

Calculus III (MAC 2313)

CRN 10495 - Spring 2015 (4 credits)

Instructor: Dr. Daniel Kern, Department of Mathematics, FGCU

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Office Hours: TR 2:15-3:15 and W 10:00-12:00, or by appointment; open door policy

Text: *Calculus: Early Transcendentals*, James Stewart, 7th edition (Brooks/Cole/Cengage).

Class Location: Library 136

Meeting Times: TR 10:00am - 11:45pm

Class Webpages: See class pages on WebAssign and Canvas

Prerequisite: C or better in Calculus II (MAC 2312 or equivalent).

Course Description: Continuation of MAC 2312. Topics include vectors in the plane and 3-space, topics from plane and solid analytic geometry, curves in space, tangential and normal acceleration, directional derivatives and the gradient, tangent and normal to surfaces, extrema of multivariable functions, Lagrange multipliers, double and triple integrals, integration in cylindrical and spherical coordinates.

Topics: Course will include, but not necessarily be limited to, material related to the following sections from the textbook: 12.1-12.6, 13.1-13.4, 14.1-14.8, 15.1-15.5, and 15.7-15.10. Material from sections 16.1-16.3 will be included as time allows.

Learning Outcomes: The primary goal is to introduce the fundamental principles and techniques of calculus of vector-valued functions and multivariate functions. Upon successful completion of the course, the student will be able to:

- Identify basic quadric surfaces from equations and identify their graphs;
- Compute dot and cross products, and manipulate vectors in 2-d and 3-d;
- Find equations of lines and planes that satisfy given conditions in 3-d;
- Perform basic calculus of vector-valued functions and their curves;
- Compute partial derivatives;
- Solve optimization problems for functions of several variables;
- Compute double integrals and triple integrals (in various coordinates);
- Solve basic physical problems involving the above.

Grading:

Homework/Problem Sets	90 points	15%
Quizzes	60 points	10%
Tests (3 total)	300 points	50%
Final Exam	150 points	25%

Any curve for letter grades will be based on the total points earned during the semester. If there is no curve, letter grades will be assigned based on percentage: A(92-100%), A-(90-91), B+(88-89), B(82-87), B-(80-81), C+(78-79), C(70-77), D+(68-69), D(60-67), and F(0-59).

Quizzes: There will be six quizzes given during the semester. They will be based predominantly on homework exercises, along with concepts covered in class. Make-ups quizzes will not be granted, but the lowest quiz score will be dropped.

Online Homework: Online homework assignments will be available on WebAssign.net. You will need both your own personal access code (packaged with your textbook, or available separately online), plus the course code for this particular section: **fgcu 9827 2332**. You are encouraged to discuss problems with your classmates, but it is important that you attempt the problems by yourself first. The effort you spend on homework will help to improve your understanding, which will make you better prepared for the exams. The lowest three homework scores will be dropped.

Problem Sets: Problem sets will be assigned either as in-class assignments to be done in groups or to do at home. The assignments may be collected, and/or individuals may be asked to present answers at the board. In either case, you do not need to type your answers but you should write legibly, and write your solutions in a connected, step-by-step manner, with explanatory sentences if necessary. In most circumstances, writing down only the final answer is not good practice and therefore not acceptable.

Tests: There will be three midterm tests during the semester, *tentatively* set for February 10, March 19 and April 16. Test dates are subject to change. Make-up exams are rarely granted; see General Policies.

Final Exam: The final exam is comprehensive, and will be given on Thursday, April 30 at 7:30am-10:15am.

General Policies: Email communication will be sent to your official FGCU issued email account (e.g., name1234@eagle.fgcu.edu). It is your responsibility to check your accounts often. Cell phones and similar devices must be turned off during class. Texting, phone calls, e-cigarettes, etc. are not permitted during class. Note-taking on tablets or laptops is fine if cleared with me first. Unauthorized use of electronic devices may result in the student being asked to leave for the day.

Attendance is expected. If you miss a class, you are responsible to obtain the missed information (such as lecture notes and handouts) from classmates. If an absence is known in advance, such as with participation in an varsity sport or official university representation, please contact me as far in advance as possible with official documentation. If you contract a major illness or have any other sudden catastrophe, please contact me ASAP. Make-up exams and quizzes are rarely given, and appropriate official written documentation is required for consideration, including your name and the dates missed; for illnesses, the documentation must be verifiable. Make-ups are not given for the Final Exam (see the University Catalog).

Tutoring: Free tutoring is available through the Department of Mathematics in Holmes Hall 202; the schedule will be available at:

<http://www.fgcu.edu/CAS/Departments/Math/tutoring.html>. There may possibly be Supplemental Instruction (SI) sessions available through the CAA; see <http://www.fgcu.edu/CAA/si.html>

Academic Behavior Standards and Academic Dishonesty: All students are expected to demonstrate honesty in their academic pursuits. The university policies regarding issues of honesty can be found in the FGCU Student Guidebook under the ***Student Code of Conduct*** and ***Policies and Procedures*** sections. All students are expected to study this document, which outlines their responsibilities and consequences for violations of the policy. The FGCU Student Guidebook is available online at:

<http://studentservices.fgcu.edu/judicialaffairs/new.html>

Disabilities Accommodations Services: Florida Gulf Coast University, in accordance with the Americans with Disabilities Act and the university's guiding principles, will provide classroom and academic accommodations to students with documented disabilities. If you need to request an accommodation in this class due to a disability, or you suspect that your academic performance is affected by a disability, please see me or contact the Office of Adaptive Services. The Office of Adaptive Services is located in Howard Hall 137. The phone number is 239-590-7956 or TTY 239-590-7930. No accommodations will be made without the student going through the Office of Adaptive Services.

Student Observance of Religious Holidays: All students at Florida Gulf Coast University have a right to expect that the University will reasonably accommodate their religious observances, practices, and beliefs. Students, upon prior notification to their instructors, shall be excused from class or other scheduled academic activity to observe a religious holy day of their faith. Students shall be permitted a reasonable amount of time to make up the material or activities covered in their absence. Students shall not be penalized due to absence from class or other scheduled academic activity because of religious observances. Where practical, major examinations, major assignments, and University ceremonies will not be scheduled on a major religious holy day. A student who is to be excused from class for a religious observance is not required to provide a second party certification of the reason

for the absence.