Introduction to Plasma Engineering and Applications MEEN 4330
School of Engineering and Computing Sciences
Summer 2017

A. COURSE INFORMATION

Course number/section: MEEN-4330.001
Class meeting time: Lec: Fully Online
Class location: TBD
Course Website: https://bb9.tamucc.edu/

B. INSTRUCTOR INFORMATION

Instructor: Dr. Magesh Thiyagarajan
Office location: EN 222D
Office hours: MW 9:30 am – 12:00 pm
Telephone: 361-825-2144
e-mail: magesh.thiyagarajan@tamucc.edu
Appointments: Non-office hour appointments must be scheduled in advance through email.

C. COURSE DESCRIPTION

Catalog Course Description
Physical, electrical, chemical properties of plasmas; differences in properties of thermal and non-thermal plasmas, direct and alternating current plasma sources, inductive and capacitive coupled plasma sources, and applications of plasmas.

D. PREREQUISITES AND COREQUISITES

Prerequisites
ENGR 2322 Materials Science, and
Either ENGR2360-Circuit Analysis or PHYS2426 –Physics II.

E. REQUIRED TEXTBOOK(S), READINGS AND SUPPLIES

Textbook: Reading materials will be provided by the instructor. It will be posted in the blackboard.

F. STUDENT LEARNING OUTCOMES AND ASSESSMENT

Assessment is a process used by instructors to help improve learning. Assessment is essential for effective learning because it provides feedback to both students and instructors. A critical step in this process is making clear the course’s student learning outcomes that describe what students are expected to learn to be successful in the course. The student learning outcomes for this course are listed below. By collecting data and sharing it with students on how well they are accomplishing these learning outcomes students can more efficiently and effectively focus their learning efforts. This information can also help instructors identify challenging areas for students and adjust their teaching approach to facilitate learning.
By the end of this course, students should be able to:

1. Describe the fundamental concepts of plasmas
2. Analyze the properties of plasmas
3. Differentiate thermal and non-thermal plasmas
4. Distinguish and discuss plasma sources
5. To learn about applications of plasmas

G. INSTRUCTIONAL METHODS AND ACTIVITIES

The instructional method will follow a fully online Instruction method. In an online instruction based course, you will follow the daily course modules in blackboard which will contain lectures and other learning materials. Afterwards, you will be required do the readings and perform assignments provided in blackboard. This approach will offer more flexibility for student learning and access to lectures as needed for review throughout the semester.

H. MAJOR COURSE REQUIREMENTS AND GRADING

The course is dived in to 4 different topics as listed above in the student learning outcomes and for each topic there will be a report writing assignment. Each report will be counted for 25% of the final grade (4 reports x 25%). There will be a report due for every 3 days. All reports are to be submitted on blackboard on or before 11 pm CST on the due date listed in the schedule.

Grading Scale: A = 100-90; B = 80-89; C = 70-79; D = 60-69; F = below 60

I. COURSE CONTENT/SCHEDULE

<table>
<thead>
<tr>
<th>DATE</th>
<th>TOPICS</th>
</tr>
</thead>
<tbody>
<tr>
<td>May 15</td>
<td>• Fundamental concepts of plasmas</td>
</tr>
<tr>
<td>May 17</td>
<td>o Report 1 Due: Fundamental concepts of plasmas</td>
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<tr>
<td>May 18</td>
<td>• Properties of plasmas, thermal and non-thermal plasmas</td>
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<tr>
<td>May 20</td>
<td>o Report 2 Due: Properties of thermal and non-thermal plasmas</td>
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<tr>
<td>May 21</td>
<td>• Plasma sources and technologies</td>
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<tr>
<td>May 23</td>
<td>o Report 3 Due: Plasma sources and technologies</td>
</tr>
<tr>
<td>May 24</td>
<td>• Applications of thermal and non-thermal plasmas</td>
</tr>
<tr>
<td>May 26</td>
<td>o Report 4 Due: Applications of thermal and non-thermal plasmas</td>
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</tbody>
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Note: The above schedule is tentative. Changes in this course schedule may be necessary and will be announced to the class by the Instructor.
J. COURSE POLICIES

Attendance/Tardiness
Online participation will be monitored through blackboard.

Late Work and Make-up Exams
Late work will not be accepted. No make-up work will be provided.

Extra Credit
Extra credit may be offered for extraordinary performances or contributions.

Participation
Active participation is required.

K. COLLEGE AND UNIVERSITY POLICIES

- Academic Integrity (University)
It is expected that university students will demonstrate a high level of maturity, self-direction, and ability to manage their own affairs. Students are viewed as individuals who possess the qualities of worth, dignity, and the capacity for self-direction in personal behavior. See Full University Policy at http://catalog.tamucc.edu/content.php?catoid=10&navoid=313#Academic_Integrity

- Classroom/Professional Behavior
Texas A&M University-Corpus Christi, as an academic community, requires that each individual respect the needs of others to study and learn in a peaceful atmosphere. Under Article III of the Student Code of Conduct, classroom behavior that interferes with either (a) the instructor’s ability to conduct the class or (b) the ability of other students to profit from the instructional program may be considered a breach of the peace and is subject to disciplinary sanction outlined in article VII of the Student Code of Conduct. Students engaging in unacceptable behavior may be instructed to leave the classroom. This prohibition applies to all instructional forums, including classrooms, electronic classrooms, labs, discussion groups, field trips, etc.

- Deadline for Dropping a Course with a Grade of W (University)
The grade of W will be assigned to any student officially dropping a course. Please consult with the instructor before you decide to drop to be sure it is the best thing to do. Just stopping attendance and participation WILL NOT automatically result in your being dropped from the class. Should dropping the course be the best course of action, visit the Office of the University Registrar for the Course Drop Form that must submitted. No student is eligible to receive a W without completing the official drop process by this deadline. Please consult the Academic Calendar (http://www.tamucc.edu/academics/calendar/) for the last day to drop a course.
Grade Appeals (College of Science and Engineering)
As stated in University Procedure 13.02.99.C2.01, Student Grade Appeal Procedures, a student who believes that he or she has not been held to appropriate academic standards as outlined in the class syllabus, equitable evaluation procedures, or appropriate grading, may appeal the final grade given in the course. The burden of proof is upon the student to demonstrate the appropriateness of the appeal. A student with a complaint about a grade is encouraged to first discuss the matter with the instructor. For complete details, including the responsibilities of the parties involved in the process and the number of days allowed for completing the steps in the process, see University Procedure 13.02.99.C2.01, Student Grade Appeal Procedures. These documents are accessible through the University Rules website at http://www.tamucc.edu/provost/university_rules/index.html, and the College of Science and Engineering Grade Appeals webpage at http://sci.tamucc.edu/students/GradeAppeal.html. For assistance and/or guidance in the grade appeal process, students may contact the chair or director of the appropriate department or school, the Office of the College of Science and Engineering Dean, or the Office of the Provost.

Disability Services
The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please call (361) 825-5816 or visit Disability Services in Corpus Christi Hall 116.

If you are a returning veteran and are experiencing cognitive and/or physical access issues in the classroom or on campus, please contact the Disability Services office for assistance at (361) 825-5816.

http://disabilityservices.tamucc.edu/

I. OTHER INFORMATION

None.

GENERAL DISCLAIMER
I reserve the right to modify the information, schedule, assignments, deadlines, and course policies in this syllabus if and when necessary. I will announce such changes in a timely manner during regularly scheduled lecture periods.