

**Syllabus for MATH 2421-001 (Monday/Wednesday 2pm)
Calculus III (Spring 2012)**

1. **Instructor:** Lynn Bennethum, CU-638
2. **E-mail:** Lynn.Bennethum@ucdenver.edu
3. **Time and Location:** Monday/Wednesday 2:00pm - 3:50pm in Plaza 130.
PLEASE TURN OFF YOUR CELL PHONES DURING OUR LECTURE PERIODS!
4. **Office Hours:** The hour before class MW 12:50-1:50pm in the MERC Lab (NC 4015). If this is too crowded we may move, and I will announce this in class. Also I will stay to answer questions after class outside our classroom.
5. **Website:** math.ucdenver.edu/~bennethm
Check here if you missed a lecture.
6. **Course Description:** Topics include vectors, vector-valued functions, partial differentiation, multiple integration, and vector calculus.
7. **Prerequisite:** MATH 2411 [Calculus II]
8. **Textbook:** *Calculus: Early Transcendentals*, Briggs, First edition. We cover four chapters, beginning with Chapter 11.
The Calc. III portion can be purchased in the PAPERBACK version (less expensive and all the corrections have been made):
“*Multivariable Calculus*”.
If you have the MyMathLab subscription from using Briggs in a previous semester, then you should not need to purchase a new subscription.
For students who have not previously used Briggs, the cost of MyMathLab is \$75 and you WILL need to purchase it in order to complete the on-line homework problems.
9. **Technology:** A graphing calculator (TI-89) is often very handy during lectures to check boardwork. We do NOT allow technology on tests.
10. **Course Goals:**
 - (a) To reinforce knowledge gained from Calculus I & II.
 - (b) To extend that knowledge to multivariable calculus.
 - (c) To demonstrate the immediate relevance and applicability to other disciplines (Physics, in particular).

11. Grading:

	Weight
MyMathLab/HW/Inquiry	20%
Test #1	25%
Test #2	25%
Uniform Final	30%

NOTE: If you decide that you do not want the first category to count toward your final course grade, then you can elect to make the Uniform Final count 50% of your total grade. You MUST inform me in writing that this is what you want to do BEFORE you take TEST #2.

Your final course grade will be determined by the following percentage scale:

92.0 or more	= A
90.0 - 91.9	= A-
87.0 - 89.9	= B+
81.0 - 86.9	= B
79.0 - 80.9	= B-
76.0 - 78.9	= C+
70.0 - 75.9	= C
55.0 - 69.9	= D
Below 55.0	= F

12. MyMathLab Homework:

- The course ID is: **bennethum61749** (School ZIP is 80202).
The information sheet should tell you how to log in, especially if you already have a MML account with Pearson. Be sure to check the due dates for the various Chapter HW assignments!!! There are approximately 160 problems to solve. Some have multiple parts.
- On each problem, you may have 3 attempts. If you ask MyMathLab to “Show Me How to Solve This”, then you will use up one of the attempts. Be very careful on how you input the final answers!

13. Regular Written Homework:

- There will be exactly 11 written assignments worth 30 pts. each. They will be graded for accuracy, so it is important to use technology whenever possible to check your answers! The lowest written assignment grade will be dropped.
- Homework is due at the beginning of lecture on the date printed on the assignment sheet.
- NO LATE HOMEWORK WILL BE ACCEPTED since these are always due on a Wednesday. You will be given the homework a week early so you can start working on the homework on or before the previous weekend. If you do this you can ask reasonable questions on the Monday before it is due.

If you are not able to make it to class the day the homework is due, you can either fax it (303-556-8550; be sure to have my name printed clearly on the top sheet as this is a

communal fax machine), or you can drop your homework off at the math department (6th floor of CU building) early, or you can have a classmate turn it in for you. I do NOT accept e-mailed homework. It must be time-stamped before the due date time.

- (d) You will receive a cover sheet. You will receive NO credit if you simply just write down a bunch of calculations. You should write up the solution so that a classmate who does not understand how to solve the problem can understand HOW you are solving the problem. If I cannot follow how you got your answer, then you will receive NO credit. For each question [see written sample], you MUST:
- (i) give a short summary of the problem statement. I should NOT need to refer back to the text to determine the problem statement.
[The summary may be as short as “Evaluate the integral.”]
 - (ii) EXPLAIN what you are doing! Writing only a bunch of equations does NOT constitute solving! Showing that you understand the problem solving process is key!
 - (iii) organize all the work for the solution neatly. Do NOT cram everything together on one page. It pays to do most of the work on scratch paper *first*, and then copy your final solutions to the engineering pad.
 - (iv) box or highlight your final answers. I hate playing hide-and-go-seek when grading your assignments.

14. How I Calculate the Grade in the Category Marked: “MyMathLab/Inquiry/HW

- (a) The MyMathLab questions (4 chapters) compose 30% of this category.
- (b) The Guided Inquiry composes 30% of this category. More details on this later.
- (c) Your regular written homework grades compose 40% of this category.
- (d) These four percentages will be averaged to form the score in this category.

15. In-Class Tests:

- (a) We strive to provide a *short review* prior (the previous lecture period) to each in-class test, but our schedule is quite tight. Be sure to ask questions about the review material which will be handed out two sessions before each exam.
- (b) No technology is allowed on the test. We supply you with a note sheet of formulas prior to the test.
- (c) There are severe consequences for not contacting me prior to test time if you cannot take the tests at the appointed time! (E-mail!!!)

16. Uniform Final:

- (a) The date is Saturday, 5 May 2012 at 9 a.m. (to 12 noon). Make plans now! You cannot take the test early. We only reschedule your uniform final if you have another final exam on that Saturday. We prefer that you take our final that afternoon instead. The make-up day is the following Monday morning.
- (b) The final exam will be given in two parts. The first part will be 75 minutes long. We will have a short 15 minute restroom break, and then the second part will be 90 minutes long.

- (c) Unless you know that you may have a possible emergency during this time, you may NOT have your cell phones on during the exam. You may leave them on vibrate, and if you need to take a call, then inform the proctor.
- (d) You may NOT leave the testing room for a restroom break during either part. Be prepared before you start each part! If you leave during a part, then you may NOT complete that part.
- (e) See Mike Kawai if you have any issues with this date/time.

17. Academic Honesty:

- (a) I HAVE NO TOLERANCE FOR CHEATING. Cheating of any kind on a test will result in a course grade of “F”. It is possible that you will also be expelled from the University.
- (b) It is okay to collaborate on homework, but if there is obvious evidence that you are simply COPYING homework solutions from a solutions manual or from another student, then you will receive a failing grade on that assignment.
You are responsible for being attentive to or observant of campus policies concerning academic honesty as stated in the CLAS Academic Integrity and Honor Code.

18. Drops & Incompletes: You have until Friday, 2 April (5:00pm) to drop this course with only the instructor’s (but not the Dean’s) signature. The incomplete policy of the department and college is strictly enforced. Incomplete grades (I) are NOT granted for low academic performance. To be eligible for an incomplete grade, a student MUST meet ALL of the following requirements:

- (a) The student successfully completed a minimum of 75% of the course.
- (b) There were special circumstances *beyond the student’s control* that precluded the student from attending class and completing the course. Verification of these special circumstances is required.
- (c) The student has made arrangements to complete the missing coursework with the *original* instructor via a CLAS Course Completion Agreement.
The Course Completion Agreement is available from the CLAS Advising Office (NC 2024) or from the Department of Mathematical Sciences (6th floor of the CU-Denver Bulding).

19. Religious Holiday Accomodations: You must inform me *at the beginning of this semester*, in order for me to accomodate any rescheduling of your coursework.

20. Disability Accomodations: To be eligible for accomodations, students *must* be registered with the UCD Office of Disability Resources and Services (DRS). The office is located at NC 2514 [(303)556-3450]. Faculty cannot arbitrarily decide to give a student extra time, extra assistance, or other forms of aid unless it is formally mandated by the DRS.

Tentative Schedule (Mon./Wed.)

- 01/18:** Sect. 11.1 (Vectors in 2D)
Sect. 11.2 (Vectors in 3D)
- 01/23:** Sect. 11.3 (Dot Products; Projections)
- 01/25:** Sect. 11.4 (Cross Product)
- 01/30:** Sect. 11.5 (Lines & Curves in 3D)
- 02/01:** Sect. 11.6 (Calculus of Vector-Valued Functions)
Sect. 11.7 (Motion in Space)
- 02/06:** Sect. 11.8 (Length of Curves)
- 02/08:** Sect. 11.9 (Curvature & Normal Vectors)
- 02/13:** Sect. 12.1 (3D Planes & Surfaces)
- 02/15:** [WEDNESDAY] **TEST #1**
- 02/20:** Sect. 12.2 (3D Graphs & Level Curves/Contours)
Sect. 12.3 (Limits & Continuity)
- 02/22:** Sect. 12.4 (Partial Derivatives)
- 02/27:** Sect. 12.5 (Multivariable Chain Rule)
- 02/29:** Sect. 12.6 (Directional Derivatives & Gradient)
- 03/05:** Sect. 12.7 (Tangent Planes & Linear Approximation)
- 03/07:** Sect. 12.8 (Maximum/Minimum Problems)
- 03/12:** Sect. 13.1 (Double Integrals over Rectangular Regions)
- 03/14:** Sect. 13.2 (Double Integrals over General Regions)
- 03/26:** Sect. 13.3 (Double Integrals in Polar Coordinates)
- 03/28:** [WEDNESDAY] **TEST #2**
- 04/02:** Sect. 13.4 (Triple Integrals)
Sect. 13.5 (Triple Integrals in Cylindrical & Spherical)
- 04/04:** Sect. 13.6 (Integrals for Mass Calculations)

04/09: Sect. 14.1 (Vector Fields)

04/11: Sect. 14.2 (Line Integrals)

04/16: Sect. 14.3 (Conservative Vector Fields)

04/18: Sect. 14.4 (Green's Theorem)

04/23: Sect. 14.5 (Divergence & Curl)

04/25: Sect. 14.6 (Surface Integrals)

04/30: Sect. 14.8 (Divergence Theorem)

05/02: Review & catch-up.

05/05: [Saturday!] **UNIFORM FINAL** (room to be announced later).
9 a.m. to 12 noon.