

## **Math 253A, Course Information - Fall 2022**

**INSTRUCTOR:** Professor Karl Heinz Dovermann

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**Homepage:** <http://www.math.hawaii.edu/~heiner/>

**OFFICE HOURS:** MWF 10:30–11:20, TR 11:00–12:00 Other hours are available by appointment.

**Course Description:** Vector calculus; maxima and minima in several variables; multiple integrals; line integrals, surface integrals and their applications. Details are included in the department syllabus for this course: <http://math.hawaii.edu/home/syllabi/syllabus-253A.pdf>

**TEXT & MATERIAL:** *Calculus* by James Stewart, Cengage.

**COURSE OBJECTIVES:** This is an honors course. A successful Math 253A student will have an in-depth, computational as well as conceptual, understanding of the topics listed above, be able to solve routine and challenging problems, and be able to apply the ideas creatively.

**PROGRAM OBJECTIVES:** This is the third and final course of the honors calculus sequence for STEM (Science, Technology, Engineering, Mathematics) majors. As this is an honors course, the approach is not just computational, but there is also an emphasis on theory and proofs. Mathematics is the basic language for STEM fields. Understanding the language, the basic ideas and results, and the computational techniques of calculus is prerequisite to advanced learning in any STEM field.

**EXAMS:** There will be two midterms (the dates will be announced in class) and a final exam (see the university calendar for the date and time). Make-up exams will be given only under excruciating circumstances such as serious illness or family emergencies. Proof may be required. If you are a student athlete, or you need to travel for academic reason, then you must make arrangements in advance to take tests at an alternate time, possibly early.

**HOMEWORK:** I will assign homework every lecture. It is due during the next lecture. If you have to miss class, then you may hand in homework early. No late homework will be accepted. Some problems will be graded. Homework should be cleanly written, and you may have to revise it before

it is in an acceptable form. Your solutions should show the steps of your solution in a logical order and end with a proper formulation of the final answer.

**GRADING:** Your grade will be determined by the scores on the midterms (100 points each), homework (150 points throughout the semester), and the final exam (150 points). There may be a few opportunities to earn extra credit.

**ABSENSES:** It is expected that you attend every lecture and recitation session. If you are absent, then you are responsible for the material covered. Arrange to copy another student's notes and be informed of any announcements.

**ACADEMIC EXPECTATIONS:** Please read the statement about the academic expectations on the Mathematics Department webpage. Go to <http://www.math.hawaii.edu>, pick 'Undergraduate' and click on Academic Expectations.

**CALCULATORS:** Use of calculators will not be permitted on exams.

**ACADEMIC HONESTY:** No student shall claim or submit the work of another as one's own. No dishonesty will be tolerated.

**IMPORANT DATES:** It is your responsibility to know about the important dates, such as deadlines to drop or withdraw from a course, holidays, final exam, etc.