Benedictine University

Informing today—Transforming tomorrow

CALCULUS WITH ANALYTICS I LAB, MATH 207A-G, FALL 2012

Instructors: Dr. Comar, Dr. Kaur, Ms. Vajdova, and Dr. Wangler

TEXTBOOK: There is no textbook required for this course, but you should bring your calculus text from your lecture course (Stewart or Neuhauser) to lab with you.

COURSE WEB SITE: Go to www.ben.edu , click on the "Current Students" tab and under "Student Login" click *Desire2Learn* and log in.

Section A:	Tuesday	8:00 – 10:50	ROOM: KN-227	Vajdova
Section B:	Tuesday	1:30 – 4:20	ROOM: BK-236	Kaur
Section C:	Thursday	8:00 – 10:50	ROOM: KN-227	Vajdova
Section D:	Thursday	8:00 – 10:50	ROOM: SL-218/KN-244?	Wangler
Section E:	Tuesday	8:00 – 10:50	ROOM: SL-218/KN-244?	Kaur
Section F:	Thursday	1:30 – 4:20	ROOM: KN-244	Comar
Section G:	Thursday	1:30 – 4:20	ROOM: BK-236	Vajdova

Comar (Section F) Office: BK-128; Office Hours: Mon, Wed, Fri 10:45 – 12:45 *or by appointment*; Phone: 630-829-6555; Email: tcomar@ben.edu

Kaur (Sections B and E) Office: BK-123; Office Hours: Mon 12 – 2, Tues 11 – 12, Wed 12 – 2, Fri 12 – 1 *or by appointment*; Phone: 630-829-6558; Email: mkaur@ben.edu

Vajdova (Sections A, C, and G) Office: BK-006; Office Hours: Tues and Thurs 11 – 1:30 *or by appointment*; Phone: 630-829-6574; Email: vvajdova@ben.edu

Wangler (Section D) Office: BK-125; Office Hours: Tues and Thurs 4:15 – 5:15, Wed 10 – 11 & 1:30 – 2:30 *or by appointment*; Phone: 630-829-6554; Email: twangler@ben.edu

Note on Office Hours: *Each student should go to his/her instructor's office hours when in need of help.*

Registration Requirement: Co-registration in Math-210 or Math-220 (lecture) is required for Math-207 (lab).

Technology Requirement: Students are expected to use Desire2Learn (D2L) for communication purposes and for accessing course information. Use of graphing, programmable, and scientific calculators is encouraged at all times. Specifically, the mathematics department supports the use of the TI-83+ and TI-84+. Any programmable calculator that does symbolic manipulations (e.g. TI-89, TI-92, Voyage 200, or other CAS) will not be allowed on tests and quizzes. At all tests and quizzes, the calculator memory must be free of any additional mathematical

material. The computer algebra system MAPLE is employed as a learning assistant and an exploratory tool in lab and will be used when taking quizzes.

Course Description/Objectives: This course is a co-requisite of Math 210 and Math 220. Together, these courses introduce the student to higher level mathematics described in your calculus lecture syllabus. The computer lab component allows for in-depth exploration of course topics using the software tool MAPLE. The goals of the lab are (1) to use Maple to help students develop content mastery of topics covered in the lecture and (2) to use Maple to learn some topics that have been "pushed" out of the lecture and into the lab, such as parametric equations, conic sections, curve fitting, Newton's Method, and the trapezoidal rule. *About 40% of the labs cover topics also discussed in the lecture and 60% of the labs are topics covered in the lab only.* Additional objectives include developing your ability to work together with class mates and improving your communication skills.

Class Attendance: "Prompt" and "complete" class attendance is expected for all labs. "Prompt" attendance means you are expected to arrive to class on time. If you are a little late (little = 5 minutes or less), please find an open computer and get logged on as quickly as possible. *This should be the exception, not the rule!* If you are more than 5 minutes late for class, you will be allowed to enter the computer lab and work on your lab report during the class period. However, due to your tardiness, you will lose points on your lab report as follows: there will be a loss of 20% of the lab points (10 out of 50) on the first occurrence, a loss of 50% of the lab points (25 out of 50) on the second occurrence, and a loss of 100% of the lab points (50 out of 50) on the third (and subsequent) occurrence(s). Also, whenever there's a quiz, it will be given at the beginning of class time and if you are late, you will get any remaining time that the rest of the class has to finish the quiz, but when the time is up, you must turn in your quiz along with the rest of the class.

"Complete" attendance means you are expected to stay in the computer lab for the *entire* class period. If you complete your lab report before the end of the period, you are expected to stay and help your lab partner finish his/her lab report. Once you and your lab partner have both finished your lab reports and turned them in, then you may leave the class. *All lab reports must be turned in by the end of the class period.*

Make-up Policy: If you miss class, make-up of labs and quizzes will be allowed in the event of illness or injury (documentation by a medical professional is required), or documented participation in an event where you are representing the school (e.g. athletic event, speech team, Model UN, student symposium, election judge) or unforeseen circumstances of an emergency nature (e.g. car accident on the way to school – you will need the police report for documentation). Make-up of labs or quizzes will not be allowed for any other reason.

Core Goals: This course contributes to the science component of the core. The course is intended to enable students to continue to meet the following core goals:
Goal 1 - Demonstrate an effective level of cognitive, communicative (oral and written), and research skills;
Goal 2 - Achieve a college level of computational skills and an ability to understand and interpret numerical data;
Goal 3 - Acquire a knowledge of the history and heritage of western civilization including scientific literacy through a knowledge of the history, the methods, and the impact of science on the individual, society, and the environment; and
Goal 5 - Apply liberal learning in problem solving contexts as preparation for active participation in society.

IDEA Objectives
1. Gaining factual knowledge (terminology, classifications, methods, trends)
2. Learning to apply course material (to improve thinking, problem solving, and decisions)

Grading: There will be 12 labs at 50 points each (600 lab points total) and 4 quizzes at 25 points each (100 quiz points total). So, all together there are 700 points for the class.

Syllabus – Math 207A-G – Calculus I Lab – Fall 2012 – 1 credit hour

Contesting Grades: You should keep all of your graded work for two reasons. First, this is a record of your achievement in the class. Second, if you ever need to contest a grade, you must be able to present your original work to the instructor. <u>N.B.</u> *You have one week from the day labs/quizzes are returned to the class to contest your grade on that lab/quiz.*

Grading Scale:

Total Points	Percentage	Grade in Course
630-700 pts	90 - 100% -------------	A
560-629 pts	80 - 89.9%	B
490-559 pts	70 - 79.9% ------------	C
420-489 pts	60 - 69.9%	D
0- 419 pts	Below 60% -----------	F

Academic Honesty Policy (AHP):   The search for truth and the dissemination of knowledge are the central missions of a university. Benedictine University pursues these missions in an environment guided by our Roman Catholic tradition and our Benedictine heritage. Integrity and honesty are therefore expected of all members of the University community, including students, faculty members, administration, and staff. Actions such as cheating, plagiarism, collusion, fabrication, forgery, falsification, destruction, multiple submission, solicitation, and misrepresentation, are violations of these expectations and constitute unacceptable behavior in the University community. The penalties for such actions can range from a private verbal warning, all the way to expulsion from the University. The University's Academic Honesty Policy is available at <u>www.ben.edu/AHP</u> and students are expected to read it. A few comments are in order at this point.

First, I expect all work turned in with your name on it to be your work. You are encouraged to work with your classmates to complete the lab reports, but copying *all or part* of any student's work will result in a grade of zero for **all** students involved.   Please see the below section entitled "Collaboration Policy" for a more detailed explanation.

Second, you should never email (or give access to) your lab report to any other student. This is sometimes done to "help" a fellow student in a different section of the lab. Although, on the surface, this appears to be a good and noble thing to do, it actually puts you at risk because if this student copies and pastes *your* work into *her* lab report, then you are *both* in violation of the AHP – the other student because she copied your work and you, because you "provided unauthorized information in an academic exercise". Both of these are considered cheating. *The bottom line is that each student is responsible to safeguard his or her academic work from unauthorized access by any other student.*

Third, I will pursue every case of alleged or apparent academic dishonesty because every incident is a serious matter and it is my obligation, as a faculty member at this institution, to pursue it.

The first occurrence of academic dishonesty will result in a zero for that lab or quiz. The second occurrence will result in an 'F' for the course.

Collaboration Policy: The math department encourages students to work together on lab reports. Since the rules for "student collaboration" vary from department to department, the following guidance is provided to clarify *what is allowed* when working with others on lab reports. You can (and should) collaborate with a classmate as you work on the lab report, but once you have completed the work and are ready to *write-it-up-in-a-text-box*, that's where you must part company with your lab partner. I expect the work you turn in to be **your own work** and hence, I expect it to be significantly different than anybody else's lab report. I understand that your graphs and equations will be the same as your lab partners, but I expect the **written portion** of your lab report, i.e. **the part you type in the text boxes**, to be different than your lab partners. *I consider turning in "carbon-copy" or "essentially carbon-copy" work (of the written portion of your lab report) a violation of the academic honesty policy and this applies whether the work is a "carbon-copy" of your lab partner's work or some other student's work (in your section or any other section of the lab) or a student's work in any section of the lab in any previous term or any other source.*

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Last day to withdraw: The last day to withdraw from a class is **Sunday, November 18, 2012.**

Americans with Disabilities Act (ADA): If you have a documented learning, psychological or physical disability, you may be eligible for reasonable academic accommodations or services. To request accommodations or services, please contact the Student Success Center, Krasa 012, (630)-829-6512. All students are expected to fulfill essential course requirements. The University will not waive any essential skill or requirement of a course or degree program.

Academic Accommodations For Religious Obligations (AAFRO): A student whose religious obligation conflicts with a course requirement may request an academic accommodation from the instructor. Students must make such requests in writing by the end of the first week of the class. Upon receiving such a request, the instructor will offer reasonable academic accommodations, whenever feasible, and communicate this to the student. However, *the course requirements listed in the syllabus remain in effect if accommodations cannot be offered.*

Electronic Devices Policy: One aspect of being a member of a community of scholars is to show respect for others by the way you behave. One way of showing respect for others in the educational community is to do your part to create or maintain an environment that is conducive to learning. That being said, allowing your cell phone to ring in class is completely inappropriate because it distracts your classmates and thus, degrades their overall classroom experience. For the sake of your classmates, *you are expected to turn off your cell phone or set it to mute/silence BEFORE you enter class—every class.* Furthermore, if you *use* your cell phone *in any manner* during class (e.g. phone call, text messaging, playing games, listening to music), you will be dismissed from class and will forfeit any points you might have earned in the remainder of the period. (For Calculus I labs, this means the portion of the lab that you've completed will be graded, but all the points from the uncompleted portion will be forfeited.) If you *use* your cell phone *in any manner* during a test or quiz, you will receive a zero for that test or quiz. (N.B. This policy also applies to pagers, iPODs, iPads, BlackBerrys, PDAs, Treos, MP3 players and *all other electronic communication and/or data storage devices.)*

Semester Schedule

Week 1, Aug 27	Lab 0: Syllabus, D2L, and AHP
Week 2, Sept 3	Lab 1: Introduction to Maple
Week 3, Sept 10	Lab 2: Limits and Continuity
Week 4, Sept 17	Lab 3: Limits Involving Infinity
Week 5, Sept 24	Lab 4: Conic Sections I – Circle & Parabola
Week 6, Oct 1	Lab 5: Conic Sections II – Ellipse & Hyperbola
Week 7, Oct 8	*Quiz 1 (Conic Sections I & II)* and Lab 6: Parametric Equations
Week 8, Oct 5	*Quiz 2 (Parametric Equations)* and Lab 7: Curve Fitting I – Linear, Quadratic, Cubic
Week 9, Oct 22	Lab 8: Curve Fitting II – Exponential Function and Power Function
Week 10, Oct 29	*Quiz 3 (Curve Fitting I & II)* and Lab 9: Newton's Method
Week 11, Nov 5	Lab 10: Logistic Differential Equation
Week 12, Nov 12	Lab 11: Optimization
Week 13, Nov 19	Thanksgiving Holiday – NO LABS!
Week 14, Nov 26	Lab 12: Numerical Integration – Trapezoidal Rule
Week 15, Dec 3	*Quiz 4 (Trapezoidal Rule)* and IDEA Survey and Wrap-Up