The Hashemite University
Faculty of Science
Course Syllabus

Department of Mathematics

Course Name: Calculus (3) **Course Number:** 110101201
Pre-requisite: 1101011102 **Credit Hours**: 3
Designation: Compulsory **Instructor**: Dr. Omar Hirzallah
Instructor's E-mail: o.hirzal@hu.edu.jo
Office Hours: 10:40-11:40 (Sunday, Monday, Tuesday and Wednesday)

Course Description (Catalog): This course introduces students to vectors and analytic geometry in space, functions of several variables and their limits, partial differentiation and their applications. The course views multiple integrals: double and triple, line integral, surface integral, Green's theorem, Gauss' and Stoke' Theorems

Text Book: Calculus Early transcendental, Metric Edition , by James Stewart, 7th Edition, Brooks/Cole, 2012.

References: Calculus, Early Transcendental, by H. Anton, I. Bivens, and S. Davis, . 9th edition John Wiley & Sons, Inc, 2002.

Major Topics Covered (Weekly Outline):

Week	Topics
1	12.1 Three-Dimensional Coordinate Systems 12.2 Vectors 12.3 The Dot Product
2	12.4 The Cross Product 12.5 Equations of Lines and Planes 12.6 Cylinders and Quadric Surfaces
3	13.1 Vector Functions and Space Curves 13.2 Derivatives and Integrals of Vector Functions 13.3 Arc Length and Curvature
4	14.1 Functions of Several Variables 14.2 Limits and Continuity 14.3 Partial Derivatives
5	14.5 The Chain Rule 14.6 Directional Derivatives and the Gradient Vector 14.7 Maximum and Minimum Values
6	15.1 Double Integrals over rectangles 15.2 Iterated Integrals 15.3 Double Integrals over General Regions 15.4 Double Integrals in Polar Coordinates
7	15.7 Triple Integrals 15.8 Triple Integrals in Cylindrical Coordinates 15.9 Triple Integrals in Spherical Coordinates
8	University Final Exams

Section	Page (7^{th} Ed)	Problems
12.1	790	2,5,6,11,13,17,23,30,31
12.2	798	3,4,6,17,22,24,25,26,29
12.3	806	1,6,7,10,11,17,19,22,24,26,41,47
12.4	814	3,8,11,13,14,16,19,27,31,33
12.5	824	3,4,5,7,13,19,23,28,31,46,51,57,60, 69,71,73
12.6	832	3,4,6,11,14,19,21,22,23,24,25,26,27,28
13.1	845	1,4,5,7,11,21,22,23,24,25,26,27
13.2	852	3,5,9,14,19,21,25,35,39,47
13.3	860	3,4,5,17,20,24
14.1	888	9,10,11,15,17,19,32,45,47,49
14.2	899	5,7,9,10,11,13,15,16,17,31,32,37,39,41
14.3	911	15,21,22,23,25,26,33,34,42,43, 47,51 53, 61,65,67
14.5	930	1,3,7,11,17,21,22,27
14.6	943	5,7,9,11,12,15,19,21,22
15.1	981	11,12,13,14
15.2	987	1,3,7,9,15,16,20,23,25,29,30,31
15.3	995	1,2,5,7,9,13,16,17,19,20,25,26,29
15.4	1002	3,5,7,11,17, 19,22,25,27
15.7	1025	2,3,5,6,7,9,11,17,21,22
15.8	1031	1,3,5,6,7,9,11,19,21,22,23,29,30
15.9	1037	1,3,5,7,9,10,11,13,21,23,25,30,35,39,40

Grading Plan:

First Exam:	30 points	--/--/2022
Second Exam:	30 points	--/--/2022
Final Exam:	40 points	To be announced later

General Notes: (Attendance Policy) students are expected to attend every class and arrive on time in compliance with HU regulations. In case you find yourself in a situation that prevents you from attending class or exam, you have to inform your instructor. If you miss more than 6 classes for the (Sunday, Tuesday, and Thursday model) or 4 classes for the (Monday and Wednesday Model), you cannot pass the course. Makeup excuses will be accepted only for very limited justified cases, such as illness and emergencies. Changing your section without informing your instructors is not accepted at all.