



# EDSE12026 Graphics, 3D Computer Aided Drafting and Design

## Term 1 - 2024

Profile information current as at 30/04/2024 09:36 am

All details in this unit profile for EDSE12026 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 is an introduction to graphical and 3-dimensional computer-aided design (CAD). It provides the necessary skills to demonstrate practical and theoretical knowledge to enable you to teach Graphics and 3D CAD in the discipline of Industrial Technology and Design in the middle years of schooling (7-10). You will design, develop, adapt and evaluate projects utilising critical aspects of knowledge about graphics and 3-dimensional drawing. You will develop hands-on drawing skills and the ability to work with 3-dimensional design technologies.

### 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

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 1 - 2024

- Mixed Mode

### 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).

### Residential Schools

This unit has a Compulsory Residential School for distance mode students and the details are:

Click here to see your [Residential School Timetable](#).

### 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. **Written Assessment**

Weighting: 15%

#### 2. **Practical Assessment**

Weighting: 20%

#### 3. **Practical Assessment**

Weighting: 15%

#### 4. **Practical Assessment**

Weighting: 15%

#### 5. **Portfolio**

Weighting: 35%

### 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 SUTE

**Feedback**

Usefulness of feedback

**Recommendation**

Continue to enhance the quality of feedback on assessment tasks.

## Unit Learning Outcomes

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

1. Explore the use, development and impact of design concepts through the use of graphical and design communication
2. Devise, create and use graphical and design concepts and procedures
3. Apply theories and pedagogies to plan and adapt, sequence, implement and assess graphics used in the production of projects
4. Analyse and use basic skills, sequences and procedures using design processes required for teaching Graphics
5. Critically evaluate specific applications of tools and equipment used in the production of Graphics and design.

**Australian Institute for School Leadership (AITSL, 2013), Professional Standards for Teachers (Graduate Level):**

Standard 2: Know the content and how to teach it

2.1 Content and teaching strategies of the teaching area

2.2 Content selection and organisation

Standard 4: Create and maintain supportive and safe learning environments

4.4 Maintain student safety

Standard 6: Engage in professional learning

6.2 Engage in professional learning and improve practice

6.3 Engage with colleagues to improve practice.

Standard 7: Engage professionally with colleagues, parents/carers and the community.

7.2 Comply with legislative, administrative and organisational requirements

7.4 Engage with professional teaching networks and broader communities.

## 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 - Written Assessment - 15%	•	•	•	•	•
2 - Practical Assessment - 20%	•	•	•	•	•
3 - Practical Assessment - 15%	•	•	•	•	•
4 - Practical Assessment - 15%	•	•	•	•	•
5 - Portfolio - 35%	•	•	•	•	•

### 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					

## Textbooks and Resources

### Textbooks

**There are no required textbooks.**

### 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: [American Psychological Association 7th Edition \(APA 7th edition\)](#)

For further information, see the Assessment Tasks.

## Teaching Contacts

**Mark Wockner** Unit Coordinator  
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**Brad Connolly** Unit Coordinator  
[b.connolly@cqu.edu.au](mailto:b.connolly@cqu.edu.au)

## Schedule

### Week 1 - 04 Mar 2024

Module/Topic	Chapter	Events and Submissions/Topic
Schematic Sketching and INVENTOR installation	Participants are required to complete schematic sketches 1 and 2 and begin the process of installing INVENTOR. Book your Compulsory Residential School place.	

### Week 2 - 11 Mar 2024

Module/Topic	Chapter	Events and Submissions/Topic
Ideation Sketching	Participants are required to complete Ideation sketches 1 and 2.	

### Week 3 - 18 Mar 2024

Module/Topic	Chapter	Events and Submissions/Topic
Technical Sketching	Participants are required to complete Technical sketches 1 and 2.	

### Week 4 - 25 Mar 2024

Module/Topic	Chapter	Events and Submissions/Topic
Technical Sketching	Participants are required to complete Technical sketches 1 and 2.	

### Week 5 - 01 Apr 2024

Module/Topic	Chapter	Events and Submissions/Topic
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**INVENTOR & ASSESSMENT 1  
SUBMISSION**

Participants are to focus on some INVENTOR practice to help you through Res School and allow you time to ensure all your 6 sheets for Assessment task 1 are complete and combined into a single PDF file ready for submission by the end of this week.

Assessment 1 - Introduction to Sketching (15% weighting) - Due Week 5, 7th April 2024, 11.55pm  
**For students to achieve an overall pass mark for this course all assessments must be submitted/completed and receive a minimum pass mark.**

**Compulsory Residential School/Vacation Week - 08 Apr 2024**

Module/Topic	Chapter	Events and Submissions/Topic
Compulsory Residential School Assessment Task 2	Day 1: Inventor, 3D printing and Drawing Interpretation Day 2: Inventor, Drawing Interpretation and Reverse Engineering Day 3: QCAA explore and design phase, Design Challenge, Inventor, and Assessment task 3 planning	Assessment 2 - Residential School (50% weighting) - Due Vacation Week, 14th April 2024, 11.55pm. <b>For students to achieve an overall pass mark for this course all assessments must be submitted/completed and receive a minimum pass mark.</b>

**Week 6 - 15 Apr 2024**

Module/Topic	Chapter	Events and Submissions/Topic
Part A Design Folio (Assessment 3)	Assessment 3 is three part task that creates a design project suitable for a yr. 9 graphics and design class. It requires all the skills and knowledge acquired in Assessment 1 and 2 to create a design folio that would be suitable for this year level. The theme is based on product design. The task focuses on designing a 3D printable childrens toy. Part A Explore: (weighting 10%) Week 6 focuses on Part A of Assessment 3.	

**Week 7 - 22 Apr 2024**

Module/Topic	Chapter	Events and Submissions/Topic
Part A Design Folio (Assessment 3)	Part A Explore: (weighting 10%) Week 7 focuses on Part A of Assessment 3 by focusing on completing tasks 1 and 2 of the explore phase to present evidence of a knowledge and understanding of 6 design movements and toy styles from 4 different design eras.	

**Week 8 - 29 Apr 2024**

Module/Topic	Chapter	Events and Submissions/Topic
Part B Develop the Design (Assessment 3)	Part B: Develop: (weighting 10%) Weeks 8 focuses on applying your broad knowledge and understanding of design movements and toy development.	

**Week 9 - 06 May 2024**

Module/Topic	Chapter	Events and Submissions/Topic
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Part B Develop the Design  
(Assessment 3)

Part B: Develop: (weighting 10%)  
Weeks 9 focuses on applying your  
broad knowledge and understanding  
of  
design movements and toy  
development.

#### Week 10 - 13 May 2024

Module/Topic	Chapter	Events and Submissions/Topic
Part C Create Presentation Files (Assessment 3)	Part C: Presentation: (weighting 15%) Week 10 focuses on applying all your Inventor skills to create a range of drawings and files that can be used to 3D print your proposed design.	

#### Week 11 - 20 May 2024

Module/Topic	Chapter	Events and Submissions/Topic
Part C Create Presentation Files (Assessment 3)	Part C: Presentation: (weighting 15%) Week 11 focuses on applying all your Inventor skills to create a range of drawings and files that can be used to 3D print your proposed design.	

#### Week 12 - 27 May 2024

Module/Topic	Chapter	Events and Submissions/Topic
Finalise Assessment 3	Week 12 is set aside for participants to merge all 3 parts to create a coherent and logical presentation for submission by the due date.	Assessment 3 - Design Task (35% weighting) - Due week 12, Sunday 2nd June 2024, 11.55pm. <b>For students to achieve an overall pass mark for this course all assessments must be submitted/completed and receive a minimum pass mark.</b>

#### Review/Exam Week - 03 Jun 2024

Module/Topic	Chapter	Events and Submissions/Topic
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#### Exam Week - 10 Jun 2024

Module/Topic	Chapter	Events and Submissions/Topic
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## Assessment Tasks

### 1 Introduction to Sketching

#### Assessment Type

Written Assessment

#### Task Description

Students are required to complete a series of set sketching tasks on A3 paper over the first 4 weeks prior to Residential school.

Refer to each weekly outline for instructions.

The completed sheets will be combined to create your Assessment task 1 response.

Once you have finished your sheets, make sure that you:

Scan your completed A3 pages and saved as a single PDF file

Ensure all scans are of high enough quality that they clearly show all details and annotations

Title the PDF file including your full name and assessment task. E.g., Mark\_Wockner\_Assessment\_1

Submit assessment online via the Moodle site no later than 11.55pm on Friday 29th March 2024

**For students to achieve an overall pass mark for this course all assessments must be submitted/completed and receive a minimum pass mark.**

#### Assessment Due Date

Sunday 7th April 2024

### **Return Date to Students**

Vacation Week Monday (8 Apr 2024)

### **Weighting**

15%

### **Minimum mark or grade**

Must achieve 50% of total mark to achieve a Pass.

### **Assessment Criteria**

Comprehension of a range of graphical procedures, principles, and conventions

- Knowledge and understanding of the use of Digital technology and AS1100 standards.
- Use of a range of graphical skills to produce graphical products.

### **Referencing Style**

- [American Psychological Association 7th Edition \(APA 7th edition\)](#)

### **Submission**

Online

### **Learning Outcomes Assessed**

- Explore the use, development and impact of design concepts through the use of graphical and design communication
- Devise, create and use graphical and design concepts and procedures
- Apply theories and pedagogies to plan and adapt, sequence, implement and assess graphics used in the production of projects
- Analyse and use basic skills, sequences and procedures using design processes required for teaching Graphics
- Critically evaluate specific applications of tools and equipment used in the production of Graphics and design.

## **2 Residential School Day 1: Inventor, 3D printing and Drawing Interpretation**

### **Assessment Type**

Practical Assessment

### **Task Description**

The focus for today is on developing participants' Inventor skills and knowledge to begin to create a range of: Inventor models (.ipt files), Inventor assemblies (.iam files), Inventor presentations (.ipn files), Inventor drawings (.idw files), and 3D printable files (.stl files)

Topics covered include:

Creating Inventor models (.ipt files)  
Creating Inventor assemblies (.iam files)  
Creating Inventor presentations (.ipn files)  
Creating Inventor working and assembly drawings (.idw files)  
Exporting .ipt files to .stl files for 3D printing  
Exporting .idw files to PDF  
Combining PDF files  
Orthographic projection  
Isometric views  
Open in line for assembly views  
Sectional views  
Dimensioning  
Subtitling  
AS1100 conventions

**For students to achieve an overall pass mark for this course all assessments must be submitted/completed and receive a minimum pass mark.**

### **Assessment Due Date**

14/4/2024

### **Return Date to Students**

Week 8 Monday (29 Apr 2024)

### **Weighting**

20%



**Minimum mark or grade**

Must achieve 50% of total mark to achieve a Pass.

**Assessment Criteria**

Comprehension of a range of graphical procedures, principles, and conventions

- Understanding and application of digital technologies to produce graphical products.
- Use of a range of graphical skills to produce graphical products.

**Referencing Style**

- [American Psychological Association 7th Edition \(APA 7th edition\)](#)

**Submission**

Online

**Learning Outcomes Assessed**

- Explore the use, development and impact of design concepts through the use of graphical and design communication
- Devise, create and use graphical and design concepts and procedures
- Apply theories and pedagogies to plan and adapt, sequence, implement and assess graphics used in the production of projects
- Analyse and use basic skills, sequences and procedures using design processes required for teaching Graphics
- Critically evaluate specific applications of tools and equipment used in the production of Graphics and design.

## 3 Residential School Day 2: Inventor, Drawing Interpretation and Reverse Engineering

**Assessment Type**

Practical Assessment

**Task Description**

Focuses on reading and interpreting a freehand sketch of a compound mechanism (has many parts) to create a series of .ipt, iam,.ipn and .idw files.

The second session starts with performing engineering measurements by measuring a physical model with a range of measuring tools to create a technical sketch of all the components.

Participants will then create a series of .ipt, iam,.ipn and .idw files

Topics covered include:

Measuring and collecting data

Using measuring tools

Technical sketching

Creating Inventor models (.ipt files)

Creating Inventor assemblies (.iam files)

Creating Inventor presentations (.ipn files)

Creating Inventor working and assembly drawings (.idw files)

Exporting .idw files to PDF

Combining PDF files

Orthographic projection

Isometric views

Open in line for assembly views

Sectional views

Dimensioning

Subtitling

AS1100 conventions

**For students to achieve an overall pass mark for this course all assessments must be submitted/completed and receive a minimum pass mark.**

**Assessment Due Date**

14/04/2024

**Return Date to Students**

29/04/2024

**Weighting**

15%

**Minimum mark or grade**

Must achieve 50% of total mark to achieve a Pass.

**Assessment Criteria**

Comprehension of a range of graphical procedures, principles, and conventions

- Exploration and presentation of primary and secondary data.
- Evaluation of the strengths, limitations, and refinements of ideas against design criteria.
- Synthesis of multiple ideas to propose a concept.

**Referencing Style**

- [American Psychological Association 7th Edition \(APA 7th edition\)](#)

**Submission**

Online

**Learning Outcomes Assessed**

- Explore the use, development and impact of design concepts through the use of graphical and design communication
- Devise, create and use graphical and design concepts and procedures
- Apply theories and pedagogies to plan and adapt, sequence, implement and assess graphics used in the production of projects
- Analyse and use basic skills, sequences and procedures using design processes required for teaching Graphics
- Critically evaluate specific applications of tools and equipment used in the production of Graphics and design.

## 4 Residential School Day 3: QCAA explore and design phase, Design Challenge, Inventor, and Assessment task 3 planning

**Assessment Type**

Practical Assessment

**Task Description**

The first session begins with familiarizing participants with the QCAA double diamond approach to the Design process which is currently used in Queensland schools.

Part of the first or 'Explore' phase of the process is examining secondary data which includes existing designs which can be used as a reference or starting point to develop innovative, unique and credible ideas.

The second session focuses on learning and understanding the develop phase of the QCAA double diamond design model by participating in a 'design challenge' task to design an 'art deco' desk tidy.

Participants will create a series of Inventor models (.ipt files), Inventor assemblies (.iam files), Inventor presentations (.ipn files), Inventor drawings (.idw files) based on their solution to the design challenge.

The final session will focus on how the application of the skills and knowledge developed over the first four weeks of the course and Residential school can be used in combination with the QCAA double diamond design model to address Assessment task 3.

**For students to achieve an overall pass mark for this course all assessments must be submitted/completed and receive a minimum pass mark.**

**Assessment Due Date**

14/04/2024

**Return Date to Students**

29/04/2024

**Weighting**

15%

**Minimum mark or grade**

Must achieve 50% of total mark to achieve a Pass.

**Assessment Criteria**

Comprehension of a range of graphical procedures, principles, and conventions

- Exploration and presentation of primary and secondary data.
- Evaluation of the strengths, limitations, and refinements of ideas against design criteria and synthesis of multiple ideas to propose a concept.

- Use of a range of graphical skills to produce graphical products.

### Referencing Style

- [American Psychological Association 7th Edition \(APA 7th edition\)](#)

### Submission

Online

### Learning Outcomes Assessed

- Explore the use, development and impact of design concepts through the use of graphical and design communication
- Devise, create and use graphical and design concepts and procedures
- Apply theories and pedagogies to plan and adapt, sequence, implement and assess graphics used in the production of projects
- Analyse and use basic skills, sequences and procedures using design processes required for teaching Graphics
- Critically evaluate specific applications of tools and equipment used in the production of Graphics and design.

## 5 Design Task

### Assessment Type

Portfolio

### Task Description

Assessment 3 is three part task that creates a design project suitable for a yr. 9 graphics and design class. It requires all the skills and knowledge acquired in Assessment 1 and 2 to create a design folio that would be suitable for those year levels. The theme is based on product design. The task focuses on designing an innovative 3D printable toy for a child. The toy aesthetics will be based on a chosen design movement from the last 170 years.

The assignment uses elements of the 'double diamond' design model which is the preferred model for Senior Design in Queensland schools and which consists of 3 sections:

Part A Explore: (weighting 10%) Weeks 6 to 7 explores secondary data to identify existing products and influential design styles over the last 170 years to build an extensive knowledge of design styles which can then be applied to Part B of this task . Participants will create a multipage folio that provides evidence of their research.

Part B: Develop: (weighting 10%) Weeks 8 to 9 focuses on the design process using divergent and convergent thinking strategies to develop of a range of ideas to identify the most suitable concept. Participants will create a range of annotated ideation sketches and presentation sketches to provide evidence of this process.

Part C: Presentation: (weighting 15%) Weeks 10 to 11 allow participants to 'showcase' their final proposal by creating a range of drawings created on Inventor of their final concept.

Week 12 is set aside for participants to merge all 3 parts to create a coherent and logical presentation for submission by the due date.

**For students to achieve an overall pass mark for this course all assessments must be submitted/completed and receive a minimum pass mark.**

### Assessment Due Date

02/06/2024

### Return Date to Students

Exam Week Monday (10 June 2024)

### Weighting

35%

### Minimum mark or grade

Must achieve 50% of total mark to achieve a Pass.

### Assessment Criteria

Comprehension of a range of graphical procedures, principles, and conventions

- Analysis of secondary data of design movements and existing designs.
- Use of a range of graphical skills to produce graphical products.
- Evaluation of the strengths, limitations, and refinements of ideas against design criteria
- Synthesis of multiple ideas to propose a concept.
- Knowledge and understanding of the use of Digital technology.
- Use of a range of graphical skills to produce graphical products.
- Knowledge and understanding of the AS1100 standards.

## Referencing Style

- [American Psychological Association 7th Edition \(APA 7th edition\)](#)

## Submission

Online

## Learning Outcomes Assessed

- Explore the use, development and impact of design concepts through the use of graphical and design communication
- Devise, create and use graphical and design concepts and procedures
- Apply theories and pedagogies to plan and adapt, sequence, implement and assess graphics used in the production of projects
- Analyse and use basic skills, sequences and procedures using design processes required for teaching Graphics
- Critically evaluate specific applications of tools and equipment used in the production of Graphics and design.

## 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