

## **Content of final exam**

- Power series. Textbook: Varberg, *Calculus*, 8th edition
  - Power series. Section [10.6].
  - Operations of power series. Section [10.7].
  - Taylor and Maclaurin series. Section [10.8].
  
- Vectors. Textbook: Stewart, *Calculus*, 3rd edition
  - Algebra of vectors. Section [11.2].
  - Dot product. Section [11.3].
  - Cross product. Section [11.4].
  - Equations of lines and planes. Section [11.5].
  - Derivatives of vector functions Theorem 5 page 709.
  - Arc length and curvature. Section [11.8].
  
- Partial derivatives. Textbook: Stewart, *Calculus*, 3rd edition
  - Limits and continuity. No  $\epsilon - \delta$  proofs. Section [12.2].
  - Finding partial derivative. Section [12.3].
  - Tangent plane. Section [12.4].
  - Chain rule for partial derivatives. Section [12.5].
  - Gradient vector and directional derivatives. Section [12.6].
  - Maximum and minimum values. Section [12.7].
  - Double integrals. Sections [13-1] [13-2] [13-3].