PHYS40110 *Introductory Physics*

Term 3 - 2020

Profile information current as at 12/10/2024 02:23 pm

All details in this unit profile for PHYS40110 have been officially approved by CQUniversity and represent a learning partnership between the University and you (our student).The information will not be changed unless absolutely necessary and any change will be clearly indicated by an approved correction included in the profile.

General Information

Overview

This unit will prepare you for university study in engineering or the physical sciences. You will gain an introductory understanding of the basic concepts in physics and learn to apply the principles of physics to solve problems of a physical nature in everyday life. Topics covered in this unit include measurement, motion, forces and mechanics, atomic and nuclear physics, properties of matter, heat and thermodynamics, electricity, magnetism and electromagnetism, waves, and optics. This unit assumes an intermediate level of mathematical knowledge.

Details

Career Level: *Non-award*
Credit Points: *6*
Student Contribution Band: *8*
Fraction of Full-Time Student Load: *0.125*

Pre-requisites or Co-requisites

There are no requisites for this unit.
Important note: Students enrolled in a subsequent unit who failed their pre-requisite unit, should drop the subsequent unit before the census date or within 10 working days of Fail grade notification. Students who do not drop the unit in this timeframe cannot later drop the unit without academic and financial liability. See details in the Assessment Policy and Procedure (Higher Education Coursework).

Offerings For Term 3 - 2020

- Online

Attendance Requirements

All on-campus students are expected to attend scheduled classes – in some units, these classes are identified as a mandatory (pass/fail) component and attendance is compulsory. International students, on a student visa, must maintain a full time study load and meet both attendance and academic progress requirements in each study period (satisfactory attendance for International students is defined as maintaining at least an 80% attendance record).

Website

This unit has a website, within the Moodle system, which is available two weeks before the start of term. It is important that you visit your Moodle site throughout the term. Please visit Moodle for more information.

Class and Assessment Overview

Recommended Student Time Commitment

Each 6-credit Non-award unit at CQUniversity requires an overall time commitment of an average of 12.5 hours of study per week, making a total of 150 hours for the unit.

Class Timetable

Regional Campuses
Bundaberg, Cairns, Emerald, Gladstone, Mackay, Rockhampton, Townsville

Metropolitan Campuses
Adelaide, Brisbane, Melbourne, Perth, Sydney

Assessment Overview

1. **Online Quiz(zes)**
Weighting: 10%
2. **Written Assessment**
Weighting: 40%
3. **Take Home Exam**
Weighting: 50%

Assessment Grading

This is a graded unit: your overall grade will be calculated from the marks or grades for each assessment task, based on the relative weightings shown in the table above. You must obtain an overall mark for the unit of at least 50%, or an overall grade of 'pass' in order to pass the unit. If any 'pass/fail' tasks are shown in the table above they must also be completed successfully ('pass' grade). You must also meet any minimum mark requirements specified for a particular assessment task, as detailed in the 'assessment task' section (note that in some instances, the minimum mark for a task may be greater than 50%). Consult the University's Grades and Results Policy for more details of interim results and final grades.

CQUniversity Policies

All University policies are available on the CQUniversity Policy site.
You may wish to view these policies:

- Grades and Results Policy
- Assessment Policy and Procedure (Higher Education Coursework)
- Review of Grade Procedure
- Student Academic Integrity Policy and Procedure
- Monitoring Academic Progress (MAP) Policy and Procedure – Domestic Students
- Monitoring Academic Progress (MAP) Policy and Procedure – International Students
- Student Refund and Credit Balance Policy and Procedure
- Student Feedback – Compliments and Complaints Policy and Procedure
- Information and Communications Technology Acceptable Use Policy and Procedure

This list is not an exhaustive list of all University policies. The full list of University policies are available on the CQUniversity Policy site.

Previous Student Feedback

Feedback, Recommendations and Responses

Every unit is reviewed for enhancement each year. At the most recent review, the following staff and student feedback items were identified and recommendations were made.

Feedback from Unit Evaluation

Feedback
Students would like on campus classes/regular zoom sessions.

Recommendation
Continue to offer classes via video conference in Term 3. Enrolment numbers do not currently support an on-campus offering in any other term.

Feedback from Unit Evaluation

Feedback
Positive comments on unit structure.

Recommendation
Continue with the unit structure and lecturer support.

Feedback from Unit evaluation

Feedback
Students would like prompt feedback.

Recommendation
Convert part of the assignments to Moodle quizzes for instant feedback.

Unit Learning Outcomes

On successful completion of this unit, you will be able to:

1. Recall fundamental physics concepts and techniques
2. Solve quantitative and qualitative problems using appropriate physics and mathematical techniques
3. Analyse information using physics techniques
4. Communicate physics in a competent, logical and professional manner
5. Improve physics comprehension through effective reflective practice.

This course has no external accreditation.

Alignment of Learning Outcomes, Assessment and Graduate Attributes

— N/A Level | • Introductory Level | • Intermediate Level | • Graduate Level | ◦ Professional Level | ◦ Advanced Level

Alignment of Assessment Tasks to Learning Outcomes

Assessment Tasks	Learning Outcomes				
	1	2	3	4	5
1 - Online Quiz(zes) - 10%	•	•	•		•
2 - Written Assessment - 40%	•	•	•	•	•
3 - Take Home Exam - 50%	•	•	•	•	

Alignment of Graduate Attributes to Learning Outcomes

Graduate Attributes	Learning Outcomes				
	1	2	3	4	5
1 - Self Management	—	—	—		—
2 - Communication	—		—	—	
3 - Information Literacy					
4 - Information Technology Competence					
5 - Problem Solving		—	—		
6 - Critical Thinking	—	—	—		—
7 - Cross-Cultural Competence					
8 - Ethical Practice					
9 - Aboriginal and Torres Strait Islander Cultures					

Alignment of Assessment Tasks to Graduate Attributes

Assessment Tasks	Graduate Attributes								
	1	2	3	4	5	6	7	8	9
1 - Online Quiz(zes) - 10%	—				—	—			
2 - Written Assessment - 40%	—	—			—	—			
3 - Take Home Exam - 50%	—	—			—	—			

Textbooks and Resources

Textbooks

PHYS40110

Prescribed

Introductory Physics
Edition: 4 (edited) (2020)
Authors: Sharon Cohalan
CQUniversity Publishing Unit
Rockhampton , QLD , Australia
Binding: Spiral

Additional Textbook Information
All study material for this unit is freely available on Moodle in electronic form; however, purchase of hard copy study material is highly recommended. Please see your Moodle site closer to the start of Term.

IT Resources

You will need access to the following IT resources:

- CQUniversity Student Email
- Internet
- Unit Website (Moodle)
- Ability to upload documents/scans - may require scanner
- PDF reader

Referencing Style

All submissions for this unit must use the referencing style: Harvard (author-date)
For further information, see the Assessment Tasks.

Teaching Contacts

Clinton Hayes Unit Coordinator
c.hayes@cqu.edu.au

Schedule

Week 1 - 09 Nov 2020

Module/Topic	Chapter	Events and Submissions/Topic
Maths and Measurement	MEAS	

Week 2 - 16 Nov 2020

Module/Topic	Chapter	Events and Submissions/Topic
Motion - Kinematics	MOTN	

Week 3 - 23 Nov 2020

Module/Topic	Chapter	Events and Submissions/Topic
Forces and Motion	FORC	Quiz 1 due on Wednesday of Week 3 (25 November) at 11:45 PM AEST

Week 4 - 30 Nov 2020

Module/Topic	Chapter	Events and Submissions/Topic

Work, Energy and Momentum	WENM	
Vacation Week - 07 Dec 2020		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
Week 5 - 14 Dec 2020		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
Atoms, Matter and Heat	AMAH	Assignment 1 due on Wednesday of Week 5 (16 December 2020) at 11:45PM AEST.
Week 6 - 21 Dec 2020		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
Atomic and Nuclear Physics	ATNU	
Vacation Week - 28 Dec 2020		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
Week 7 - 04 Jan 2021		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
Properties of Matter	MATT	Quiz 2 due on Wednesday of Week 7 (6 January 2021) at 11:45 PM AEST
Week 8 - 11 Jan 2021		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
Heat and Thermodynamics	HTTH	
Week 9 - 18 Jan 2021		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
Electricity	ELEC	Assignment 2 due Wednesday of Week 9 (20 January 2021) at 11:45PM AEST.
Week 10 - 25 Jan 2021		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
Magnetism	MAGN	
Week 11 - 01 Feb 2021		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
Two Dimensional mechanics OR Waves and Optics	2DME OR OPTC	Quiz 3 due on Wednesday of Week 11 (3 February 2021) at 11:45 PM AEST
Week 12 - 08 Feb 2021		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
Finish additional module and review		Assignment 3 due on Wednesday of Week 12 (10 February 2021) at 11:45PM AEST.
Exam Week - 15 Feb 2021		
Module/Topic	**Chapter**	**Events and Submissions/Topic**
		Examination: The date and time of the take home exam will be available via the unit Moodle site approximately six weeks before the examination period.

Term Specific Information

Unit Coordinator:
Dr Clinton Hayes
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c.hayes@cqu.edu.au
Rockhampton North Campus 32/G.39

Assessment Tasks

1 Moodle Quizzes

Assessment Type
Online Quiz(zes)

Task Description
This assessment item comprises three Moodle quizzes.
Quiz 1 requires you to answer questions, solve problems and complete calculations covered by the MEAS module. Quiz 1 will be available in Moodle from week 1. It is weighted at 3%
Quiz 2 requires you to answer questions, solve problems and complete calculations covered by the AMAH module. Quiz 2 will be available in Moodle from week 4. It is weighted at 3%
Quiz 3 requires you to answer questions, solve problems and complete calculations covered by the ELEC and MAGN modules. Quiz 3 will be available in Moodle from week 7. It is weighted at 4%
Mark allocations are indicated on the individual questions in each quiz. The quizzes are comprised of multiple-choice, matching and/or short answer questions. Follow the information provided on the quiz site about presenting formulas and/or units correctly.
The resources provided on the PHYS40110 Moodle site contain all the relevant material (content, examples and practice quizzes) required to complete the assessment. Please ensure that you do not use the internet in seeking answers, as this assessment is not a research task, but is assessing your knowledge and understanding of topics covered in the Unit. Moreover, the information from some sites is unreliable, generalised or not as specific as is required for this assessment.

Number of Quizzes
3

Frequency of Quizzes

Assessment Due Date

Quiz 1: 25 Nov 2020. Quiz 2: 6 Jan 2021. Quiz 3: 3 Feb 2021.

Return Date to Students

The quiz will automatically return a result on completion.

Weighting
10%

Assessment Criteria
Marks will be awarded for the correct response to multi-choice and short answer questions.

Referencing Style

- Harvard (author-date)

Submission
No submission method provided.

assessmentOutcome

- Recall fundamental physics concepts and techniques
- Solve quantitative and qualitative problems using appropriate physics and mathematical techniques
- Analyse information using physics techniques
- Improve physics comprehension through effective reflective practice.

assessmentGradAttribute

- Self Management

- Problem Solving
- Critical Thinking

2 Assignments

Assessment Type
Written Assessment

Task Description
This assessment item comprises three written assignments.

Assignment 1 requires you to answer questions, solve problems and complete calculations covered by the MOTN, FORC and WENM modules. Assignment 1 will be released via Moodle by Friday of week 2. It will be returned via Moodle.

Assignment 2 requires you to answer questions, solve problems and complete calculations covered by the ATNU, MATT and HTTH modules. Assignment 2 will be released via Moodle by Friday of week 6. It will be returned via Moodle.

Assignment 3 requires you to answer questions, solve problems and complete calculations covered by the ELEC, MAGN modules and the chosen additional module, either 2DME or OPTC. Assignment 3 will be released via Moodle by Friday of week 9. It will be returned via Moodle.

Assessment Due Date

Assignment 1: 16 Dec 2020. Assignment 2: 20 Jan 2021. Assignment 3: 10 February 2021.

Return Date to Students

Two academic calendar weeks from due date or submission date, whichever is later.

Weighting
40%

Assessment Criteria
Mark allocations are indicated in the question documents. The questions are available on the unit Moodle site; follow the instructions carefully. Marks for each question will be awarded for accuracy of the answer, setting out, showing correct steps in the solution as well as calculating the correct answer (including units). Answers to all questions should be neatly and clearly presented, and full working is required to obtain maximum credit for solutions.

Referencing Style

- Harvard (author-date)

Submission
Online

Submission Instructions
Each of the three assignments is to be uploaded as a single pdf document through the unit Moodle site.

assessmentOutcome

- Recall fundamental physics concepts and techniques
- Solve quantitative and qualitative problems using appropriate physics and mathematical techniques
- Analyse information using physics techniques
- Communicate physics in a competent, logical and professional manner
- Improve physics comprehension through effective reflective practice.

assessmentGradAttribute

- Self Management
- Communication
- Problem Solving
- Critical Thinking

3 Take Home Exam

Assessment Type
Take Home Exam

Task Description
The Take Home Exam will be made available via Moodle. It is anticipated that the exam should take three hours to complete. You will be given a limited time-frame to access and download the exam from the unit Moodle site, complete

it and upload it back into Moodle. The Take Home Exam covers material from all modules within the unit. The Take Home Exam is an unsupervised assessment item and you are required to do your own work, maintaining academic integrity with all honesty.

Assessment Due Date

The date and time of the Take Home Exam will be made available on the Unit Moodle site approximately six weeks before the Take Home Exam period.

Return Date to Students

Take Home Exam marks will be made available to students via the unit Moodle site on the day grades are released for the term (Certification of Grades).

Weighting
50%

Minimum mark or grade
40

Assessment Criteria
Marks for each question will be awarded for accuracy of the answer, setting out, showing correct steps in the solution as well as calculating the correct answer (including units). Answers to all questions should be neatly and clearly presented, and full working is required to obtain maximum credit for solutions.

Referencing Style

- Harvard (author-date)

Submission
Online

Submission Instructions
The take home exam is to be uploaded as a single pdf document through the unit Moodle site.

assessmentOutcome

- Recall fundamental physics concepts and techniques
- Solve quantitative and qualitative problems using appropriate physics and mathematical techniques
- Analyse information using physics techniques
- Communicate physics in a competent, logical and professional manner

assessmentGradAttribute

- Self Management
- Communication
- Problem Solving
- Critical Thinking

Academic Integrity Statement

As a CQUniversity student you are expected to act honestly in all aspects of your academic work.

Any assessable work undertaken or submitted for review or assessment must be your own work. Assessable work is any type of work you do to meet the assessment requirements in the unit, including draft work submitted for review and feedback and final work to be assessed.

When you use the ideas, words or data of others in your assessment, you must thoroughly and clearly acknowledge the source of this information by using the correct referencing style for your unit. Using others' work without proper acknowledgement may be considered a form of intellectual dishonesty.

Participating honestly, respectfully, responsibly, and fairly in your university study ensures the CQUniversity qualification you earn will be valued as a true indication of your individual academic achievement and will continue to receive the respect and recognition it deserves.

As a student, you are responsible for reading and following CQUniversity's policies, including the **Student Academic Integrity Policy and Procedure**. This policy sets out CQUniversity's expectations of you to act with integrity, examples of academic integrity breaches to avoid, the processes used to address alleged breaches of academic integrity, and potential penalties.

What is a breach of academic integrity?
A breach of academic integrity includes but is not limited to plagiarism, self-plagiarism, collusion, cheating, contract cheating, and academic misconduct. The Student Academic Integrity Policy and Procedure defines what these terms mean and gives examples.

Why is academic integrity important?
A breach of academic integrity may result in one or more penalties, including suspension or even expulsion from the University. It can also have negative implications for student visas and future enrolment at CQUniversity or elsewhere. Students who engage in contract cheating also risk being blackmailed by contract cheating services.

Where can I get assistance?
For academic advice and guidance, the Academic Learning Centre (ALC) can support you in becoming confident in completing assessments with integrity and of high standard.

What can you do to act with integrity?

Be Honest
If your assessment task is done by someone else, it would be dishonest of you to claim it as your own

Seek Help
If you are not sure about how to cite or reference in essays, reports etc, then seek help from your lecturer, the library or the Academic Learning Centre (ALC)

Produce Original Work
Originality comes from your ability to read widely, think critically, and apply your gained knowledge to address a question or problem