NCSU Mathematics Department

MA 231-001 - Calculus for Life and Management Sciences B

Summer I 2010, MTWHF 9:50-11:20, Poe 320

Instructor: Dr. Bojko Bakalov, office SAS 3116, phone 513-7442, email bojko_bakalov@ncsu.edu

Course Webpage: http://www4.ncsu.edu/~bnbakalo/ma231.html

Office Hours: MTWHF 11:30-12:30 or by appointment, in SAS 3116.

Course Objectives: At the end of this course, a student should be able to:

- Write and solve differential equations relevant to simple models of population growth and to monetary processes such as mortgages, consumer loans, investment streams and annuities;
- Write and perform quantitative analysis of differential equations such as the exponential, logistic and predator-prey models associated with population growth;
- Apply calculus to solve ‘word problems’, problems presenting verbal descriptions of situations such as those indicated above;
- Express the meaning of partial derivatives in terms of slopes at a point on a surface and of rate of change of a function;
- Use partial derivatives to find optimal values of functions;
- Use Lagrange multiplier methods to optimize functions, subject to constraints on the variables.

Prerequisite: MA 131. MA 121 is not an accepted prerequisite for MA 231.


Homework will be assigned regularly but will not be collected or graded. I will go over selected problems in class. A key to success in this course is doing as many of the homework problems as you can!

Tests: There will be three tests (on 6/4, 6/14, 6/23) and a cumulative final exam (on 6/29, 8-11 am). If you miss a test, I will need a letter documenting the reason. Makeup tests can only be given for reasons such as illness, family emergency, participation in a University-sponsored event, required court attendance or military duty, or religious observances as certified by the Department of Student Development. If you know you will be absent on a test date, you must clear the absence with me in advance and schedule a makeup date. In the case of an unanticipated absence on a test date, you must give me documentation and schedule a makeup date as soon as possible. See the University policies at http://www.ncsu.edu/policies/academic_affairs/pols_regs/REG205.00.4.php
Grade will be determined from a raw score of test grades. There will be three in-class exams and a final exam. Each test counts 100 points. If your lowest grade is an in-class exam, I will drop that grade and double the grade on the final to compute your raw score. If your lowest grade is the final exam, I will use all exams in calculating your raw score. For example, if your in-class grades are 80, 80, 50 and your final exam is 65, I will drop the 50 and your raw score would be $80+80+65+65 = 290$ out of 400. If your in-class exams are 80, 80, 70 and your final exam is 65, then your raw score would be $80+80+70+65 = 295$ out of 400. I will use letter grades with +/- and these will be determined from the raw score.

Tutoring may be available through the Undergraduate Tutorial Center (see http://www.ncsu.edu/tutorial_center).

Attendance: Students are expected to arrive on time, to contribute to group work and class discussions, and to stay until the class ends. Attendance at all meetings of the class is expected. Occasional absences will be approved if they meet University policies (see http://www.ncsu.edu/policies/academic_affairs/pols_regs/REG205.00.4.php). Attendance will be recorded in the beginning of each lecture. If you arrive late, it is your responsibility to request a change of your record from ‘absent’ to ‘late’. Three ‘lates’ equal one ‘absent’. A student who has more than two absences (excused or unexcused) may lose the option of dropping the lowest test grade.

Adverse Weather: Announcements regarding scheduled delays or the closing of the University due to adverse weather conditions will be broadcast on local radio and television stations and posted on the University homepage.

Cell Phones: Pagers, cellular phones and other types of telecommunication equipment are prohibited from use during class. Make sure that any pagers, phones or other equipment are turned off during the class period. If you have a special need to have your pager or phone on during class, please let me know.

Academic Integrity Statement: Students are required to follow NCSU policy available at http://www.ncsu.edu/provost/academic_regulations/integrity/reg.htm. “Academic dishonesty is the giving, taking, or presenting of information or material by a student that unethically or fraudulently aids oneself or another on any work which is to be considered in the determination of a grade or the completion of academic requirements or the enhancement of that student's record or academic career.” (NCSU Code of Student Conduct). The Student Affairs website has more information (http://www.ncsu.edu/student_affairs/osc/AIpage/acaintegrity.html).

Statement for Students with Disabilities: Reasonable accommodations will be made for students with verifiable disabilities. In order to take advantage of available accommodations, students must register with Disabilities Services for Students (http://www.ncsu.edu/provost/offices/affirm_action/dss).