



KTH / COURSE WEB / HANDS-ON MICROELECTROMECHANICAL SYSTEMS ENGINEERING (EK2360) / HT 2015 / COURSE MATERIAL
FOR HT2015 (RESTRICTED)

Course material for HT2015 (restricted)

Task description 2015

[Task description 2015](#)

Lecture notes, introduction phase

- [Introduction to the course 2015 \(JO\)](#)
- [Introduction to MEMS and Basics of MEMS actuator design, 2015 \(JO\)](#)
 - [Video Section 1](#)
 - [Video Section 2](#)
 - [Video Section 3](#)
 - [Video Section 3a](#)
 - [Video Section 3b](#)
 - [Video Section 4](#)
 - [Video Section 5+6](#)
 - [LINK TO ONLINE QUESTIONNAIRE](#)

COMSOL and FEM models

- [Lecture - FEM modelling with COMSOL \(BB\)](#)
- [Introduction to COMSOL - tasks during meeting 3 \(BB\)](#)
- [Calculation of electrostatic force from COMSOL \(BB\)](#)
- [models and documentation \(BB\)](#)

Layouting with libreCAD:

- [design rules for the layouting 2015 \(BB\)](#)
- download CAD software at <http://librecad.org/>
- [template to chip layout \(COMPULSORY TO USE THIS TEMPLATE\)](#)

Fabrication Lab

- [Fabrication lab manual, 2015 \(SS\)](#)
- [Fabrication lab directions: how to find the clean-room laboratory](#)

Evaluation Lab

- [Evaluation lab manual, 2015 \(HF\)](#)
- Evaluation lab meeting point is Osquidas väg 10, floor 5, Dept. Micro and Nano Systems; ring the bell and ask for Henrik Frid (your lab supervisor)

Additional reading: some relevant research papers (not compulsory)

- classic research paper on comb-drive (1996)
- classic research paper on comb-drive (1998)
- thesis on simulating comb drives (2009)
- research paper on minimizing comb drive fingers (2005)
- research paper on shaped comb fingers (2001)
- research paper on stepped-shape comb drives (2005)

Additional reading: MEMS background material (not compulsory)

- a not so short introduction to MEMS (NTU, 2007)
- MEMS overview lecture (BSAC)
- MEMS short course (Xiamen Univ, 2003)

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Joachim Oberhammer [edited](#) ▾ | 23 November at 15:21

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