

MA 242 Weekly Schedule  
Fall Semester, 2006

**Class days:** MA 242 is scheduled to meet 2 days a week during the fall semester, with T,Th as the usual schedule.

**Tests:** There are 4 scheduled tests during the semester. The test dates have been coordinated with Physics and Chemistry and hence the test dates **cannot be changed.**

**Textbook:** *Calculus, Concepts and Contexts* by James Stewart, 3rd edition.

**All materials related to the Maple program** can be found at the URL

<http://www.math.ncsu.edu/calculus> .

**Maple Homework Assignments:** There are 6 scheduled Maple Homework assignments distributed throughout the semester. The "Start" and "Due dates" are listed on the attached syllabus. The "start" dates have been adjusted so that the Maple Homework materials correspond to the lecture materials. Note that there are **no formal Maple labs.** However there are twice weekly Maple Help labs for students to attend on a voluntary basis. It is the responsibility of each student to (1) download the Maple Lessons from the web, (2) study the Lessons, and (3) complete the Maple Homework assignments on time.

**Students with no previous Maple experience:** Such students in MA 242 need to follow the instructions in the "*Introductory Materials*". These instructions are posted on the calculus with Maple homepage listed above.

**Extensions on Maple Homework:** Short extensions on Maple Homework assignments can only be given for extreme situations. If a student has a valid reason to request an extension, then the student MUST request an extension from the Lecture Instructor in the course.

**In the following schedule TEST DAYS are indicated by a light blue background.**

**In the following schedule the STARTING DAY for Maple Homework work is indicated by a light red background.**

**In the following schedules WEEKS ARE SEPARATED by rows with a light grey background.**

## MA 242 Weekly Schedule - Fall 2006

Week	Sections	Topics
8/23	9.1	<b>3-D Coordinate systems</b>
	9.2	<b>Vectors</b>
	9.2	Continue study of vectors
8/28	9.3	<b>The Dot Product</b>
	9.4	<b>The Cross Product</b>
	9.5	<b>Equations of lines and planes</b>
	9.6	<b>Functions and surfaces.</b> Students should look at how this material will be used in problems 19-26 on pages 853-854.
9/01	<b>Begin Maple Homework #0 "Maple basics" and #1: "Vectors" - Both homeworks are due Friday, September 8 at 11:45 pm</b>	
9/04	Monday, September 4 is the <b>Labor Day Holiday</b>	
	10.1 - 10.2	<b>Vector Functions and Space curves - derivatives and integrals of vector functions</b>
	10.3	<b>Arc length and curvature</b> Treat the binormal lightly. Point out that formula #10.3.7 will be needed later in section 13.2.
	10.3-10.4	More on curvature; Begin <b>Motion in space.</b>
9/11	10.4	More on motion in space
	11.1	<b>Multivariable Functions.</b> Material up through level curves.
	11.1	<b>Level surfaces</b> of functions of 3-variables.

<b>Review for Test #1</b>		
<b>Tuesday September 19 TEST #1</b>		
	11.2	<b>LIMITS AND CONTINUITY.</b> Draw attention to the first full paragraph near the bottom of page 752, and refer students to section 2.3 in the textbook.
	11.3	<b>PARTIAL DERIVATIVES.</b> Omit PDE material on page 764-766.
	11.4	<b>Tangent planes and linear approximations.</b> Draw attention to theorem 8 on page 773. Omit "Tangent planes to parametric surfaces on pages 777-778. This material will be covered later.
9/25	11.5	<b>The Chain Rule</b>
	11.6	<b>Directional derivatives and the gradient vector.</b> Using the gradient to find tangent planes and normal lines.
	11.6	Continue study of directional derivatives and the gradient vector.
	11.7	<b>Optimization</b>
10/02	12.1	<b>Double integrals over rectangles</b>
10/03	<b>Begin Maple Homework #2: "Boundaries of regions in the plane" - Homework must be finished by Wednesday, October 18 at 11:45 pm</b>	
	12.2	<b>Iterated Integrals</b> - Note that Maple Lesson #2 deals with double integrals over general regions.
	12.3	<b>Double integrals over general regions.</b> Note that Maple Homework #2 shows the students how to use Maple to find the limits of integration for general regions
<b>Review for Test #2</b>		
<b>Tuesday, October 10 - Test #2</b>		
	12.3	Continue study of double integrals over

		general regions
Oct. 12 -13	<b>Fall Break - Thursday and Friday</b>	
10/16	12.4 and Appendix H	<b>Double integrals in polar coordinates.</b> You will need to spend part of 1 day introducing polar coordinates to your students. Refer your students to Appendix H.
	12.4	More on double integrals in polar coordinates
	12.5	<b>Applications</b> of Double Integrals
	12.7	<b>Triple Integrals.</b> Note that Maple Homework #3 shows students how to use Maple to find limits of integration for triple integrals.
10/20	<b>Begin Maple Homework #3: "Boundaries of regions in space" - Homework must be finished by Monday, October 30 at 11:45 pm</b>	
10/23	12.7	More on triple integrals
	9.7	<b>Cylindrical and spherical coordinates</b>
	12.8	<b>Triple integrals in cylindrical coordinates</b>
	12.8	<b>Triple integrals in spherical coordinates</b>
10/30	13.1	<b>Vector Fields</b>
	13.2	<b>Line integrals.</b> First briefly review parameterized curves from section 10.1 and formula #7 in section 10.3.
	<b>Review for Test #3</b>	
	<b>Thursday, November 2 - Test #3</b>	
	13.3	<b>The fundamental theorem for line integrals;</b> Conservative vector fields and potential functions
	13.4	<b>Green's Theorem</b>
11/13	13.5	<b>Curl and Divergence</b>

	10.5	<b>Parametric surfaces</b> - Note that Maple Lesson #4 deals with this subject
11/14	<b>Begin Maple Homework #4: "PARAMETRIC SURFACES" - Homework must be finished by Tuesday, November 21 at 11:45 pm</b>	
	pp. 787-788	<b>Tangent planes</b> to parameterized surfaces.
	12.6	<b>Surface area</b> of parameterized surfaces
11/20	13.6	<b>Surface Integrals</b> Note that Maple Lesson #5 shows students how to use Maple to compute surface, surface area and flux integrals.
	<b>Begin Maple Homework #5: " Surface Integrals " - Homework must be finished Monday, December 12 at 11:45 pm</b>	
		<b>Thanksgiving Holiday</b> Wednesday, Thursday and Friday November 22-24
11/27	13.6 (2 day)	<b>Surface Integrals</b> - Note that Maple Lesson #5 shows students how to use Maple to compute surface, surface area and flux integrals.
	<b>Review for Test #4</b>	
	<b>Thursday, November 30 - Test #4</b>	
12/04	13.7	<b>Stokes' Theorem.</b>
	13.8	<b>The Divergence Theorem</b>
		<b>Semester Review</b>
12/08	<b>Last day of classes</b>	