Wollongong College Australia

A College of the University of Wollongong

Australia

Wollongong

Foundation Studies Program

(CRICOS course codes: 007732G, 023266F)

Subject Outline Summer 2009/10

FSP 022 Physics

ITC Education Ltd trading as
Wollongong College Australia
CRICOS 02723D
ABN 14105312329

© Wollongong College Australia. All rights reserved 2009.
WCA-FSP 022-S0/4

Physics

Subject description

Physics is designed to provide an understanding of some of the physical laws governing the operation of the universe. This subject will prepare students for the study of science and engineering at University. It will also help the student evaluate whether they are able to continue to study physics at university as they are required to do for several science and all engineering subjects.

Subject structure

Physics is a 6 credit point, single session subject delivered as 4 hours of scheduled classes per week. The subject consists of a 1 x 2 hour lecture and 1 x 2 hour tutorial/laboratory session each week. The session is of 14 week's duration with face-to-face classes scheduled for the first 12 weeks and a study/examination period in Weeks 13 and 14.

In addition to scheduled class sessions, students are expected to spend additional time in individual study and research. As a general guideline students will need to spend at least 1 hour in private study (including completing homework and revision) for every hour of scheduled class time.

Teachers will be available for a consultation time each week. Students will be notified of the time and location of the consultation session during Week 1 of the Session. It is recommended that students experiencing difficulty with this subject arrange to consult with the teacher as difficulties are encountered.

Learning resources

Students will require a calculator with trigonometric functions for work in class.

There is no set text for this subject.

The following textbook may be useful:

Zealey B, *Physics in Context: The forces of life*, Oxford University Press, Melbourne, 2001

There are also a number of excellent first year or senior high school Physics textbooks available in the library which cover the material presented in lectures.

© Wollongong College Australia. All rights reserved 2008.

Subject outcomes

Successful completion of Physics will enable students to:

- have a greater understanding of the physical laws, and
- demonstrate their ability to solve written and experimental problems in the areas of:
    - measurement,
    - motion,
    - forces,
    - mechanical interactions,
    - electrical interactions, and
    - electromagnetism

© Wollongong College Australia. All rights reserved 2008.

Subject outline in weeks

The following guide to lessons and activities may be adjusted to suit the needs of the group as long as subject outcomes and assessment criteria are met.

Weeks 1 & 2 - Measurement and Experimental Techniques

Units, dimensions, orders of magnitude, significant figures, uncertainties, graphs in Physics

Week 3 - Motion in one dimension

Position, velocity, acceleration, equations of motion.

Week 4 - Motion in two dimensions

Vectors, projectile motion

Week 5 - Forces

Newtons Laws, weight, tension.

Week 6 - Mechanical Interactions

Linear momentum, impulse, conservation of energy, elastic collisions, work, energy and power

Week 7 - Static Electricity

Electric charge, the electroscope, charge distribution, Coulombs law

Week 8 - Review and mid-session test

Review of all topics covered in weeks 1-6

Mid-session Test

Week 9 - Electric Fields

Electric field, electric potential

© Wollongong College Australia. All rights reserved 2008.

Week 10 - Electric Circuits

Conductors and insulators, Ohms Law, electric power, simple circuits, series and parallel circuits, electric meters

Week 11- Electromagnetism

Magnetic fields, Oersted's experiment, right hand screw rule

Week 12

Revision

Weeks 13 & 14 Final examination Period

Examination and study period. Please refer to examination timetable for the exact date, time and location of the final exam.

© Wollongong College Australia. All rights reserved 2008.

Assessment

Assessment and plagiarism policy

All written assessment tasks, with the exception of examinations and in-class tasks, must be word-processed unless students are otherwise advised.

Students must keep copies of all assessment tasks submitted for marking with the exception of class tests and examinations.

Plagiarism is a form of cheating or stealing that happens when a student uses someone else's work and presents it as his/her own without showing where it comes from. To avoid this, students are expected to submit their own original work for assessment and to accurately acknowledge all references and sources used in essays and assignments.

For information regarding assessment, plagiarism, acknowledging sources and examination rules, please refer to the Wollongong College Australia Student Handbook http://www.wca.uow.edu.au/handbook

Assessment schedule

Task	Date due	Weighting	Length/Time
Laboratory tasks	Week 1, 3, 5, 9, 11	20%	2 hours every 2nd week
Weekly assignments	Every week	30%	Approximately 5 problems per week
Mid session test **	Week 8	25%	
Final examination **	Weeks 13 & 14	25%	FSP3 Session 1 students: 2 hours 12 mins All other students: 2 hours

** In recognition of the early stages of development of the language skills of students enrolled in the **first session** of the Foundation Studies 3-session program, these students are allowed an additional 10% in time to complete all **in-class assessments** and **final exams**.
No additional time is given for tasks that are completed outside of class time.

Marking Guidelines

WCA best practice is that students can normally expect to have assessment tasks handed back within two weeks, and before the next assessment task is due. On occasion there may be exceptions to this time frame due to, for example, the size of the task, the size of the class, teacher illness or teacher leave.

Where there are several teachers marking a major assessment task, tasks will be handed back by all the teachers within the same week.

© Wollongong College Australia. All rights reserved 2008.

Assessment criteria and explanation of components

Laboratory Tasks 20%

Approximately every 2nd week students, working in pairs will perform a two hour experiment filling in an answer sheet. All work will be completed in laboratory time.

Weekly assignments 30%

Each week students will be given a set of problems to solve. These problems will be based on the lecture material covered during that particular week. Problem tasks will be submitted each week and marked by the tutor. The tutor will return the assignment every two weeks in a tutorial where the problems and answers will be revised. Students will have the opportunity to ask questions where necessary. Extra practise questions may be given and solved during the tutorial.

Mid session test 25%

The mid session test will cover all the material in weeks one to six. The test will consist of multiple-choice questions and longer problems which need to be solved showing all working.

Final examination 25%

The final examination will cover all the material in weeks seven to eleven. The test will consist of multiple-choice questions and longer problems which need to be solved showing all working.

© Wollongong College Australia. All rights reserved 2008.