COURSE SYLLABUS
MTH 244.01: Calculus III
Fall 2007 (4 credit hours)

Meeting Time/Place: MW 9:00 -- 9:50/ LDB 402
TT   9:30-10:50 / LDB 203
Instructor: Dr. Jianzhong Wang
Office/Phone: LDB 417D **/** 294-3521
E-mail/Web: jzwang@shsu.edu / www.shsu.edu/~mth_jxw
Office Hours: MW 10:00-11:00, TT 11:00-12:00. If these times are inconvenient for you, please call and make an appointment at another time. You can also use the blackboard on school Web to submit your questions. Due to the large number of students in my courses, I must ask you be prepared when you come for help.

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Textbook: *Thomas' Calculus, Eleventh Edition,* Weir, Hass, Giordano, (Ch 12 — CH16)

Objective: The purpose of the calculus sequence is to provide the student with an understanding of the principles of calculus needed to solve problems in mathematics, science and engineering. This sequence is designed to provide the student with a basic knowledge of differential and integral calculus of both one and several variables. Particularly, Calculus III deals with differential and integral calculus of several variables.

Description: Topics include vector algebra and geometry of vector space, partial derivatives, multiple integrals, and the basic of field theory.   Prerequisite: MTH 142 and MTH143 with a grade C or better.

MAPLE Usage: Students will learn how to use MAPLE to solve the computational problems in the course. No prior knowledge of MAPLE is required.

Assignments: The student is expected to spend a double time after each class meeting for understanding concepts, formulas, and methods, and doing assigned homework. Failure to work enough time after class will usually result in a poor showing in the class. **The due time to turn-in homework is 4:00 PM each Monday. If a Monday is a holiday, then the due time is changed to the following class day (4:00 PM).** Students are asked to use MAPLE to finish each assignment and turn in it electrically.

Exams: There are 2 tests and one final exam. No test can be dropped. The final exam is comprehensive. You can only make-up at most one test with (1) a phone call or an email before or during the test day; and (2) an official written evidence for the absence. The make-up test should be completed within 2 class days after you return to school.

Grade: The assignments of homework count 35%, each test counts 20%, and final counts 25%. No extra credit can be earned for this course. The following is for each letter grade: A 90-100%, B 80-89%, C 70-79%, D 55-69%, F 0-54%.

Academic Dishonesty: All students are expected to engage in all academic pursuits in a manner that is above reproach. Students are expected to maintain complete honesty and integrity in the academic experiences both in and out of the classroom. Any student found guilty of dishonesty in any phase of academic work will be subject to disciplinary action at the discretion of the instructor. The University and its official representatives may initiate disciplinary proceedings against a student accused of any form of academic dishonesty including, but not limited to, cheating on an examination or other academic work which is to be submitted, plagiarism, collusion and the abuse of resource materials.

Students with Disabilities: It is the policy of Sam Houston State University that no otherwise qualified disabled individual shall, solely by reason of his/her handicap, be excluded from the participation in, be denied the benefits of, or be subjected to discrimination under any academic or Student Life program or activity. Disabled students may request assistance with academically related problems stemming from individual disabilities by contacting the Director of the Counseling Center in the Lee Drain Annex or by calling (936) 294-1720. Please bring all the necessary paperwork to the instructor before the end of the first week of classes in order to proceed with the requested accommodations. All disclosures of disabilities will be kept strictly confidential. NOTE: no accommodation can be made until you register with the Counseling Center.

Classroom Rules of Conduct: Students will refrain from behavior in the classroom that intentionally or unintentionally disrupts the learning process and, thus, impedes the mission of the university. Cellular telephones and pagers must be turned off before class begins. Students are prohibited from eating in class, using tobacco products, making offensive remarks, reading newspapers, sleeping, talking at inappropriate times, wearing inappropriate clothing, or engaging in any other form of distraction. Inappropriate behavior in the classroom shall result in a directive to leave class. Students who are especially disruptive also may be reported to the Dean of Students for disciplinary action in accordance with university policy.

Observation of Holy Days: Section 51.911(b) of the Texas Education Code requires that an institution of higher education excuse a student from attending classes or other required activities, including examinations, for the observance of a religious holy day, including travel for that purpose. A student whose absence is excused under this subsection may not be penalized for that absence and shall be allowed to take an examination or complete an assignment from which the student is excused within a reasonable time after the absence.
University policy 861001 provides the procedures to be followed by the student and instructor. A student desiring to absent himself/herself from a scheduled class in order to observe (a) religious holy day(s) shall present to each instructor involved a written statement concerning the religious holy day(s). This request must be made in the first fifteen days of the semester or the first seven days of a summer session in which the absence(s) will occur. The instructor will complete a form notifying the student of a reasonable timeframe in which the missed assignments and/or examinations are to be completed.

Course Schedule: The course schedule and the scheduled test dates are tentative and may be subject to revision.

Date	Section	Topics covered
08/20		**First-day class**
08/21, 22		Introduction of MAPLE
08/23, 27		Review of Univariate Calculus
08/28, 29	12.1-12.3	Vectors and Dot Product
08/30	12.4	Cross Product
09/04, 05	12.5	Lines and Planes in Space
09/06, 10	12.6	Cylinders and Quadratic Surfaces
09/11, 12	13.1	Vector functions and Arc Length
09/13, 17	13.3-4	Unit Tangent Vector **T** and Normal Vector **N**
09/18, 19	13.5	Unit Binormal Vector **B**
09/20	13.6	Planetary Motion
09/24 -27		**Chapter review and Test**
10/01	14.1	Functions of Several Variables
10/02, 03	14.2-3	Limits, Continuity, Partial Derivatives
10/04, 08	14.4	The Chain Rule
10/09, 10	14.5	Directional derivatives and Gradients
10/11, 15	14.6	Tangent Plane and Differentials
10/16, 17	14.7	Extreme Values
10/18, 22	14.8	Lagrange Multipliers
10/23, 24	14.9	Partial Derivative with Constrained Variables
10/25	14.10*	Taylor's Formula
10/29-11/01		**Chapter Review and Test 2**
11/05	15.1-3	Double Integrals
11/06, 07	15.2	Areas, Moments, and Centers of Mass
11/08, 12	15.4	Triple Integrals
11/13, 14	15.6-7	Substitutions in Multiple Integrals
11/15, 19	16.1	Line integrals
11/20	16.2	Vector fields
11/26	16.3-4	Potential functions and Green's Theorem
11/27, 28	16. 5-6	Surface Integrals
11/29, 12/03	16. 7	Stoke's Theorem
12/04, 05	16.8	Divergence Theorem
12/06		Catch-up
12/11 (Thu)		**Final (8:00-10:00)**