

**BRONX COMMUNITY COLLEGE**  
**of the City University of New York.**  
**DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE**

**SYLLABUS for MTH 44: VECTOR ANALYSIS** (4 credits / 4 hours).

Prerequisites: MTH 33 or equivalent; and CUNY English Proficiency, or ENG 100 or 110, if required

Textbook: Vector Calculus, by Jerrold Marsden & Anthony Tromba, W. H. Freeman, 6<sup>th</sup> Ed. ISBN 9781429215084.

Course Description: This is an undergraduate multivariable and vector analysis course. It is a one semester course designed to introduce integral over paths and surfaces, Green's theorem, Stokes' theorem, Gauss' divergence theorem and differential forms. The topics we will cover are mainly Chapters 6-8 of the text. Additional topics will be covered if time permits.

Accommodations/Disabilities: BCC respects and welcomes students of all backgrounds and abilities. In the event you encounter any barrier(s) to full participation in this course due to the impact of a disability, please contact DisAbility Services as soon as possible this semester. A Disability Services specialist will work with you to review the barriers you are experiencing and explain the eligibility process for establishing academic accommodations for this course. You can reach DisAbility Services by email at [disabilityservices@bcc.cuny.edu](mailto:disabilityservices@bcc.cuny.edu) or by phone at 718-289-5874. You may also reach DisAbility Services through Microsoft Teams. Download the Teams app, login using your CUNYfirst login, and join the DSO Student Service Center team using the following access code: neewu66.

Academic Integrity: Academic dishonesty (such as plagiarism and cheating) is prohibited at Bronx Community College and is punishable by penalties, including failing grades, dismissal, and expulsion. For additional information and the full policy on Academic Integrity, please consult the BCC College Catalog.

Resources: Math Tutorial Lab Tutoring Support: Please visit this URL address for information:  
<http://www.bcc.cuny.edu/academics/academic-departments/mathematics-and-computer-science-department/academic-advising-tutoring-support-services/>

<u>SECTION</u>	<u>TOPIC</u>
5.2-5.3	Double integrals over rectangles and general regions. 5.5 Triple integrals.
6.1	The geometry of maps.
6.2-6.3	The change of variables theorem and applications.
7.1	The path integral.
7.2	Line integrals.
7.3	Parametrized surfaces.
7.4	Area of a surface.
7.5	Integrals of scalar functions over surfaces.
7.6	Surface integrals of vector fields.
7.7	Applications to differential geometry.
8.1	Green's theorem.
8.2	Stokes' theorem
8.3	Conservative fields.
8.4	Gauss' divergence theorem
8.5	Differential forms.
ML 3/21.	Updated 8/22 EA for prereq