



engineering mechanics

Graduate course

Mechanics in micro-systems

April 25-26, 2022

**Faculty of Mechanical, Maritime and Materials Engineering
Department of Precision and Microsystems Engineering
Delft University of Technology**

Programme

Monday, April 25, 2022

Location: TU Delft, EWI, Lecture room F.

9:30-10:00 Welcome - coffee/thee

Hans Goosen:

10:00-11:00 **Microsystems and Scaling**

Introduction to microsystems. The effects on mechanics of going small.

11:00-11:15 Coffee/thee

11:15-12:15 **Processing of Microsystems**

Fabrication techniques and their influence on mechanics.

12:15-13:00 Lunch

Murali Ghatkesar:

13:00-14:00 **Atomic force microscope and other nanotools**

Introduction into nanotechnology. Seeing, feeling and working in the nanometer domain.

Mechanical interfaces to the small world.

14:00-14:15 Coffee/thee

14:15 -15:00 **AFM application**

Basic applications and Material probing.

15:00-18:00 **Lab exercises**

AFM, Interferometry, Assignment

Tuesday, April 26, 2022

Location: TU Delft, EWI, Lecture room J.

8:45-9:15 Welcome - coffee/thee

Gerard Verbiest:

9:15-10:30 **Subsurface Atomic Force Microscopy**
3D imaging at the nanoscale: working principle, status and prospects

10:30-10:45 Coffee/thee

10:45-12:30 **Mechanics and dynamics of 2D materials**
Introduction to 2D materials and their applications

12:30-13:30 Lunch

Sabina Caneva:

13:30-14:45 **Mechanically controlled break junctions**
Theory

14:45-15:00 Coffee/thee

15:00-16:30 **Mechanically controlled break junctions**
Applications.

16:30- Farewell drink