

# Syllabus for MA 322 Fall 2009

MA322-401 Fall 2009

**Ma322-401 is an introduction to linear algebra and the theory of matrices. Prerequisites are the mathematical maturity represented by successful completion of two semesters of calculus or the completion of the first and concurrent enrollment in the second. Except for the initial session and for examinations, the class will meet "online", using a synchronous conferencing system called CENTRA. Students will receive an email prior to each class meeting which will have a link that opens their class session. To participate in the class you will need:**

- access to a computer (PC or Mac) on which you have administrative privileges and
- an audio headset with earphones and microphone.

The class will also use the UK Math Department's WHS web-homework system. Accounts will be created in this system within 24 hours of official registration in the course and can then be activated beginning the evening of August 25, 2009.

The instructor will use the Maple problem solving language to illustrate course material and to efficiently do calculations. Students may wish to learn about Maple as part of their course participation. Maple is installed in all university computing laboratories where it can be freely used. The student version can be purchased from Maplesoft at <https://webstore.maplesoft.com/catalog.aspx> (download) for \$99 and shipped CD for \$129. They offer many "student resources" that are probably not worth the expense given free resources such as Professor Eberhart's free Maple handbooks and worksheets at <http://www.ms.uky.edu/~carl/>

An orientation to the technology will be provided at the "in-person" meeting on the first day of class in CB 214 at 7:30 pm. Check the schedule of classes for the classroom. For students who are taking the course at a distance making it unreasonable to attend the on-campus orientation a web-conference orientation will be scheduled. Contact the instructor for information on the online orientation. Assistance with the Technology:

For assistance with any of the UK technology, contact the instructor by email or telephone or click "Help" on any page of <http://www.mathclass.org> and submit a help message describing the problem. IF you are logged in to your account then the system will, in principle, have all of the information it needs to contact you. Even in that case however, at least until the second full week of class, please include contact information in the message.

Here is summary of instructor contact information as well as times and locations of class meetings and the like, as of the first day of class. **These are subject to change through the first two weeks of class.**

<b>MA 322-401</b>	
<b>Instructor</b>	Paul Eakin
<b>Office</b>	961 P.O.T.
<b>Phone</b>	257-3641 or 323-2849
<b>E-Mail</b>	<a href="mailto:paul@ms.uky.edu">paul@ms.uky.edu</a>
<b>Office Hours</b>	11-12 Monday and by appt. for on-campus After class for off-campus
<b>Mathskeller Hours</b>	10-11 MWF
<b>Class</b>	MW 7:30 -9:00 CB Initial Meeting and exams in CB 214. Subsequent meetings via synchronous distance learning.

THE EXAMINATIONS ARE ALL "TRADITIONAL", PROCTORED, CONSTRUCTED RESPONSE EXAMS. IF STUDENTS CAN REASONABLY TRAVEL TO THE UK CAMPUS THEN THEY ARE EXPECTED TO TAKE THEM ON THE UK CAMPUS AS SCHEDULED BELOW.

IF A STUDENT IS TAKING THE COURSE AT A DISTANCE MAKING IT UNREALISTIC TO COME TO CAMPUS THEN INDIVIDUAL ARRANGEMENTS WILL BE MADE FOR PROCTORING THE STUDENT'S EXAMS.

The **exam schedule** is as follows.

Exam	Date	Time	Location
<b>Exam 1</b>	MONDAY, OCT 12	7:30-9:30 pm	CB 214
<b>Exam 2</b>	Mon, Nov. 9	7:30-9:30 pm	CB 214
<b>Exam 3</b>	Wed, Dec. 2	7:30-9:30 pm	CB 214
<b>Final Exam</b>	Wed, Dec. 16	7:30-9:00 pm	CB 214

*Any changes in the schedule will be announced no less than two weeks in advance of the affected exam.*

**Exam scheduling conflicts:** Students engaged in some official university-sponsored activities and some in evening classes may encounter conflict with the examination times. Please inform the instructor as soon as possible if you expect to have such conflicts.

**Generalities:** The formal course prerequisites are two semesters of calculus. The second may be taken concurrently.

**Credit:** This course carries three (3) semester hours credit.

**Class Meetings:** Except for the initial orientation and examinations the course will meet electronically using a web-based conferencing. Students will receive an email prior to each class meeting with a link to the class. The system will record all class sessions and students can review these at any time. These, however, are not a substitute for class attendance.

**Attendance at all class sessions is required and is a factor in the course grade.**

**Textbook:** The textbook is *Introduction to Linear Algebra (4th edition)*, Wellesley-Cambridge Press, by Gilbert Strang.

The text is an important course resource but the homework problems are in the homework system and are not assigned from the text. We are using edition 4 because it is the one in print. The arrangement of the problems tends to be the major differences among editions of math texts so if you have access to a copy of an earlier edition then it and the class notes and discussion should serve well for the course.

**Homework:** This course uses a web based homework system called WHS. Students use the system to obtain homework assignments as well submit them for immediate grading. The system is also used in communicating with their instructors and for tracking their progress in the class. The homework assignments corresponding to each of the three exams are marked by letter codes A,B,C respectively.

Each student has a personal version of each assignment which must be completed before the assignment deadline. There are typically two recitation sessions and a lecture on the material before the final assignment deadline. The system records the number of problems which are submitted with a correct answer. If you submit an incorrect answer, you are allowed to submit again (as many times as needed) until you have the correct answer. There is no penalty for submitting an incorrect answer. Students **are permitted and, in fact, encouraged to work together on the homework problems.**

**Homework credit:** Submissions of versions other than the student's personal version as well as submissions after the deadline (midnight of the due date) receive no credit. The homework counts for 50 of the 425 possible course points. If  $N$  is the total number of homework problems assigned in the course and  $C$  is the number for which credit is earned then

$$\text{Homework points} = 50 \cdot CN$$

**Examinations:** As noted in the table above, there will be three mid-term examinations and one final exam. The examinations will be scheduled as shown in the table above. Each of the examinations will be focused primarily on the material from the lectures, recitation, and homework from

the corresponding exam period. However, students are responsible for all material covered up to that exam, including material from previous exam periods. The final will be comprehensive.

Exams are hand written and will be hand-graded by the instructor whose primary concern will be an evaluation of the understanding of the material communicated by the student's work. Students are both permitted and expected to use calculators on the examinations for routine arithmetic and built-in function evaluation. Sophisticated features may be used for such things as gaining intuition about a problem or cross-checking answers. However, "answers" simply taken as output from calculator routines, without explanation or justification, will generally not receive any credit.

The first two mid-terms and the final count 100 points each. Due to the smaller amount of course time and the fact that it spans the Thanksgiving holidays, the third exam will not cover as much material and will therefore count only 50 points. Depending on the progress of the course the instructor may elect to assign projects, due at the time of the third exam, which would count as a substantial part of the third exam. This determination will be made no later than Nov. 1, 2009

Thus there are a total of 350 examination points in the course.

**Course Topics and Dates:** The **Course Calendar** listing the material to be covered, relevant homework assignments, and homework due dates is available at <https://www.mathclass.org/mc/Postings.aspx?noEdit=true&poId=660>. Note that this is not a rigid schedule and is subject to change, depending on the progress of the course. The dates and times of the exams, however are very unlikely to change.

**Final Exam:** The final examination will be over all the material of the course.

**Grades:** There are a total of **425 points** to be earned in the course. The grading scale is:

- A** At least 90% or at least 382 points
- B** At least 80% or at least 340 points
- C** At least 70% or at least 297 points
- D** At least 60% or at least 255 points
- E** Below 60% or below 255 points

These points can be earned through the following activities:

<b>Exams and Final</b>	350 points	82% of course grade
<b>Online homework</b>	50 points	12% of course grade
<b>Attendance and participation</b>	25 points	6% of course grade

<b>Total</b>	425 points	100% of course grade
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**Note Well:** The grade is a course grade - not a test grade. If you don't do the homework or attend and participate then the highest grade possible is a low "B" even if you have 100% on the exams.

**Attendance and Participation:** attendance credit for the session. There are **25 attendance points**. Each student is allowed two unexcused absences from lectures. Each unexcused absence beyond those two deducts three attendance points.

Attendance will be taken at each lecture. Expect to be asked for participation. Failure to participate when called upon will result in loss of attendance credit for the session.

**H1N1 EXCEPTION:** It is understood that H1N1 flu may cause absences fall 2009. Students who feel that they have H1N1 symptoms should not attend class or take tests out of concern for their own health and that of others. If you miss class or a test because of H1N1 symptoms please promptly inform your instructor by email and you will not be charged with an unexcused absence. In the case of an exam you would be able to take a makeup exam.

**Cheating** Collaboration on, or receiving assistance on the online homework is specifically permitted and is **not** considered cheating.

Any representation of the work of others as your own in order to gain academic credit or advantage **is** cheating.

Individuals caught cheating will immediately be assigned failing grades in the course. They will then be reported to the proper university administrators. Refer to the current UK catalog for information on university disciplinary procedures.

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