



Full Syllabus



Course Title

Corrosion Engineering

Lecturer

Professor Noam Eliaz

Semester

A

Course requirements

Two homework assignments: 20%; Exam: 40% (must get 60 or above!!!); Final project: 40% (see separate instructions).

Final grade components

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Course schedule

Class no. / Date	Subject and Requirements (assignments, reading materials, tasks, etc.)
1	General terms and economics of corrosion
2-5	Thermodynamics of electrode reactions
6-8	Kinetics of electrode reactions
9-10	Corrosion measurements
11-12	Forms of corrosion
13-14	Corrosion protection

Required course reading

Eliaz, N., Gileadi, E. (2019) [Physical Electrochemistry: Fundamentals, Techniques, and Applications](#), 2nd edition, Wiley-VCH, Weinheim, Germany. ISBN: 978-3-527-34139-9. In particular: Ch. 17: Corrosion, Ch. 15: Electrochemical impedance spectroscopy (EIS), Ch. 18: Electrochemical deposition.

Jones, D.A. (1995) [Principles and Prevention of Corrosion](#), 2nd ed., Prentice Hall.

Optional course reading

1. Popov, B.N. (2015) [Corrosion Engineering: Principles and Solved Problems](#), Elsevier, Amsterdam, The Netherlands.
2. Roberge, P.R. (2012) [Handbook of Corrosion Engineering](#), 2nd ed., McGraw-Hill.
3. Revie, R.W. (2011) [Uhlig's Corrosion Handbook](#), 3rd ed., John Wiley & Sons, Inc., NY, USA.
4. Fontana, M.G. (1986) [Corrosion Engineering](#), 3rd ed., McGraw-Hill Book Co, Singapore.
5. Pourbaix, M. (1974) [Atlas of Electrochemical Equilibria in Aqueous Solutions](#), 2nd ed., NACE, Houston, TX, USA.



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6. *Corrosion*, <http://www.corrosionjournal.org/>.
7. *Corrosion Reviews*, <https://www.degruyter.com/view/j/corrrev>.
8. *Corrosion Science*, <http://www.sciencedirect.com/science/journal/0010938X/>.

Comments

Students Benefit

The course has been approved for NACE International Collegiate Certification. Thus, students who will achieve a final grade of 75 or above will be eligible for a free year of student membership in NACE International.