

## Course Learning Outcomes

1. model spatial problems with vectors, lines, planes, curves and surfaces in three-dimensional space a,b,c
2. use differentiation to compute tangent lines and tangent planes a,b,c
3. use differentiation for multivariate functions to find relative extrema and rates of change a,b,c
4. set up and evaluate multiple integrals for regions in the plane and in space a,b
5. use iterated integrals to measure areas, compute volumes and find centers of mass a,b,c
6. analyze infinite series for convergence using a range of tests a,e1,e2
7. find intervals of convergence for power series and represent functions with power series a,b,c,e1,e2
8. use MATLAB to analyze and solve geometric, computational, and symbolic problems for topics above 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.

1. several in-class exams
2. departmental final exam

## Departmental aims:

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 denitions and theorems  
f. prove fundamental theorems  
g. construct and present (generally in writing, but, occasionally, orally) a rigorous mathematical argument.