

# CLASSICAL PHYSICS III, PHYS 343

## Syllabus - Fall 2016

**CRN: 74979, F01**

**MWF 11:45-12:45, REIC 204 (Lecture)**  
**R 9:30-10:30 AM, REIC 204 (Tutorial)**

- Instructor:** Ataur R. Chowdhury
- Office:** REIC 118
- Office Hours:** MWF 2:00-3:30 pm
- Contact:** Phone (907) 474-6109  
Fax (907) 474-6130  
Email archowdhury@alaska.edu
- Prerequisites:** Phys 220, phys 301, and phys 342; or permission of instructor.
- Texts:** **Classical Mechanics** by J. R. Taylor, University Science Books, 2005 (ISBN 1-891389-22-X), and  
**Introduction to Electrodynamics** by D. J. Griffiths, 3<sup>rd</sup> edition, Prentice Hall Publishing, 1999 (ISBN 0-13-805326-X).
- Description:** Normal modes and vibrations, continuum systems, wave mechanics, electromagnetic waves and radiation. Relativistic mechanics and electromagnetism.
- Schedule:** Materials covered in this course will be based on chapters 7, 11, and 16 of Taylor, and chapters 9-12 of Griffiths. Additional material will be provided in class as needed.
- Course Objective:** To acquire a basic understanding of advanced topics in classical mechanics and electrodynamics, and the fundamentals of relativistic formulation of mechanics and electromagnetism.
- Student Learning Outcomes:**
1. Students should be able to understand the physics of vibrational modes of coupled discrete systems and continuum systems.
  2. Students should have acquired a solid foundation of wave mechanics in both classical mechanics and electrodynamics.
  3. Students should be able to understand basic properties of radiation physics from classical perspective.
  4. Students should be able to understand the fundamentals of basic relativistic framework of mechanics and electromagnetism.
- Credits:** 4 credits: 3 hr. of lecture, and 1 hr. of tutorial per week.

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### **Course Requirements/ Policies:**

#### Class Attendance/Participation:

For a better understanding of the course material attendance and participation in classroom activities are very important. This particular course is generally regarded as one of the founding courses that deal with the fundamentals of advanced mechanics and electrodynamics, and it is highly expected that the students will commit themselves to attend the class regularly. There will be supplemental materials for this course and the students will be held responsible for all the materials that will be brought in from outside the text. The students will be expected to participate in class activities, and take part in meaningful discussion and ask questions to better comprehend the subject material.

#### Homework:

On the average, 6-8 problems/exercises/questions will be assigned each week on Fridays. The homework will be due back at the beginning of class the following Friday. **NO LATE HOMEWORK WILL BE ACCEPTED. NO EXCEPTIONS** (barring emergencies and extreme situations). Group work is highly encouraged for solving problems, and for additional help with the homework the students are most welcome to consult the instructor during the office hour or any other time by prior appointment. Any homework you submit should reflect your own best effort. Copying of homework from any online sources is absolutely not acceptable and will result in a grade of zero for the assignment.

#### Tutorial Session:

One hour per week will be devoted to doing problems. Both the instructor and students will take part in solving a pre-selected set of problems during this session. Students may also take advantage of this session to bring in subject material for further discussion. This session is intended to foster a better understanding of the subject and will not be a part of the grade.

#### Examinations:

There will be two midterm examinations (October 14, Friday 11:45-12:45 and November 18, Friday 11:45-12:45) and a final comprehensive examination (December 14, Wednesday, 10:15-12:15 pm) for this course. Examinations will consist of, in most part, problems similar to those in the homework and those worked out in class. Midterms will cover the material covered in class and homework prior to the date of test, and the final will be comprehensive and will include material covered during the entire semester.

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### **Grading Policy:**

Homework	45%
Midterm I	15%
Midterm II	15%
<u>Final</u>	<u>25%</u>
Total	100%

The final grading for this course will be based on a curve, the average of which is usually taken to be the break-point of letter grade B and C, and the standard deviation of the grade point distribution will separate subsequent letter grades. No plus-minus letter grades will be given for this course.

### **Academic Honesty**

UAF expects and requires academic honesty from all members of the University community, and takes any act of plagiarism and cheating seriously. It is expected that all assignments, including homework and reports, that are turned in for this course must be the original work of the individual student. Failure to comply with this policy will result in penalty as stipulated under UAF regulations.

### **Disabilities Services**

The UAF Office of Disability Services implements the Americans with Disabilities Act (ADA), and insures that UAF students have equal access to the campus and course materials. Any student who may need assistance with disabilities, should feel free to contact the instructor or directly to the Office of Disabilities Services (208 WHIT) by calling 907- 474-5655, or through email: [uaf-disability-service@alaska.edu](mailto:uaf-disability-service@alaska.edu).