



## Course Specification Document

<b>Title</b>	Multivariable Functions
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<b>Credits</b>	3.5 ECTS
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<b>Aims</b>	This course aims to enable the student to solve some optimization problems.
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### Intended learning outcomes

On successful completion of this course, the student will be able to:

- Identify and determine partial derivatives.
- Identify the differential function of several variables.
- Determine the nature of a critical point to solve optimization problems.
- Identify first order differential forms, and determine their integrals on a path.
- Use computer programs to solve mathematical problems.

### Syllabus

- **Multivariable functions:** Partial derivatives, differentiation, nature of critical point, local, global supremum and infimum, implicit functions, Lagrange multipliers.
- **First order differential forms:** Exact and closed differential forms, primitive of a differential form, integrating a first order differential form on a path, parametric representation of a path.