

MATH 232 – CALCULUS IV (3 Credits)

INSTRUCTOR: Jody-Lynn Storm
OFFICE: Mana'opono 105
OFFICE HOURS: MW 10:00 am – 11:00 am
TR 9:00 am – 10:00 am
And by appointment
TELEPHONE: (808) 236 – 9277
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WEBSITE: <http://www.jodystorm.com>
EFFECTIVE DATE: Spring 2015

| CRN | Days | Time | Classroom |
|-------|------|-------------------|----------------|
| 63149 | MW | 1:00 pm – 2:15 pm | Mana'opono 115 |

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.

COURSE DESCRIPTION

Math 232 is the fourth course in the calculus sequence. Topics include multiple integrals, line integrals, Green's Theorem, surface integrals, Stokes' Theorem, Gauss' Theorem and differential equations. (3 hours lecture)

Pre-Requisite(s): "C" or better in Math 231 or equivalent or consent of instructor.

STUDENT LEARNING OUTCOMES

Upon completion of the course, the student will be able to:

1. Compute multiple integrals in various coordinate systems.
2. Use multiple integrals or vector calculus techniques to solve application and/or theoretical problems.
3. Solve basic differential equations and applications.
4. Utilize precise mathematical language and symbols and effectively communicate in written and/or oral form.

Note: All SLO assessments are embedded in class activities, homework, quizzes, or Exams.

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, or you may stop by Hale 'Akoakoa 213 for more information, or visit <http://windward.hawaii.edu/Disabilities/>

LEARNING RESOURCES & MATERIALS

REQUIRED MATERIALS:

- Textbook: Multivariable Variable Calculus for Scientists and Engineers, by Briggs & Cochran, bundled with MyMathLab
 - If preferred you may just use the ebook on MyMathLab
- MyMathLab (MML) Access Code with ebook
 - Register online at <http://pearsonmylabandmastering.com/>
 - Use Course ID: **storm37929**
- Calculator: TI-83, TI-83+, TI-84, or TI-84+

LEARNING RESOURCES:

- Supplemental Instruction Leader (SIL): Jacob Hillegass
Email: jacobrh@hawaii.edu
- Math Lab: La'akea (Library Learning Commons) Room 220
http://windward.hawaii.edu/About_WCC/Math_Lab/index.php
- The Testing Center (TTC): La'akea (Library Learning Commons) Room 228
Phone: (808) 235-7498
http://windward.hawaii.edu/Testing_Center/index.php
- Brainfuse Online Tutors: <http://windward.hawaii.edu/brainfuse/>
- OLA (UH online tutoring program): <http://manoa.hawaii.edu/ola/>
- Kahn Academy Videos: <http://www.khanacademy.org>

COURSE TASKS & GRADING

Grades are posted on the Lualima gradebook. Grades for this course are based on the following course tasks:

| | | |
|---------------------------|---------------|---------------------|
| 3 unit exams @ 100 pts ea | 300 pts | 54% of possible pts |
| Final Exam | 120 pts | 22% of possible pts |
| Course Activity: | | |
| Graded Problems | 102 pts | 18% of possible pts |
| MyMathLab | <u>33 pts</u> | 6% of possible pts |
| Total | 555 pts | |

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 |
| N | See below |
| CR | 70% or above of the cumulative points possible |

| | |
|----|---|
| NC | Less than 70% of the cumulative points possible |
| W | Official Withdrawal |
| I | See below |

Note: The N grade indicates that the student has worked conscientiously, attended class regularly, finished all work, fulfilled course responsibilities, and has made measurable progress. However, either the student has not achieved the minimal student learning objectives and is not yet prepared to succeed at the next level, or the student has made consistent progress in the class but is unable to complete the class due to extenuating circumstances, such as major health, personal, or family emergencies.

The N grade is an optional grade that instructors do not have to give. All requests for the N grade must be submitted by the student in writing and is contingent upon the instructor's approval.

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 and if s/he does not withdraw, a letter grade (A, B, C, D, F, N) will be assigned for the course.

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

Note: The I grade is a temporary grade given at the instructor's option when a student has failed to complete a small part of a course because of circumstances beyond his or her control.

The I grade is given by student request and must be approved by the instructor. A student may qualify for the I grade if

- (a) they are unable to take the final exam and
- (b) taking the final exam could possibly raise their course grade.

ADDITIONAL INFORMATION

ABSENCES

It is your responsibility to attend class. If you are absent, you are responsible for any important announcements or assignments given during the class you missed. It is your responsibility to meet with your instructor to review any missed lecture material. You may drop in during posted office hours or make an appointment to meet one-on-one. Please do not send email requests for missed lecture material. If you are absent frequently or for an extended period of time, contact the instructor as soon as you can to discuss your situation. Frequent absences could negatively impact your grade.

MAKE-UP POLICY

Exams will be available for 2-3 days in the Testing Center. If you know in advance that you will be unable to take an exam during the assigned period, discuss your situation with the instructor. It may be possible for you to take the exam earlier than the specified dates. If there is a documented emergency preventing you

from taking an exam during the assigned period, a make-up exam will be scheduled. For each student, ONLY ONE make-up exam may be taken. There are no make-up opportunities for assigned graded problems.

CALCULATORS

Some problems require the use of a graphing calculator. You are free to use any type of graphing device for homework problems, but may only use a TI-84+ or lower model graphing calculator on exams. You may not use higher models, such as the TI-89 or the TI-Nspire on exams as these come equipped with CAS.

EXAMS

There are no retests for exams. The final exam is cumulative.

SUPPLEMENTAL INSTRUCTION (SI)

For each hour of SI one point will be added to the Course Activity portion of your grade. Points cannot exceed the maximum Course Activity allotment of 150 points.

This class is supported by the Supplemental Instruction (SI) program. SI is a FREE, collaborative, peer-study program that helps students succeed in difficult classes. Your SI Leader is a peer who has taken this class (or a higher level class) previously and has an understanding of the course material. In SI sessions, students will work together with the SI Leader name to explore important concepts, review class notes, discuss test taking strategies, and review for tests. All students in this class are encouraged to attend!

Note: At WCC, students who attend SI sessions earn A, B, and C grades at nearly a 20% higher rate than non-attendees and are less likely to withdraw from their courses. WCC data has also shown that the more sessions students attend, the more likely they are to pass.

HOMEWORK

There is one homework assignment per textbook section. Most of the assignments will be given in two parts:

- 1) MyMathLab Assigned problems
 - a) Submitted online
 - b) Due on the last day of each exam period
 - c) 20% point deduction for late submissions
- 2) Assigned graded problems (mostly from the textbook) to turn in.
 - a) 6 pts each
 - b) Must be turned in at the start of class
 - c) No late submissions

Assignments and due dates are posted on the instructor's webpage. You may need to do more than the assigned homework problems to become comfortable with the concepts and skills.

Note: Chapters 14 and 15 in the multivariable textbook (paperback) correspond to chapters 15 and 16 respectively in the eBook.

GRADING

To receive full credit for problems done on exams or graded homework, you must show sufficient work in a clear and organized manner. Your work must be neat and organized. "Messy" and/or disorganized work will not receive full credit.

CELL PHONES & OTHER ELECTRONIC DEVICES

Cell phones and other electronic devices should be silenced and put away prior to the start of class.

DISRUPTIVE BEHAVIOR

Please respect your fellow students and act accordingly. If a student takes part in disruptive behavior, the instructor reserves the right to exclude the student immediately from the class meeting. Examples are activated cell phones, texting, making offensive remarks, prolonged chattering, smokeless cigarettes, etc.

ACADEMIC HONESTY

All exams must be done by your own individual effort. You may not consult with any classmates while taking exams. 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. An "F" will be assigned to students involved in cheating and will be reported to the Dean. See <http://windward.hawaii.edu/Policies/> for more information on the UH system-wide student conduct code.

Graded homework assignments may be discussed with your classmates and you may seek guidance from the instructor, the Math Lab tutors, the Trio tutors (if you are a Trio client), or the SIL (if assigned to your course). However, the write up of the solution for each problem must be done on your individual effort.

MATH 232 – TENTATIVE SCHEDULE
 MW 1:00 PM – 2:15 PM
 STORM – SPRING 2015

| Important Dates | |
|-----------------|--|
| JAN 16 | Last day to register/add/drop and to receive 100% refund of tuition |
| FEB 2 | Last day for 50% refund of tuition and to withdraw without a "W" grade. |
| MAR 31 | Last day to withdraw with a "W" or choose CR/NC grade option. Last day to make up "I" grade from previous semester |

| | Monday | | Wednesday |
|--------|--|--------|--|
| JAN 12 | Orientation | JAN 14 | 14.1 |
| JAN 19 | No Class Dr. Martin Luther King Jr. Day | JAN 21 | 14.2 |
| JAN 26 | 14.2, 14.3 | JAN 28 | 14.3 |
| FEB 2 | 14.4 | FEB 4 | 14.5 |
| FEB 9 | 14.5, 14.6 | FEB 11 | Exam Review EXAM 1 (14.1-14.5) |
| FEB 16 | No Class President's Day | FEB 18 | 14.6, 14.7 |
| FEB 23 | 14.7, 15.1 | FEB 25 | 15.1 |
| MAR 2 | 15.2 | MAR 4 | 15.2 |
| MAR 9 | 15.3 | MAR 11 | 15.3 |
| MAR 16 | 15.4, 15.5 | MAR 18 | Exam Review EXAM 2 (14.6, 14.7, 15.1-15.3) |
| MAR 23 | No Class Spring Recess | MAR 25 | No Class Spring Recess |
| MAR 30 | 15.5 | APR 1 | 15.6 |
| APR 6 | 15.6 | APR 8 | 15.7 |
| APR 13 | 15.8 | APR 15 | DE 1st order |
| APR 20 | DE 1st order | APR 22 | Exam Review EXAM 3 (15.4-15.8, DE 1st order) |
| APR 27 | DE 2nd order | APR 29 | DE 2nd order |
| MAY 4 | Final Exam Review | MAY 6 | Final Exam Review |
| MAY 11 | FINAL EXAM In Testing Center 5/11 - 5/14 | MAY 13 | |