

## **ECE 341. FALL 2024. COURSE SYLLABUS**

### **(1) Course Details:**

**Instructor: Mario Marconi**, Professor,

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Office hours: Virtual meetings on demand. If you have questions, send Prof. Marconi a meeting request. Your email will be answered with the link to a virtual meeting. Office hours are *open agenda* at any time, any day, upon request.

TA: **Christopher Erickson**

Email: [Christopher.Erickson@colostate.edu](mailto:Christopher.Erickson@colostate.edu)

**Textbook:** Electromagnetics, Branislav M. Notaros, PEARSON Prentice Hall

### **(2) Course Description:**

**Concepts:** Electrostatic fields in free space, Dielectrics, Capacitance and Electric Energy, Steady Electric Currents, Magnetostatic Field in Free Space, Magnetostatic Fields in Material Media, Slow Time-varying Electromagnetic Fields, Inductance and Magnetic Energy

### **(3) Grading:**

- Homework (22%)
- Knowledge Integrators (KI) Participation and report (8%)
- Quizzes (on line) (20%)
- Assessment 1- First Midterm (15%)
- Assessment 2- Second Midterm (15%)
- Assessment 3- Final Exam (20%)
- Math Foundation: Extra credit (2%)

### **(4) Organization of Course Topics:**

#### ***Tentative schedule***

- 1 Electrostatic field in free space: 2 weeks
- 2 Electrostatic field in Material Media: 2 weeks
- 3 Steady electric currents: 2 weeks
- 4 Magnetostatic field: 2.5 weeks
- 5 Low frequency electromagnetic field: 3 weeks

The course will be organized in 5 LSMs (Learning Studio Modules) covering the first seven chapters of the textbook. The tentative schedule for the lecture delivery is

Week			LECTURE SCHEDULE	Sections in the book
8/19/24	to	8/23/24	LSM1	1.1-1.10
8/26/24	to	8/30/24	LSM1	1.12-1.19, 1.21
9/2/24	to	9/6/24	LSM2	2.1-2.10
9/9/24	to	9/13/24	LSM2	2.12-2.17
9/16/24	to	9/20/24	LSM2/ <b>KI1</b>	2.12-2.17
9/23/24	to	9/27/24	<b>Midt1</b> /LSM3	3.1, 3.2
9/30/24	to	10/4/24	LSM3	3.3-3.5, 3.8
10/7/24	to	10/11/24	LSM3	3.9, 3.11
10/14/24	to	10/18/24	LSM4	4.1-4.8
10/21/24	to	10/25/24	LSM4	5.1-5.6
10/28/24	to	11/1/24	LSM4/ <b>KI2</b>	5.9, 5.10
11/4/24	to	11/8/24	LSM5	6.1-6.3
11/11/24	to	11/15/24	<b>Midt2</b> /LSM5	6.5-6.7
11/18/24	to	11/22/24	LSM5	7.1-7.3
11/25/24	to	11/29/24	<b>Fall break</b>	
12/2/24	to	12/6/24	LSM5/ <b>KI3</b>	7.4, 7.5
12/9/24	to	12/13/24	Finals	

#### (5) Assessments:

- **Midterms:** Two tests are planned during the semester. Exams are open notes. Each exam will last one class period.
- **Final:** In addition a final comprehensive exam will include all the topics reviewed during the semester.
- **On line quizzes:** There will be assigned periodically, at the end of each LSM. The conceptual questions quizzes must be answered on line before the indicated deadline. No extensions will be granted.

#### (6) Homework:

- Homework will be assigned during the semester. Homework assignments will be posted on the course website. The deadline will be indicated in each case and strictly enforced.
- Late submissions will be accepted with 20% deduction *for each hour late*
- All homework will be completed on line.
- Solutions to the problems will be available 48 hours after the deadline

- To get full credit all homeworks must be accompanied by a file with your work. Every student is required to upload a file with the work that justified the answers in a detailed manner [must include a clear explanation how the problem was solved]. The file must be uploaded in the last question of each homework. Failing to do so, or uploading a deficient explanation will incur a penalty of 50% in the homework score

**VERY IMPORTANT:** *You are responsible to submit the homework. If you forget to submit the homework on time there is no possibility to remove the tardiness penalty*

### **(7) Lectures**

- All lecture notes will be posted in CANVAS, in pdf format, in the “Modules” folder.
- If necessary, additional pre-recorded videos will be posted in the same folder.
- Lecture notes and videos will be posted with sufficient time for you to solve the homeworks and prepare for the exams.

### **(8) Office hours**

- Office hours will be held as virtual meetings by request. For office hours consulting please send an e-mail to Prof. Marconi ([Mario.marconi@colostate.edu](mailto:Mario.marconi@colostate.edu)) to arrange a virtual conference. We will use mainly the video conference platform Zoom.
- When help is needed please use the following procedure:
  - a. If the questions can be answered by emails, that will be the first option. Emails will be answered within 24 hours.
  - b. If you need more detailed help, request a videoconference (send an email to the professor) and you will receive an email with the invitation to join a virtual meeting

*Video conference platforms information*

- a- Microsoft Teams [<https://teams.microsoft.com/downloads>] and
- b- Zoom [<https://zoom.us/download>].

Both are free softwares, please download them in your devices

**VERY IMPORTANT!**

*Read the announcements in CANVAS. All news, deadlines, dates and times of the exams, etc. will be posted in Announcements and in this Syllabus. If you cannot find the answer to your question, please send professor Marconi an email.*

### **(9) Knowledge Integration:**

There will be three knowledge integration (KI) modules. Each KI will address a set of anchoring concepts taught in ECE311, ECE331, and ECE341 and will show how these

basic concepts are integrated in a practical design. A set of questions related to the concepts used in each KI will be distributed before each KI module begins. Students are required to complete the pre-work in the form of a report by working through the questions and to understand how individual concepts are integrated in the practical design. Online presentations by each student to demonstrate his/her understanding of the materials in the first two KIs are required. Participation in the KI activity is mandatory. The KI modules will count for 8% of the final grade.

**Note 1:** Regular attendance to online lectures is required.

**Note 2:** KI grade consists of two components: pre-work and video presentation. Video presentations are peer-assessed.

**Note 3:** Late homework submissions will not receive full credit.

**Note 4:** Math foundation extra credit consists of two components: attending lectures and solving problems sets.

- 1% extra credit for any student who attends at least seven math foundation lectures.
- 1% extra credit for any student who receives an average grade of 85% or more on math foundation problem sets

### (10) Grading scale

The following grading scale will be applied in the course

*Grading scale:*

95+	A+	75-79.99	B	40-54.99	D
90-94.99	A	70-74.99	B-	<40	F
85-89.99	A-	65-69.99	C+		
80-84.99	B+	55-64.99	C		

### (11) Important dates

<b>Knowledge integrator 1</b>	<b>September 19</b>
<b>Midterm 1</b>	<b>September 24</b>
<b>Knowledge integrator 2</b>	<b>October 31</b>
<b>Midterm 2</b>	<b>November 12</b>
<b>Knowledge integrator 3</b>	<b>December 5</b>
<b>Final</b>	<b>December 9 6:20 to 8:20 PM</b>