

# Cover Sheet: Request 15930

## EEL3472C Fundamentals of Electromagnetic Fields

### Info

Process	Course Modify Ugrad/Pro
Status	Pending at PV - University Curriculum Committee (UCC)
Submitter	Shannon Chillingworth schill@ece.ufl.edu
Created	3/4/2021 11:12:17 AM
Updated	5/13/2021 4:31:15 PM
Description of request	Change lab designation, reduce course credits, update course description.

### Actions

Step	Status	Group	User	Comment	Updated
Department	Approved	ENG - Electrical and Computer Engineering 19050000	Robert Fox	Remove lab & reduce credits from 4 to 3	3/4/2021
No document changes					
College	Approved	ENG - College of Engineering	Heidi Dublin	Approved by HWCOE Curriculum Committee and Faculty Council	5/13/2021
EEL3472 Fund EM Fields UCC2.docx					4/21/2021
University Curriculum Committee	Pending	PV - University Curriculum Committee (UCC)			5/13/2021
No document changes					
Statewide Course Numbering System					
No document changes					
Office of the Registrar					
No document changes					
Catalog					
No document changes					
Student Academic Support System					
No document changes					
College Notified					
No document changes					

# Course|Modify for request 15930

## Info

**Request:** EEL3472C Fundamentals of Electromagnetic Fields

**Description of request:** Change lab designation, reduce course credits, update course description.

**Submitter:** Shannon Chillingworth schill@ece.ufl.edu

**Created:** 2/23/2021 1:49:23 PM

**Form version:** 1

## Responses

### Current Prefix

*Enter the current three letter code (e.g., POS, ATR, ENC).*

Response:

EEL

### Course Level

*Select the current one digit code preceding the course number that indicates the course level at which the course is taught (e.g., 1=freshman, 2=sophomore, etc.).*

Response:

3

### Number

*Enter the current three digit code indicating the specific content of the course based on the SCNS taxonomy and course equivalency profiles.*

Response:

472

### Lab Code

*Enter the current lab code. This code indicates whether the course is lecture only (None), lab only (L), or a combined lecture and lab (C).*

Response:

C

### Course Title

*Enter the current title of the course as it appears in the Academic Catalog. There is a 100 character limit for course titles.&nbsp;*

Response:

Fundamentals of Electromagnetic Fields

### Effective Term

*Select the requested term that the course change(s) will first be implemented. Selecting "Earliest" will allow the change to be effective in the earliest term after SCNS approval. If a specific term and year are selected, this should reflect the department's expectations. Courses cannot be changed retroactively, and therefore the actual*

*effective term cannot be prior to SCNS approval, which must be obtained prior to the first day of classes for the effective term. SCNS approval typically requires at least 6 weeks after approval of the course change at UF.*

Response:  
Earliest Available

**Effective Year**

*Select the requested year that the course change will first be implemented. See preceding item for further information.*

Response:  
Earliest Available

**Requested Action**

*Indicate whether the change is for termination of the course or any other change. If the latter is selected, all of the following items must be completed for any requested change.*

Response:  
Other (selecting this option opens additional form fields below)

**Change Course Prefix?**

Response:  
No

**Change Course Level?**

*Note that a change in course level requires submission of a course syllabus.*

Response:  
No

**Change Course Number?**

Response:  
No

**Change Lab Code?**

*Note that a change in lab code requires submission of a course syllabus.*

Response:  
Yes



**Change S/U Only?**

Response:  
No

**Change Contact Type?**

Response:  
No

**Change Rotating Topic Designation?**

Response:  
No

**Change Repeatable Credit?**

*Note that a change in repeatable credit status requires submission of a course syllabus.*

Response:  
No

**Change Course Description?**

*Note that a change in course description requires submission of a course syllabus.*

Response:  
Yes

**Current Course Description**

Response:  
Reviews the vector calculus needed for the study of electromagnetic fields and their applications. Considers both static and dynamic fields, including radiation and propagation both in free space and in waveguide structures. The associated laboratory reinforces classroom instruction.

**Proposed Course Description (500 characters max)**

Response:  
Transmission lines, vector analysis, electrostatics, magnetostatics, time-varying fields, plane waves.

**Change Prerequisites?**

Response:  
No

**Change Co-requisites?**

Response:  
No

**Rationale**

*Please explain the rationale for the requested change.*

Response:  
The nature of the course makes it difficult to synchronize appropriate laboratory experiments.

## **Fundamentals of Electromagnetic Fields**

EEL 3472

**Class Periods:** M W F, 5<sup>th</sup> period, 11:45 a.m. – 12:35 p.m.

**Location:** Online (Zoom)

**Academic Term:** TBD

### **Instructor:**

- Name: V.A. Rakov
- Email Address: [rakov@ece.ufl.edu](mailto:rakov@ece.ufl.edu)
- Office Phone Number: (352) 392-4242
- Office Hours: M W F, 11:40-2:00 p.m., Zoom
- Course Website: <http://www.rakov.ece.ufl.edu/teaching/3472.html>

### **Teaching Assistant/Peer Mentor/Supervised Teaching Student:**

- Ziqin Ding, Email : [jesse.threon@hotmail.com](mailto:jesse.threon@hotmail.com), office hours: TH, 3:00 p.m. - 4:00 p.m.

### **Course Description**

Transmission lines, vector analysis, electrostatics, magnetostatics, time-varying fields, plane waves.

### **Course Pre-Requisites / Co-Requisites**

EEL 3008, PHYSICS OF EE

### **Course Objectives**

Students will learn fundamentals of electromagnetic fields, from waves guided by transmission lines to generalized Maxwell's equations and Poynting's theorem. The learning process will be facilitated by examples from the electric energy system practice and lightning research. Practical aspects, such as the electromagnetic skin effect, will be emphasized throughout the course.

### **Materials and Supply Fees**

N/A

### **Professional Component (ABET):**

This course consists of 3 credits of Engineering Science

### **Relation to Program Outcomes (ABET):**

The ABET outcomes are:

1. - An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics

### **Required Textbooks and Software**

- Title: FUNDAMENTALS OF APPLIED ELECTROMAGNETICS
- Author: ULABY and RAVAIOLI
- Publication date, edition, and publisher: 2015, 7TH EDITION, PEARSON
- ISBN number: 

978-0-13-335681-6
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### **Recommended Materials**

Course Packet (Lecture Slides) developed by V.A. Rakov and posted at

<http://www.rakov.ece.ufl.edu/teaching/3472.html>

## Course Schedule

Weekly Course Schedule	Number of Lectures	HA Given	HW Due	Chapter(s) in Text (Ulaby)
Week 1: Introduction	3	-	-	1
Week 2-3: Transmission Lines	7	09/21	09/23	2
Week 4: Review of Vector Analysis	4	10/05	10/07	3
Week 5-6: Electrostatics	7	10/19	10/21	4
Week 7-8: Magnetostatics	5	11/02	11/04	5
Week 9-12: Time-Varying Fields	10	11/20	11/23	6, 5.7, 7.5
Week 13-14: Electromagnetic Waves	6	12/07	12/09	7, 8
Week 14: Review	1	-	-	1-8
Final Exam Group 18C	-	-	12/18 (12:30-2:30 p.m.)	1-8

### **Online Course Recording**

Our class sessions may be audio visually recorded for students in the class to refer back and for enrolled students who are unable to attend live. Students who participate with their camera engaged or utilize a profile image are agreeing to have their video or image recorded. If you are unwilling to consent to have your profile or video image recorded, be sure to keep your camera off and do not use a profile image. Likewise, students who un-mute during class and participate orally are agreeing to have their voices recorded. If you are not willing to consent to have your voice recorded during class, you will need to keep your mute button activated and communicate exclusively using the "chat" feature, which allows students to type questions and comments live. The chat will not be recorded or shared. As in all courses, unauthorized recording and unauthorized sharing of recorded materials is prohibited.

### **Attendance Policy, Class Expectations, and Make-Up Policy**

Excused absences must be consistent with university policies in the undergraduate catalog (<https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>) and require appropriate documentation.

### **Evaluation of Grades**

Assignment	Percentage of Final Grade
Homeworks (6)	24%
Tests (5)	50%
Final Exam	26%
TOTAL	100%

### **Grading Policy**

Percent	Grade	Grade Points
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90	A	4.00
86.67	A-	3.67
83.33	B+	3.33
80	B	3.00
76.67	B-	2.67
73.33	C+	2.33
70	C	2.00
66.67	C-	1.67
63.33	D+	1.33
60	D	1.00
56.67	D-	0.67
<56.67	E	0.00

More information on UF grading policy may be found at:  
<https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

### ***Students Requiring Accommodations***

Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the disability Resource Center by visiting <https://disability.ufl.edu/students/get-started/>. It is important for students to share their accommodation letter with their instructor and discuss their access needs, as early as possible in the semester.

### ***Course Evaluation***

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at <https://gatorevals.aa.ufl.edu/students/>. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via <https://ufl.bluera.com/ufl/>. Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-results/>.

### ***University Honesty Policy***

UF students are bound by The Honor Pledge which states, “We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: “On my honor, I have neither given nor received unauthorized aid in doing this assignment.” The Honor Code (<https://sccr.dso.ufl.edu/policies/student-honor-code-student-conduct-code/>) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TAs in this class.

### ***Commitment to a Safe and Inclusive Learning Environment***

The Herbert Wertheim College of Engineering values broad diversity within our community and is committed to individual and group empowerment, inclusion, and the elimination of discrimination. It is expected that every person in this class will treat one another with dignity and respect regardless of gender, sexuality, disability, age, socioeconomic status, ethnicity, race, and culture.

If you feel like your performance in class is being impacted by discrimination or harassment of any kind, please contact your instructor or any of the following:

- Your academic advisor or Graduate Program Coordinator
- Robin Bielling, Director of Human Resources, 352-392-0903, [rbielling@eng.ufl.edu](mailto:rbielling@eng.ufl.edu)
- Curtis Taylor, Associate Dean of Student Affairs, 352-392-2177, [taylor@eng.ufl.edu](mailto:taylor@eng.ufl.edu)
- Toshikazu Nishida, Associate Dean of Academic Affairs, 352-392-0943, [nishida@eng.ufl.edu](mailto:nishida@eng.ufl.edu)

### ***Software Use***

All faculty, staff, and students of the University are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against University policies and rules, disciplinary action will be taken as appropriate. We, the members of the University of Florida community, pledge to uphold ourselves and our peers to the highest standards of honesty and integrity.

### ***Student Privacy***

There are federal laws protecting your privacy with regards to grades earned in courses and on individual assignments. For more information, please see: <https://registrar.ufl.edu/ferpa.html>

### ***Campus Resources:***

#### *Health and Wellness*

##### **U Matter, We Care:**

Your well-being is important to the University of Florida. The U Matter, We Care initiative is committed to creating a culture of care on our campus by encouraging members of our community to look out for one another and to reach out for help if a member of our community is in need. If you or a friend is in distress, please contact [umatter@ufl.edu](mailto:umatter@ufl.edu) so that the U Matter, We Care Team can reach out to the student in distress. A nighttime and weekend crisis counselor is available by phone at 352-392-1575. The U Matter, We Care Team can help connect students to the many other helping resources available including, but not limited to, Victim Advocates, Housing staff, and the Counseling and Wellness Center. Please remember that asking for help is a sign of strength. In case of emergency, call 9-1-1.

**Counseling and Wellness Center:** <http://www.counseling.ufl.edu/cwc>, and 392-1575; and the University Police Department: 392-1111 or 9-1-1 for emergencies.

##### **Sexual Discrimination, Harassment, Assault, or Violence**

If you or a friend has been subjected to sexual discrimination, sexual harassment, sexual assault, or violence contact the **Office of Title IX Compliance**, located at Yon Hall Room 427, 1908 Stadium Road, (352) 273-1094, [title-ix@ufl.edu](mailto:title-ix@ufl.edu)

##### **Sexual Assault Recovery Services (SARS)**

Student Health Care Center, 392-1161.

**University Police Department** at 392-1111 (or 9-1-1 for emergencies), or <http://www.police.ufl.edu/>.

#### *Academic Resources*

**E-learning technical support**, 352-392-4357 (select option 2) or e-mail to [Learning-support@ufl.edu](mailto:Learning-support@ufl.edu). <https://lss.at.ufl.edu/help.shtml>.

**Career Resource Center**, Reitz Union, 392-1601. Career assistance and counseling.  
<https://www.crc.ufl.edu/>.

**Library Support**, <http://cms.uflib.ufl.edu/ask>. Various ways to receive assistance with respect to using the libraries or finding resources.

**Teaching Center**, Broward Hall, 392-2010 or 392-6420. General study skills and tutoring.  
<https://teachingcenter.ufl.edu/>.

**Writing Studio, 302 Tigert Hall**, 846-1138. Help brainstorming, formatting, and writing papers. <https://writing.ufl.edu/writing-studio/>.

**Student Complaints Campus**: <https://care.dso.ufl.edu>.

**On-Line Students Complaints**: <http://www.distance.ufl.edu/student-complaint-process>.