Department of Computer and Electrical Engineering & Computer Science Engineering
Florida Atlantic University
Course Syllabus

1. Course title/number, number of credit hours	
Electromagnetic Fields and Waves EEL 3470	3 credit hours
2. Course prerequisites, corequisites, and where the course fits in the program of study	
Prerequisites: EEL 3111 (Circuits 1) AND MAC 2313 (Calculus with Analytical Geometry 3), both with minimum grade of "C"	
3. Course logistics	
Term: Fall 2018 This is a classroom lecture course *Class location and time* TBA This course has limited design content.	
4. Instructor contact information	
Instructor's name *Office address* *Office Hours* *Contact telephone number* *Email address*	John Bagby EE 518 TBA 561.297.3462 bagby@fau.edu
5. TA contact information	
TBA	
6. Course description	
Electrostatics, magnetostatics, time-varying EM fields, plane-wave/TEM wave- reflection and refraction, transmission lines	
7. Course objectives/student learning outcomes/program outcomes	
Course objectives	This course will impart both theoretical concepts and practical aspects of electromagnetic theory. Relevant field concepts and EM wave and propagation principles (including Maxwell's equations and Helmholtz wave equation) will be taught. Design of EM components like capacitors and inductors will be indicated. Principle of transmissions lines and the associated design aspects of stub-line matching, etc., will be covered. Analytical solutions of boundary value problems to solve for potential functions in a medium and its elaboration as a computational exercise are discussed.
Student learning outcomes & relationship to ABET 1–7 outcomes	1. The student will understand the concepts of electromagnetic theory (1), (7) 2. The student will be able to perform analytical calculations on various EM-related electric and magnetic field problems (1), (7) 3. The student will learn the basics of EM materials: dielectrics, conductors and magnetic materials (1), (7) 4. The student will learn the numerical analysis of boundary value problems (1), (2), (6) 5. The student will be able to design basic components like capacitors, resistors, inductors and transmission-line matching elements (1), (2), (6)
8. Course evaluation method	
Homework - 20 % Midterm - 40 % Final Examination - 40 %	*Note*: The minimum grade required to pass the course is C
9. Course grading scale	
Grading Scale: 90 and above: "A", 87-89: "A-", 83-86: "B+", 80-82: "B", 77-79 : "B-", 73-76: "C+", 70-72: "C", 67-69: "C-",	

63-66: "D+", 60-62: "D", 51-59: "D-", 50 and below: "F."

10. Policy on makeup tests, late work, and incompletes

No makeup tests will be given, except with documentation from a Doctor. Late assignments will only be accepted and graded, if excused by me. Blackboard will allow you to submit an assignment after the due date and time. However, Blackboard will mark a late assignment late. Incomplete grades will only be given if the student is passing the class and has proper documentation for the reason of the incomplete.

11. Special course requirements

None

12. Classroom etiquette policy

University policy requires that in order to enhance and maintain a productive atmosphere for education, personal communication devices, such as cellular phones and laptops, are to be disabled in class sessions.

13. Attendance policy statement

Students are expected to attend all of their scheduled University classes and to satisfy all academic objectives as outlined by the instructor. The effect of absences upon grades is determined by the instructor, and the University reserves the right to deal at any time with individual cases of non-attendance. Students are responsible for arranging to make up work missed because of legitimate class absence, such as illness, family emergencies, military obligation, court-imposed legal obligations or participation in University-approved activities. Examples of University-approved reasons for absences include participating on an athletic or scholastic team, musical and theatrical performances and debate activities. It is the student's responsibility to give the instructor notice prior to any anticipated absences and within a reasonable amount of time after an unanticipated absence, ordinarily by the next scheduled class meeting. Instructors must allow each student who is absent for a University-approved reason the opportunity to make up work missed without any reduction in the student's final course grade as a direct result of such absence.

14. Disability policy statement

In compliance with the Americans with Disabilities Act Amendments Act (ADAAA), students who require reasonable accommodations due to a disability to properly execute coursework must register with Student Accessibility Services (SAS) and follow all SAS procedures. SAS has offices across three of FAU's campuses – Boca Raton, Davie and Jupiter – however disability services are available for students on all campuses. For more information, please visit the SAS website at www.fau.edu/sas/

15. Code of Academic Integrity Policy Statement

Students at Florida Atlantic University are expected to maintain the highest ethical standards. Academic dishonesty is considered a serious breach of these ethical standards, because it interferes with the university mission to provide a high quality education in which no student enjoys an unfair advantage over any other. Academic dishonesty is also destructive of the university community, which is grounded in a system of mutual trust and places high value on personal integrity and individual responsibility. Harsh penalties are associated with academic dishonesty. For more information, see University Regulation 4.001.

16. Counseling and Psychological Services (CAPS) Center

Life as a university student can be challenging physically, mentally and emotionally. Students who find stress negatively affecting their ability to achieve academic or personal goals may wish to consider utilizing FAU's Counseling and Psychological Services (CAPS) Center. CAPS provides FAU students a range of services – individual counseling, support meetings, and psychiatric services, to name a few – offered to help improve and maintain emotional well-being. For more information, go to http://www.fau.edu/counseling/

15. Required texts/reading

F.T. ULABY, E. MICHIELSSEN and U. RAVAIOLI:FUNDAMENTALS OF APPLIED ELECTROMAGNETICS, Prentice-Hall/Pearson, 2010

16. Supplementary/recommended readings

None

17. Course topical outline, including dates for exams/quizzes, papers, completion of reading

LectureTopics	Approximate # of Lectures
1. Electrostatics	8
2. Magnetostatics	6
3. Time-varying Fields	7
4. Transmission Lines	8