Course Learning Outcomes for Math 32404 (Advanced Calculus II) Fall 2015

COURSE LEARNING OUTCOMES

The student is expected to acquire the skills which are presented in the text and demonstrated by the instructor in class. These skills include the following, with associated departmental learning outcomes(see below):

- 1.1 model spatial problems with vectors, lines, planes, curves and surfaces in three- dimensional space a,b,c
- 1.2 understand completeness and compactness and limits in $\mathbb{R}^n$ e,f,g
- 2.1 use differentiation to compute tangent lines and tangent planes a,b,c
- 2.2 relate the linear-algebraic properties of the Frechet derivative to the geometric properties of the function e,f,g
- 3.1 use differentiation for multivariate functions to find relative extrema and rates of change a,b,c
- 3.2 understand the Implicit Function Theorem and its proof e,f,g
- 5 Use software to visualize 3-dimensional graphs b,d

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.

Final exam 40%, six in-class tests 30%, biweekly problem sets 30%; some opportunities for extra credit.

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.