

Syllabus for MATH 2421 Section 001
Calculus III – Summer 2007

1. **Instructor:** Craig Tennenhouse

I am a Ph.D. student in the Department of Mathematical Sciences at UCDHSC.

2. **Time and Location:** Tuesdays & Thursdays, 4:00 p.m. - 6:45 p.m. in NC 1515.

3. **Office Hours:**

Tuesdays & Thursdays, 12:40 p.m. - 1:40 p.m. in SI 132 (MERC Lab). [This is a shared office hour with my other course, MATH 1010.]

Tuesdays & Thursdays, 6:45 p.m. - 7:45 p.m. in SI 132 (MERC Lab). [This one is pretty much dedicated to you.]

MERC Lab Phone: (303)556-8532. Do NOT leave voice mail there. Use my e-mail address!

Other times are available by appointment.

4. **My Office of Record:** I will have a regular office in the CU-Denver Building later on in the semester. [Math Dept.: (303) 556-8442]

For now, I will conduct all of my course business in the MERC Lab (SI 132). You may give homework, etc., to any of the Lab Assistants and they will place it in my folder.

5. **E-mail:** ctennenhouse@gmail.com

6. **Website:** math.cudenver.edu/~mkawai

[The curriculum coordinator for this course is Mike Kawai, the MERC Lab Director. He will host the associated web pages for this course this semester.]

7. **Course Description:** Topics include vectors, vector-valued functions, partial differentiation, multiple integration, and vector calculus.

8. **Prerequisite:** MATH 2411 [Calculus II]

9. **Textbook:** *Calculus: Concepts and Connections*, Smith/Minton (Maroon book). We cover five chapters, beginning with Chapter 08.

If your textbook came with a blue cardboard *Student Access Kit* (not an Instructor's Access Kit), then hold on to it.

10. **Optional Technology:** A graphing calculator is often very handy during lectures. We often check our boardwork with the TI-89/92. Calculators are NOT used on the in-class quizzes or tests. You may use technology if I give a Lab Assignment (which may count as a quiz).

If you have a Windows PC, you may obtain a free copy of Derive5 from the MERC Lab. Follow the installation instructions very carefully!

11. **MathZone [Extra Credit]:** MathZone is the publisher's on-line resource which provides extra practice problems, on-line quizzes, and on-line tutoring for this textbook. By completing the on-line quizzes (each has a due date), you can earn percentage points which will be added to your final course grade.

With an overall score of at least...	you will earn an additional
90%	+4%
80%	+3%
70%	+2%
50%	+1%

For most on-line quizzes, you will have three attempts to score 100%. Some questions require the use of technology.

If you bought your textbook on-line and it contains a MathZone kit, be sure that it is a *Student Access Kit*, and not an Instructor's Access Kit. You can buy a Student Access separately on-line at www.mathzone.com for \$20. If you already bought a password, then you do not need to buy a new one.

If you have any questions, please contact Mike Kawai in the MERC Lab.

12. **Course Goals:**

- (a) To reinforce knowledge gained from Calculus I and II.
- (b) To extend that knowledge to multivariable calculus.
- (c) To demonstrate the immediate relevance and applicability to other disciplines (Physics, in particular).

13. **Grading:**

	Weight
Homework	15%
Quizzes	15%
Test #1	35%
Test #2	35%

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-
75.0 - 78.9	= C+
69.0 - 74.9	= C
55.0 - 68.9	= D
Below 55.0	= F

14. Homework:

- (a) Unless otherwise stated, assignments will be made on Thursdays and your completed write-ups will be due on the following Thursday.
- (b) Unexcused late homework will be accepted through the following lecture period with a 30% deduction. After that, no late homework will be graded.
- (c) We do NOT have a lot of time to answer homework questions during the lecture periods. It is imperative that you do not miss any class meetings!
- (d) All homework must be completed on *engineering pad paper*. Only use the graph paper side when drawing scaled graphs and figures.
- (e) Organize all work neatly. I want to see a short summary of each question and I should NOT need to refer back to the text when analyzing your work. It pays to do most of the work on scratch paper *first*, and then copy your final solutions to the engineering pad. I have attached an sample of some homework from Mike's previous section.
- (f) It is imperative that you spend as much time as possible at mastering the homework and computer work (8 hours minimum per week *outside of lecture*; some of that time can be spent in the lab working with other students!). Spend your time wisely! If you find yourself working on one problem for more than 10 minutes without any progress, then move on to another problem. Doing other problems will often clarify something which you needed to do for the original problem. If you are getting stuck on all the problems, then collaborate with other students or with me during office hours!

15. Quizzes:

- (a) Unless stated otherwise, we will have a quiz every Tuesday, typically at the beginning of the lecture period. If you arrive late to the lecture, please be considerate of other students and enter quietly.
- (b) I will drop your lowest quiz grade.
- (c) NO MAKEUPS ON QUIZZES.

16. In-Class Tests:

- (a) We strive to provide a *short review* prior 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 the week 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 on schedule! (E-mail!)

- 17. Cheating:** I HAVE NO TOLERANCE FOR THIS AT ALL. Cheating of any kind on a quiz or test will result in a course grade of "F". It is possible that you will also be expelled from the university.

18. **Drops and Incompletes:** Incomplete grades (IW or IF) are NOT granted for low academic performance. To be eligible for an incomplete grade, students 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.
19. **Religious Holiday Accomodations:** You must inform me AT THE BEGINNING OF THE 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 UCDHSC Office of Disability Resources and Services (DRS). The office is located in the Arts Bldg. in Room 177 [(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.

21. Dean's Office Announcements:

- (a) Students MUST check and verify their schedule prior to the published drop/add deadlines. Failure to verify a schedule is NOT sufficient reason to justify a late add or drop later in the semester. It is the student's responsibility to ensure that their schedule is correct prior to the appropriate deadlines.
- (b) All students must always have an accurate mailing and e-mail address. E-mail is the official method of communication for all UCDHSC business.
To update this information, please go to: <http://www.cudenver.edu/registrar>.
- (c) Students are NOT automatically added to a course off a wait list after wait lists are dropped. If a student is told by a faculty member that they will be added off the wait list, then IT IS THE RESPONSIBILITY OF THE STUDENT TO COMPLETE THE PROPER PAPERWORK TO ADD THE COURSE. Students are NOT automatically added to a course off the wait list after the fifth day of the semester when wait lists are dropped.
- (d) Students are NOT AUTOMATICALLY NOTIFIED if they are added to a class from a wait list. Again, it is the student's responsibility to ensure that their schedule is correct prior to the appropriate deadlines.
- (e) Students must complete and submit a drop/add form to make any schedule changes (beyond the SMART system). Students are NOT automatically dropped from a class if they stop attending or do not make tuition payments. The STUDENT is ultimately responsible for verifying his schedule prior to the officially published drop dates!
- (f) Late adds and late drops will be approved ONLY when the circumstances surrounded the add or drop are beyond the student's control and can be documented independently. This will require a petition and documentation from the student. Please note that the signature of a faculty member on an add/drop form does NOT guarantee that the corresponding action will be approved.
- (g) Students wishing to graduate in August of 2007 MUST meet with their academic advisors by the end of the add/drop period to obtain a graduation application. This application must be completed and submitted by 5:00 p.m. on 7 June 2007. You can obtain an application ONLY after meeting with your academic advisor. THERE ARE NO EXCEPTIONS TO THIS POLICY OR DATE.
- (h) Students are responsible for completing financial arrangements with financial aid, family, scholarships, etc. to pay their tuition. Students will be responsible for all tuition and fees for courses they do not officially drop! [In other words, use the proper drop/add procedures and forms!]
- (i) Students who drop after the published drop/add period will not be eligible for a refund of the COF hours or tuition.
- (j) 31 May (11:59 p.m.) – Last day to be added to the wait list for closed courses (via SMART).
- (k) 30 May - 7 June – Students are responsible for verifying accurate Summer 2007 registration via web SMART. Students are NOT notified of their wait-list status by the University. All students must check their schedules THROUGH 7 June 2007 for accuracy!

- (l) 2 June (5:00 p.m.) – Wait lists are dropped. Any student who was not added to a course automatically from the wait list by this date and time **MUST** complete a drop/add form to be added to the class. Students are **NOT** automatically added to the class from the wait list after this date and time. If your name is not on the official student roster (your instructor has this), then you are **NOT** registered for the course.
- (m) 4 June (11:59 p.m.) – Last day to add courses via web SMART system.
- (n) 7 June (5:00 p.m.) – Last day to add structured courses without a written petition for a late add. **This is an ABSOLUTE deadline.** This deadline does not apply to independent study, internships, and late-starting module courses.
- (o) 7 June (5:00 p.m.) – Last day to drop a Summer 2007 course (or withdraw from all Summer 2007 courses) for tuition refund and no transcript notation. Drops after this date will appear on your transcript. **This is an ABSOLUTE deadline.**
- (p) 7 June (5:00 p.m.) – Last day for undergraduates to apply for August 2007 graduation. **This is an ABSOLUTE deadline.**
- (q) 7 June (5:00 p.m.) – Last day to request Pass/Fail or No Credit option. **This is an ABSOLUTE deadline.**
- (r) 2 July (5:00 p.m.) – Last day for **non-CLAS students** to drop or withdraw from all classes without a petition to their home college and receiving their Dean’s approval. **This is an ABSOLUTE deadline.**
- (s) 6 July (5:00 p.m.) – Last day for **CLAS students** to drop or withdraw from all classes without a petition and special approval from the student’s academic Dean. **This is an ABSOLUTE deadline.**

Tentative Schedule

- 5/29:** Sect. 8.1 (Vectors in 2D)
Sect. 8.2 (Vectors in 3D)
- 5/31:** Sect. 8.3 (Dot Product)
Sect. 8.4 (Cross Product)
- 6/05:** Sect. 8.5 (Lines & Planes in 3D)
Sect. 9.1 (Vector-Valued Functions)
- 6/07:** Sect. 9.2 (Calculus of Vector-Valued Functions)
Sect. 9.3 (Motion in Space)
- 6/12:** Sect. 9.4 (Curvature/Unit Tangent Vector)
Sect. 9.5 (Tangent & Normal Vectors)
- 6/14:** Sect. 8.6 (Surfaces)
Sect. 10.1 (Functions of Several Variables)
- 6/19:** Sect. 10.2 (Limits & Continuity)
Sect. 10.3 (Partial Derivatives)
- 6/21:** Sect. 10.4 (Total Differential, Linear Approximations, and Tangent Planes)
Sect. 10.5 (Chain Rule)
- 6/26:** Sect. 10.6 (Gradient & Directional Derivative)
Sect. 10.7 (Extrema of Two-Variable Functions)
- 6/28:** CATCH-UP/REVIEW FOR TEST #1
- 7/03:** TEST #1.

- 7/05:** Sect. 11.1 (Double Integrals)
Sect. 11.2 (Area, Volume, and Center of Mass)
- 7/10:** Sect. 11.3 (Polar Double Integrals)
Sect. 11.4 (Surface Area)
- 7/12:** Sect. 11.5 (Triple Integrals)
Sect. 11.6 (Cylindrical Coordinates)
- 7/17:** Sect. 11.7 (Spherical Coordinates)
Sect. 12.1 (Vector Fields)
- 7/19:** Sect. 12.2 (Curl & Divergence)
Sect. 12.3 (Line Integrals)
- 7/24:** Sect. 12.4 (Independence of Path)
Sect. 12.5 (Green's Theorem)
- 7/26:** Sect. 12.6 (Surface Integrals)
[Mention Stokes' Theorem.]
Sect. 12.7 (Divergence Theorem)
- 7/31:** CATCH-UP/REVIEW FOR TEST #1
- 8/02:** TEST #2.