Syllabus –Math 281 – Multivariable Calculus (Calc III)

Cuyamaca College/Math Department Spring 2018

Instructor: Lamia Raffo Email: [lamia.raffo@gcccd.edu](mailto:lamia.raffo@gcccd.edu)

**Section:** 9385/ 4 units

**Room:** H – 114

**Lecture**: MW 10:00 – 11:50 a.m.

**Office Hours:** M - TH 9:15 am – 9:45 am, MW 2:00 – 3:00 & TTH 1:30 pm – 2:00 pm

**Canvas Website**: <https://www.cuyamaca.edu/academics/canvas/default.aspx>

**Office**: H – 117

**Class Key**: **cuyamaca 6925 3802**

**Course Description:**

This course is the third semester course in calculus intended to discuss calculus of functions of several variables, including vector analysis. Also discussed in this course is solid analytic geometry, partial differentiation, multiple integration, Green's Theorem, Stokes' Theorem and Divergence Theorem, and vector-valued functions. I will attempt to bring in a wide range of applications of the calculus taught in this class to the mathematical sciences. By the end of this course, you should be prepared for further study in Mathematics, Engineering, or other science fields. AA/AS GE, CSU, CSU GE, IGETC, UC

**Length of class:** 16 weeks/ 4 hours lecture

**Prerequisites:**

Math 280 or equivalent with a grade of C or better.

**Materials:**

1. Stewart, James; (Multivariable **OR** Early Transcendentals) Calculus, 8 E plus Enhanced WebAssign.

Students who purchase the textbook in the bookstore will have the WebAssign access **included**, if the students purchase WebAssign online their cost is less depending on how they purchase access. Even if they want a hardcopy of the textbook, there are other options online that are a lot cheaper than our bookstore. **Note**: when setting up your WebAssign account, you'll have the option to purchase a WebAssign account for this class with or without the eBook. If you purchase the account with the eBook, you are not required to purchase the print textbook listed above.

1. A **scientific calculator** and/or **Graphing Calculator** are required. The Mathematics Department of Cuyamaca College highly recommends and supports the use of Texas Instruments Graphing Calculators. For this course in particular, I would recommend the use of a TI-83, TI-84 plus.

\*\*\* We have a Calculator Loan Program run through the library in which students can check out a calculator for the entire semester…

1. Students MUST be enrolled in a Math course at Cuyamaca AND be on the Financial Aid list.
2. Students have until Wednesday, January 31 at closing time for the library (8:00 pm) to put their name on a list at the Circulation Desk. Financial Aid will send the library a list of people who have met the criteria. The library staff will compare those students who signed up to receive a calculator with the Financial Aid list. The calculators are ready to be picked up on Monday, February 5 (maybe earlier so students can check starting Thursday, February 1).
3. After two weeks, if there are still calculators left, the library will open it up to any student enrolled in a Math course at Cuyamaca College (no financial aid restrictions).

**IMPORTANT DATES:**

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| **January 29 - February 9** | [Program Adjustment](http://www.cuyamaca.edu/cc/program-adjustment.asp) (Last day to add classes/Last day to drop and qualify for a refund and to drop without receiving a “W”). |
| **February 12** | Census Day (Semester length Classes) |
| **February 19** | **Holiday (Washington's Birthday)** |
| **March 2** | Last Day to [Apply for P/NP](https://www.cuyamaca.edu/services/admissions/forms.aspx#pnp) (semester length classes) |
| **March 24** | End of First 8-weeks Session |
| **March 26  - March 31** | **Spring Recess** |
| **April 27** | Last day to drop with a “W‟. (It is the student’s responsibility to take care of any administrative procedures involved in dropping should he/she stop attending class.) |
| **May 28** | **Holiday (Memorial Day)** |
| **May 29 - June 4** | **Final Examinations** |
| **Monday, June 4th** | **Final Exam day, from 9:30 am – 11:30 am** |

You can see the Spring 2018 academic calendar in its entirety at <http://www.cuyamaca.edu/current-students/academic-calendars/default.aspx>

**Tutoring:**

If you feel you need more help than I or other classmates can offer, then it is highly recommended that you utilize the free math tutoring services available in the STEM Achievement Center (Tutoring Center) or Academic Resource Center (ARC). You can register for “IS 198” (free registration; you don’t have to pay for it) which allows you to log in to the system after 24 hours of registration. You must log in and out each time you use the STEM Center regardless of the hours you have accumulated (this is for state reporting). The hours for both centers are 9:00 am – 6:00 pm MTWTh, and Friday 9:00 am – 2:00 pm. *Please understand these hours are subject to budget restrictions and may change.*

**Additional Support:**

**Canvas Website**: <https://www.cuyamaca.edu/academics/canvas/default.aspx>

you have a Canvas account for Math 281 with links to the syllabus, all handouts, notes, group work sheets, Exams study guide, important announcements, checking grades, etc…

Use the gray menu panel to the left to check your browser’s compatibility and check that the necessary plug-ins are installed use this link <http://www.cuyamaca.edu/helpdesk/>

**Homework:**

It is imperative that you read the material in your textbook before it is covered in class and complete the homework assignments in a timely and responsible manner. You can request no more than two homework extensions for the semester (none after the Exam which covers the material); However, I will drop your two lowest scores (the last two homework assignments **cannot be dropped**) (The two dropped scores are there for emergency situations). Homework assignments will be done via Webassign; and they are graded automatically.

**Quizzes**

Each week you may have a short homework quiz on webassign; each will open after class and is due by 11:59 pm on Sunday. The quizzes will be open-book, open-notes. The problems will be lifted DIRECTLY from the previous week’s assigned homework or similar. In addition, you may have an in-class quiz which is a closed-book, closed-notes quiz. There are **NO extension** requests for quizzes but I will drop one of your lowest HW Quizzes scores. Each quiz is worth 10 points.

**Group Work/Projects** –Students are expected to solve problems and work together with other students in groups on some special assignments, class work, and projects. Each group work is worth 10 points.

**Exams:** Expect four exams. **No makeups**. You will be allowed to use a graphing calculator on some of the exams and the final. The exams will consist of problems that look similar to the chapter’s homework assignments as well as “concept” problems that require you to “synthesize” the material learned and relate it to other topics covered.

**Final Exam:**

The **comprehensive** final exam is scheduled for **Monday, June 4th, 2018** from 9:30 to 11:30 am.

**Evaluation:**

Exams 40%

Quizzes 15%

Homework 15%

Group Work/projects and class activities 10%

Final examination 20%

A grading system will be used for final grades.

90% to 100% = A ;

80% to 89.9% = B ;

70% to 79.9% = C;

60% to 69.9% = D;

below 60% = F

Any students seeking an "I" (incomplete) for a grade must file a petition with me citing "unforeseeable, emergency, and justifiable" reasons for this grade.

**Student Learning Outcomes:**

Upon successful completion of this course, students will be able to:

1. Perform vector operations.
2. Determine equations of lines and planes.
3. Evaluate partial derivatives.
4. Find local extrema and test for saddle points.
5. Solve constraint problems using Lagrange multipliers.
6. Compute arc length.
7. Evaluate two and three dimensional integrals involving rectangular, polar, cylindrical and spherical coordinates.
8. Analyze multivariable functions, equations, graphs, contour maps, vector fields, or tables of data.

**Class Policies:**

* All cell phones must either be **turned off or completely silent** (vibrate mode is not silent) during class time. They are not allowed on desks during lecture and exams at all.
* Math is not a spectator’s sport. A student *may* be dropped for four or more absences but the **student is** **ultimately responsible** for **officially withdrawing** from the course. If absences become a problem, please come and speak with me.
* If you are caught cheating or plagiarizing or using a cellphone during an exam, you will earn a ‘0’ on that assignment. If it happens a second time, you will earn a ‘0’ on that assignment and I will report it.
* You are responsible for getting class notes and any schedule changes or other announcements on days missed from the class. Any changes and announcements will be posted on **Canvas** web site.
* You are expected to be courteous to each other and to the instructor. You will be asked to leave the class for display of behavior the instructor deems as disruptive to the learning environment. You are encouraged to establish study partners with whom you may study and prepare for exams.
* You are responsible for your own learning. You should strive to make sense of mathematics. Do not settle for rules and formulas unless those rules and formulas are constructed while trying to make sense of mathematics, or, if from other sources, are fully understood. You should expect me to provide the learning environment and the opportunities you need in order to learn in this manner.
* You are expected to work actively with your peers, sharing, taking and giving, listening and explaining, questioning and answering. You are responsible for being prepared for participation in class discussions and in group work, and for assisting your peers to come to an understanding of mathematics.

**ACCOMIDATIONS FOR STUDENTS WITH DISABILITIES**

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**Academic accommodations** are available for students with disabilities.

Please identify yourself to me (after class) and/or to **Disabled Students Programs & Services** staff so that the appropriate accommodations can be ensured. If you suspect you have a learning disability or need services for any other type of disability, contact the **Disabled Students Programs & Services** **(DSP&S)** Office, **A-113**, at the **Student Services One-Stop Center** or call (**619) 660-4239.**

**Note**: You must earn a minimum of 70% in your overall grade in this class, and you must earn at least a “D” on your final exam in order to receive a Passing Grade.

**Math 281; Class Schedule (Tentative)**

**Spring 2018**

**Week 1 1/29 — Introduction; Section 12.1 1/31 – Sections 12.1, 12.2**

**Week 2 2/5 — Sections 12.2, 12.3 2/7 – Section 12.3**

**Week 3 2/12** **— Section 12.4 2/14 — Sections 12.4, 12.5**

**Week 4 2/19 — Holiday 2/21 – Section 12.5 / group activity**

**Week 5 2/26 — Sections 12.6 2/28 – Sections 12.6, 13.1**

**Week 6 3/05 — Section 13.1, 13.2 3/07 –** **Exam 1**

**Week 7 3/12 — Section 13.3 3/14 – Sections 13.3 / group activity**

**Week 8 3/19 — Sections 13.4, 14.1 3/21 – Section 14.1, 14.2**

**Week 9 SPRING BREAK March 26 – 31**

**Week 10 4/02 — Section 14.2 4/04 – Section 14.3 / group activity**

**Week 11 4/09 – Sections 14.4, 14.5 4/11 — Exam 2**

**Week 12 4/16 — Section 14.5 / group activity 4/18 – Section**  **14.6**

**Week 13 4/23 — Section 14.7, 14.8 4/25 – Section 14.8**

**Week 14 4/30 — Sections 15.1, 15.2 5/02 —** **Exam 3**

**Week 15 5/07 — Sections 15.2, 15.3 5/09 – Section 15.4 & 15.7**

**Week 16 5/14 — Section 15.7 5/16 – Sections 15.7, 15.8**

**Week 17 5/21 — ­­ Section 15.8/ group activity 5/23 – Section 15.9, Exam 4**

**May 28th HOLIDAY (No School)**

**Final Examinations, No regular class meetings May** **29 – June 4**

**Final Exam Monday, June 4th 9:30 am – 11:30 am**