Syllabus for MATH 2421 Section 001 Calculus III (Fall 2011)

1. **Instructor:** Prof. Alexander Engau

2. **E-mail & Phone:** alexander.engau@ucdenver.edu, (303) 556-6121

3. **Time and Location:** Monday/Wednesday 5:00 p.m. - 6:50 p.m. in NC 3205.
   PLEASE TURN OFF YOUR CELL PHONES DURING OUR LECTURE PERIODS!

4. **Instructor’s Office Hours:** Tuesday/Wednesday 9:00 a.m. - 10:30 a.m. in CU 622.

5. **Instructor’s Course Website:** math.ucdenver.edu/~aengau/math2421calc3.php

6. **Course Captain’s Website:** math.ucdenver.edu/~mkawai (Check here if you missed class.)

7. **Course Topics:** Vector calculus, partial differentiation, and multiple integration.

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

9. **Textbook:** Calculus: Early Transcendentals, Briggs, First edition. We will cover Chapters 11–14. This portion can be purchased in the PAPERBACK version “Multivariable Calculus”. If you have the MyMathLab subscription from 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 it to complete your on-line homework problems.

10. **Technology:** A graphing calculator (TI-89) is often very handy during lectures to check boardwork. We do NOT use them during the tests.

11. **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).

12. **Grading:**

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<thead>
<tr>
<th></th>
<th>Weight</th>
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<tbody>
<tr>
<td>MyMathLab</td>
<td>15%</td>
</tr>
<tr>
<td>Quiz</td>
<td>5%</td>
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<tr>
<td>Test #1</td>
<td>25%</td>
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<tr>
<td>Test #2</td>
<td>25%</td>
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<tr>
<td>Uniform Final</td>
<td>30%</td>
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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
13. **MyMathLab Homework:**

(a) You first need to enroll into your course on MyMathLab (the course ID is “engau04741”). Be sure to periodically check the due dates for the various Chapter HW assignments!!!

(b) You should be spending about 8 hours each week outside of class on written work. This includes MyMathLab. Note that you have access to the Student’s Solutions Manual which is located under “Tools for Success” in the left-hand column of the MML buttons.

(c) 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!

14. **Quizzes**

(a) I give both in-class and take-home quizzes. Each quiz is worth 5 points. I will drop your lowest quiz.

(b) I usually give a prep sheet for in-class quizzes.

(c) Take-home quizzes are formal write-ups of some longer problems. You must submit these on ENGINEERING PAD paper (regular graph paper is NOT acceptable).

(d) You will receive a cover sheet for a take-home quiz. You will receive NO credit if you simply just write down a bunch of calculations. If a non-MATH person cannot understand how you are solving the problem, then you 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) give a one or two sentence “plan of attack” which tells the reader how you are planning to solve the problem.

   (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. We hate playing hide-and-go-seek when grading.

(e) Late homework will not be accepted. If you have made some prior arrangement with me, then no points will be deducted. No homework scores will be dropped. We expect you to complete all 12 assignment on time, with the written project.

(f) The Guided Inquiry from Chapter 13 is equal to one chapter’s worth of homework. It will be graded separately off-line, but should appear in your MyMathLab gradebook eventually. The inquiry must be typed, but the number of algebraic equations is not huge and you should be able to format them with MS Word’s Equation Editor, or with a similar word processing tool. We will hand out the grading criteria when the assignment is posted.

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, 10 December 2011 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 makeup 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 15 minute rest room 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 room for a rest room break during either part. Be prepared before you start! 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 quiz or 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.

(c) 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 Monday, 31 October 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 be 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 Building).

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

20. **Disability Accommodations:** To be eligible for accommodations, 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.)

08/22: Sect. 11.1 (Vectors in 2D)
       Sect. 11.2 (Vectors in 3D)
08/24: Sect. 11.3 (Dot Products; Projections)
08/29: Sect. 11.4 (Cross Product)
08/31: Sect. 11.5 (Lines & Curves in 3D)
       NO CLASS MEETING ON LABOR DAY 09/05.
09/07: Sect. 11.6 (Calculus of Vector-Valued Functions)
       Sect. 11.7 (Motion in Space)
09/12: Sect. 11.8 (Length of Curves)
09/14: Sect. 11.9 (Curvature & Normal Vectors)
09/19: Sect. 12.1 (3D Planes & Surfaces)
09/21: [WEDNESDAY] TEST #1
09/26: Sect. 12.2 (3D Graphs & Level Curves/Contours)
       Sect. 12.3 (Limits & Continuity)
09/28: Sect. 12.4 (Partial Derivatives)
10/03: Sect. 12.5 (Multivariable Chain Rule)
10/05: Sect. 12.6 (Directional Derivatives & Gradient)
10/10: Sect. 12.7 (Tangent Planes & Linear Approximation)
10/12: Sect. 12.8 (Maximum/Minimum Problems)
10/17: Sect. 13.1 (Double Integrals over Rectangular Regions)
10/19: Sect. 13.2 (Double Integrals over General Regions)
10/24: Sect. 13.3 (Double Integrals in Polar Coordinates)
10/26: [WEDNESDAY] TEST #2
10/31: Sect. 13.4 (Triple Integrals)
       Sect. 13.5 (Triple Integrals in Cylindrical & Spherical)
11/02: Sect. 13.6 (Integrals for Mass Calculations)
11/07: Sect. 14.1 (Vector Fields)
11/09: Sect. 14.2 (Line Integrals)
11/14: Sect. 14.3 (Conservative Vector Fields)
11/16: Sect. 14.4 (Green’s Theorem)
11/28: Sect. 14.5 (Divergence & Curl)
11/30: Sect. 14.6 (Surface Integrals)
12/05: Sect. 14.8 (Divergence Theorem)
12/07: Review & catch-up.
12/10: [Saturday!] UNIFORM FINAL (room to be announced later).
       9 a.m. to 12 noon.
Fall 2011 CLAS Academic Policies

The following policies pertain to all degree students in the College of Liberal Arts and Sciences (CLAS).

- **Schedule verification**: It is each student’s responsibility to verify online that his/her official registration is correct: verify before classes begin and prior to the drop/add deadline. Failure to verify schedule accuracy is not sufficient reason to justify a late add or drop.

- **E-mail**: Students must activate and regularly check their official student e-mail account for CU Denver business: [http://www.ucdenver.edu/student-services/Pages/WebMail.aspx](http://www.ucdenver.edu/student-services/Pages/WebMail.aspx). Those who forward email to a private account are still responsible for checking their official student e-mail account for messages not automatically forwarded.

- **Waitlists**:  
  - Students are *not* automatically notified if they are added to a class from a waitlist. Students are *not* automatically dropped from a class if they never attended, stopped attending, or do not make tuition payments.
  - Waitlists are purged after the 1st week of classes, after which a paper Schedule Adjustment Form (drop/add form) is required. It is the student’s responsibility to get the form (online or at the Advising Office, NC 4002), have it signed, deliver it to the Registrar (Annex 100) or the Student Services Center (NC 1003), and verify her/his schedule online.

- **Late adds**: (after 7 September) will be approved only when circumstances surrounding the late add are beyond the student’s control. This will require a written petition and verifiable documentation. Petition forms are available in NC 4002. The signature of a faculty member on a Schedule Adjustment Form does not guarantee that a late add petition will be approved.

- **Late drops**: (after 14 November) will be approved only when circumstances surrounding the late drop have arisen after the published drop deadline and are beyond the student’s control. This will require a written petition and verifiable documentation. The signature of a faculty member does not guarantee that a late drop petition will be approved.

- **Tuition**: Students are responsible for completing arrangements with financial aid, family, scholarships, etc. (depending on tuition plan selected) to pay their tuition prior to Census Date (7 September). Students who drop after that date are (1) financially responsible for tuition and fees, (2) academically responsible and will receive a “W” grade, and (3) are ineligible for a refund of COF hours or tuition.

- **Graduation**:  
  - Undergraduate students wishing to graduate in fall 2011 must complete the online Intent to Graduate Form and meet with their academic advisor to obtain a graduation application. This application must be submitted by Census Date (7 September). You can obtain an application only after meeting with your advisor. There are no exceptions to this policy.
  - Graduate students wishing to graduate in fall semester 2011 must complete the online Intent to Graduate form and have a Request for Admissions to Candidacy on file with the CU Denver Graduate School (Lawrence Street Center) no later than 5 PM, September 7, 2011.
Fall 2011 CLAS Important Dates and Deadlines

- **August 22, 2011**: First day of classes.
- **August 28, 2011**: Last day to add a class or be added to a waitlist using the UCD Access student portal. After this date, you must use a Schedule Adjustment Form to change, add, or drop.
- **August 29, 2011**: LAST DAY TO DROP WITHOUT DROP CHARGE – THIS INCLUDES SECTION CHANGES.
- **August 29, 2011**: Waitlists are dropped. Any student not added to a course automatically from the waitlist by this date MUST complete a Schedule Adjustment Form to be added. Students are NOT automatically added to the class from the waitlist after this date and time. If your name is not on the official student roster, you are not registered for the course.
- **August 30-September 7, 2011**: Students are responsible for verifying an accurate fall 2011 course schedule via the UCDAccess student portal. Students are NOT notified of their waitlist status by the University. All students must check their schedule prior to 9/7 for accuracy.
- **August 30, 2011**: First day instructor may approve request to add a student to a course with a Schedule Adjustment Form.
- **September 7, 2011**: Census date.
  - **9/7/11, 5 PM**: Last day to add structured courses without a written petition for a late add. This is an absolute deadline and is treated as such. This deadline does not apply to independent studies, internships, project hours, thesis hours, dissertation hours, and late-starting modular courses.
  - **9/7/11, 5 PM**: Last day to drop a fall 2011 course or completely withdraw from all fall 2011 courses using a Schedule Adjustment Form and still receive a tuition refund, minus the drop fee. After this date, tuition is forfeited and a "W" will appear on the transcript. This includes section changes. This is an absolute deadline and is treated as such.
  - **9/7/11, 5 PM**: Last day to request pass/fail or no-credit option for a course.
  - **9/7/11, 5 PM**: Last day for a graduate student to register for a Candidate for Degree.
  - **9/7/11, 5 PM**: Last day for a Ph.D. student to petition for a reduction in hours.
  - **9/7/11, 5 PM**: Last day to apply for fall 2011 graduation. You must make an appointment and see your academic advisor before this date to apply for graduation if you are an undergraduate; you must complete the Intent to Graduate and Candidate for Degree forms if you are a graduate student.
- **September 19-28, 2011**: Faculty can use the Early Alert system.
- **October 31, 2011, 5 PM**: Last day for non-CLAS students to drop or withdraw without a petition and special approval from the academic dean. After this date, a dean's signature is required.
- **November 14, 2011, 5 PM**: Last day for CLAS students to drop or withdraw with signatures from the faculty and dean but without a full petition. After this date, all schedule changes require a full petition. Petitions are available in NC 4002 for undergraduates and in the CU Denver Graduate School offices for graduate students.
- **November 21-27, 2011**: Fall break (no classes; campus closed). Be thankful.
- **December 12-17, 2011**: Finals Week. No schedule changes will be granted once finals week has started. There are NO exceptions to this policy.
- **December 27, 2011**: Fall final grades available on UCD Access (tentative).
Additional University Resources

**Academic Advising Center** This office serves as the first point of contact for students who are pre-business, pre-engineering, or who have not declared a major in CLAS or CAM. In addition, the center provides general information and resource referral to all students. *North Classroom Building (NC) Room 1, Phone (303) 352-3520.*

**Career Center** The CC offers a full array of services that prepares students for success, such as resume help, internship and career counseling. *Tivoli Student Union Room 260.*

**Center for Learning Assistance** The Center for Learning Assistance is where students go to get help or insight with class assignments, course-loads, and study skills. The Center also helps with arranging tutoring sessions, which take place in the days or evenings. *NC Bldg. Room 2006, (303) 556-2802, Monday - Thursday 8am-7pm, Friday 8am-5pm.*

**Counseling Center** The UC Denver Student and Community Counseling Center provides mental health counseling services to the UC Denver student body as well as the Denver Metro community. If you are interested in counseling services, call (303) 556-4372 or drop in at the North Classroom Building, Room 4036 to schedule an intake appointment.

**Experiential Learning Center** The ELC serves students, faculty, employers, and community partners as a resource for experiential learning opportunities, including a variety of activities with one common goal: to immerse you in hands-on learning outside the classroom where your experience is at the heart of the learning process. The Center offers information, resources and support in the development and coordination of academic internships and co-ops, service-learning courses, volunteer opportunities, and undergraduate research experiences. *Tivoli Student Union, Suite 260, Phone: (303) 556-6656, Hours: M-F 8:00-5:00.*

**Mathematics Education Resource Center (MERC)** The MERC Lab provides both general help as well as coursework and technology assistance for all lower-division math classes (Math 1010, 1070, 1080, 1130, 1401, 2411, 2421, 2830) and selected upper-division courses (linear algebra, differential equations, statistics). It also provides computing facilities for students with access to mathematical software and computer algebra systems. Regular Operation Hours are Monday through Thursday from 9am to 8pm and Friday and Saturday from 9am to 4pm (closed on Sundays and Campus Holidays). *North Classroom (NC) Building, Room 4015, Phone: (303) 556-8532, Email: mike.kawai@ucdenver.edu.*

**Program Access for Persons with Disabilities** UCD is committed to providing reasonable accommodation and access to programs and services to persons with disabilities. Students with disabilities requiring accommodations, please contact the Office of Disability Resources & Services located in NC 2514, phone (303) 556-3450, TTY (303) 556-4766. The staff will assist you in determining reasonable accommodations as well as their coordination.

**Psychological Services Center** The PSC provides high quality, affordable therapy and assessment services to the Denver metropolitan area. The program serves the local Denver community, as well as faculty, staff and students, by providing a range of therapeutic services including therapy for individual adults and children, intellectual/academic testing and psychoeducational assessment for adults and children, consultation and feedback following each assessment, and referrals and resources to help meet your needs. *North Classroom (NC) Building Suite 3002, Phone: (303) 556-5289, Email: psych.services@ucdenver.edu.*

**Writing Center** The Writing Center offers free one-on-one and small-group writing consultations in areas such as generating, organizing and developing ideas, analysis, synthesis and argument, and information literacy and research strategies. Consultants are available to work with writers on any type of written work, including scholarship applications, personal statements, resumes, article reviews, theses, statements of purpose, dissertations, and graduate school applications. *North Classroom Building, Room 4014, Phone: (303) 556-4845, Fax: (303) 352-3651, Email: writing.center@ucdenver.edu.*