LB 220 Calculus III, Spring 2013 Course Syllabus

Instructor: Robert Bell
Lectures: MWF 9:10-10:00 a.m. in C-103 Holmes Hall
Instructor’s Office Hours: MWF 8:00 - 9:00 a.m. and by appointment in W-32 Holmes Hall
Instructors’s e-mail: rbell@math.msu.edu
Recitation: T 9:10-10:00 a.m. in C-103 Holmes Hall
Learning Assistant (LA): Claire Baniel
LA’s Office Hours: W 6:45 - 7:45 p.m. in 2nd FL math help lounge in East Holmes Hall
LA’s e-mail: banielcl@msu.edu


Topics: LB 220 Calculus III is a course in multi-variable calculus. There are four major topics: vector-valued functions, functions of several variables, multiple integrals, and line & surface integrals. We will cover most of the topics in chapters 11 thru 15 in the textbook.

Grading Criteria: In general, all of your work in the course will be graded according to three criteria: does your work effectively communicate your reasoning and methods? does your work completely answer the question posed? does your work correctly answer the question posed? Solutions which ineffectively communicate your ideas, which omit or incompletely address the questions posed, or which include inaccuracies or errors will be penalized.

Exams: There will be three midterm exams during the semester and a comprehensive final exam on the date scheduled by the university.

Exams are written and completed in class without the aid of the textbook, notes, calculators, or similar materials. Exams last for the entire class period (50 minutes).

Homework: Written homework will be assigned and collected on a regular basis. The assignments will be posted on the course webpage (please use the url at the top of this document). Homework is due at the start of class. Late homework will be accepted up to 48 hours after the due date, but you will be assessed a 20% penalty. The lowest two homework scores will not count towards your final grade.

Some assigned problems may require significantly more time to complete than the questions and problems which will typically appear on quizzes or exams. However, reading through your homework gives the instructor an excellent opportunity to assess your overall understanding of the course material as well as your progress towards developing strong analytical problem solving skills and applying these skills to applications.

Only a select few problems will be graded (usually about 60%). Many of the assigned problems will need to be checked by you, the student, by reading through the solutions posted on our course web page. We will discuss solutions to the homework during lecture as needed.

A score will be assigned to each homework assignment using the criteria below.

- completeness 40%
- correctness 40%
- communication 20%

Your submitted work must include a clear and complete statement of each problem that you address. Often the most difficult step in solving a mathematical problem is correctly recognizing the nature of the
problem and choosing methods which are likely to be applicable. If you do not know how to solve a particular problem, try to write down the ideas or questions you have about this problem— I will try to respond to your questions and offer suggestions and you will receive some partial credit.

**Quizzes:** Quizzes will be administered on a weekly basis by your LA during recitation. The lowest two quiz scores will not count towards your final grade. There are no make-up quizzes.

Quizzes are an opportunity to test your current understanding and preparedness for a timed, written exam. Quizzes are written and will last 10 minutes. You are not permitted to use the textbook, notes, calculators, or similar materials during the quizzes. Solutions to quiz problems will be discussed during class time, either during lecture or during recitation.

**Writing Projects:** There will be two writing projects as part of this course. Each project consists of writing a response to a letter which asks for your assistance in solving a mathematical problem. These projects may be completed a joint project with one other partner; in such a case, both students will receive the same grade. A sample writing project (with a sample student solution) will be provided to you for reference.

The writing projects will be due on the following dates:

- **Writing Project I** Monday, March 18
- **Writing Project II** Monday, April 22

**Ungraded Work:** IMPORTANT! PLEASE READ! You will not be successful in this course if you only complete the graded assignments. You must, in addition, regularly test your understanding by attempting exercises in the textbook. You will be provided with a comprehensive list of recommended textbook exercises that you should be able to solve if you have mastered the material. If you have not mastered the material, then you should not expect to succeed on exams. Moreover, if you are are unable to solve at least half of the recommended textbook exercises without making multiple or serious errors, then you should not expect to receive a passing grade on exams.

There will be several in-class problem solving worksheets at regular intervals throughout the semesters. These are not collected nor graded, but your participation is essential for gaining proficiency in the problem solving techniques introduced in this course.

I will regularly allot time during lecture for discussing the solutions to assigned or recommended textbook problems. However, our time is limited. Please send additional questions by e-mail, ask questions during recitation, and utilize office hours.

**Calculator Policy:** The use of calculators is not be permitted on any of the exams or quizzes. Approximate answers will be penalized when an exact answer can be obtained. However, you are welcome to use your calculator or computer programs to test your understanding while studying.

**Students with Disabilities:** MSU provides the Resource Center For Persons with Disabilities (RCPD); URL: http://www.rcpd.msu.edu/ Please contact the RCPD if you require special accommodations, and then schedule an appointment to meet with the instructor.

**Academic Honesty:** Cheating in any form will not be tolerated and will be reported to the Dean. You will receive a zero on any assignment in which their is a case of cheating. This includes, but is not limited to, plagiarism, failure to give proper citations, and copying another’s work. A copy of the Lyman Briggs College academic honesty policy can be found at this URL: http://www.lymanbriggs.msu.edu/academics/LBC-Academic-Honesty.pdf If you are preparing an assignment and have a question about whether you are adhering to this policy, please ask your instructor.

**Student Responsibilities**

**Attend class & arrive prepared:** Regular attendance is required. Before attending the lecture, read the current sections. At minimum, attempt to work through the first two examples in each current section, and write down any questions you have. Work through the recommended textbook exercises for the current sections.

**Advice on how to read mathematics:** You should always have paper and pencil (and eraser!) readily available when reading mathematics. Work through the examples by writing the steps out yourself until it is clear to you that the solution is correct. Once a topic has been introduced in lecture, you should re-read the corresponding sections from the text. You should work on the exercises at the end of these sections until you are proficient.

**Participate:** Be attentive and stay alert. Work with your classmates, especially those adjacent to your seat. Take careful notes. Ask questions! Don’t be shy: we (yes, me too) are all here to learn!
Complete homework assignments: Start homework assignments early and discuss these with your classmates. Write your attempts to solve the homework on scratch paper. Then re-write, carefully and neatly, your solutions that you will submit for a grade. When your homework is returned with a grade, compare your solutions to the posted answers and solutions; you might learn a new technique or a more appealing way to understand a topic.

Work through the recommended textbook exercises: Attempt these problems and test your understanding. Ask questions about these exercises. Ask your classmates, your LA, your instructor, your roommate, your lab partner, etc. Part of the fun of mathematics is that you can discuss mathematical problems with your others and together you can discover a solution.

Attend recitation: You are required to attend the recitation. Prepare for recitation by making a list of specific problems or concepts with which you would like additional help. Please keep in mind that if time runs out before your question is answered that you can send questions via e-mail to either the instructor or the LA.

What is recitation? Recitation is a problem solving session lead by your Learning Assistant (LA). The recitation will typically consist of a question and answer session followed by an opportunity to solve problems suggested by the LA. Additionally, there will usually be a 10 minute quiz administered at the end of each recitation.

Utilize office hours: Please consider bringing your questions to office hours. Both the instructor and LA have regularly scheduled office hours. Office hours are times set aside specifically as an opportunity for you to get additional help. If your schedule conflicts with the scheduled office hours, please make an appointment.

Please do not think of this as an inconvenience to your instructors; additional help is available if you seek it out. However, it is your responsibility to come to office hours only after first making a sincere effort to answer questions on your own. Learning is difficult: work hard, try new ideas, and ask questions. If you do this, you will see definite progress.

Send questions via e-mail: When e-mailing your instructor, be sure to state your question clearly. If you are asking about a specific exercise or example in the text, be sure to restate the problem in its entirety.

Final Thoughts

The best way to learn mathematics is to write down solutions to specific mathematical problems. If you are able to solve most of the assigned problems, then I am confident that you will do very well in the course. But don’t limit yourself to the assigned problems; the textbook offers a variety of interesting problems. Challenge yourself! Try working out problems that sound interesting to you. If you want more practice or want more challenging problems, please drop by my office during office hours or make an appointment to meet with me.

If you are falling behind in the course, please seek help ASAP. There is help available during office hours, from your classmates (just ask them!), and here in the Holmes Hall math help room (2nd Floor of East Holmes Hall—your LA and other LAs will hold office hours here). Additionally, the Mathematics Department hosts the Math Learning Center (MLC) in Wells Hall and in some of the neighborhood communities on campus.

I want you to succeed in this course, and I’m here to facilitate this goal. But the burden is upon you to work hard, to set aside realistic amounts of time for study and to seek out help when you need it.

Some final advice: read the textbook. Then work some problems and read the textbook again. I cannot emphasize this enough. Learn to read the textbook. It is the key to being able to learn and apply mathematical techniques to problems you encounter outside of this class and down the road.