

Numerical Methods: CSCI/MATH 373-01, Christine Cumming (Strunk)

I. Contact Information

Professor: Dr. Christine Cumming (Strunk)

Email: cumming@ulm.edu (preferred)

Phone: 318-342-1923

Webpage: www.ulm.edu/~cumming

Office: Airway 353

Office Hours: (also by 24 hour appointment)

In the MRC, TTh 11:30-12:30pm, and Th 2-3pm*

In Airway 353, MW 9-10am

Math Resource Center (MRC*): It is located in Airway 211. The expected hours are Monday through Thursday from 7am-7pm and Friday from 8-11:30am. [While you are in the MRC, you must be only doing work for a math class. The instructors might be able to help you with *Maple* or *Matlab*, **but not with programming.**]

II. Course Prerequisites

CSCI 203 and a grade of C or better in MATH 132 and MATH 202.

III. Course Description

This course covers numerical algorithms fundamental to scientific work including discussion or error.

IV. Course Objectives and Outcomes

Students finishing this course will have a working knowledge of techniques used to numerically solve classical Calculus and Linear Algebra problems including how to solve gravity problems, to find zeros of functions, to optimize functions, to differentiate numerically, to integrate numerically, to interpolate polynomials, to find inverses of matrices, and to use Gaussian Elimination.

V. Course Topics

We will cover a majority of the material in chapters 1-6, 8-12, and 15-18 and other select topics.

VI. Instructional Methods and Activities

This course will consist of daily lectures, regular quizzes, homework, projects, 3 exams, and a final exam.

VII. Evaluation and Grade Assignment

Homework Assignments

On all homework and programming projects, I want a clear explanation on every problem/program of what you did and why you did it.

Student Evaluation:

Quizzes, Homework, and Projects	150 points
<i>(probably Quiz+Hw 60pts and Projects 90pts OR vice versa)</i>	
Exams (3 exams each 100 points)*	300 points
<u>Final Exam (comprehensive)</u>	<u>150 points</u>
Total	600 points

Exams will be kept by the instructor. You may make an appointment to review your exam, but you may not copy **OR take pictures of your exam.*

Grading Scale:

A	540-600 points	D	360-419 points
B	480-539 points	F	0-359 points
C	420-479 points		

Undergraduate mid-term grades will be posted on-line for students to view via Arrow. Mid-term grades indicate a student's status at mid-semester only and do not indicate the final performance outcome of a student.

VIII. Class Policies and Procedures

At a minimum, all policies stated in the current ULM *Student Policy Manual & Organizational Handbook* should be followed (see <http://www.ulm.edu/studentpolicy/>). Additional class policies include:

A. Textbook and Materials:

- **Textbook:** *Applied Numerical Methods with MATLAB* by S. Charpra
- **Calculator:** A graphing calculator (such as TI-83, TI-83+, or TI-84+) (*Please no cell phone calculators.*)

B. Attendance Policy: Attendance is mandatory and will be taken each period. It is the student's responsibility to ensure that his/her attendance is recorded. If you miss any class (excused or unexcused), you are responsible for finding out what was covered and learning it on your own.

- The guidelines for excused absences may be found in the current ULM catalog (on page 57). **YOU MUST PROVIDE A COPY OF DOCUMENTATION** (doctor's excuse, etc.) **FOR ANY EXCUSED ABSENCE**. It must be presented **FOR THE PROFESSOR'S RECORDS**, and you must show the original when presenting the copy. Questionable documentation will not be accepted.

C. Make-up Policy:

- There are no make-up quizzes. Late homework and projects will not be accepted.
- If you miss an exam due to an unexcused absence, zero points will be recorded for that exam.
- If you miss an exam due to an excused absence and you can provide documentation as soon as you return to class (or **if possible before the exam**), I will use your final exam score to assign you a grade for that exam.
- Do not miss the final exam for any reason. You must provide at least one month notice if there is even the possibility that you may miss the final exam.

D. Academic Integrity: Faculty and students must observe the ULM published policy on Academic Dishonesty (see Page 4 in ULM *Student Policy Manual* -- <http://www.ulm.edu/studentpolicy/>).

E. Course Evaluation Policy: At a minimum, students are expected to complete the on-line course evaluation.

F. Student Services: Information about ULM student services, such as

- Student Success Center (<http://www.ulm.edu/cass/>),
- Counseling Center (<http://www.ulm.edu/counselingcenter/>),
- Special Needs (<http://www.ulm.edu/counselingcenter/special.htm>), and
- Student Health Services (under the Student Services web site) <http://www.ulm.edu/studentaffairs/>.

G. Emergency Procedures: Contact me as soon as possible.

H. Classroom Behavior: *Please be respectful of your fellow students.*

Cell phones and other electronic devices are to be set to the "off" mode. All such devices should be placed out of sight during exams. If these devices become disruptive, further rules will follow.

I. Email Policy: Poor email etiquette reflects poorly on you. Treat emails like you would a business letter that you would send through the mail. Make sure your emails include "Math 373" and your full name.

J. Special Note: *Any athletes or anyone else needing special assistance (as addressed by the Americans with Disabilities Act) please notify the instructor immediately.*

IX. Tentative Course Schedule

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B. Tentative Schedule:

- This schedule shows the approximate dates that we will cover specific sections.
- Ask the instructor or see Moodle for due dates.
- The instructor reserves the right to adjust the schedule as needed.

	<u>Monday</u>	<u>Wednesday</u>	<u>Due This Week</u>
Aug. 24*/26	Ch. 1	Ch. 2-4	
Aug. 31/Sept. 2	Ch. 4	Ch. 5	
Sept. 7/9	(No Classes)	Ch. 6, Quiz on Ch. 1-5	
Sept. 14/16	Ch. 6	Review/Project 1 check	
Sept. 21/23**	<u>EXAM 1</u>	Ch. 15	Project 1 on 9/23
Sept. 28/30	Ch. 15-16	Ch. 16	
Oct. 5/7	Ch. 16-17	Ch. 17, Quiz on Ch. 15-17	
Oct. 12/14	Ch. 17	Ch. 18	
Oct. 19/21	Review/ Project 2 check	<u>EXAM 2</u>	
Oct. 26/28	(No Classes)	Ch. 8	Project 2 on 10/28
Nov. 2/4	Ch. 9	Ch. 9-10	
Nov. 9/11	Ch. 10-11	Ch. 11, Quiz on Ch. 8-10	
Nov. 16/18	Ch. 12	Review/ Project 3 check	
Nov. 23/25	<u>EXAM 3</u>	(No Classes)	
Nov. 30/Dec. 2	Ch. 12	Review	Project 3 on 12/2

Final Exam is on Tuesday, Dec. 8 at 3pm.

Notes: The last day to add or drop a course without “W” is Aug. 25*. The last day to drop a course and/or resign from the university with a grade of “W” is Sept. 24**.

C. Homework Problems: (To be announced)

- These will be assigned throughout the semester. Check Moodle.
- You may always use previous problems and parts even if you have not proved them.

D. Projects: (To be announced)

- These will be assigned throughout the semester. Check Moodle.
- These will use either Maple or Matlab.
- **If we do use Matlab, as a student, you can buy a student version of Matlab for around \$100 for your computer. Please talk to me about this outside of class for details.**

Any suggestions to make this class more productive or enjoyable are welcome. Please do not hesitate to contact me any time during the semester to get help on your work or to discuss your grade in the course.