An asynchronous pre-recorded online short course

**Corrosion: Fundamentals and Experimental Methods**

Fontana Corrosion Center, The Ohio State University, Columbus, OH

*October 18, 2021 – November 19, 2021*

During each week of this five-week course, you should pace yourself to view the material from one day of the weeklong course, as broken out in the schedule below. On each of the days mentioned in this schedule, there will be five discussion periods to give you time to ask questions regarding the material from that day and have a discussion with an instructor. The times for the live sessions will be as follows, given in Eastern US time (see [https://www.timeanddate.com/worldclock/converter.html](https://www.timeanddate.com/worldclock/converter.html) to convert to your local time).

**Discussion times during each of the five days listed below:**

0700 - 0800
1100 - 1200
1500 - 1600
1900 - 2000
2300 - 2400

**Topics to cover by Monday, October 18:**

Prerecorded lecture 1 - Fundamentals of Corrosion

Lecture 1 - Corrosion Thermodynamics

Lecture 2 - Corrosion Kinetics 1

Lecture 3 - Corrosion Kinetics 2

Lecture 4 - Corrosion Kinetics 3

Lab 1 - Corrosion Potential Measurements and Polarization Methods for Determining Corrosion Rate

Lab 1 wrap-up
**Topics to cover by Tuesday, October 26:**

- Prerecorded lecture 2 - Introduction to Electrochemical Instrumentation

- Lecture 5 - Galvanic Corrosion

- Lecture 6 - Experimental Issues

- Lecture 7 - Passivity

- Lab 2 - Galvanic Corrosion

  Lab 2 wrap-up

**Topics to cover by Wednesday, November 3:**

- Prerecorded lecture 3 - Pourbaix Diagrams

- Lecture 8 - Localized Corrosion 1

- Lecture 9 - Localized Corrosion 2

- Lecture 10 - Localized Corrosion 3

- Lab 3 - Localized Corrosion

  Lab 3 wrap-up
**Topics to cover by Thursday, November 11:**

- Prerecorded lecture 4 - Fundamentals of Electrochemical Impedance Spectroscopy
- Lecture 11 - EIS and Coated Metals 1
- Lecture 12 - EIS and Coated Metals 2
- Lecture 13 - EIS and Coated Metals 3
- Lab 4 - EIS
- Lab 4 wrap-up

**Topics to cover by Friday, November 19:**

- Prerecorded lecture 5 - Intergranular Corrosion
- Lecture 14 - Atmospheric Corrosion
- Lecture 15 - Corrosion Inhibitors
- Lecture 16 - Thermodynamic and Kinetic Modeling of Corrosion
- Lecture 17 - Environment Assisted Cracking 1
- Lecture 18 - Environment Assisted Cracking 2