

MTH 243
Calculus 2 for Engineering Technology
MWTh 1:35-2:40 (126 FR)
Spring 2005

Instructor: Kristin Webster
Office: Lake Hall 563
Office Hours: Tue. 4-5:30 and Wed. 3-4:30
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Course Description: Calculus 2 builds upon the differential and integral calculus topics of MTH U241. The course considers three of the basic ideas of calculus: integrals, differential equations, and power series.

Pre-requisites: MTH U241 or equivalent

Text: Calculus. Johnston, Mathews. Addison-Wesley, 2002.

Calculator: TI-83 or higher

Course Objectives:

- To develop an understanding of integration and apply this to areas and volumes.
- To form rules for differentiation and integration of transcendental functions.
- To be familiar with the various techniques of integration including parts, partial fractions, and tables.
- To apply the methods of evaluating definite integrals and

improper integrals.

- To study the calculus of functions of more than one variable.
- To develop an understanding of three-dimensional space, the graphing of functions of two variable.
- To study power series and to write Taylor Polynomials.
- To solve differential equations and apply this to the solution of problems.

Major Topics:

1. Indefinite Integral, Sigma Notation, Definition and Evaluation of the Indefinite Integral
2. Application of the Definite Integral to Area, and Volume of a Solid of Revolution
3. Differentiation and Integration of Logarithmic, Exponential, and Inverse Trigonometric Functions
4. Techniques of Integration and Evaluation of Improper Integrals
5. Surfaces in Three Dimension Space, Functions of Two or More Variables and the Graphs of Functions of Two Variables.
6. Derivatives and Integrals of Functions of More than One Variable
7. Double Integration Applied to Areas and Volumes
8. Power Series for Taylor Polynomials
9. First and Second Order Linear Differential Equations and Their Applications

Final Grade Components:

Quizzes: 30%
Midterm: 30%
Final: 40%

- Good attendance is essential to success in the course and class participation is desired.

Homework:

- Homework assignments are considered minimal. Students are expected to do additional problems until mastery is achieved.
- Homework assignments for each section will be due the class meeting after the lecture on the section was finished.
- Homework should be done neatly with detailed solutions to problems.

Quizzes:

- A short quiz will be given every Thursday.
- Your lowest 2 quiz grades will be dropped.
- No make-up quizzes permitted.

Tutoring and Additional Help

? If you need additional help, come to my office hours. I suggest that you not wait until a quiz or test to seek additional help. If you cannot make my regularly scheduled office hours, you can schedule an appointment.

FREE tutoring is available at:

? **Math Tutoring Center, 102 Cahners (CA)**

? The hours of operation are:

- Monday, Tuesday, and Wednesday 9:15 AM - 8:00 PM
- Thursday 9:15 AM - 4:00 PM
- Friday 9:15 AM - 1:00 PM

• **Peer Tutoring Center, 242 Snell Library (SL)**

? The Peer Tutoring Center offers tutoring in calculus, differential equations, combinatorics, and higher math courses. To use this

service, students must go to 242 Snell Library and fill out a tutor-request card. They will be assigned an individual tutor that they may then contact to set up tutoring times (up to 2 hours per week). For more information you can call: 617-373-4900, or visit the website: <http://www.lib.neu.edu/ptc/wehelp.html>. This is a **free service** for all students currently enrolled in the course that they are experiencing difficulty with.

· **Tutoring for Freshman Engineering Students, 222 Snell (SN)**

○ The Department of Engineering offers drop-in tutoring in various courses for freshmen engineering students; this includes the calculus courses MTHU241, MTHU242, MTHU243, and MTHU341. This is a **free service**, but is restricted to engineering students. For hours of availability, see the door at 222 SN, phone 617-373-4418, or visit their website at:

<http://www.coe.neu.edu/studentservices/index.phtml?go=tutoring.htm>.

Academic Honesty: Cheating will not be tolerated. Any incidents of cheating will be reported to the Office of Judicial Affairs. These incidents are investigated and adjudicated. The judicial process is a fair one with procedures for appealing decisions, and leads to substantial consequences: a deferred suspension and a fine of up to \$200 for the first offense, expulsion from the University for a second offense.

Other Information:

The final exam is scheduled for Friday, April 22 at 1:00 pm.

It is your responsibility to be aware of any changes the instructor may make to the syllabus as they are announced in class. Students are responsible for all information given when they are absent.

If you have a concern about the course or the instructor that is not

or cannot be resolved by speaking with the instructor, the next step is to speak with the course coordinator, Bob Lupi (x4882, bobl@neu.edu). If the course coordinator does not settle the matter, please contact Professor D. King, 447 Lake Hall, x5679, donking@neu.edu.

It is University policy that no grade, including an incomplete, can be changed after one year. Exceptions must be authorized by the Academic Standing Committee.

All students without legitimate conflicts will take the final exam at the scheduled time. Do not make travel plans that conflict with the final exam.