



MEDS12001 *Physics of Ultrasound*

Term 1 - 2021

Profile information current as at 27/09/2024 10:18 am

All details in this unit profile for MEDS12001 have been officially approved by CQU University 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

In this unit, you will be introduced to the principles of ultrasound physics and instrumentation. Ultrasound safety, quality assurance and recognition of artifacts will also be covered. The knowledge and skills learnt from this unit are integral to all concurrent and subsequent sonography and echocardiography units and forms the foundation from which you will build your image acquisition, recognition and assessment skills. You will apply your knowledge and skills of physics principles in the laboratory setting using ultrasound equipment.

Details

Career Level: *Undergraduate*

Unit Level: *Level 2*

Credit Points: 6

Student Contribution Band: 8

Fraction of Full-Time Student Load: 0.125

Pre-requisites or Co-requisites

Prerequisite MEDI11002 Physics for Health Sciences Co requisite MEDS12003 or ECHO12006

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 1 - 2021

- Brisbane
- Mackay
- Melbourne
- Perth
- Sydney

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 Undergraduate 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: 40%

2. **Laboratory/Practical**

Weighting: Pass/Fail

3. **Online Test**

Weighting: 60%

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 Have Your Say

Feedback

Students commented that a lot of resources were provided to enhance their understanding of physics concepts.

Recommendation

Continue to provide support through a comprehensive range of resources for students to enhance their understanding of various concepts.

Feedback from Have Your Say

Feedback

Students reported that they benefited from the online virtual labs in place of the on campus labs. This enabled them to watch lab tasks several times in order to complete the lab manual assessment successfully.

Recommendation

The virtual labs videos will remain as a resource for revision prior to the unit's relevant assessments.

Feedback from Have your Say

Feedback

Students commented that their e-mails and queries were answered in record time, which they felt was very helpful when they couldn't progress further in their revision until their question was addressed.

Recommendation

Continue to provide timely response to all student e-mails and questions on the Q&A forum.

Unit Learning Outcomes

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

1. Apply the physical principles of diagnostic ultrasound to practical problems
2. Evaluate the components and performance of diagnostic ultrasound equipment
3. Apply knowledge of ultrasound physics and practical skills to acquire optimal ultrasound images, with due regard of safe practices
4. Discuss the principles of ultrasound techniques, Doppler ultrasound and its application in medical ultrasound including safety issues
5. Interpret the causes of, and apply problem solving skills to reduce, sources of artifacts on an ultrasound image.

This unit will be one of the core units in the Medical Sonography Course which is externally accredited by the Australian Sonographers Accreditation Registry (ASAR), an external professional regulatory body. Intended learning outcomes have been linked to:

ASAR Required Graduate Competency Outcomes for General Sonography Accreditation Standards 1.2,

Deliver safe, patient centred services- 1, 2, 3, 4, 5, 6 and 7

Practice within professional and ethical frameworks- 2, 6 and 7

Contribute to workplace health and safety and quality assurance- 2, and 7

Alignment of Learning Outcomes, Assessment and Graduate Attributes



Alignment of Assessment Tasks to Learning Outcomes

Assessment Tasks	Learning Outcomes				
	1	2	3	4	5
1 - Online Quiz(zes) - 40%	•	•	•		
2 - Laboratory/Practical - 0%	•	•	•	•	•
3 - Online Test - 60%			•	•	•

Alignment of Graduate Attributes to Learning Outcomes

Graduate Attributes	Learning Outcomes				
	1	2	3	4	5
1 - Communication	•	•	•	•	•
2 - Problem Solving	•	•	•	•	•
3 - Critical Thinking	•	•	•	•	•
4 - Information Literacy					
5 - Team Work					
6 - Information Technology Competence	•	•	•	•	•
7 - Cross Cultural Competence					
8 - Ethical practice				•	
9 - Social Innovation					
10 - 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	10
1 - Online Quiz(zes) - 40%	•	•	•					•		
2 - Laboratory/Practical - 0%	•	•	•			•		•		
3 - Online Test - 60%	•	•	•					•		

Textbooks and Resources

Textbooks

MEDS12001

Prescribed

Sonography Principles and Instruments

Edition: 10th (2019)

Authors: Frederick W. Kremkau

ELSEVIER

St Louis , Missouri , U.S.A

ISBN: 9780323597081

Binding: eBook

MEDS12001

Supplementary

ULTRASOUND, Physics and Technology, HOW, WHY AND WHEN

Edition: 1st (2009)

Authors: Vivien Gibbs, David Cole, Antonio Sassano

CHURCHILL LIVINGSTONE ELSEVIER

London , UK

ISBN: 978-0-7020-3041-3

Binding: eBook

Additional Textbook Information

If students already have the 9th edition of the prescribed book; Sonography Principles and Instruments by Kremkau, they do not require to purchase the 10th edition.

[View textbooks at the CQUniversity Bookshop](#)

IT Resources

You will need access to the following IT resources:

- CQUniversity Student Email
- Internet
- Unit Website (Moodle)

Referencing Style

All submissions for this unit must use the referencing style: [Vancouver](#)

For further information, see the Assessment Tasks.

Teaching Contacts

Afrooz Najafzadeh Abriz Unit Coordinator

a.najafzadehabriz@cqu.edu.au

Schedule

Week 1- Sonography Two Principles of Operation. Operating Principle 1 :Pulse Echo Principle and Sound Parameters - 08 Mar 2021

Module/Topic

Chapter

Events and Submissions/Topic

Sonography: Two Principles of Operation. Back to Basics Pulse Echo Principle Sound Parameters Maths Concepts	Sonography Principles and Instruments, Kremkau 10th edition chapter 1, PP: 1-12, chapter 2, PP 13-44	Zoom tutorial Monday
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Week 2- Pulsed Ultrasound and Parameters related to Pulsed Ultrasound - 15 Mar 2021

Module/Topic	Chapter	Events and Submissions/Topic
Pulsed Ultrasound Pulse Repetition Period and Pulse Repetition Frequency Pulse duration, Duty Factor Spatial Pulse Length Bandwidth	Kremkau Chapter 2, PP 13-44	Zoom Tutorial Monday

Week 3- Sound interaction with matter - 22 Mar 2021

Module/Topic	Chapter	Events and Submissions/Topic
Sound interaction with matter Amplitude, Power and Intensity Attenuation and Absorption Reflection and Acoustic Impedance Types of Reflection Refraction	Kremkau Chapter 2, PP 13-44 Ultrasound Physics and Technology, How, Why and When, Gibbs Chapter 4, PP 19-22 Gibbs Chapter 8, PP 45-49	Zoom Tutorial Monday Physics lab one on Thursday

Week 4- Transducers, Beam Geometry and Instrumentation - 29 Mar 2021

Module/Topic	Chapter	Events and Submissions/Topic
Transducers, Beam Geometry and Instrumentation Transducer Construction Beam Geometry Instrumentation (Operating Principle 1)	Kremkau Chapter 3, PP 45-63 Kremkau Chapter 4, PP 73-116 Gibbs Chapter 6, PP 27-37	Zoom Tutorial Monday

Week 5, Image Resolution - 05 Apr 2021

Module/Topic	Chapter	Events and Submissions/Topic
Image Resolution Lateral Resolution Axial Resolution Contrast Resolution Temporal Resolution	Kremkau Chapter 3, PP 63-76 Kremkau Chapter 4, PP 110-116 Gibbs Chapter 7, PP 39-43	Zoom Tutorial Monday Physics lab two on Thursday

Vacation Week - 12 Apr 2021

Module/Topic	Chapter	Events and Submissions/Topic
Break week		

Week 6- Online Quiz - 19 Apr 2021

Module/Topic	Chapter	Events and Submissions/Topic
No lectures are delivered this week to allow you to concentrate on the online quiz.		No Zoom tutorial on Monday due to the online quiz this week. Online Quiz Due: Week 6 Monday (19 Apr 2021) 7:00 pm AEST

Week 7- Haemodynamics and The Doppler Principle - 26 Apr 2021

Module/Topic	Chapter	Events and Submissions/Topic
Imaging motion and flow with principle 1 Blood flow haemodynamics The Doppler principle Colour Doppler	Kremkau Chapter 5, PP 138-162 Gibbs Chapter 11, PP 11-79	Zoom Tutorial Monday

Week 8- Doppler Imaging - 03 May 2021

Module/Topic	Chapter	Events and Submissions/Topic
Doppler Imaging Spectral Doppler Power Doppler	Kremkau Chapter 5, PP 162-189 Gibbs Chapter 11, PP 79-89	Zoom Tutorial Monday
Week 9- Ultrasound Image Artifacts - 10 May 2021		
Module/Topic	Chapter	Events and Submissions/Topic
Ultrasound Artifacts Spectral Doppler Artifacts Colour Doppler Artifacts	Kremkau Chapter 7, PP 202-235 Gibbs Chapter 9, PP 51-61	Zoom Tutorial Monday
Week 10- Ultrasound Bioeffects - 17 May 2021		
Module/Topic	Chapter	Events and Submissions/Topic
Safety and Quality Assurance Performance Measurements Output Measurements Ultrasound Bioeffects	Kremkau Chapter 8, PP 236-247 Kremkau Chapter 9, PP 249-258 Gibbs Chapter 12, PP 91-99 Gibbs Chapter 13, PP 101-110	Zoom Tutorial Monday Physics lab three on Thursday
Week 11- Additional modes of ultrasound imaging - 24 May 2021		
Module/Topic	Chapter	Events and Submissions/Topic
Additional modes of ultrasound Imaging Instruments: Imaging Anatomy, Motion, and Flow with Principle 2	Kremkau Chapter 4, PP 116-137 Gibbs, Chapter 14, PP 111-119 Kremkau Chapter 6, PP 190-201	Zoom Tutorial Monday Physics lab manual submission due on Friday Laboratory Manual Submission Due: Week 11 Friday (28 May 2021) 2:00 pm AEST
Week 12- Review and Consolidation - 31 May 2021		
Module/Topic	Chapter	Events and Submissions/Topic
Review and Consolidation		Pre- online test Zoom Tutorial Monday
The Exam Week - 07 Jun 2021		
Module/Topic	Chapter	Events and Submissions/Topic
Revision for the online test		Zoom Tutorial Monday
Exam Week - 14 Jun 2021		
Module/Topic	Chapter	Events and Submissions/Topic
The end of the term online test.		The end of the term online test Due: Exam Week Thursday (17 June 2021) 7:00 pm AEST

Term Specific Information

The unit coordinator for MEDS12001 is Dr Afroz Najafzadeh Abriz. Afroz is based on the Perth campus. The best way to contact Afroz is via email at a.najafzadehabriz@cqu.edu.au.

It is important to check your student email regularly as updates about the unit will be sent from the unit coordinator via email and via the News forum on the Moodle site. Please ensure all email correspondence is done via your CQU student email.

There are three on campus labs to attend during the term on Thursdays of weeks 3, 5 and 10 respectively. Students are expected to perform the tasks set out in their lab manual and answer the relevant questions.

It is highly recommended that students attend these labs as the lab manual submission is a PASS/FAIL assessment of this unit. Failure to submit the lab manual by the due date and time will result in failing the unit irrespective of student's achievements in other assessments of the unit.

No replacement labs will be available for students who fail to attend a lab for any reason.

Assessment Tasks

1 Online Quiz

Assessment Type

Online Quiz(zes)

Task Description

To demonstrate the understanding and knowledge of this unit, students are required to complete an online quiz. This quiz can be accessed via the Assessment tab from the unit's Moodle page.

The access to the online quiz will be available in week 6 on Monday 19th April 2021 for general sonography students enrolled in CG91 and on Thursday 22nd of April for echocardiography students enrolled in CV69.

The contents of week 1 to week 5 will be assessed in the online quiz.

The online quiz will be open from 09:00 to 19:00 hours AEST on both days.

The test is comprised of ten questions worth 10 marks each.

The questions will be combination of short answer and calculation type questions including image recognition questions.

Images included will be from physics lab tasks in week 3 and week 5.

Once the quiz is accessed, it will remain open for 90 minutes, giving the students an average time of 9 minutes per question.

Questions will be drawn from a large pool of questions to allow the quiz to be different for each student.

This assessment is to be undertaken as an individual. As with all other university assessments, colluding with other students on non-group work tasks is considered academic misconduct, and may lead to action being taken. Inserting answers from other websites is considered plagiarism.

Please note: You MUST start the quiz before 17:30 AEST, as the test automatically closes at 19:00 hours.

Number of Quizzes

1

Frequency of Quizzes

Other

Assessment Due Date

Week 6 Monday (19 Apr 2021) 7:00 pm AEST

The online quiz is open for ten hours from 09:00 to 19:00 AEST on Monday 19th of April for general sonography students (CG91) and on Thursday 22nd of April for echocardiography students (CV69).

Return Date to Students

Week 8 Friday (7 May 2021)

The online quiz grades and feedback will be available by Friday 7th of May 2021 at 02:00 p.m. AEST.

Weighting

40%

Minimum mark or grade

50%

Assessment Criteria

Responses will be assessed according to:

- Use of appropriate physics and ultrasound terminology and descriptors as well as grammar, spelling, the relevance of response and competence in addressing all elements of the question.
- The student's ability to appropriately interpret images/graphs/tables and then to succinctly compose an appropriate response based on their learning from the unit.
- The student's ability to show all the working out for any calculation question and demonstration of correct methods of using the appropriate formula and use of correct SI unit throughout the calculation.

Referencing Style

- [Vancouver](#)

Submission

Online

Submission Instructions

You must access the online quiz by 17:30 AEST, as the quiz closes automatically at 19:00 AEST.

Graduate Attributes

- Communication
- Problem Solving

- Critical Thinking
- Ethical practice

Learning Outcomes Assessed

- Apply the physical principles of diagnostic ultrasound to practical problems
- Evaluate the components and performance of diagnostic ultrasound equipment
- Apply knowledge of ultrasound physics and practical skills to acquire optimal ultrasound images, with due regard of safe practices

2 Laboratory Manual Submission

Assessment Type

Laboratory/Practical

Task Description

Physics laboratories (labs) will provide an opportunity for the students to explore the physical principles of ultrasound and develop their knowledge of machine instrumentation and controls under the guidance of a tutor.

Students are responsible for printing their own lab manual and bringing it to the lab or having access to the lab manual on their electronic devices.

In small groups (4-5 people), students are required to collaboratively perform tasks set out in their lab manuals during the practical laboratory sessions (weeks 3, 5 and 10) and obtain ultrasound images that will assist to answer set questions per task.

During the labs, students will be required to record and store images, and observe the effect of changing machine parameters on the resultant image.

Students will be required to attempt the lab manual questions during the lab sessions. The questions are designed to help students understand the physical properties of ultrasound and how that knowledge is used to inform the practical production of diagnostic medical images.

Students are expected to work in teams to acquire images. Image sharing amongst lab group members is permitted.

Students are expected to individually submit the completed lab manual by week 11, Friday 28th of May at 14:00 AEST.

Students will be required to upload their completed lab manual answers to the unit Moodle page via the link provided in the Assessment block.

It is a highly recommended that students attend all the laboratory practical sessions in order to meet the learning outcomes.

Students who fail to attend a lab for any reason are still required to complete the lab manual exercises and submit the lab manual by the due date.

Students are advised to bring a USB stick to labs to save the acquired images. Image sharing amongst group members is allowed.

Please note the following excerpt from the University Assessment of Coursework Procedures: '...students who fail a single assessment task in a pass-fail unit, or who fail a pass-fail component of a graded unit will be deemed to have failed that unit'.

Assessment Due Date

Week 11 Friday (28 May 2021) 2:00 pm AEST

The completed lab manual should be submitted as a single Word document on Moodle.

Return Date to Students

Week 12 Friday (4 June 2021)

The PASS / FAIL grades will be available on Moodle by Friday 4th of June 2021

Weighting

Pass/Fail

Assessment Criteria

Students are required to demonstrate their understanding of each lab task by performing the assigned task correctly and answering the assigned question for each task.

Students are required to record and store the required images as per instructions on the lab manual. The images are to be stored on a USB drive (provided by the student).

Answering the questions in the lab manual can be attempted during the lab session and may be completed in own time, once the lab activities are completed.

Questions should be answered concisely, supported by the acquired images where required.

The acquired images should be deidentified and inserted in the lab manual which should be saved in the Microsoft Word format.

This assessment will be marked as a PASS or FAIL. A minimum of fifty percent of the questions must have been

answered correctly for students to obtain a PASS grade.

A detailed marking rubric is available on unit's Moodle page.

Failure to submit the completed lab manual by the due date and time will result in a grade of "FAIL" for the students regardless of their performance in other assessments of the unit.

There is no option of extension or late submission for the lab manual assessment (unless there are extenuating circumstances) as students have in effect 8 weeks to complete this task (from week 3 to week 11 of the term).

Referencing Style

- [Vancouver](#)

Submission

Online

Submission Instructions

The completed lab manual should be submitted as a single Word document on Moodle.

Graduate Attributes

- Communication
- Problem Solving
- Critical Thinking
- Information Technology Competence
- Ethical practice

Learning Outcomes Assessed

- Apply the physical principles of diagnostic ultrasound to practical problems
- Evaluate the components and performance of diagnostic ultrasound equipment
- Apply knowledge of ultrasound physics and practical skills to acquire optimal ultrasound images, with due regard of safe practices
- Discuss the principles of ultrasound techniques, Doppler ultrasound and its application in medical ultrasound including safety issues
- Interpret the causes of, and apply problem solving skills to reduce, sources of artifacts on an ultrasound image.

3 The end of the term online test

Assessment Type

Online Test

Task Description

To demonstrate the understanding and knowledge of the entire unit's contents, and to assess whether all the unit's learning outcome have been achieved, students are required to complete an end of the term online test in place of an end of the term examination.

The contents of week 1 to week 11 will be assessed in the end of the term online test.

The end of the term online test will be open from 09:00 to 19:00 hours on the assessment day. The date of the end of the term online test will be during the university's examination weeks.

The end of the term online test is comprised of ten questions worth 10 marks each.

The questions will be combination of short and long answer and calculation type questions including image recognition questions. Images included will be from physics lab activities during the term.

Once the online test is accessed, it will remain open for 120 minutes, giving the students an average time of 12 minutes per question.

Questions will be drawn from a pool of questions to allow tests to be different for each student. This assessment is to be undertaken as an individual.

The access to the end of the term online test can be via own electronic devices. No on-campus attendance is necessary on the assessment day.

As with all other university assessments, colluding with other students on non-group work tasks is considered academic misconduct, and may lead to action being taken. Inserting answers from other websites at the time of the online test is considered plagiarism.

Assessment Due Date

Exam Week Thursday (17 June 2021) 7:00 pm AEST

The online test will be open from 09:00 a.m to 07:00 p.m. on Thursday 17th of June 2021

Return Date to Students

The end of the term online test results will be available after the certification of grades meeting on 9th of July 2021.

Weighting

60%

Minimum mark or grade

50%

Assessment Criteria

The end of the term online test assesses students on their:

- Use of appropriate physics and ultrasound terminology and descriptors as well as grammar, spelling, the relevance of response and competence in addressing all elements of the question.
- Ability to appropriately interpret images/graphs/tables and then to succinctly compose an appropriate response based on their learning from the unit.
- Ability to show all the working out for any calculation question and demonstration of correct methods of using the appropriate formula and use of correct SI unit throughout the calculation.
- Ability to discuss their answers comprehensively and to demonstrate evidence of deep understanding of the concept and to apply critical thinking when addressing the questions.

Referencing Style

- [Vancouver](#)

Submission

Online

Submission Instructions

Students must open the online test by 05:00 p.m. AEST as the test automatically closes at 07:00 p.m. AEST

Graduate Attributes

- Communication
- Problem Solving
- Critical Thinking
- Ethical practice

Learning Outcomes Assessed

- Apply knowledge of ultrasound physics and practical skills to acquire optimal ultrasound images, with due regard of safe practices
- Discuss the principles of ultrasound techniques, Doppler ultrasound and its application in medical ultrasound including safety issues
- Interpret the causes of, and apply problem solving skills to reduce, sources of artifacts on an ultrasound image.

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