Calculus 1 Learning Objectives[1]

1. Demonstrate an understanding of the concept of a limit; evaluate limits of functions, including indeterminate forms; use the limit de nition to determine if a function is continuous;

2. State the limit de nition of the derivative; use it to calculate simple derivatives;

3. Use derivative laws to calculate the derivatives of rational, trigonometric, inverse-trigonometric, exponential, and logarithmic functions; calculate derivatives for composite and implicit functions;

4. Use derivatives to linearly approximate functions near a value; write equations for the tangent lines of functions;

5. Use derivatives to identify local and global maxima and minima of graphs; use the second derivative to describe the concavity of functions;

6. Formulate and solve problems involving the application of concepts in derivative calculus from various elds such as physics, economics, biology, etc.

[1] This list was approved by the department on 01/07/2019