## PHYS 302: Electricity and Magnetism II

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| Course Title/Number  | PHYS 302: Electricity and Magnetism II |
| Semester/Year | Spring 2017 |
| Days/Time | T &R, 11:00-12:15 |
| Location | S281 |
| Instructor | Que Huong Nguyen |
| Office | S 251 |
| Phone | 62756 |
| E-Mail | nguyenh@marshall.edu |
| Office/Hours | 1-3pm T&R |
| University Policies | By enrolling in this course, you agree to the University Policies listed below. Please read the full text of each policy be going to [www.marshall.edu/academic-affairs](http://www.marshall.edu/academic-affairs) and clicking on “Marshall University Policies.” Or, you can access the policies directly by going to <http://www.marshall.edu/academic-affairs/?page_id=802> Academic Dishonesty/ Excused Absence Policy for Undergraduates/ Computing Services Acceptable Use/ Inclement Weather/ Dead Week/ Students with Disabilities/ Academic Forgiveness/ Academic Probation and Suspension/ Academic Rights and Responsibilities of Students/ Affirmative Action/ Sexual Harassment  |

Course Description:

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| In the second part of Electricity and magnetism course we will first continue to study the properties and interactions of electric and magnetic fields in matter. We will then learn about the electromagnetic dynamics, electromagnetic waves, their energies and potentials. You also will gain experience with related mathematical topics, especially vector calculus, differential equations and special functions.  |

**Required Texts, Additional Reading, and Other Materials**

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| The required text book is "Introduction to Electrodynamics", David Griffiths, 3rd edition |

**Goals & Outcomes:**

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| **Course Student Learning Outcomes**  | **How students will practice each outcome in this Course** | **How student achievement of each outcome will be assessed in this Course** |
| To develop familiarity with the concepts and facility with the methods of electro-dynamics. The difference between the two semesters is that PHY 300 dealt with *static* fields, whereas PHY 302 deals with *time-dependent* fields. | Methods and theory will be discussed in classroom, examples will be solved as classwork.  | Students will be given quizzes on theories they learn. |
| To develop student nascent skills as a physicist, in particular to develop student skill in using the physics approach to formulating and solving problems. Students will learn problem solving techniques. | Homework will be assigned every week. Students will work on real physics problems using methods they learn in class. | There will be 3 midterms and one final exam. |

**Homework** :

Home work will usually be assigned every week and are due in one week. Two to four problems plus one or two additional extra-credit problems will be assigned each week. You are expected not to copy any homework solution from anyone else. After you have tried hard to do it all by yourself, teamwork is encouraged for solving the homework assignments, but solutions must be handed in separately. Homework problems are a very important part of the course. Cheating on the homework will result at minimum in zero grades, and could lead to failing the entire course.

**Course Requirements / Due Dates**

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| There will be 3 midterms and one final. Quizzes will be given every 2- week period1. Exam 1: February 9
2. Exam 2: March 9
3. Exam 3: April 14
4. Final: May 2
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**Grading Policy**

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| Homework: 10%Quizzes 15%Exam I 15%Exam II 15 % Exam III 15% Final Exam 30% |

**Attendance Policy**

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| Students are expected to attend all scheduled classes. Lectures and class discussions are vital for learning and understanding. Any absence from exams and quizzes can be excused only if the instructor is informed in advance with reasonable excuses. See University policy above. |

### COURSE OUTLINE:

The course, as the second semester of the two-semester E&M course, will cover from chapter 6 to chapter 12 of the text book.