MAT 401/520
Surface Science (Fall 2022)

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Course Hours: Mon 8:40-10.30 (FENS L030)
Tue 12:40-13:30 (FASS 1103)

Office Hours: TBA

Requirements: MAT401: 2 Midterm Exams (30% each)
               Final Exam (40%)

MAT520: 2 Midterm Exams (20%)
         Project (20%)
         Final Exam (40%)

Resources: Surface Science: Foundations of Catalysis and Nanoscience (by K. Kolasinski)
           Introduction to Surface Chemistry and Catalysis (by Somorjai and Li)

Course Outline:

Week 1   : Definition of surfaces, surface structures
Week 2-3 : Thermodynamics of surfaces
Week 4   : Fundamental forces; molecular interactions, surface diffusion
Week 5   : Adsorption; kinetics and thermodynamics
Week 6   : Midterm
Week 7   : Adsorption; kinetics and thermodynamics continued
Week 8-9 : Surface reactions
Week 10  : Electrical properties of surfaces
Week 11  : Midterm
Week 12  : Mechanical and optical properties of surfaces
Week 13-14 : Liquid/solid interfaces