



Prince Sultan University

Department of Mathematical Science

SYLLABUS **PHYSICS 205** **(Term 121)**

Text (Required): **Physics**, James Walker. 4th Edition.
Pearson/Addison Wesley (2010).

Reading and homework assignments will be from this textbook.

Objectives:

The students are expected to develop an understanding of natural phenomena through direct observations and reasoning. In addition students are expected to learn problem solving strategies and analyzing problems.

Course Grades:

Two Major exams: Each exam contributes **15%** towards the final grade.

Final comprehensive Exam: Contributes **35%** to the final grade.

Homework: Contributes **5%** to the final grade.

Quizzes: Several quizzes will be given which Contribute **10%** to the final grade.

Laboratory: Contributes **20%** to the final grade (**10%** reports and **10%** as a final exam).

Attendance and Absences:

You are responsible for the material covered in each class. No make-up of either Major Exams or Quizzes will be allowed.

◆ If a student misses a class because of a legitimate excuse, he should notify the Student's Affairs Office within a week.

◆ A "D N" Grade will be automatically issued to the student who misses 13 lectures. After 13 missed lectures, you are not allowed to either attend the lecture or to take any exam:

1st warning is issued after 6 absences.

2nd warning is issued after 11 absences.

◆ Attendance is usually taken during the first 5 minutes. If you enter the lecture room after the first 5 minutes, you will be recorded as an absent for that lecture.

Homework Assignment:

There will be an assignment at the end of each chapter which has to be handed one week after the end of the chapter. **You must show all your work in your solution in a well-organized presentation.** A box including **UNITS** and **SIGN** (i.e. positive or negative) should mark your final answer. These problems will be graded on the following scale: **5 (excellent), 4 (good), 3 (adequate), and 0-2 (unacceptable)**. To receive full credit you must provide a **complete explanation** for how you obtained your answer.

NO LATE ASSIGNMENT WILL BE ACCEPTED.

Lecture Schedule (Tentative) & Exams Dates

| Week # | Date | Chapter & Topic/ Sections | Homework Assignment |
|---|-----------------------|---|---|
| 1 | September 1 – 5 | Introduction Ch.19 “Electric Charge, Forces & Electric Fields” | |
| 2 | September 8 – 12 | Ch. 19 - Continues | Conceptual Questions: 4, 8, 10, 18. Problems & Conceptual Exercises: 2, 7, 11, 16, 20, 24, 31, 35, 48, 57, 63, 80, 94. |
| 3 | September 15 – 19 | Ch. 20 “Electric Potential & Electric Potential Energy” | |
| 4 | September 22 – 26 | Ch. 20 - Continues | Conceptual Questions: 4, 6, 10. Problems & Conceptual Exercises: 2, 8, 12, 16, 22, 30, 37, 47, 58, 82. |
| 5 | September 29 – Oct. 3 | Ch. 21 “Electric Current & Direct Current Circuit” | |
| 6 | October 6 – 10 | Ch. 21- Continues | Conceptual Questions: 2, 10, 18. Problems & Conceptual Exercises: 2, 9, 16, 18, 22, 28, 33, 36, 38, 49, 54, 58, 61, 68, 75, 102. |
| First Major Exam , To be Announced Later | | | |
| 7 | October 13 – 17 | Ch. 22. “Magnetism” | |
| Al Adha Vacation – Saturday, October 17 -Wednesday, October 31 | | | |

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| 8 | November 3 – 7 | Ch. 22 - Continues. | Conceptual Questions: 2, 4, 6. Problems & Conceptual Exercises: 4, 8, 16, 21, 26, 34, 38, 44, 55, 58, 64, 81, 86, 91. |
| 9 | November 10 – 14 | Ch. 23 “Magnetic Flux & Faraday’s Law of Induction” | |
| 10 | November 17 – 21 | Ch. 23 – Continues. | Conceptual Questions: 6, 8, 12. Problems & Conceptual Exercises: 2, 4, 10, 12, 16, 20, 22, 26, 29, 32, 38, 42, 46, 54, 62. |
| 11 | November 24 – 28 | Ch. 24. “Alternating Current Circuits” | Ch.7: Conceptual Questions:2, 6, 8, 10. Problems & Conceptual Exercises: 4, 8, 16, 20, 24, 34, 38, 42, 46, 54,72, 84. |
| 12 | December 1 – 5 | Ch.24 – Continues. | Conceptual Questions: 2, 4, 6, 10. Problems & Conceptual Exercises: 4, 6, 7, 12, 14, 24, 27, 32, 38, 46, 50, 60, 66, 82, 89. |
| Second Major Exam , To be Announced Later | | | |
| 13 | December 8 – 12 | Ch. 25. “Electromagnetic Waves” | |
| 14 | December 15 – 19 | Ch.25 – Continues. | Conceptual Questions: 2, 4, 8, 10. Problems & Conceptual Exercises: 4, 9, 12, 16, 25, 30, 36, 47, 54, 62, 68, 88. |
| 15 | December 22 – 26 | Ch. 26 “Geometrical Optics” | |
| Final Exams : January 5 -- 16 | | | |