withdrawal Policy:

If a student is unable to attend the course or must drop the course for any reason, it will be the responsibility of the student to withdraw from the course. The "W" or withdrawal grade will be awarded only to students who officially withdraw from the course by filling out a withdrawal form by Monday, April 24th, 2017.

**Math Solution**:  The math solution is a free drop-in tutoring center.  The Math Solution hours are Monday - Thursday 7:00am to 8:00pm, Friday 7:00am to 4:00pm, and Saturday 9am to 1pm.

**Miscellany:**

* Anything that is said and decided upon in class overrules the syllabus.
* All cell phones, pagers, etc. should be turned off and out of sight during class time.
* Audio taping of lectures will not be permitted.
* If you have a disability that may have some impact on your work in this class and for which you may require accommodations, you need to notify the Disability Services and Resources office.  Their phone number is 623.845.3080.  Also, please let me know so we can plan accommodations.

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|  | **MAT 230 Schedule** |  |
|  | **Spring 2017** |  |
|  |  |  |  |  |  |  |
| *This schedule is tentative and may change to meet the needs of the class and/or instructor.* |
|  | **Monday** | **Tuesday** | **Wednesday** | **Thursday** | **Friday** |  |
|  | Jan 16 | Jan 17 | Jan 18 | Jan 19 | Jan 20 |  |
|  | *MLK Day* | **Syllabus** | **12.1** | **12.2** | **12.3** |  |
|  | Jan 23 | Jan 24 | Jan 25 | Jan 26 | Jan 27 |  |
|  | **12.3** | **12.4** | **12.4** | **6.1** | **6.5** |  |
|  | Jan 30 | Jan 31 | Feb 01 | Feb 02 | Feb 03 |  |
|  | **7.0** | **Review** |  **7.1** | **Test 1** | **7.1** |  |
|  | Feb 06 | Feb 7 | Feb 8 | Feb 9 | Feb 10 |  |
|  | **7.2** | **7.2** | **7.3** | **7.3** | **7.4** |  |
|  | Feb 13 | Feb 14 | Feb 15 | Feb 16 | Feb 17 |  |
|  | **7.4** | **7.5** | **7.6** | **7.7** | **7.8** |  |
|  | Feb 20 | Feb 21 | Feb 22 | Feb 23 | Feb 24 |  |
|  | *President Day* | **7.8** | **Review** | **Test 2** | **6.2** |  |
|  | Feb 27 | Feb 28 | Mar 01 | Mar 02 | Mar 03 |  |
|  | **6.2** | **6.3** | **6.4** | **6.4** | **8.1** |  |
|  | Mar 06 | Mar 07 | Mar 08 | Mar 09 | Mar 10 |  |
|  | **8.2** | **8.3** | **8.3** | **Review** | **Test 3** |  |
|  | Mar 13 | Mar 14 | Mar 15 | Mar 16 | Mar 17 |  |
|  | SPRING BREAK - No Classes all week! |  |
|  |   |   |   |   |   |  |
|  | Mar 20 | Mar 21 | Mar 22 | Mar 23 | Mar 24 |  |
|  | **10.1** | **10.1** | **10.2** | **10.2** | **10.3** |  |
|  | Mar 27 | Mar 28 | Mar 29 | Mar 30 | Mar 31 |  |
|  | **10.3** | **10.4** | **10.4** | **10.5** | **10.5** |  |
|  | Apr 03 | Apr 04 | Apr 05 | Apr 06 | Apr 07 |  |
|  | **10.6** | **11.1** | **Review** | **Test 4** | **11.1** |  |
|  | Apr 10 | Apr 11 | Apr 12 | Apr 13 | Apr 14 |  |
|  | **11.2** | **11.2** | **11.3** | **11.3** | **11.4** |  |
|  | Apr 17 | Apr 18 | Apr 19 | Apr 20 | Apr 21 |  |
|  | **11.5** | **11.6** | **11.6** | **11.7** | **11.8** |  |
|  | Apr 24 | Apr 25 | Apr 26 | Apr 27 | Apr 28 |  |
|  | **11.8** | **11.9** | **11.10** | **11.10** | **Review** |  |
|  | May 01 | May 02 | May 03 | May 04 | May 05 |  |
|  | **11.11** | **Test 5** | **Review** | **for the**  | **FINAL** |  |
|  | May 08 | May 09 | May 10 | May 11 | May 12 |  |
|  |   |   | **Final Exam** |   |   |  |
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MAT230

section12069

 Honors Requirements

Lectures: Each honor student will be asked to give a 20-30 minute lecture covering the topic(s)

(25 pts) listed for one of the days indicated below. Please give me a list of your top three choices by Monday of the second week of class. I will use your preferences to assign lectures to our eight honor students. You could choose the topics other than those listed below if you want.

Once assigned, you should meet with me two weeks prior to your scheduled lecture. You will then write up your lecture and meet with me again one week before your scheduled date. (25 pts.)

|  |  |  |
| --- | --- | --- |
| Week 3 Friday | 7.1 | Integration by Parts |
| Week 4 Tuesday | 7.2 | Trigonometric Integrals |
| Week 5 Friday | 7.8 | Improper Integrals |
| Week 7 Friday  | 8.1 | Arc Length |
| Week 10 Monday | 10.1 | Parametric Equations |
| Week 12 Tuesday | 11.1 | Sequences |
| Week 14 Monday | 11.5 | Alternating Series Test |
| Week 14 Wednesday | 11.6 | Ratio and Root Tests |

Project: There will be a group project that will be assigned to you. This should be a challenging

(20 pts) problem that requires deeper problem-solving and critical thinking skills. Details will be discussed in class.

Essay Paper: Do some research and write a paper (at least two page long) to address the following

(25 pts) question: **Why should anyone have to study mathematics?**

Please give reasoned answers whether it is a “pro” or a “con” argument. You may address some of the following questions raised by most students.

1. When are we gonna use this math in our life? For example, do we ever have to solve rational equations or simplify radical expressions?
2. I am a music major (or art or English major) and I know that I won’t need any math in my life. Why do I have to study algebra?
3. Why do we have to learn/memorize this stuff knowing that we will forget it in the future?
4. I know how to do it on my calculator (or computer), why do I have to do it by hand?