

Topics for Exam 1**1. Euclidean Space**

- 1.1 Definition of n -Dimensional Euclidean Space
- 1.2 Spans, Lines and Planes
- 1.3 Dot Product and Euclidean Norm
- 1.4 Orthogonality and Projections
- 1.5 The Cross Product in \mathbf{R}^3

2. Continuous Functions

- 2.1 Vector fields, scalar fields and paths
- 2.2 Definition of continuous function
- 2.3 Compositions of Continuous Functions
- 2.4 Limits and continuity

Relevant sections in the online class notes: 2.1, 2.2, 2.3, 2.4, 2.5.1, 2.5.2, 3.1, 3.2, 3.3.1, 3.3.2, 3.3.3, 3.3.4.

Relevant assignments: 1, 2, 3, 4, 5, 6 and 7.

Important concepts: Euclidean space, dot product, orthogonal projections, cross product, continuous function.

Important skills: Know how to compute projections; know how to find equations of lines and planes; know how to show that a function is continuous or not; know how to compute limits of functions of several variables.