**Week 9 (Mar 25 – 29, Lectures 17 and 18) Teaching and Learning**

**Topics**

**14.7**: Local and global (absolute) extrema; critical points and saddle points; first and second derivative tests; continuous functions with closed and bounded domains attain global (absolute) extrema.

**14.8**: Optimization with one or two equality constraints; the method of Lagrange multipliers.

**14.9**: Proof of the second derivative test; proof of the error bound for standard linear approximation (for two variables); Taylor formula for two-variable functions.

(It is OK to go a bit faster than this; but aim not to be slower.)

**Assignment 9**

14.7, #13,22,32,37,41,49,50,57,65,66

14.8, #5,12,14,30,31,33,34,41,45,46,47

14.9, #4,5,12

The questions above need to be submitted; students are encouraged to attempt other questions in the same chapters if they need more exercises.

Deadline: 11:59 PM, Friday, Apr 5 --- solutions should be submitted online on Blackboard in one single PDF file.