Syllabus for LB 119 Calculus II - Fall 2010 - R. Bell

Course: LB 119 Calculus II  
Instructor: Robert Bell  
Office Hours: 10:15 -11:15 a.m., MWF in W-32 Holmes Hall, and by appointment (please send an e-mail).  
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Topics: The main topics of the course are techniques of integration, applications of integration, sequences & series, polar coordinates, conic sections, vectors & vector operations, and 3-dimensional coordinate geometry. The course will cover most of the material in chapters 5-9 of the textbook.

Grading Criteria. You work will be graded according to three criteria: the clarity of your explanation, the completeness of the steps taken to arrive at a solution, and the accuracy of the answer. Correct answers without supporting work may not receive full credit.

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<th>Grade Components</th>
<th>Grading Scale</th>
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<tr>
<td>Midterm Exams</td>
<td>4.0, 90 ≤ x</td>
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<td>Homework</td>
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<td>Quizzes</td>
<td>3.0, 78 ≤ x &lt; 84</td>
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<td>Participation</td>
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<td>Project</td>
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<td>Final Exam</td>
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<td></td>
<td>1.0, 55 ≤ x &lt; 60</td>
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<td></td>
<td>0.0, x &lt; 55</td>
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Description of Graded Assignments

1. Midterm Exams. There will be two midterm exams during the semester. These are tentatively scheduled for Wednesday, October 6 and Wednesday, November 3. Please refer to the schedule for the dates of the exams as well as the planned topics for each day. 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). Each exam is worth 15% of your final grade.

2. Homework. Homework is assigned and collected weekly. The homework is due on Wednesdays at the start of lecture. Homework may be turned in late during the next class, but the assignment will be penalized 20%; homework will not be accepted later that this and the
assignment will receive a score of zero. 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, please be assured that 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. Please do all of the homework assignments: it's good for you.

**How homework is graded:** Only a select few problems will be graded (usually about 3 or 4 from among about 8 to 10 problems). Most of the assigned problems will be checked by you, the student. Answers and partial solutions will be provided online. It is recommended that you correct your homework as part of a study group that meets every week at the same time.

A score between 0 and 10 will be assigned using the criteria below. Problems for which a serious attempt at a solution is not given will count against the completeness. All but the most minor of errors will count against the accuracy. Problems which are not clearly stated (e.g. just listing the problem number) and illegible or carelessly written solutions will count against the clarity.

- **completeness** 5 pts (100% complete 5 pts, 80% complete 4 pts, etc.)
- **accuracy** 4 pts (from among graded problems)
- **clarity** 1 pt (clearly state problems and neatly write solutions)

3. **Quizzes.** Quizzes will be administered on a weekly basis during recitation. The lowest two quiz scores will not count towards your final grade. You may make up a missed quiz only if you have missed class due to highly specialized reason (e.g. you are in the hospital or it is a religious holiday). You must contact the instructor in advance and ask permission if it is a planned event, or you must contact the instructor within 24 hours if it is an unplanned event (health emergency). Any re-scheduled quiz must be arranged with your instructor, not with your LA. You should view the quiz as an opportunity to test your current understanding and preparedness. Quizzes are written and will last 15 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.

4. **Participation.** There will be regular in–class activities including problem solving, group discussion, and completing worksheets. You are an active participant if you are prepared for class (see below), diligently work on assigned problems, work effectively with your classmates, and are generally attentive in class.
However, the logistics of monitoring every student’s participation are formidable. Therefore, I will use the following approximation: once per week I will ask during lecture for you to submit an answer to a question on an index card (which will be provided). You score 1 point for attendance and up to two points for your answer. The question may be related to reading the textbook, solving an in–class problem, or writing a summary of your group’s answer to a discussion problem. Thus you will score between 0 and 3 points per week on participation. So long as you are in attendance, you should typically score 2 or 3 points. If you are not in class on the chosen day, then you receive zero points; these points cannot be recovered without a highly unusual excuse (e.g. religious holiday or health emergency).

5. **Project.** Each student is required to complete a project on a mathematical topic. This will take the form of either an in–class presentation or a poster. The presentation or poster must be accompanied by a written summary (1 page typed, front and back, single spaced, plus 1 non-typed page of visual supplements such as hand-written equations, graphs, or charts) of your project. Any references must be given proper citation; please list these references on a third separate page.

Each student can choose to complete this assignment as part of a group of 2-4 students or as an individual. If you would like to be assigned to a group, please let me know (via e-mail) by November 1, and I will form groups from among those students who choose this option. In all cases, groups must be formed and finalized by November 1; and you must notify the instructor in writing via e-mail of your group. (Choose one member to send the e-mail and CC: all of the members of your group.) Once the groups have been formed, each group or individual needs to submit a 1 page (front and back) typed or hand-written proposal. This will be evaluated and returned. You then must submit a revised proposal; again this will be evaluated and returned for your consideration. The initial proposal is due Nov. 15; the revised proposal is due Nov. 22.

Presentations will occur during the last week of classes. Posters and written summaries are due on Monday, Dec. 6.

*Presentation Option.* In–class, oral presentation at the chalkboard or using the computer projector. Duration: minimum 5 minutes, maximum 10 minutes. The instructor and your classmates will ask follow-up questions.

*Poster Option.* The poster should be suitable for display in Holmes Hall. Your group will be interviewed by the instructor on the content of your poster.

The grading criteria for the project will be set forth in a separate handout.
6. **Final Exam.** The final exam is comprehensive. The date and time of the final exam is set by the university. You must take the final exam on the scheduled day at the scheduled time.

If your lecture meets at 9:10 a.m., then your final exam is on Tuesday, December 14 from 7:45 a.m. until 9:45 a.m. If your lecture meets at 11:30 a.m., then your final exam is on Wednesday, December 15 from 7:45 a.m. until 9:45 a.m.

**Student Responsibilities**

1. **Attendance & Preparation.**
   - 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.

   *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.

   *Practice exercises.* Recommended exercises will be announced during the lecture, and a current list will be maintained on the course web page. These recommended exercises are not part of homework assignments and are not collected. You are encouraged to work on these problems in study groups, to e-mail the instructor or LA with questions, to bring questions to office hours, and to ask questions during lecture and recitation.

2. **Participation.**
   - Be attentive and stay alert.
   - Make an effort to complete all in–class exercises.
   - Work on group activities with your neighbors.

3. **Homework.**
   - Start homework assignments early and bring questions to class.
   - Write your attempts on scratch paper. Write solutions that you will submit for a grade carefully and neatly.
   - Compare your solutions to the posted answers and solutions.
4. Recitation.

- You are required to attend the recitation corresponding to the section in which you are enrolled.
- 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 LA.

What is recitation? Recitation is a problem solving session lead by your Learning Assistant. The class meeting will typically consist of a question and answer session followed by an opportunity to solve problems suggested by the LA or your classmates. Additionally, there will usually be a 15 minute quiz administered at the end of class.

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 the instructor; 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.

E-mail. E-mail can be an effective way to obtain more immediate help. When e-mailing your instructor or LA, 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 since, while it is quite possible that your instructor or LA is also awake and online at 10 p.m., it is unlikely that he or she keeps a copy of the text under his pillow! (You, of course, should keep one there just in case the benefits of osmosis have been underestimated.)

When addressing e-mail, please include a greeting and sign your e-mail with your first and last name, at least until you are certain the instructor has learned your name. E-mail messages such as “how do u solve 42 on p 314 ? l8r” are inappropriate.

Online Discussion Forum. There is an online discussion forum for this course. You will receive an invitation via e-mail to join a Google Group named LB119FA2010. Please feel welcome to discuss problems from the course here online. The instructor and LAs will also participate and help to facilitate discussions.
**Calculators.** 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 on homework problems.

**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 me ASAP.

**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.

**Advice.** 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 (ask them!), and from the Math Learning Center (MLC) on the 1st floor of the A-wing of Wells Hall. Additionally, it is not difficult to find private tutors through the MSU community. Did you know that your LA has office hours too? Ask your LA.

Their participation in your learning experience is one of the unique aspects of taking calculus through Lyman Briggs College.

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. Additionally, there are many potentially helpful books in the library or at your favorite bookstore. I recommend, in particular, the “How to Ace Calculus” books by Adams, Hass, and Thompson.

Some final advice: read the book. Then work some problems and read the book again. I cannot emphasize this enough. Read the book.