Electrical and Computer Engineering
ECE 989 Advanced Topics in Plasmas:
Plasma Discharges and Plasma Materials Processing
Fall 2021 Syllabus
Version: Sept. 1, 2021

Part 1: Course Information

Instructor Information

Instructor: Timothy Grotjohn, Professor, ECE

Office: B113 (Engineering Research Complex)
Class Times: Tuesday and Thursday: 10:20am-11:40am, Room B122 Wells
Office Hours: Monday and Wednesday, 10:30-11:30 am. Zoom
(https://msu.zoom.us/j/7329335895), or by appointment
Office Telephone: 517-353-8906
E-mail: grotjohn@egr.msu.edu (Note: “I plan to reply to emails within 24 hours”)
Please put “ECE 989” in the subject line to reduce the chances of me missing your email.

Course Website: D2L https://d2l.msu.edu/

Course Description: This course covers fundamental physics and chemistry of partially ionized, chemically reactive, and low-pressure plasmas. It also covers the role of plasma discharges and processes in materials processing, especially materials deposition, etching and surface treatment with plasmas.

Prerequisite: Graduate standing in Engineering, Physics or Chemistry

Course Structure

This course will be delivered in-person this semester. D2L will be used.

In the event that COVID requires the university to go to remote instruction, arrangements will be made to continue this lab course in a remote format until such time that on campus instruction resumes.

Technical Assistance

If you need technical assistance with D2L at any time during the course or to report a problem, you can:

Visit the Distance Learning Services Support Site
Visit the Desire2Learn Help Site (http://help.d2l.msu.edu/)

Other Course Policies

Inform Your Instructor of Any Accommodations Needed

From the Resource Center for Persons with Disabilities (RCPD): Michigan State University is committed to providing equal opportunity for participation in all programs, services and activities. Requests for accommodations by persons with disabilities may be made by contacting the Resource Center for Persons with Disabilities at 517-884-RCPD or on the web at rcpd.msu.edu. Once your eligibility for an accommodation has been determined, you will be issued a Verified Individual Services Accommodation ("VISA") form. Please present this form to Timothy Grotjohn and your TA at the start of the term and/or two weeks prior to the accommodation date (test, project, etc.). Requests received after this date may not be honored.

Understand When You May Drop This Course and other Important Dates

Sept. 8: last date to add a course for SS21
Sept. 27: last date to drop a class with tuition refund (if dropping below 12-18 credit tuition block)
Oct. 25-26: Break days. No classes, no work assigned
Oct. 20: last date to drop a class with no grade reported.

Commercialized Lecture Notes

Commercialization of lecture notes and university-provided course materials is not permitted in this course.*

*Note: The Code of Teaching Responsibility requires instructors who permit students to commercialize their class lecture notes to include a statement in their course syllabi that gives such permission. Absent such permission, students may not do so.
Complete Assignments
Assignments must be submitted by the given deadline or special permission must be requested from instructor before the due date.

ECE 989 Specific COVID-19 Related Procedures
Masks must be worn in all classes. For medical exemptions, students must contact RCPD.

If a student is not wearing a mask, instructor will request a non-compliant student to either comply with the mask requirement or leave the building. If a student has forgotten their mask, they should leave to go get one.

If a direct request to comply with the mask mandate is ignored, the instructor should inform the class that the entire class will be dismissed for the day unless everyone is in compliance with the mask mandate.

If a non-compliant student refuses to wear a mask or leave the classroom, class should be dismissed. In these situations, instructors should notify their department chairs and work with the college to ensure appropriate measures are taken to help ensure that the next class meeting can be held safely.

Students should reach out to their advisors, College Student Affairs offices, and instructors if they will need to miss class due to COVID.

Contact tracing and notification of positive cases will be handled centrally by the university in collaboration with local health officials.

“If you are feeling ill or have tested positive for COVID-19 and have questions, contact MSU's COVID-19 Triage Hotline at 855-958-2678 or your primary health care provider.”

A face mask must be worn by each student at all times in buildings on campus, including the Engineering Building and the ECE 303 teaching lab.

Other cautionary notes are:

• Handwashing with soap and water for at least twenty (20) seconds before and after in person class is always a good idea. If soap and water are not readily available, hand sanitizer that contains at least 60% alcohol can be used.

• Students should not come to class if they are sick.

Grading
Exam 1: 100 pts
Final Exam: 100 pts
Homework: 100 pts
Report: 100 pts
Total: 400 pts

**Homework & Grading Policy**

Your lowest homework score will be dropped at the end of the semester. Homework is due at the start of class and no late homework is accepted without prior arrangement.

The course grade is based on the total number of points.
## Course Outline:

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