

# Introduction to differential geometry, fall 2015

## Introduction to differential geometry, fall 2015

**Teacher:** [Ilkka Holopainen](#)

**Scope:** 10 cr

**Type:** Advanced studies

**Teaching:** Weeks 36-42 and 44-50, Wednesday 10-12 and Thursday 10-12 in room C123. **First lecture** on Wednesday, September 2.

**Topics:**

- Smooth manifolds
- Smooth mappings
- Tangent vectors, tangent bundle
- Cotangent bundle
- Tensors
- Differential forms
- Integration on manifolds
- De Rham cohomology
- Integral curves and flows
- Lie derivatives
- Lie algebras and Lie groups

**Prerequisites:** Vector analysis, topology, linear algebra, differential equations

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## News

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## Teaching schedule

Weeks 36-42 and 44-50, Wednesday 10-12 and Thursday 10-12 in room C123.

First lecture on Wednesday, September 2.

Last lecture on Thursday, December 3.

## Exams

The course can be passed by an [exam](#). First possibilities are on December 10 or December 21.

## Course material

[John M. Lee: Introduction to smooth manifolds](#), Springer, 2003.

I. Holopainen: [Johdatus differentiaaligeometriaan](#), (in Finnish).

## Registration

Did you forget to register? [What to do?](#)

## Exercises

### Assignments and solutions

#### Exercise classes

Group	Day	Time	Room	Instructor
1.	Monday	10-12	B321	Eleferios Soutanis

You will get extra credit points by solving the home work exercises:

25% = +1p, 35% = +2p, 45% = +3p, 55% = +4p, 65% = +5p ja 75% = +6p.

## Course feedback

Course feedback can be given at any point during the course. Click [here](#).