

## MATH 244 - MATHEMATICS FOR ENGINEERING & SCIENCE V

**SECTION: 001**

**MEETING TIME: 9:30 - 10:45**

**CLASSROOM: GTM 311**

**INSTRUCTOR: Dr. Brian Barron**

**OFFICE NUMBER: GTM 310**

**OFFICE HOURS: MWF 12:30 - 1:00, T, TR 8:00 - 12:30**

**PHONE: 2453**

**E-MAIL: [bbarron@latech.edu](mailto:bbarron@latech.edu)**

**WEB: [www.latech.edu/~bbarron](http://www.latech.edu/~bbarron)**

**PREREQUISITE: MATH 243**

**COREQUISITES: ENGR 221**

**COURSE GOALS:** The student will become proficient in partial differentiation, multiple integration, vector calculus, sequences, series, power series, and certain convergence test for series. This proficiency will be demonstrated by satisfactorily completing a series of exams and homework assignments.

**TEXTBOOKS:** Calculus: Early Transcendentals, 6<sup>th</sup> ed., by James Stewart

**COURSE OUTLINE AND OBJECTIVES:** Attached.

**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.

**HOMEWORK POLICY:** Homework assignments will be completed online using WeBWork. The website is:

<http://webwork.latech.edu>

**Note:** WeBWork assignments will be graded based on what is completed online. Paper submissions will NOT be accepted. You are encouraged to do the suggested problems that are given in the outline as practice problems for exams.

**GRAPHING CALCULATOR/COMPUTER ALGEBRA SYSTEM:** A graphing calculator that does at least as much as the TI-82 is recommended for the course. Its use on exams will be at the discretion of the instructor. The student also needs to have access to Mathcad.

**EXAMINATIONS:** There will be three topical exams and a comprehensive final exam. If a student has to miss an exam, he/she must notify the instructor prior to the exam either in person or by phone. An unexcused absence from an exam will result in a zero on that exam. The exam dates are **Fri. Dec. 17; Fri. Jan. 21; Mon. Feb. 14, and Mon. Feb. 28.**

**GRADE DETERMINATION POLICY:** The grading scale will be: A = 90% - 100%; B = 80% - 89%; C = 70% - 79%; D = 60% - 69%; F = 0% - 59%. The course grade will be calculated as follows:

Exams I-III	300	(100 each)
Homework Avg.	35	
Final	150	
Total	485	

**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 p. 16 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/documents/honor-code.pdf>

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

**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](http://www.latech.edu/coes/assets/engr_math_policy.pdf) and see your program's curriculum check sheet for more details."

**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>

### Suggested Study Problems, MATH 244

Day	Topic	Homework
1	14.3 Partial Derivatives	p.888 # 3, 13,16,19,21,25,29,35,39,50,51,61,71,74
1	14.4 Tangent Planes and Linear Approximations	p.899 # 1,3,5,11,18,19,22,25,30,33,35
1	14.5 Chain Rule	p.907 # 1-3,7-9,15,18,21,25,27,29,31
1	14.6 Directional Derivatives	p.920 # 4,7-9,11,15,17,19,21,25,29,37b, 39,40
1	14.7 Maximum and Minimum Values	p.930 # 1,3, 5-8,11,25,30,47
1	14.8 Lagrange Multipliers	p.940 # 1,3-5,7,10,11
1	15.9 Change of Variables in Multiple Integrals	p.1020 # 1-13odd, 21
1	16.1 Vector Fields	p.1032 # 3,5,11-18,21,23,29-32
2	16.2 Line Integrals	p.1043 # 3-5,8-9,11,15,19,21,40,41
1	16.3 The Fundamental Theorem For Line Integrals	p.1053 # 1,4-7,13-16,21,29-33
1	16.4 Green's Theorem	p.1060 # 1,5,7,8,9,11,15,18
1	16.5 Curl and Divergence	p.1068 # 2-5,13-15,19,21,30
2	16.6 Parametric Surfaces and Their Areas	p.1078 # 1,3-6,13-18,20,23,25,26,40,41,43,45,47
2	16.7 Surface Integrals	p.1091 # 5,7,10,11,15,19,21,23,25
1	16.8 Stokes' Theorem	p.1097 # 2,3,4,7,9,13,15
1	16.9 The Divergence Theorem	p.1103 # 1,2,5,6,11,13
1	11.1 Sequences	p.684 # 4,5,8,13,17,19,22,24,25,29,41,61,64
1	11.2 Series	p.694 # 3,5,11,14,17,19,21,22,25,35,37,41,42,47
1	11.6 Ratio Test	p.719 # 1,2,5,6,8,13,29,31
1	11.8 Power Series	p.727 # 3,6,7,15,16,17,30,33,35
1	11.9 Representations of Functions as Power Series	p.733 # 3,4,7,13,17,20,27
1	11.10 Taylor and Maclaurin Series	p.746 # 5,9,14,15,25,27,33,34
25		

\*The text is *Calculus, Early Transcendentals 6<sup>Th</sup> ed.* by J. Stewart.