Task

You have been tasked to construct an evidence guide of your learning. The subject of the evidence guide is defaulted to the construction of learning material for other students to consume (see below) – however the subject can be negotiated with the teacher for individual interest or skills.

The subject of the evidence (the learning material) can be collaborated on together in teams of 2 ± 1 but the evidence guide of your learning is individual.

An evidence guide is a centrally located document which contains evidence of your growing knowledge and understanding of the content taught in this course. By default you are required to submit the subject matter that you are using to base your evidence on and your evidence guide itself.

An evidence guide document is, generally, represented on a document that consists of short, and sharp, responses to high level questions. Historically, this document has been a PowerPoint document but this year the focus is on creating Markdown Documents.

Topics for learning material (choose one, all continuing content must be chosen before we can allow for duplicate choices).

Continuing students

- Motor Controllers
- RF communication
- Servo Motors
- Esplora Board integration
- DPad / Joystick
- I2C communication between Arduinos
- Flatpack design on OnShape and Using a flat pack design on the laser cutter
- 3D design to hold components on OnShape andUsing a 3D design on the 3D printer
- Soldering a small circuit

New year students may choose from here as well

- Replicating a project from T1 on a physical Arduino (Traffic Light,
- Centre Detector, Train Crossing
- Sending and Receiving Serial Communications

Each topic of learning must include the following at a minimum

- Some sort of explicit instruction on the topic
- At least 2-4 (group size +1) worked example for any major thought you are trying to express
- At least 2-4 (group size +1) practice question for each worked example.

- At least 1 challenge question which incorporates the majority the knowledge from above.

Evidence Guide:

Students must respond to the following questions:

- What was the design process that you used ensure that you met all of required elements to produce your learning material?
- How did your understanding of digital solutions inform your choice band/or your learning solution?
- What is at least one example of how existing knowledge or understanding framed novel learning? ## Section 1: Knowledge Comprehension, and Application

This section of the rubric consists of the required elements of the assignment. Students should take special care to include ALL these elements as they are often extended in the following sections

Section 2: Analysis, Synthesis, and Evaluation

This section will evaluate your ability to include critical thinking and justification elements into your work. Often the requirements for extension are not explicitly given, so it will be up to the you to decide how best to demonstrate what you have learned beyond the required unit goals and curriculum. Items such as 3D models, pictures, drawings, diagrammatic responses, notes, evidence of problem solving, advanced programming concepts, elegant responses, media, etc., are all available options.

Section 3: Submission Guidelines

For this section, students will be expected to provide a submission which fulfils all of the formatting and citation requirements listed in this assessment sheet but also that the submission is of a professional quality. Be aware, points in this section could be 2- or 4-point items. Treat them accordingly.

Submission

All submission items should be stored in an appropriate format. For example, code must be stored in a programmatical format so it can be evaluated (**images of code, or code simply copied and pasted into a document, will not be marked**)

Evidence of working material must be recorded where appropriate. For example, if you are showing how your game meets some requirement, you must submit a recording. Similarly, if you are showing how your robot meets a requirement, you must record it.

If you are unsure if an element needs to be recorded, **ask the teacher.**

All materials must be submitted to google classrooms.

Students are responsible for keeping backups/master-copies.

SCORING NOTES

Formatting for all typed/written assessments should be as follows:

Google Doc

11-12 Pt

1.15-1.5 Line Spacing

1 Space between paragraphs

Spelling and Grammar "Soft Limit"

In-Text Citations with footnotes

Title Page/Slide:

Name

Slides

10-12 pt. font text

14-24 pt. font titles

1.0 1.15 Line Spacing

Bullet Points Preferred

Word Count per slide >100-110 "Soft Limit"

Approved Templates and Themes

Date

Class

Aim

Assessment Title

"Soft Limits" are not rigidly defined limits and will be assessed on a case-by-case basis. Ask for clarification for specific tasks

Possible Scoring Groups are out of 2 or 4 Points

2-Point Criteria - Knowledge and Understanding

Criteria assessed as 2-Points are classified as Knowledge and Understanding criteria. These will examine and evaluate a student's ability to state facts and define terms and concepts effectively. Analysis and synthesis of the information will not be assessed through these criteria.

0 Points

1-Point

2-points

Not present or able to be assessed as the required criteria

Item is presented and does not meet expectations for quality, rigour, or detail

Item is presented and does meet expectations for quality, rigour, or detail

4-Point Criteria - Analysis and Synthesis and Expert Review

To show true mastery of your developing skills, students must show that they can go beyond simple repetition of the given tasks or an explanation of processes. Students will show their ability to show higher order thinking through analysis, evaluation, or the linking of multiple fields of learning to solve problems in novel ways.

4-Point Criteria - Analysis and Synthesis

Analysis and Synthesis components evaluate a student's ability to effectively review data and understandings and develop these into a coherent and relevant statement. Analysis refers to the generating of thoughts from interpreting the data, while synthesis refers to combining analysis of the data with other relevant information to develop an original and effective idea.

0 Points

1 Point

2 Points

3 Points

4 Points

Not present or able to be assessed as the required criteria

Item is presented and explained. However, it does not show any evidence of higher order thinking such as analysis, evaluation, or synthesis.

Item is presented and shows appropriate evidence of higher order thinking such as analysis, evaluation, or synthesis

Item is presented and exceeds expectations for evidence of higher order thinking such as analysis, evaluation, or synthesis.

-or-

Item is presented and shows appropriate evidence of higher order thinking such as analysis, evaluation, or synthesis and exceeds expectations for quality, rigour, or understanding of the selected mastery.

Item is presented and exceeds expectations for evidence of higher order thinking such as analysis, evaluation, or synthesis. Additionally, this item exceeds expectations for quality, rigour, or understanding of the selected mastery.

Expert Review

Expert Reviews evaluate a student's ability to build solutions using the skills that have been taught during the semester. Criteria assessed as 4-Points are classified as Analysis and Synthesis criteria. These will examine and evaluate a student's ability to effectively review data and understandings and develop these into a coherent and relevant statement. Analysis refers to the generating of thoughts from interpreting the data, while synthesis refers to combining analysis of the data with other relevant information to develop an original and effective idea.

0 Points

1 Point

2 Points

3 Points

4 Points

Not present or able to be assessed as the required criteria

Item is presented and broadly solves the problem. However, upon review, it does not show any evidence of appropriate mastery.

Item is presented and broadly solves the problem. On review, it does show any evidence of appropriate mastery.

Item is presented and solves the specific problem. On review, the evidence shows understanding beyond expected mastery.

-or-

Item is presented and broadly solves the problem. On review, it does show any evidence of appropriate mastery and is done so in a well-constructed or design method that clearly shows higher levels of understanding.

Item is presented and solves the specific problem. On review, the evidence shows understanding well beyond expected mastery and is done so in a well-constructed or design method that clearly shows higher levels of understanding.

Multiplier

Criteria will be combined with a **Multiplier**. While each criterion will be scored on the 0-1-2-4 scale, the multiplier will attach relevant worth to each criterion. Be aware of these multipliers and dedicate appropriate time to ensure you achieve your best result.

Achievement Standards

Achievement Standards Technologies T Course - Year 12

	*A student who achieves an **A** grade typically*	*A student who achieves a **B** grade typically*	*A student who achieves a **C** grade typically*	*A student who achieves a **D** grade typically*	*A student who achieves an **E** grade typically*
Knowledge and understanding	• critically analyses the design process and evaluates opportunities, constraints and implications for decision making • critically analyses strategies, methodologies and procedures and evaluates their validity and reliability • synthesises technology theories, concepts and principles and evaluates the properties of material or data or systems to address a need, problem or challenge • critically analyses technologies in a range of contexts and evaluates ethical and sustainable application of technology • thinks critically and creatively, drawing on data and information to solve complex problems and evaluates opportunities for application of technology	• analyses the design process and explains opportunities, constraints and implications for decision making • analyses strategies, methodologies and procedures and explains their validity and reliability • analyses technology theories, concepts and principles and explains the properties of materials or data or systems to address a need, problem or challenge • analyses technologies in a range of contexts and explains ethical and sustainable application of technology • thinks critically, drawing on data and information to solve complex problems and analyses opportunities for application of technology	• explains the design process and describes opportunities, constraints and implications for decision making • explains strategies, methodologies and procedures and describes their validity and reliability • explains technology theories, concepts and principles and describes the properties of materials or data or systems to address a need, problem or challenge • explains technologies in a range of contexts and describes ethical and sustainable application of technology • thinks critically, drawing on data and information at times to solve problems and explains opportunities for application of technology	• describes the design process with some reference to opportunities, constraints and implications for decision making • describes strategies, methodologies and procedures with some reference to validity and reliability • describes technology theories, concepts and principles with some reference to properties of materials or data or systems to address a need, problem or challenge • describes technologies in a range of contexts with some reference to ethical and sustainable application of technology • draws on data and information at times to solve problems and describes opportunities for application of technology	• identifies features of the design process with little or no reference to decision making • identifies some strategies, methodologies and procedures with little reference to validity and reliability • identifies technology theories, concepts and principles with some reference to properties of materials or data or systems to address a need, problem or challenge • identifies some features of technologies in a range of contexts with little or no reference to ethical and sustainable application of technology • identifies some opportunities for application of technology with limited use of information and data
Skills	• applies technology concepts, strategies and methodologies demonstrating an understanding of the historical and cultural context and impact on individuals, groups, communities and society • creates innovative and high quality design solutions/products using techniques and approaches and justifies ideas coherently • critically analyses potential prototypes and solutions evaluating their appropriateness and effectiveness via iterative improvement and review • communicates complex ideas and insights effectively in a range of mediums to a variety of audiences using appropriate evidence, metalanguage and accurate referencing • reflects with insight on their own thinking and that of others and evaluates inter and intrapersonal skills including planning, time management, use of appropriate techniques & strategies and capacity to work independently and collaboratively	• applies technology concepts, strategies and methodologies with control demonstrating understanding of the historical and cultural context and impact on individuals, groups, communities and society • creates innovative and quality design solutions/products using techniques and justifies ideas coherently • analyses potential prototypes and solutions explaining their appropriateness and effectiveness via iterative improvement and review • communicates ideas effectively in a range of mediums to a variety of audiences using appropriate evidence, metalanguage and accurate referencing • reflects on their own thinking and that of others and analyses inter and intrapersonal skills including planning, time management, use of appropriate techniques and strategies and capacity to work both independently and collaboratively	• applies technology concepts, strategies and methodologies with some control demonstrating understanding of context and the impact on individuals, groups, communities and society • creates quality design solutions/ products using techniques and justifies ideas coherently • explains potential prototypes and solutions describing their appropriateness and effectiveness via iterative improvement and review • communicates ideas appropriately in a range of mediums to a variety of audiences using appropriate evidence, metalanguage and accurate referencing • reflects on their own thinking and that of others and explains inter and intrapersonal skills including planning, time management, use of appropriate techniques and strategies and capacity to work both independently and collaboratively	• applies technology concepts, strategies and methodologies with minimal control demonstrating understanding of the impact on individuals, groups, communities and society • creates design solutions/products using some techniques and explains ideas • describes analyses potential prototypes and solutions with some reference to their appropriateness and effectiveness via iterative improvement and review • communicates ideas in mediums to a variety of audiences using some evidence, metalanguage and referencing • reflects on their own thinking with some reference to inter and intrapersonal skills including planning, time management, use of appropriate techniques and strategies and capacity to work both independently and collaboratively	• applies technology concepts, strategies and methodologies with limited control demonstrating little evidence of understanding of the impact on individuals, groups, communities and society • plans design solutions/products using some techniques and describes ideas • identifies potential prototypes and solutions with little or no reference to their appropriateness and effectiveness via iterative improvement and review • communicates basic ideas in mediums to a variety of audiences using minimal evidence, metalanguage and some referencing • reflects on their own thinking with little or no reference to planning, time management, use of appropriate techniques and strategies and capacity to work both independently and collaboratively

Figure 1: Achievement Standards

Evidence of higher order learning:

Rubric

Knowledge, Comprehension & Application

CRITERIA

EXPECTATIONS

POSSIBLE

STUDENT

TEACHER

MULTIPLYER

TOTAL

Learning Material

You have submitted evidence of completing the required learning material. This evidence is submitted in an appropriate format (Markdown) unless negotiated for a different format.

The evidence of learning material appears to be of appropriate level for your accreditation level and the topic chosen.

The evidence appears to have at least 2-4 (group size +1) worked examples / 2-4 practice questions / 2-4 challenge and includes references to any appropriate required learning material that other students may need to know.

Explicit instruction

At least 2-4 worked example for each required element (minimum group-size + 1)

At least 1 practice question for each worked example

At least 1 challenge question which requires most of the practice questions

(If applicable) A document which includes all your teammates, and who submitted your body of work

Evidence for knowledge, comprehension, and application may include:

Knowledge

Comprehension

Application

2

2

2

2

___/2

___/2

___/2

___/2

___/2

___/2

___/2

___/2

Ax2

Tx1

___/8

___/4

Evidence Guide

You have submitted evidence of your evidence guide. By default, your evidence guide responses to each of the three questions selected by your teacher. However, these questions can be negotiated or reframed with your teacher. To achieve a passing grade (2) you must submit a serious attempt to response to the question. By default, your submission for the evidence guide would be on a Google Slide or PowerPoint document. This document has a maximum space allotment of 3 slides per question. Additional space can be used for introduction, indexes, and summary slides. The output can be negotiated with the teacher. Previous submissions have allowed for Google Sites, HTML, or Markdown documents.

Evidence for knowledge, comprehension, and application may include:

Knowledge: Your evidence highlights that you recall and list relevant terms covered in your learning. It may tell a story to the reader (the teacher) or state the conditions of your learning.

Comprehension: Your evidence highlights that you can identify key aspects of your learning or explains to the author what you've done.

Application: It is clear from your evidence that you constructed a complete submission

2

2

2

___/2

___/2

___/2

___/2

___/2

___/2

1

___/6

Analysis, Synthesis & Evaluation

SUB TOTAL

A */14 T* / 6

CRITERIA

EXPECTATIONS

POSSIBLE

STUDENT

TEACHER

MULTIPLYER

TOTAL

Question 1: What was the process you used to ensure that you would meet all of the required elements of your tutorial?

Evidence guides are a tool you use to highlight your learning to the teacher. Learning how to reflect on your learning during your assessments and identifying what parts of your work were high quality and what you could do to improve your work is an essential aspect of education.

This aspect of the assessment evaluates your ability to analyse your learning, identify how and when you synthesised new understanding on your own, and your ability to assess your work

Each of your questions will be marked against the following aspects of your ability to :

express your understanding of technology concepts and principles

your ability to communicate ideas appropriately in the selected medium

Evidence for higher order learning may include:

Analysis: Your evidence shows a reasoned understanding of what you did and why you did it. For example, you may have explained how you did X, Y, and Z, but you continue to explain why you did them the way you did.

Evaluative: your evidence makes a judgement of something or between multiple things. This judgement may be the value of one thing over another or a highlighting the major differences between two things.

Transferal: your evidence highlights when you apply information, strategies, or skills that you have learnt to a new situation or context.

4

4

___/4

___/4

___/4

___/4

A x1

T x2

A___/ 8

T___/16

Question 2: How did your existing knowledge and/or understanding of Information Technology helped inform your work on the tutorial.

Evidence guides are a tool you use to highlight your learning to the teacher. Learning how to reflect on your learning during your assessments and identifying what parts of your work were high quality and what you could do to improve your work is an essential aspect of education.

This aspect of the assessment evaluates your ability to analyse your learning, identify how and when you synthesised new understanding on your own, and your ability to assess your work

Each of your questions will be marked against the following aspects of your ability to :

express your understanding of technology concepts and principles

your ability to communicate ideas appropriately in the selected medium

Evidence for higher order learning may include:

Analysis: Your evidence shows a reasoned understanding of what you did and why you did it. For example, you may have explained how you did X, Y, and Z, but you continue to explain why you did them the way you did.

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Transferal: your evidence highlights when you apply information, strategies, or skills that you have learnt to a new situation or context.

4

4

___/4

___/4

___/4

___/4

A x1

T x2

A___/ 8

T___/16

Question 3: How has your understanding of Information Technology changed from the start of this assignment time until now?

Evidence guides are a tool you use to highlight your learning to the teacher. Learning how to reflect on your learning during your assessments and identifying what parts of your work were high quality and what you could do to improve your work is an essential aspect of education.

This aspect of the assessment evaluates your ability to analyse your learning, identify how and when you synthesised new understanding on your own, and your ability to assess your work

Each of your questions will be marked against the following aspects of your ability to :

express your understanding of technology concepts and principles

your ability to communicate ideas appropriately in the selected medium

Evidence for higher order learning may include:

Analysis: Your evidence shows a reasoned understanding of what you did and why you did it. For example, you may have explained how you did X, Y, and Z, but you continue to explain why you did them the way you did.

Evaluative: your evidence makes a judgement of something or between multiple things. This judgement may be the value of one thing over another or a highlighting the major differences between two things.

Transferal: your evidence highlights when you apply information, strategies, or skills that you have learnt to a new situation or context.

4

4

___/4

___/4

___/4

___/4

A x1

T x2

A___/ 8

T___/16

-

Submission Guidelines

-

-

-

SUB TOTAL

A */24 T* /48

CRITERIA

EXPECTATIONS

POSSIBLE

STUDENT

TEACHER

MULTIPLYER

TOTAL

Readability

Assessment submission is ordered and has a definite pattern to its construction. The reader is not confused as to the content in any given section and can follow the flow of the submission easily.

4

___/4

___/4

Ax1

Tx2

A___/4

T___/8

Formatting

Students have followed the formatting instructions including any provided templates and guides or have created their own, legible formatting guide and applied it constantly.

2

___/2

___/2

-

A___/2

T___/2

TOTAL

A */58 T /*72

VET Competencies