**Week 10 (Apr 1 – 5, Lectures 19 and 20\*) Teaching and Learning**

*\*Apr 4 (Thur) is a public holiday and there will be no lectures or tutorials --- the make-up lectures and tutorials will be held on Apr 7 (Sun) according to the university calendar. There will be no tutorials on Apr 5 (Fri) due to holiday and there will be NO make-ups.*

**Topics**

**15.1**: Double integrals over rectangles; iterated integrals and Fubini’s theorem.

**15.2**: Double integrals over general bounded regions; Fubini’s theorem for type-I and type-II regions; properties of double integrals.

**15.3**: Finding areas by double integrals; average values of two-variable functions.

**15.4**: Double integrals in polar form.

**15.5**: Triple integrals in Cartesian (rectangular) coordinates; finding volumes and average values using triple integrals.

**15.7**: Triple integrals in cylindrical coordinates. (The spherical coordinate part could be postponed until after general change-of-variable formula (Jacobian) is introduced; this way, it could be more consistent to explain the change in differential comparing to the geometric argument in the book; assignment problems will be assigned next week.)

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

**Assignment 10**

15.1, #9,10,19,22,27,34

15.2, #14,17,20,46,48,50,60,72,78,80

15.3, #11,18,22,25

15.4, #3,5,11,16,25,36,46

15.5, #7,16,21,24,29,42

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 12 --- solutions should be submitted online on Blackboard in one single PDF file.

**Quiz 3 next week (Week 11, Apr 8 – 12, in tutorials)**

Scope = 14.1 to 14.6 (inclusive); three problems (could have parts); 30 minutes.