

COURSE LEARNING OUTCOMES

DEPARTMENT: **Mathematics**

<p>COURSE #20100: COURSE TITLE: Calculus I CATEGORY: Introductory – part of sequence 20100, 20200, 20300 TERM OFFERED: fall, spring, summer PRE-REQUISITES: Grade of C or higher in Math 19500 or placement by the Department. Credit will only be given for only one of the following courses: Math 20100 or 20500 PRE/CO-REQUISITES: HOURS/CREDITS: 4 hrs/week, 3 credits DATE EFFECTIVE COURSE SUPERVISOR: Prof. S. Ocken</p>	<p>CATALOG DESCRIPTION : Limits, derivatives, rules of differentiation, trigonometric functions and their derivatives, differentials, graph sketching, maximum and minimum problems, related rates, antidifferentiation, Riemann sums, introduction to integration</p> <p>Required Text: <i>Essential Calculus 2nd edition</i>, James Stewart, Brooks-Cole, 2007</p>
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COURSE LEARNING OUTCOMES

Please describe below all learning outcomes of the course, and indicate the letter(s) of the corresponding Departmental Learning Outcome(s) (see list at bottom) in the column at right.

After taking this course, the student should be able to:	Contributes to Departmental Learning Outcome(s):
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| 1. Evaluate limits | a,b,e1,e2 |
| 2. Differentiate algebraic and trigonometric functions | a,b,e1,e2 |
| 3. Solve maximum and minimum problems | a,b,c,e1,e2 |
| 4. Solve related rates problems | a,b,c |
| 5. Apply methods of calculus to curve sketching | a,b |
| 6. Antidifferentiate polynomial and trigonometric functions | a,b,c,e1,e2 |
| 7. Approximate integrals by Riemann sums | a,b,e |
| 8. Evaluate elementary integrals using substitutions | a |

COURSE ASSESSMENT TOOLS

Please describe below all assessment tools that are used in the course. You may also indicate the percentage that each assessment contributes to the final grade.

1. Semester grade, based primarily on four fifty-minute (or equivalent) exams (60%)
2. Final exam (two hours and fifteen minutes) (40%)

DEPARTMENTAL LEARNING OUTCOMES *(to be filled out by departmental mentor)*

The mathematics department, in its varied courses, aims to teach students to

- a. perform numeric and symbolic computations*
- b. construct and apply symbolic and graphical representations of functions*
- c. model real-life problems mathematically*
- d. use technology appropriately to analyze mathematical problems*
- e. state (e1) and apply (e2) mathematical definitions and theorems*
- f. prove fundamental theorems*
- g. construct and present (generally in writing, but, occasionally, orally) a rigorous mathematical argument.*