

# MTH 251: Differential Calculus – Spring 2013

## Skills checklist

Skill	Unsatisfactory	Satisfactory	Proficient
<b>Limits and Continuity</b>			
1. Determine limits from a graph	0	1	3
2. Estimate limits from a table	0	1	3
3. Evaluate limits analytically	0	3	5
4. Limits at infinity	0	1	3
5. Infinite limits	0	1	3
6. Determine continuity of a function	0	1	3
7. Apply l'Hôpital's Rule <i>(Final Exam only)</i>	0	3	5
<b>Derivatives</b>			
8. Compute derivatives using definition	0	3	5
9. Estimate values of the derivative from a graph	0	3	5
10. Compute derivatives using the rules of differentiation <i>(Differentiation skills quiz only)</i>	0	5	10
11. Compute the equation for a tangent line	0	3	5
12. Implicit differentiation	0	3	5
<b>Applications of the Derivative</b>			
13. Understand relationship between a function and first two derivatives <i>(Increasing/Decreasing/Concavity)</i>	0	3	5
14. Interpret the meaning of a derivative of a function in an applied context	0	3	5
15. Use linear approximation to approximate values of functions	0	3	5
16. Identify local and global maxima and minima of a provided function <i>(Identify <b>where</b> the function attains such extrema, as well as those extrema values)</i>	0	4	8
17. Solve a Related Rates problem	0	5	10
18. Solve an applied optimization problem <i>(Final Exam only)</i>	0	5	10