Topics for Exam 1

1. **Paths and Curves**

   1.1 Parametrized curves

   1.2 Differentiable paths

   1.3 Tangent lines to curves

   1.4 Linear approximations to paths

   1.5 Arc length

2. **Vector Fields**

   2.1 Two–dimensional vector fields

   2.2 Flow of a vector field

Relevant sections in text: 17.1, 17.2, 17.3 and 17.4

Relevant chapters in the online class notes: Chapters 2, 3 and 4.

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

Important concepts: Parametrizations, differentiable path, tangents to curves, linear approximations to paths, arclength, vector fields, flow of a vector field.

Important skills:

- Know how to parametrize curves;
- know how to compute tangents to curves;
- know how to compute linear approximations to paths;
- know how to sketch vector fields;
- know how to compute flows of vector fields.