

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

