Vector Analysis
Spring 2018
MATH-UA.0224-001

Instructor: Liming PANG
Email: liming@cims.nyu.edu
Time: Mon. Wed. 14:00–15:15
Classroom: CIWW 201

Course Web Page: https://cims.nyu.edu/~liming/Vector/2018.html

Office Hours: Thursday 10:00–12:00 CIWW Room 720


Teaching Assistant: Han WANG (hw1358@nyu.edu)

Grading Policy: Homework (20%), Quiz 1 (5%), Quiz 2 (5%), Midterm (30%), Final (40%).

Exam Schedule:

Quiz 1 ............................. Feb.23 2018
Midterm .............................. Mar.07 2018
Quiz 2 ............................. Apr.19 2018
Final Exam ............................. TBA

Class Policy:

• Homework will be released each Thursday or Friday, and due on the following Friday during recitation. Late homework or emailed version shall NOT be accepted.

• You may discuss with your classmates about homework, but you should organize and write your solutions by yourself.

• We will NOT be able to accommodate out-of-sequence exams for purposes of more convenient travel, including already purchased tickets. Please note again the date of the exams and plan your travel accordingly.

• Exams will be close book. Books, paper or electronic material, calculator or electronic devices are NOT allowed during exams.

• The recitation is on Friday 14:00–15:15 at CIWW 312. The TA will discuss about some example exercises, remark on previous homework and review course material.
Tentative Course Outline:

01/22: Real Vectors
01/24: Basic Operations of Vectors
01/29: Line Integrals
01/31: Conservative Vector Fields
02/05: Surface Integral
02/07: Surface Integral
02/12: Curl
02/14: Stokes Theorem
02/21: Volume Integral
02/26: Divergence
02/28: Divergence Theorem
03/05: Review
03/07: Midterm
03/19: Suffix Notation
03/21: Suffix Notation
03/26: Electrodynamics
03/28: Heat Transfer
04/02: Inverse Function Theorem
04/04: Implicit Function Theorem
04/09: Change of Coordinates and Jacobian
04/11: Tensors
04/16: Tensors
04/18: Examples of Tensors
04/23: Differentiable Manifold
04/25: Tangent and Cotangent Vectors
04/30: Vector Bundles
05/02: A Tour for Differential Forms on Manifolds
05/07: Review