MA 242H (040): Honors Calculus III
Spring 2010

Section 40, MTWHF 8:05-8:55am, HA 113

Instructor: Leslie Kurtz (lakurtz@ncsu.edu)

Office: SAS Hall, Room 3240

Office Hours: MTWH 12:15-1:15pm or by appointment

Class Web Page: http://www4.ncsu.edu/~lakurtz/ This is the place to find old tests, extra copies of handouts, complete solutions to the exams and Extra Credit opportunities.

Prerequisites: MA 241 with a grade of C- or better.

Content: This is the third of three semesters in a calculus sequence for science and engineering majors. Vectors, vector algebra, vector functions, functions of several variables, partial derivatives, gradients, directional derivatives, maxima and minima, multiple integration, line and surface integrals, Green's Theorem, Divergence Theorem, Stokes' Theorem, and numerous applications will be covered. The Maple software program will be used to further illuminate these topics.

Textbooks: Calculus: Concepts and Contexts, by James Stewart (3rd ed.)

Grade Calculation:

WebAssign/Quizzes	10%
Maple	10%
Projects	5%
Tests	50%
Final Exam	25%

Grading Scale: The final grade will be assigned using the plus/minus grading system

A+: 98-100	A: 93-97.99	A-: 90-92.99
B+: 88-89.99	B: 83-87.99	B-: 80-82.99
C+: 78-79.99	C: 73-77.99	C-: 70-72.99
D+: 68-69.99	D: 63-67.99	D-: 60-62.99

WebAssign: Homework assignments will be completed through WebAssign. See http://webassign.ncsu.edu for homework questions and due dates. You must log in using your unity ID and password (same as your email). You will have to purchase an access card to use the WebAssign system, which you can do at the school's bookstore or online at the Webassign page.

Maple Assignments: There will be 8 Maple assignments that must be completed throughout the semester. Assignments, dates, and other information can all be found at http://math.ncsu.edu/calculus. Please Note: You do NOT have to purchase Maple. You can use Maple for free at the school's computer labs. If you need help with Maple you can get help in HA G-108 on Tuesdays and Thursdays from 4:30-6:30pm.

Tests: There are 4 scheduled tests during the semester. ** Each student is asked to turn in 5 blue "Examination" booklets before the first test. **Do not write anything on the books**. Blue books can be purchased at the bookstore.** Their dates are as follows:

Test 1: Feb 3
Test 2: Mar 1
Test 3: Mar 31
Test 4: Apr 23

Please note: After the tests are returned, you have 3 days to look them over and compare them to the solutions online. If you believe there is an error in the grading of your test, you need to notify me within these 3 days. Grade changes will not occur outside of this timeframe.

Final: The final will be given on Wednesday, May 12 from 8AM-11AM.

Make-Up Test Policy: All anticipated absences must be excused **in advance of the test date** and a make-up test scheduled if possible in advance of the absence. These include University duties or trips (certified by an appropriate faculty or staff member), required court attendance (certified by the Clerk of Court), or religious observances (certified by the Department of Student Development: 515-2441). Emergency absences must be reported within one week of returning to class and must be appropriately documented (illness by an attending physician or family emergencies by Student Development). No other make-ups will be given. It is not wise to miss a test.

Attendance: Attendance will be recorded daily, with no distinction made between excused and unexcused absences, except in the event of a missed test. You are expected to arrive on time to class. Any student who is not an active class participant the full class period (e.g., doing other work in class, socializing, sleeping, text messaging, leaving early) is recorded as absent. If you miss no more than 4 days AND attend every test, I will replace your lowest test grade with your final exam grade (assuming it is higher).

If you miss class or are late, you are still responsible for all material covered and assignments due. The university attendance policy can be found at:
http://www.ncsu.edu/policies/academic_affairs/courses_undergrad/REG02.20.3.php

Academic Integrity: I assume that anything turned in with your name on it is your own work. Each time you submit a test, maple, WebAssign, quiz, or project, you affirm the honor pledge, "I have neither received unauthorized aid nor given aid on this assignment." The minimum penalty for cheating is a grade of zero on the assignment; violators may be reported to the Academic Integrity Review Board, which can impose additional sanctions. The code of

student conduct can be found at:
http://www.ncsu.edu/policies/student_services/student_discipline/POL11.35.1.php

Multimedia Center: The math department's multimedia center is located in SAS 2105. Videotapes and DVDs of lectures for this course from previous semesters are available for viewing. These lectures are also available online
http://courses.ncsu.edu/ma242/common/media/OutlineOfLectures.html

Additionally, free tutoring from mathematics graduate students is available; no appointment is necessary.

Disability Services: Reasonable accommodations will be made for students with verifiable disabilities. In order to take advantage of available accommodations, students must register with Disability Services for Students at 1900 Student Health Center, Campus Box 7509, 515-7653. http://www.ncsu.edu/provost/offices/affirm_action/dss/

For more information on NC State's policy on working with students with disabilities, please see the Academic Accommodations for Students with Disabilities Regulation (REG02.20.1)
http://www.ncsu.edu/policies/academic_affairs/courses_undergrad/REG02.20.1.php

Tentative Class Schedule		
Day	Topic	Due
Mon Jan11	9.1 3-D Coordinate Systems	Purchase webassign access card
Tues Jan 12	9.1 cont.	
Wed Jan 13	9.2 Vectors	
Thurs Jan 14	9.2 Continued/9.3 Dot Product	
Fri Jan 15	9.3 continued	Intro to Webassign, Intro to Symbolic Questions, Symbolic Questions Part 2
Mon Jan 18	NO CLASS, Martin Luther King Day	
Tues Jan 19	9.4 Cross Product	
Wed Jan 20	9.4 cont	Webassign 9.1 & 9.2
Thur Jan 21	9.5 Equations of lines & planes	**MAPLE HW 0 & 1 DUE**
Fri Jan 22	9.5 cont	
Mon Jan 25	9.6 Functions & Surfaces	Webassign 9.3 & 9.4
Tue Jan 26	10.1 Vector Functions & Space Curves	
Wed Jan 27	10.2 Derivatives & integrals of vector functions	Webassign 9.5
Thur Jan 28	10.3 Arc length & curvature	**MAPLE HW 2 DUE**
Fri Jan 29	10.4 Motion in space	
Mon Feb 1	10.4 More on motion in space	Webassign 9.6 & 10.1
Tue Feb 2	Review for Test #1	Webassign 10.2 & 10.3

Wed Feb 3	**TEST #1**	
Thur Feb 4	11.1 Multivariable functions	
Fri Feb 5	11.1 Level surfaces	Webassign 10.4
Mon Feb 8	11.2 Limits & continuity	
Tues Feb 9	11.3 Partial derivatives	
Wed Feb 10	11.3 cont	
Thur Feb 11	11.4 Tangent planes & linear approximations	
Fri Feb 12	11.5 The chain rule	Webassign 11.1 & 11.2
Mon Feb 15	11.6 Directional derivatives & the gradient vector	
Tue Feb 16	11.6 cont	Webassign 11.3
Wed Feb 17	11.7 Extreme values	
Thur Feb 18	11.7 cont	
Fri Feb 19	If needed	Webassign 11.4 & 11.5
Mon Feb 22	12.1 Double integrals over rectangles	Webassign 11.6
Tue Feb 23	12.2 Iterated integrals	**MAPLE HW 3 DUE**
Wed Feb 24	12.2 cont	
Thur Feb 25	12.3 Double Integrals over general regions	
Fri Feb 26	Review for Test #2	Webassign 11.7
Mon Mar 1	**TEST #2**	
Tue Mar 2	12.3 cont	
Wed Mar 3	12.3 cont	Webassign 12.1 and 12.2
Thur Mar 4	12.4 & Appendix H Double Integrals in polar coordinates	**MAPLE HW 4 DUE**
Fri Mar 5	12.4 Cont	
Mon Mar 8	12.4 Cont	Webassign 12.3
Tue Mar 9	12.5 Applications of double integrals	
Wed Mar 10	12.7 TRIPLE INTEGRALS	
Thur Mar 11	12.7 cont	Webassign 12.4 & 12.5
Fri Mar 12	12.7 cont	
Mar 15-19	SPRING BREAK, NO CLASSES	
Mon Mar 22	9.7 Cylindrical and spherical coordinates	Webassign 12.7
Tues Mar 23	12.8 Triple integrals in cylindrical coordinates	**MAPLE HW 5 DUE**
Wed Mar 24	12.8 Triple integrals in spherical coordinates	
Thurs Mar 25	12.8 cont	
Fri Mar 26	13.1 VECTOR FIELDS	

Mon Mar 29	13.2 LINE INTEGRALS	Webassign 9.7
Tues Mar 30	Review for Test #3	Webassign 12.8
Wed Mar 31	**TEST #3**	
Thurs Apr 1	SPRING HOLIDAY, NO CLASS	
Fri Apr 2	SPRING HOLIDAY, NO CLASS	
Mon Apr 5	13.2 More on line integrals	Webassign 13.1
Tues Apr 6	13.3 Fundamental thm for line integrals	
Wed Apr 7	13.3 Conservative vector fields and potential functions	
Thurs Apr 8	13.4 Green's Theorem	
Fri Apr 9	13.5 Curl & divergence	
Mon Apr 12	10.5 Parametric surfaces	Webassign 13.2 & 13.3
Tues Apr 13	10.5 cont	
Wed Apr 14	P 777-778 Parametric surfaces & tangent planes to parametric surfaces	Webassign 13.5
Thurs Apr 15	12.6 Surface area of parametrized surfaces	
Fri Apr 16	13.6 Surface Integrals	
Mon Apr 19	13.6 cont	Webassign 10.5
Tues Apr 20	13.6 cont	**Maple HW 6 DUE**
Wed Apr 21	13.6 cont	
Thurs Apr 22	Review for Test #4	Webassign 12.6 & 13.6
Fri Apr 23	**TEST #4**	
Mon Apr 26	13.7 Stokes' theorem	
Tues Apr 27	13.8 Divergence Theorem	
Wed Apr 28	13.8 cont	
Thurs Apr 29	Semester Review	
Fri Apr 30	Semester Review	Webassign 13.7 & 13.8
MAY 2		**MAPLE HW 7 DUE**
Wed May 12	**FINAL EXAM 8AM-11AM**	