MATHEMATICS 10B

CALCULUS OF SEVERAL VARIABLES – II

Text: *Vector Calculus*, by S. Colley, 4th edition

Instructor: Zhuang-dan Daniel Guan
Class: TTh 11.10am–12.30noon, WAT. 1101
First Class: Mar. 29, Tuesday
Office Hours: F 1.30–3.00pm or by appointment, Surge 237.

This course covers the basics of integral calculus for functions of two and three variables, including double and triple integration, changes of variables, line and surface integrals, and the theorems of Green, Stokes and Gauss in vector calculus.

Outline for Mathematics 10B

We plan to cover the following sections and expect your eager and sincere participations:

TOPICS	SUGGESTED NO. OF WEEKS' COVERAGE
Multiple integration (§§ 5.1–5.5)	3.5
Computation of volumes, double integrals over rectangles and more general regions, triple integrals, change of variables.	
The line integrals (§§6.1–6.3)	2.5
Scalar and vector line integrals; Green's theorem, conservative vector fields.	
Surface integrals and vector analysis, differential forms (§§ 7.1–7.3, 8.1)	3
Parameterized surfaces; theorems of Stokes and Gauss; surface integrals; differential forms.	

Tests: Midterm on the sixth week; Final: June. 8 (W), 8.00–11.00am.
Homework: Homework assigned right after each lecture through WeBWorK due a week later. Homework is important, it counts for 20% of the total credit.
Quizzes: There will be four quizzes in the discussion sections, two on the second and the fourth weeks and the other two on the eighth and the tenth weeks. Discussion sections are also important, they count for another 20% of the total credit.
Midterm counts 20%, and Final counts 40% (or 35% with using clickers). We shall decide to use clickers (6%) or not in the first few weeks. There will be 1% bonus or deduction (only in an extraordinary situation) for your participations. **Attendance are required and have a nice quarter.**