

Course information

- Course: Mathematics 140C MWF 1:00–1:50 ET 204
- Instructor: Bernard Russo MSTB 263 Office Hours MW 2:30-3:30 or by appointment (a good time for short questions is right after class just outside the classroom)
- Discussion section: TuTh 1:00–1:50 MSTB 118
- Teaching Assistant: Mitchell Khong
- Homework: There will be approximately 35 assignments with at least one week notice before the due date.

• Grading:	First midterm	October 21 (Friday of week 4)	20 percent
	Second midterm	November 18 (Friday of week 8)	20 percent
	Final Exam	December 7 (Wednesday)	40 percent
	Homework	approximately 35 assignments	20 percent

- Holidays: November 11, 24, and 25
- Text: R. C. Buck, Advanced Calculus
- Material to be Covered

Schwarz inequality Theorem 1, page 13 (1 lecture)

topology §1.5 pp 28–33: open, closed, boundary, interior, exterior, closure, neighborhood, cluster point (about 4 lectures)

compactness §1.8 pp 64–67: Heine-Borel and Bolzano-Weierstrass properties (Theorems 25,26,27, page 65) (about 4 lectures)

continuity §§2.2–2.4: Uniform continuity, extreme value theorems (Theorems 1,2,6,10,11,13 on pages 73,74,,84,90,91,93) (about 4 lectures)

differentiation (of functions) §3.3: Implies continuity, characterization by approximation (Corollary, page 129 and Theorem 8, page 131) (about 4 lectures)

integration §§4.2–4.3: Integrability of continuous functions, fundamental theorem of calculus, mixed partial derivatives (Theorems 1,4,7,11 on pages 169,176,182,189) (about 4 lectures)

differentiation (of transformations) §§7.2–7.6: Boundedness of linear transformations, characterization by approximation, chain rule, mean value theorem, inverse function theorem, implicit function theorem (Theorems 5,8,10,11,12,16,17,18 on pages 335,338,344,346,350,358,363,364) (about 5 lectures)