**Week 6 (Mar 4 – 8, Lectures 11 and 12) Teaching and Learning**

**Topics**

**12.6**: Cylinders and quadric surfaces.

**13.1**: Curves and (univariate) vector functions; limits, continuity, and derivatives; tangent vectors; differentiation rules; vector functions whose outputs have constant length.

**13.2**: Integrals of vector functions; projectile motion.

**13.3**: Arc lengths and arc length differential for space curves.

**13.4**: Unit tangent vectors, curvatures, and principal unit normal vectors; osculating circle.

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

**Assignment 6**

12.6, #7-12

13.1, #3,13,17,21,23(b)(c)(d),27

13.2, #7,13,21,24,30,31,32,44

13.3, #10,12,14,19,21

13.4, #3,5,12,17,18,20,27

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, Mar 15 --- solutions should be submitted online on Blackboard in one single PDF file.