



Queensland, Australia

Course Code:	PHY001A
Course Name:	Physics 1
Semester:	Semester 1, 2016
Program:	Certificate IV Tertiary Preparation Program
Credit Points:	10
Course Coordinator:	Amanda Day
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Teaching Team

Your lecturer/tutor can be contacted via the email system on the portal.	
Name	Email
Amanda Day	Amanda.Day@staff.griffithcollege.edu.au

Staff Consultation

Your lecturer/tutor is available each week for consultation outside of normal class times. Times that your lecturer/tutor will be available for consultation will be given in the first week of lectures. A list of times and rooms will be published on the Griffith College Portal under the "myTimetable" link.

Prerequisites

There are no prerequisites for this course

Brief Course Description

This course provides students with an introduction to the study of matter, energy, and their interactions. It will provide students with a basic understanding of a broad range of physics concepts - necessary if they wish to continue studies at the tertiary level in engineering, science, or environmental science.

Rationale

Entry to tertiary study in fields such as engineering and science requires a basic understanding of physics. This course is designed to provide students with knowledge in a broad range of physics concepts, and to help students appreciate the impact of physics and technology on society.

This course involves practical investigations that require logical and analytical thinking, as well as the communication of scientific information and ideas. Through the development of knowledge of the basic principles of physics, students will be able to explain many natural phenomena. It will also enable students to apply these phenomena in technologies that are important to modern day society.

Aims

The course aims to provide students with a basic knowledge of a broad range of physics concepts and processes. Students will develop analytical, problem solving, calculation and technical report writing skills.

Learning Outcomes

Upon successful completion of this course you will be able to demonstrate:

1. An understanding of the basic mathematical and geometric skills and manipulations required to effectively apply and understand concepts in Physics;
2. An understanding of the principles of motion and the effect of forces;
3. An understanding of momentum, work and energy, and how they relate to forces and motion;

4. An understanding of heat as a form of energy, and various heat-related phenomena;
5. An understanding of wave motion, light, optics and wave-related phenomena;
6. An understanding of electricity and magnetism, including basic electric circuits and electromagnetism.
7. A brief glimpse into relativity and quantum mechanics - the world is not always as it seems!
8. Analytical, problem solving, calculation and technical report writing skills
9. Use of scientific processes to collect and organise data in simple situations

Texts and Supporting Materials

Recommended:

Giancoli, D. C. (2005). *Physics: Principles with Applications: International Edition* (6th Ed.). New Jersey: Prentice Hall. [ISBN10: 013191183X, ISBN: 9780131911833]

Organisation and Teaching Strategies

The teaching and assessment portion of the semester is of 14 weeks duration - inclusive. Classes are usually four (4) hour duration, however, where class sizes are small they may be reduced to three (3) hours.

Course delivery consists of a combination of formal lecturing, laboratory exercises and tutorials. During the lecture component concepts and techniques needed in order to pass the course will be presented and discussed.

Where class times conflict with Public Holidays, 'makeup' classes may be organised on a different day. You are advised to make inquiries about these Public Holidays to determine when the relevant class will be held.

Class Contact Summary

Attendance:

Your attendance in class will be marked twice during a four hour class. To receive full attendance, you must be present in the classroom on both occasions. Before attending classes each week you are also expected to have pre-read the lecture notes and read through the relevant readings from the text and other sources. Therefore, you are encouraged to attend and participate in all classes throughout the semester.

Participation in Class:

During classes each week you are expected to actively participate in exercises covering the current topic.

Consultation Times:

Attendance during consultation times is optional but you are encouraged to use this extra help to improve your learning outcomes.

Course Materials:

Lecture notes will be made available to you on the Learning@Griffith College site on the student portal and you are advised to print these out before each class to help guide you in your study program. You are expected to bring your lecture notes together and textbook to each class.

Laboratory Exercises:

Before attending the laboratory exercise sessions, you must read the Laboratory exercises.

Independent Learning:

You are expected to reinforce your learning from class time by undertaking sufficient independent study (approximately 6 hours per week outside of class time) so that you can achieve the learning outcomes of the course.

Program Progression:

You are reminded that satisfactory Program Progression requires that attendance in classes is maintained at equal to or greater than 80%, and that GPA is maintained at equal to or greater than 3.5 with passing grades achieved in more than 50% of courses in any semester [please see Griffith College Policy Library - Program Progression Policy - for more information].

Content Schedule

The Weekly Teaching Schedule provides an overview of the structure and progression of topics taught in this course. Topics chosen may vary in selection, depth of treatment or be moved forward or back in the schedule, subject to the learning requirements of students.

Weekly Teaching Schedule

Week	Topic	Activity	Readings
1	Course Introduction & Course Outline	Class	
	The Scientific Method	Class	
	Measurement and Quantities	Class	
2	Vectors and Graphing	Class	
3	Motion in One Dimension	Class	
4	Forces	Class	
	Quiz Revision	Class	
5	Quiz 1	Examination	
	Motion in Two Dimensions and Simple Harmonic Motion	Class	
6	Momentum, Work and Energy	Class	
7	Thermodynamics	Class	
8	Mid-Semester Examination	Examination	
9	Wave Motion	Class	

10	Light and Optics	Class	
11	Electricity and Electric Circuits	Class	
12	Magnetism and Electromagnetism	Class	
13	Relativity and Quantum Mechanics - A Brief Introduction	Class	
	Exam Revision	Class	

Assessment

This section sets out the assessment requirements for this course.

Summary of Assessment

Item	Assessment Task	Weighting	Relevant Learning Outcomes	Due Date
1	Quiz 1	20%	1,2,8&9	Week 5
2	Mid-Semester Exam	25%	1,2,3,4,8&9	Week 8
3	Assignment	15%	All	Week 11
4	Final Exam	40%	1,5,6,7,8&9	Week 14

Assessment Details

The assessment for this course is divided into two sections:

- Theoretical and conceptual understanding is tested in the quiz and exams;
- The application of theoretical concepts is tested in the assignment.

You are expected to complete the quiz and exams individually. You will be assigned groups for the assignment.

The assessment items progressively increase in weighting to allow students time to adjust to the course, and plan and monitor their current and future learning progress.

Quiz 1

Quiz 1 will assess your foundation knowledge and skills from weeks 1-4 of the semester, and relates to learning outcomes 1, 2, 8 and 9.

Mid-Semester Exam

The mid-semester exam further expands on Quiz 1 by additionally assessing the topics covered in weeks 5-7. The mid-semester exam relates to learning outcomes 1, 2, 3, 4, 8 & 9.

Assignment

The assignment will assess your ability to operate safely and proficiently in a physics laboratory, to collect and organise data, to devise and design simple investigations, and to use complex reasoning processes. The skills needed to present experimental data and write scientific laboratory reports are also developed (Relates to all objectives).

NOTE: You will be asked to submit both a paper and electronic copy of your Laboratory Reports (see Submission and Return of Assessment Items section below for further information).

Final Exam

The final examination assesses your knowledge and skills in the topics presented following the mid-semester exam. The final exam relates to learning outcomes 1, 5, 6, 7, 8, and 9.

Submission and Return of Assessment Items

Normally you will be able to access your results within fourteen [14] days of the due date for submission of the assignment. ALL assessment submitted in this course must be retained by Griffith College as directed by the Australian Skills Quality Authority (ASQA) made under section 28 (1) of the National Vocational Education and Training Regulator Act 2011.

Retention of Originals

You must be able to produce a copy of all work submitted if so requested. Copies should be retained until after the release of final results for the course.

Extensions

To apply for an extension of time for an assignment, you must submit an Application for Extension of Assignment form to your teacher at least 24 hours before the date the assignment is due. Grounds for extensions are usually: serious illness, accident, disability, bereavement or other compassionate circumstances and must be able to be substantiated with relevant documentation [e.g. Griffith College Medical Certificate]. Please refer to the Griffith College website - Policy Library - for

guidelines regarding extensions and deferred assessment.

Assessment Feedback

Marks awarded for assessment items will also be available on the on-line grades system on the Student Website within fourteen [14] days of the due date.

Generic Skills

Griffith College aims to develop graduates who have an open and critical approach to learning and a capacity for lifelong learning. Through engagement in their studies, students are provided with opportunities to begin the development of these and other generic skills.

Studies in this course will give you opportunities to begin to develop the following skills:

Generic Skills	Taught	Practised	Assessed
Written Communication		Yes	Yes
Oral Communication		Yes	
Information Literacy		Yes	Yes
Secondary Research	Yes	Yes	Yes
Critical and Innovative Thinking			
Academic Integrity	Yes	Yes	Yes
Self Directed Learning			
Team Work		Yes	Yes
Cultural Intelligence			
English Language Proficiency			

Additional Course Generic Skills

Additional Course Information

In addition to formal contact hours, you are provided with extra support through individual consultation with lecturers, English language support, and self-access computer laboratories.

Teacher and Course Evaluations

Your feedback is respected and valued by your lecturers and tutors. You are encouraged to provide your thoughts on the course and teaching, both positive and critical, directly to your lecturer and tutor or by completing course and lecturer evaluations on the Griffith College portal whenever these are available.

Academic Integrity

Griffith College is committed to maintaining high academic standards to protect the value of its qualifications. Academic integrity means acting with the values of honesty, trust, fairness, respect and responsibility in learning, teaching and research. It is important for students, teachers, researchers and all staff to act in an honest way, be responsible for their actions, and show fairness in every part of their work. Academic integrity is important for an individual's and the College's reputation.

All staff and students of the College are responsible for academic integrity. As a student, you are expected to conduct your studies honestly, ethically and in accordance with accepted standards of academic conduct. Any form of academic conduct that is contrary to these standards is considered a breach of academic integrity and is unacceptable.

Some students deliberately breach academic integrity standards with intent to deceive. This conscious, pre-meditated form of cheating is considered to be one of the most serious forms of fraudulent academic behaviour, for which the College has zero tolerance and for which penalties, including exclusion from the College, will be applied.

However, Griffith College also recognises many students breach academic integrity standards without intent to deceive. In these cases, students may be required to undertake additional educational activities to remediate their behaviour and may also be provided appropriate advice by academic staff.

As you undertake your studies at Griffith College, your lecturers, tutors and academic advisors will provide you with guidance to understand and maintain academic integrity; however, it is also your responsibility to seek out guidance if and when you are unsure about appropriate academic conduct.

Please ensure that you are familiar with the [Griffith College Academic Integrity Policy](#); this policy provides an overview of some of the behaviours that are considered breaches of academic integrity, as well as the penalties and processes involved when a breach is identified.

For further information please refer to the Academic Integrity Policy on the Griffith College website – Policy Library.

Risk Assessment Statement

This course follows Griffith College and Griffith University Workplace Health and Safety Laboratory guidelines.

The aim of workplace health and safety is to make sure that people do not get sick or injured at the workplace. The legislation dealing with this in Queensland is called the Workplace Health and Safety Act, 1995. Anyone who can affect workplace health and safety has an obligation under this Act.

As a student, you have an obligation to yourself and others to undertake activities in a safe manner. You must follow instructions which are provided for safety. You

must not put yourself or anyone else at risk. Care especially needs to be taken when you are performing activities which can affect others.

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