Instructors:
Name: Dr. Ryan B. Green
Email: green@ece.msstate.edu
Office Hours: Tuesdays 10AM – 12PM
Office: WebEx (https://msstate.webex.com/meet/rbg54)

Notes on Office Hours: Office hours will be available in Cisco WebEx during the office hours posted above unless prior notice has been given by the instructor. If you need alternate meeting times, email the instructor with "ECE 3313-01" in the subject line. Please include two to three time slots that will work for you in the 8AM-5PM work day. Please give the instructor at least 24 hours for a meeting request.

All times are given in the USA Central Time Zone.

Lecture Time: MWF 9:00-9:50, RULA 2030

Lab Times: No Laboratory

Prerequisites: MA 3253, PH 2223
Corequisites: N/A

Textbook: Fundamentals of Applied Electromagnetics, 8th Ed.
Fawwaz T Ulaby & Umberto Ravaioli
ISBN: 9780135199008

Software: **Required -** MATLAB (latest Student version) – Note that this is the same software you purchased in ECE 1013. The software costs $99 (one-time cost) and will be used throughout your ECE degree program (all four years)

Hardware: Materials and tools may be required for your design project. Your team will decide on these parts based on the project topic chosen by the team. Students enrolled in the Online Campus course must purchase all parts and tools required for the course.

Website: canvas.msstate.edu

Course Description and Learning Outcomes

(Prerequisite: Grade of C or better in both MA 3253 and PH 2223.). One hour lecture. Introduction to engineering electromagnetics with applications. Vector analysis, static and time-varying electromagnetic fields, wave propagation, and transmission lines

After successfully completing this course, the students will be able to:

i. Use and apply vector calculus
ii. Use, develop, and apply the knowledge of vector fields.
iii. Describe and apply the fundamental nature of static fields (electric and magnetic)
iv. Use Maxwell's equations to time-harmonic fields, Poynting's power-balance theorem, boundary conditions, and wave equations.
v. Apply the properties of plane waves in unbounded space and understand the concepts of wavelength, phase velocity, and attenuation.

LECTURE TOPICS (42 contact hours)

I. Vector Analysis and Coordinate Systems (6 hours)
II. Static Electric Fields (6 hours)
III. Static Magnetic Fields (4 hours)
IV. Maxwell's Equations and Time Varying Electromagnetic Fields (7 hours)
V. Electromagnetic Waves (6 hours)
VI. Transmission lines (10 hours)
VII. Tests (3 hours)

Methods of Evaluation and Standards of Achievement

Your grade will be calculated using the following breakdown and scale.

Grading Breakdown	
Assignment Type	**Max % Possible**
Quiz 0	5%
Homework 1	6%
Homework 2	6%
Homework 3	6%
Homework 4	6%
Homework 5	6%
Quiz 1	10%
Quiz 2	10%
Quiz 3	10%
Quiz 4	10%
Project 1	5%
Project 2	5%
Project 3	5%
Final Exam	10%
TOTAL	**100%**
+Extra Credit	*as announced*

Grading Scale	
Grade	**Points**
A	90.0-100
B	80.0-89.9
C	70.0-79.9
D	60.0-69.9
F	<600

Since this is an asynchronous course, consistent with AOP 12.04, students will have at least 72 hours to complete their final exam. The two final exam parts will be available for students to take over any two nonconsecutive 3 hour periods within a week timeframe. These two three-hour periods do not have to be consecutive (back-to-back) and may be scheduled at the student's convenience during that week of availability, satisfying the minimum requirement of 72 hours to complete their final exam.

University Policies

The Mississippi State University Syllabus contains all policies and procedures that are applicable to every course on campus and online. The policies in the University Syllabus describe the official policies of the University and will take precedence over those found elsewhere. It is the student's responsibility to read and be familiar with every policy. The University Syllabus may be accessed at any time on the Provost website under Faculty and Student Resources and at https://www.provost.msstate.edu/faculty-student-resources/university-syllabus

ECE 3313 COURSE POLICIES

Course Grading Policies

Instructor-provided class materials are the only resources allowed while taking quizzes. **All quizzes, exams, and homework are INDIVIDUAL assignments.** If you share quiz questions, copy another student's work, or allow another student to copy your work, then you will be referred for an Honor Code violation.

You may use a calculator, lecture notes, lecture videos, and other instructor-provided material when taking quizzes. **No other outside resources are allowed**. Resources such as Chegg or any other unauthorized resource used during the completion of a quiz or homework is considered a violation of the Mississippi State University Honor Code.

Preparation, self-regulated learning, and participation are expected and required throughout the semester. These skills are demonstrated through attendance in lecture, consistent log ins to the Canvas site, frequent email reading and responding, viewing course videos, and/or timely submission of assignments.

Due dates matter. The rule in ECE 3313 is that assignments must be turned in on the due date by the time specified. Assignments typically close at the due date and time, and no late assignments will be accepted.

On occasion and with prior announcement, your instructor may choose to institute a "soft" deadline for an assignment to encourage you to work on an assignment early, but give you more time if needed. **Except in cases of an excused absence as defined in Academic Operating policy 12.09 or "soft" deadlines described above, assignments will not be accepted after the due date listed in Canvas and will receive**

no credit. For excused absences, contact the instructor prior to the absence, if possible, or as soon as possible after the absences if the nature of the absence prevents prior notice. For other unusual emergency situations beyond the student's control (e.g., housing disruption, family emergency), deadline extensions may be requested via email and may be granted solely based on the instructor's discretion.

Types of Assessments

Assignments are listed in the schedule below. Detailed instructions for each will be provided throughout the semester. Please be sure to begin assignments with enough time to allow for completion.

Quizzes (45%)

Students will be assigned five quizzes over the course of the semester. Quizzes will be assigned via Canvas (one week before the due date) and submitted to Canvas before 11:59 PM on the respective due dates. Each quiz will have a 3-hour window of completion once when the student starts the exam on Canvas. This 3-hour window includes 1.5 hours to take the exam and 1.5 hours to scan and organize the answers in the correct format for submission. Each Exam will be worth 10% of the total grade except for Quiz 0, which is 5% of the total grade.

Comprehensive Final Exam (10%)

Students will be assigned a Comprehensive Final Exam on Canvas and submitted to Canvas before 11:59 PM on the due date. The final exam will cover concepts learned throughout the semester. The Comprehensive Final Exam will be worth 10% of the total grade. The final exam will be assigned one week prior to the due date.

Homework (30%)

Students will be assigned 5 homework assignments over the course of the semester. Each homework is individually worth 6% of the final course grade. Homework assignments will be assigned in Canvas and will be submitted via Canvas before 11:59 PM on the due date.

Projects (15%)

Students will be assigned 3 projects over the course of the course of the semester. Each project is individually worth 5% of the final course grade. Projects will be physically demonstrated to the professor before 5PM on the due date, and a small report will be submitted via Canvas before 11:59 PM on the due date.

Assignment Submissions

Submit assignments well before the deadline! Engineering is often more about creating an efficient process than the final product, and engineering education is very similar. ECE 1022 is a large class with many assignments. To be efficient, ECE 1022 uses the Canvas classroom management system for almost all "classroom transactions": assignments are made via Canvas, homework assignments are submitted to Canvas, quizzes are administered and graded by Canvas, etc. It is impractical or impossible to adjust student submissions or computer-based grading on a student-by-student basis. Therefore, **it is YOUR**

responsibility to ensure that your submissions are in the right format and have been accepted by the Canvas system before the scheduled deadline. Unless specified by the individual assignment, all submissions must be in pdf format. Any assignment submitted in any other format (including. but not limited to, .png, .bmp, .jpg, .jpeg, etc.) will result in an automatic zero (0) grade.

Missed quizzes. All quizzes are provided in the online environment and, in most cases, available for multiple days. ***There will be no make-up quizzes offered***. In cases of true emergency or excused absence, the instructor may temporarily reopen a quiz if the instructor is notified of the emergency within 24 hours of the student's return to campus, **and** it is reasonably feasible, **and** documentation of the circumstance is produced upon the instructor's request.

Attendance Policies

Please refer Academic Operating policy 12.09. (http://www.policies.msstate.edu/policypdfs/1209.pdfLinks to an external site.), regarding attendance expectations and accommodations. Note that official, university-approved and documented absences are not subjected to attendance penalties. It is the student's responsibility to initiate a request of making up course work in a timely manner. Unless impractical, all communication regarding official, university-approved and documented absences and make-up work should take place prior to the absence.

Attendance Policy for Distance instruction

Distance students are expected to "attend" every class meeting by watching assigned lecture videos. Lectures are asynchronous, which means you can "attend" (e.g., watch videos) at a time convenient for your weekly schedule. However, you must turn in assignments according to the weekly class schedule and assignment due dates.

AI Policy: Permitted for Select Assignments in this Course *with Attribution*

Generally, students are **NOT** permitted to use generative AI tools such as ChatGPT for assignments except those authorized specifically by their instructor in the assignment directions. The unauthorized use of a generative AI tool to complete an assignment constitutes academic dishonesty and may be reported as an Honor Code violation. All submitted work will be filtered through Turnitin's AI writing detection tool, and other screeners may also be used.

For assignments in which generative AI has been explicitly permitted by your instructor, students must give credit and cite any AI-generated material according to citation-specific rules (e.g., IEEE style), including in-text citations, quotations, and references. Any work with more than the allowable percentage of AI-generated material specified in the assignment instructions, if applicable, could be reported as an Honor Code violation. Students must also include the following statement in assignments to indicate use of a generative AI tool: "The author(s) acknowledges the use of [Tool Name] in the preparation of this

assignment for [brainstorming, grammatical correction, citation, etc.].” Failure to acknowledge use of generative AI could be reported as an Honor Code violation.

Tools

The hands-on projects in ECE 3313 (and the ECE degree program) involves prototyping and testing. Because these projects have a heavy design component to them, liberties in component and tool selection are allowed within reason. You are expected to purchase all components, materials, and tools needed to complete all assignments in this course.

Expectations for the ECE 3313 Classroom and Communication

The following policies for course communication apply for **ALL students**:

- You are required to check your MSU email account regularly. This is considered an official means of communication by MSU for all students.
- The course materials for each week will be accessed through Canvas.
- Assignment submissions including quizzes will utilize Canvas unless otherwise specified by the instructor.
- You are required to have access to a computer that connects to the internet.
- Students should direct correspondence to the instructor directly related to the class via email using “ECE 3313-01” in the subject line. **All canvas mail will be ignored**.
- Students should not discuss specific quiz questions.
- Students are encouraged to discuss homework together in a group, but the assignment should be completed individually.

The following policies for course communication apply to **students enrolled in ECE 3313 Online**:

- Faculty office hours will be hosted in WebEx. Students can join using a computer or smartphone app.
- Students should expect to log in to Canvas no less than 2-3 times per week to access course information, lectures, and updates.

Minimum Technology Requirements

The following minimum technology requirements are necessary **for all students** to complete the course:

- Computer with web browser, Microsoft Office, and Adobe Reader
- Internet access
- Webcam and microphone (computer or smartphone) to upload video responses to assignments or participate in virtual meetings / office hours.
- Video recording and editing software (Camtasia is available to download free from MSU ITS)

Online students will also need:

- Webcam and microphone (computer or smartphone) to upload video responses to assignments or participate in virtual meetings / office hours.
- Video recording and editing software (Camtasia is available to download free from MSU ITS)

Quizzes are administered online via Canvas. **Ensure you have adequate internet access and power for your computer BEFORE you begin the quiz.** You will only be able to start the quiz one time. There are no time extensions available.

Technical Assistance
If you have questions about this course, please contact the instructor via Canvas messaging. For technical support (e.g., computer support, Canvas issues), please contact help@ece.msstate.edu or engr-dist-support@lists.msstate.edu or www.bagley.msstate.edu/distance.

Copyright

Copyrighted materials within the course are only for the use of students enrolled in the course for purposes associated with this course and may not be retained or further disseminated. Course materials must not be posted on any website or added to any database without the instructor's written permission. Do not distribute test problems, homework, or any other materials. Do not post course materials on websites such as chegg.com, slader.com, etc. Violations of this policy will be referred to the Honor Court.

The course syllabus is and schedule are subject to change based on the needs of the class; course announcements will be made during the class period and via Canvas.