Syllabus for MATH 243-001, Mathematics for Engineering and the Sciences IV

Time: 8:00 - 9:15	Room: GTM 309	Credit Hours: 3
Professor: Dr. Brian Barron	Office: GTM 310	Phone: 2453
e-mail: barren@latech.edu	Web: www.latech.edu/~bbarron	
WeBWorK: http://webwork.latech.edu/webwork2	Prerequisites: MATH 242 with a	
Office Hours: T, TR 8:00 - 12:30 MWF, 12: 30 - 1:00	C or better	

Textbooks:

Calculus: Early Transcendentals, by James Stewart, 6th Edition.

Single Variable Calculus, by B. Schröder, 2nd Edition.
Corequisite resource: Statics and Mechanics of Materials, by W. Riley, L. Sturges and D. Morris (the ENGR 220 text)

Course outline: Please see Page 2 for the approximate pace of the class. Detailed objectives can be found in the text.

Calculator: A graphing calculator will not be required for the course. Familiarity with EXCEL and MathCAD will be assumed and deepened as necessary.

Attendance regulations: Class attendance is regarded as an obligation as well as a privilege. All students are expected to attend regularly and punctually. Failure to do so may jeopardize a student's scholastic standing and may lead to suspension from the university. A student shall submit excuses for all class absences to the instructor within three class days after returning to class.

Homework policy: Homework will be completed on WeBWorK. The Prerequisite Material WeBWorK assignment will count for 35 points of the total grade.

Examinations: Three examinations and a final will be given The final will count for 150 points of the grade, Exams 2 and 3 will count for 100 points and Exam 1 will count 75 points. Up to half of the content on Exam 1 is material the student is expected to recall from MATH 241 and 242. This policy for Exam 1 is to assure that students have the requisite computational ability to continue their mathematical education at the sophomore level. All examinations are cumulative.

Grade determination procedure: The percentages with which the examinations, project and homework will be weighted are indicated above. The grading scale will have the usual ten point cut-offs, i.e., A: 90% and above; B: above 80%, less than 90%; C: above 70%, less than 80%; D: above 60%, less than 70%; F: below 60%.

Grade appeal: In the event of a question regarding an exam grade or final grade, it will be the responsibility of the student to retain and present graded materials which have been returned for student possession during the quarter.

Late homework, exams missed: If an absence occurs for a valid reason, the possibility for a make up test will be given. Late homework will only be accepted if there is a good reason for not meeting the original homework deadline.

HONOR CODE and ACADEMIC MISCONDUCT. Honor Code Statement "Being a student of a higher standard, I pledge to embody the principles of academic integrity." In accordance with Page 17 of the Louisiana Tech University bulletin, any form of plagiarism is considered academic misconduct and will carry a minimum penalty of an "F" for the assignment in question. The instructor reserves the right to enforce a more stringent penalty. For details on the honor code, please refer to http://www.latech.edu/tech/students/honor-code.pdf .

STUDENTS NEEDING SPECIAL ACCOMODATIONS: Students needing testing or classroom accommodations based on a disability should discuss the need with the instructor during the first week of class.

EMERGENCY NOTIFICATION SYSTEM: All Louisiana Tech students are strongly encouraged to enroll and update their contact information in the Emergency Notification System. It takes just a few seconds to ensure you're able to receive important text and voice alerts in the event of a campus emergency. For more information on the Emergency Notification System, please visit
http://www.latech.edu/administration/ens.html

NOTE: This class is a part of the MATH 240 series and the Cumulative Mathematics GPA Policy for engineering programs. If you are an engineering major, please read the policy at http://www.latech.edu/coes/assets/engr_math_policy.pdf and see your program's curriculum check sheet for more details.

243 Course Outline

The following outlines the progression of topics and assignments for the quarter. The instructor reserves the right to adjust assignments and pace of the course.

Day	Topic	Suggested Practice Problems from Textbooks
1	12.1 Three-Dimensional Coordinate Systems 12.2 Vectors	12.1: 4, 7, 11, 17, 19, 23, 29, 34, 35; 12.2: 2, 5, 7, 19, 22, 24, 28, 32
2	12.3 The Dot Product	12.3: 1, 4, 6, 7, 13, 18, 23, 27, 30, 35, 47
3	12.4 The Cross Product	12.4: 2, 5, 6, 9, 13, 16, 29, 33, 39, 40, 41
4	12.5 Equations of Lines and Planes (focus: lines)	12.5: 3, 4, 9, 10, 13, 14, 19
5	12.5 Equations of Lines and Planes (focus: planes)	12.5: 1, 25, 26, 27, 30, 33, 34, 39, 43, 49, 55, 69
6	10.5 Conic Sections	10.5: 5, 7, 15, 23, 25-30, 35, 41, 45
7	12.6 Cylinders and Quadric Surfaces	12.6: 3, 5, 8, 11, 13, 15, 17, 21-28, 37-42
8	10.3 Polar Coordinates (basics)	10.3: 1, 3, 5, 11, 12, 17, 24
9	14.1 Functions of Several Variables	14.1: 5, 10, 12, 15, 17, 23, 30, 37, 41, 55-60
10	Exam 1: 12.1-12.6, 10.3, 10.5	
11	14.2 Limits and Continuity	14.2: 6, 9, 12, 17, 20, 27, 28, 30, 33, 36
12	15.1 Double Integrals over Rectangles	15.1: 3, 7, 8, 12, 15
13	15.2 Iterated Integrals	15.2: 4, 5, 9, 16, 17, 20, 26, 33, 37
14	15.3 Double Integrals over General Regions	15.3: 6, 8, 11, 14, 15, 21, 25, 33, 35, 39, 45, 47, 51
15	15.4 Double Integrals in Polar Coordinates	15.4: 3, 4, 7, 9, 20, 22, 26, 29, 31, 34
16	15.5 Applications of Double Integrals	15.5: 5, 11, 16, 19, 20, 22, 26
17	15.6 Triple Integrals	15.6: 3, 6, 11, 13, 15, 22, 23, 29, 33, 42
18	15.7 Triple Integrals in Cylindrical Coordinates	15.7: 1-11odd, 14, 15, 18, 19, 21, 22, 25, 27, 29
19		
20	15.8 Triple Integrals in Spherical Coordinates	15.8: 1-11odd, 15, 17, 22, 23, 25, 29, 39, 43
21		
22	Exam 2: 14.1-14.2, 15.1-15.8	
23	10.1 Parametric Curves	10.1: 3,4,7,8,10,13,18,20,24,31,43
24	13.1 Vector Functions and Space Curves	13.1: 1, 3, 5, 15, 17, 36, 37, 41
25	13.2 Derivatives & Integrals Of Vector Functions	13.2: 1, 4, 5, 9, 15, 16, 17, 21, 25, 33, 36, 40
26	13.3 Arc Length & Curvature	13.3: 1, 3, 4, 13, 14, 17, 19, 21, 24, 28
27	13.4 Motion in Space	13.4: 2, 4, 9, 10, 11, 15, 19, 21, 23, 25, 33
28	Exam 3: 10.1, 13.1-13.4	
29	Review	
30	Final: Cumulative	