

**MATH 231 CRN 61283 – CALCULUS III - 3 credits**  
**TR 8:30 – 9:45 a.m.**

**INSTRUCTOR:** Weiling Landers  
**OFFICE:** Mana’opono 105A  
**OFFICE HOURS:** MWF 11:30 – 12:30 p.m.  
TR 10:00 a.m. – 11:00 a.m.  
Other Hours by Appointment  
**TELEPHONE:** 236-9283  
**FAX NUMBER:** 247-5362 Attention: Weiling Landers  
**EMAIL ADDRESS:** [weiling@hawaii.edu](mailto:weiling@hawaii.edu)  
**EFFECTIVE DATE:** Fall 2012

**Windward Community College Mission Statement**

*Windward Community College offers innovative programs in the arts and sciences and opportunities to gain knowledge and understanding of Hawai‘i and its unique heritage. With a special commitment to support the access and educational needs of Native Hawaiians, we provide O‘ahu’s Ko‘olau region and beyond with liberal arts, career and lifelong learning in a supportive and challenging environment — inspiring students to excellence.*

**Catalog Description**

Vector-oriented study of functions of several variables; partial differentiation and *line integrals*; *multiple integrals*. (3 hrs lecture)

Note: Italicized topics are optional and generally covered in Math 232. Other topics covered in Math 231 include parametric curves, polar curves, vector algebra, and vector calculus.

PREREQUISITES: Grade of "C" or better in Math 206 or equivalent, satisfactory placement test score, or consent of instructor.

**Suggested Basic Skills**

Good study skills and habits; Competency with Calculus I & II.

**DISABILITIES ACCOMMODATION STATEMENT**

*If you have a physical, sensory, health, cognitive, or mental health disability that could limit your ability to fully participate in this class, you are encouraged to contact the Disability Specialist Counselor to discuss reasonable accommodations that will help you succeed in this class. Ann Lemke can be reached at 235-7448, [lemke@hawaii.edu](mailto:lemke@hawaii.edu), or you may stop by Hale ‘Akoakoa 213 for more information.*

**Learning Resources and Materials**

Required Texts: Multivariable Calculus by Briggs & Cochran

Note: The full textbook Calculus by Briggs & Cochran may be used instead of the required text. The required text is a subset of the full textbook.

Required Material: MyMathLab (MML) access code

Required Technology Tool: TI-83, TI-83+, TI-84, or TI-84+ calculator.

MATH LAB: TBA – free drop-in tutoring

THE LEARNING CENTER (TLC): TBA – phone number 235-7498

**STUDENT LEARNING OUTCOMES**

These student learning outcomes will be assessed via course activities (homework, in-class work, and/or additional assignments) and via tests or quizzes.

1. Analyze and apply principles, concepts, and properties from algebra, geometry, trigonometry, and calculus to solve problems.
2. Apply concepts and calculus properties of Cartesian space coordinates and vectors.
3. Apply principles and concepts from calculus to multivariable functions.
4. Use various strategies from this course to solve problems.
5. Utilize precise mathematical language and symbols and effectively communicate in written and/or oral form.

**Course Goals**

1. To acquire skills with various analytical problem-solving strategies.
2. To gain competency with the theoretical and practical foundations of differential and integral calculus.
3. To learn about Cartesian space coordinates, vectors and vector applications, functions of multiple variables, and partial differentiation.
4. To inculcate the relevance of calculus through applications.
5. To prepare the student for endeavors which have Calculus III as a prerequisite.

**Activities Required at Scheduled Times Other Than Class Times**

Homework; possibly quizzes or exams; consultation with instructor.

It is expected that students spend, at the minimum, 9 hours per week outside of class time studying and doing homework and readings for this class.

**Responsibilities of Students**

Success in this course will be enhanced by:

1. A positive, inquiring attitude toward mathematics;
2. Setting aside adequate time for studying, working on problems, and careful cogitation of the material;
3. Reading the text carefully and making use of other learning materials whenever necessary;
4. Seeking assistance from the instructor and the Math Lab whenever necessary;
5. Regularly attending class and, notifying the instructor of an absence and responsibly obtaining and completing assignments by the designated date.

**Email and Laulima Website**

You are responsible for checking your UH email regularly for important announcements. You are also expected to check the Math 231 course homepage at the Laulima website for important resources for the course.

## Academic Honesty

All quizzes and exams are **closed books and notes and must be done by your individual effort**. You may not consult with any classmates while taking quizzes or exams. You are not allowed to tell a friend the type of questions on the quiz or exam, the answers, or help a classmate in any way (e.g. by explaining how to solve the problem). This would fall under the guidelines of academic integrity and any evidence of cheating will result in a score of 0 for all parties involved. Also keep in mind that we are assessing your knowledge and understanding of the concepts and strategies – attempting to find the answers online or through other sources is not in the spirit of academic honesty. An “F” will be assigned to students involved in **cheating** and will be reported to the Dean.

Graded assignments that apply to the course activities portion of your grade may be discussed with your classmates and you may seek guidance from the instructor, the Math Lab tutors, or the Trio tutors (if you are a Trio client), however, the write up of the solution for each problem must be done on **your individual effort** unless otherwise specified by the instructor. Graded assignments are **not group assignments** where all members of the group write the same responses for each problem. Any evidence of plagiarism will result in a score of 0 for all parties involved. If plagiarism persists, then an “F” will be assigned to the students involved in **plagiarism** and will be reported to the Dean.

## Disruptive Behavior

**Disruptive Behavior** leads to a loss of learning time. Examples are activated beepers and cell phones, texting messages, making offensive remarks, packing books before class is over, making noise, leaving class early, coming to class late, sleeping in class, prolonged chattering, reading other materials not relevant to this class, etc. If a student takes part in disruptive behavior, the instructor reserves the right to exclude the student immediately from the class meeting, and will be marked absent.

## MyMathLab (MML)

This course will utilize MML for some assignments. The textbook purchased from the WCC bookstore is packaged with MML. If you purchase the textbook from elsewhere, be sure that it comes with the MML access code.

The MML access code also provides an e-book so if you prefer, you may purchase just the MML access code online for about \$80.

## Course Tasks and Grading Information

Grades for this course are based on the following course tasks:

3 exams @100 pts	50% of possible points
Course Activities	30% of possible points
Final Exam	20% of possible points

Course activities may include but are not limited to:

Homework Problems	In-Class or Other Problems
Journal entries (writing assignments)	MML Problems
Reports or Presentations	Guided Projects

**There are no make-up opportunities for missed or late assignments, in-class activities, or other activities that are graded for the course activities portion of your grade.**

Each letter grade for the course will be assigned according to the level of achievement as provided in the table below:

<u>Letter Grade</u>	<u>Definition</u>
A	90% - 100% of the cumulative points possible
B	80% - 89% of the cumulative points possible
C	70% - 79% of the cumulative points possible
D	60% - 69% of the cumulative points possible
F	Less than 60% of the cumulative points possible
Cr	70% - 100% of the cumulative points possible
NC	Less than 70% of the cumulative points possible
W	Official Withdrawal
I	Incomplete - given when a student has failed to complete a SMALL part of the course due to circumstances beyond his/her control.

Note: Cr/NC grades require written instructor consent. Students must apply for Cr/NC grading option at the Admissions Office by the posted deadline. If a student does not apply for Cr/NC grading option at the Admissions Office by the required deadline Oct. 29, 2012 and if s/he does not withdraw, a letter grade (A, B, C, D, F) will be assigned for the course.

Note: W grade is given only when the student officially withdraws from the course at the Admissions Office by the posted deadline.

**Additional Information**

## 1. ABSENCES:

It is your responsibility to attend class. If you are absent, borrow a classmate's notes and copy them for the day you were absent. You are responsible for those topics and examples discussed on the day of your absence. Furthermore, you are responsible for any important announcements or homework assignments given during the class you missed. Frequent absences can negatively affect your grade.

## 2. MAKE-UP POLICY:

There are no make-up opportunities for any quizzes, graded assignments, or graded in-class activities that you miss due to absences or tardiness. Some extra credit opportunities are available for the course activities portion of your grade.

If you are unable to attend class on an exam day, discuss your situation with the instructor as soon as possible before the exam day. It may be possible for you to take the exam earlier than the specified day/time. IF YOU UNEXPECTEDLY MUST BE ABSENT ON AN EXAM DAY, NOTIFY THE INSTRUCTOR AT LEAST ONE HOUR PRIOR TO THAT EXAM TIME. YOU CAN LEAVE A VOICE MAIL MESSAGE FOR THE INSTRUCTOR (236-9283). BE SURE TO STATE THE REASON FOR THE ABSENCE. If no notification is received by the day of the exam or if the reason is not justified, then you will receive a 0 for that exam and no make-up will be allowed. If notification is received and the reason is justified then a make-up exam will be scheduled. You must take the make-up exam as soon as possible after you return to school. The instructor has the right to request documentation of the student's absence and determine if the reason for the absence is justified. FOR EACH STUDENT, NOT MORE THAN ONE MAKE-UP EXAM MAY BE TAKEN.

## 3. There are NO RETESTS for this course.

## 4. FINAL EXAM: The final exam is cumulative.

## 5. CALCULATOR:

A TI-83, TI-83+, or TI-84+ calculator is required for this class. The calculator is required for some parts of the exams and assignments and not allowed for other parts. The TI-89 and TI-NSPIRE calculators are not allowed for exams.

## 6. CELL PHONES:

Please put your cell phone on silent mode or turn it off prior to the start of the class so that it does not disturb the class session.

**Additional Information (continued)**

## 7. HOMEWORK:

Read the sections to be covered in a class session prior to that class session. As you read each section, write down terminology or symbols and its definition and properties/rules that are important and that are not already listed in the in-class notes. This will become helpful additional notes. Try to do as much of the recommended problems as possible. Also look at the in-class examples and try to do as much of those problems as possible.

After the class lecture/discussion on a section, you should complete the recommended problems from those sections. Those problems and concepts that you still do not understand or that you need further clarification on should be asked about in the class meeting after the section is discussed in class. Because there is very little class time, you will probably need to seek assistance from the instructor or from the Math Lab if not all your questions on problems are handled during class time or if you are still having difficulties. Complete, review, and analyze all of the recommended problems to help you learn and get a better understanding of the material. You may need to do more than the recommended problems to become comfortable with the concepts and skills.

After the section(s) are covered in class, graded work that count towards the course activities (CA) portion of your grade will be given with a due date. Some homework will be given in MML. Course activities may also include other activities such as journals (writing assignments), oral presentations, etc.

Any item collected for grading purposes for the course activities portion of your grade are due at the BEGINNING OF CLASS unless otherwise specified by the instructor and WILL NOT RECEIVE ANY POINTS IF TURNED IN LATE. You may turn in your graded work before the due date and/or time without losing points. There will be opportunities to earn some extra credit points towards your course activities portion of your grade.

Although there are usually no points associated with recommended problems that are problems from the text or on handouts that have answers provided as a way to practice the strategies learned, it is expected that students do recommended problems to assist them in their learning. Not doing recommended problems and/or waiting to work on recommended problems until right before an exam generally results in poor exam results and a lack of success in this course.

Be sure to review and analyze your graded homework and other course activities after it is returned to you. This will help you to get a better understanding of the material and concepts.

**Additional Information (continued)**

## 8. HELP:

Your instructor is your primary human resource for help when you are lost or having trouble. Seek help immediately if you are encountering problems even after reading and re-reading the text section(s) and listening to/thinking about the discussion in class on that section(s). See the instructor during office hours, make an appointment, email or call. Don't wait too long to get help!!

If a crisis comes up that interferes with the class, communicate with your instructor in a timely manner. Too many students wait until it is too late to inform their instructor about their crisis and that reduces the options that students may have to complete the course with a grade of C or better.

## 9. GRADING ON HOMEWORK, QUIZZES, OR EXAMS:

To receive full credit for problems done on exams, on quizzes, or for graded homework, you must show sufficient work in a clear, logical, mathematically precise and organized manner. This is to assess student learning outcome #6 and Foundations Hallmark #4. It also helps me determine where your error is (hence, you might be able to obtain partial credit) and if you are logically applying the mathematical tools learned to solve the given problem. Your work must be neat and organized. "Messy" and/or disorganized work will not be accepted.

## 10. DON'T PROCRASTINATE

Mathematics is not a subject that you can consistently be successful in by "cramming" a day or two before the test. By "cramming" you don't develop proficiency in doing the problems, knowledge of what to do on a particular problem and long-term understanding of the process. Also, if you procrastinate, you may fall so hopelessly behind that it becomes impossible to catch up. It requires constant work to keep on top of the material.