



MTU

Ollscoil Teicneolaíochta na Mumhan
Munster Technological University

Academic Integrity in a GenAI World

Faculty Series

Presented by:

Members of the Office of the Vice President of Academic Affairs & Registrar

www.mtu.ie

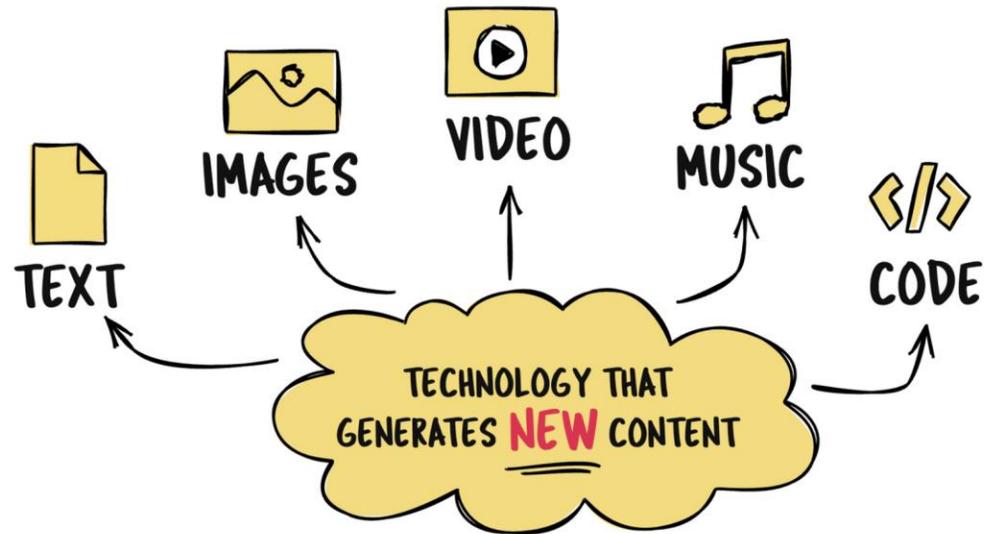


ACADEMIC INTEGRITY IN A GEN AI WORLD SURVEY

Assessment Challenges Posed by Generative AI

★ WHAT IS GENERATIVE ARTIFICIAL INTELLIGENCE?

👉 (GEN AI)



IT DOES THIS BY PREDICTING THE NEXT WORD, PIXEL, ETC BASED ON AN EXTENSIVE LIBRARY OF TRAINING DATA AVAILABLE FROM WEB PAGES, ONLINE SOURCES, SOCIAL MEDIA ETC.



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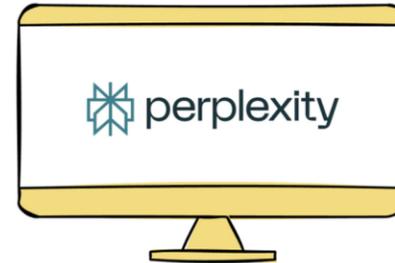
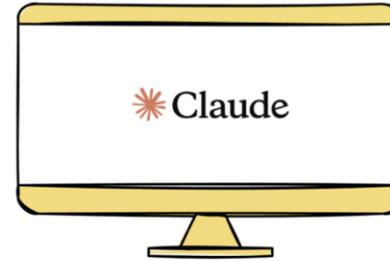
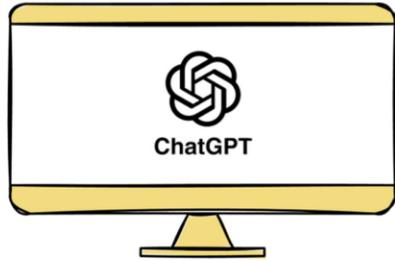
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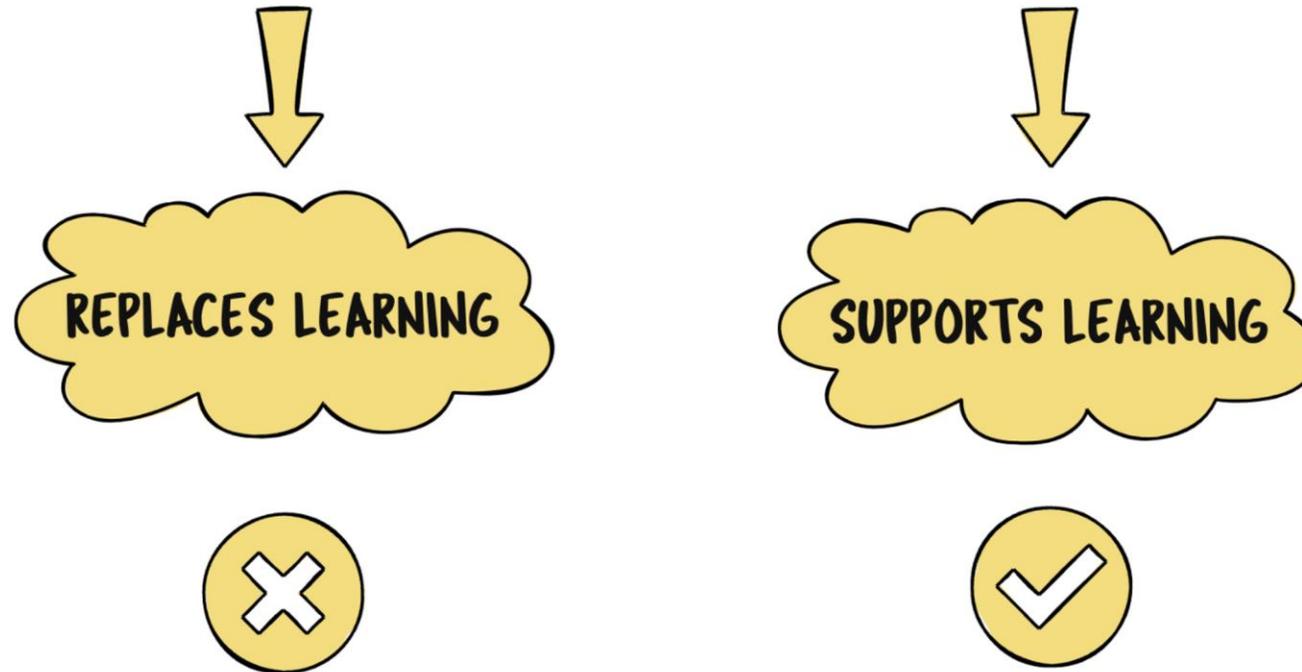
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WHAT KINDS OF AI TOOLS ARE THERE?



SHOULD STUDENTS BE ALLOWED TO USE AI TOOLS TO COMPLETE TASKS (ASSESSMENTS)?





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Brain Experts **WARNING: Watch This Before Using ChatGPT Again! (Shocking New Discovery)**



The Diary Of A CEO
12M subscribers

Join

Subscribed

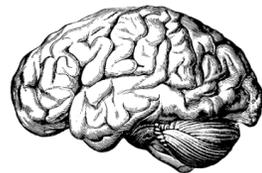
Succeeding Together

www.mtu.ie

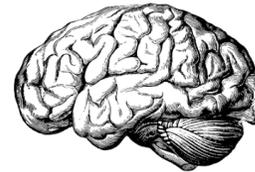
MIT study

Brain connectivity systematically **scaled down** with the amount of external support: the **Brain-only group exhibited the strongest, widest-ranging networks**, Search Engine group showed intermediate engagement, and **LLM assistance elicited the weakest overall coupling.**

[Link to authors](#)



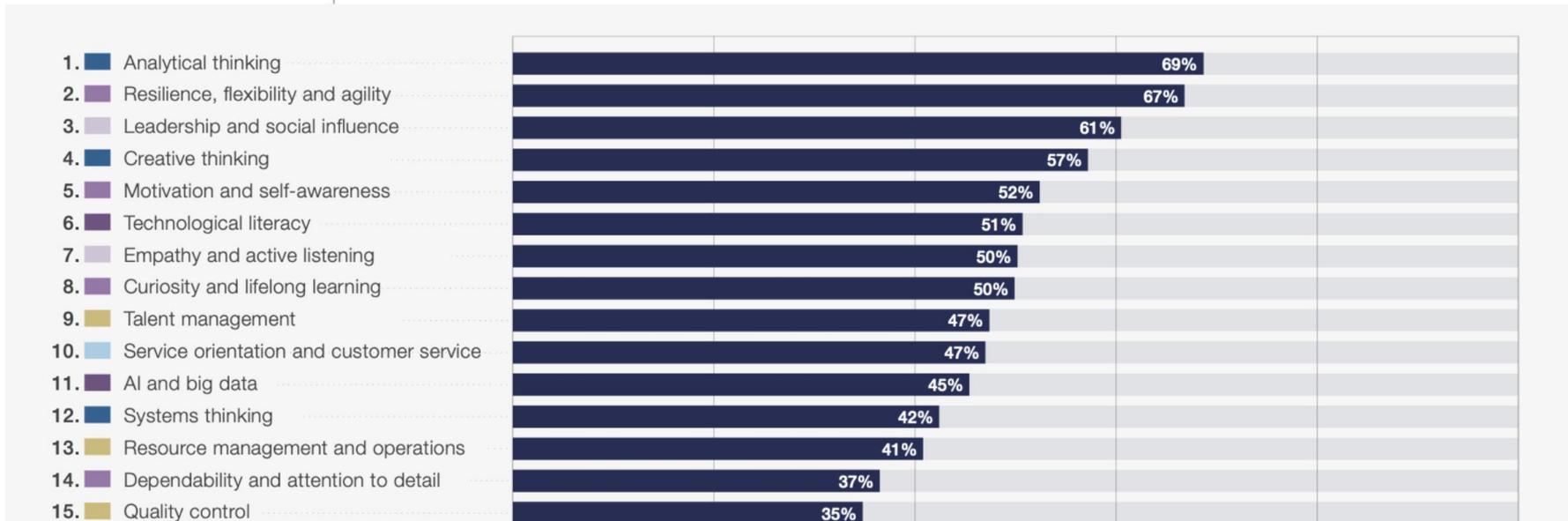
Google



ChatGPT

FIGURE 3.3 | **Core skills in 2025**

Share of employers who consider the stated skills to be core skills for their workforce.



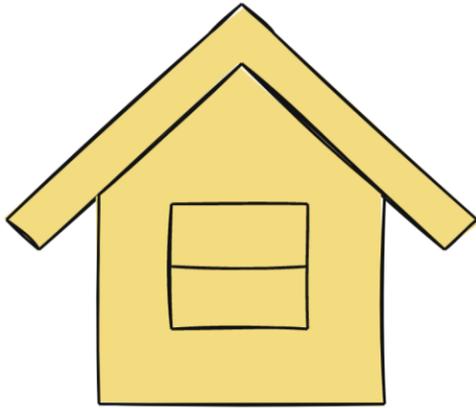
**WHAT SKILLS
 SHOULD WE PRIORITISE ?**

Future of jobs report – World Economic Forum



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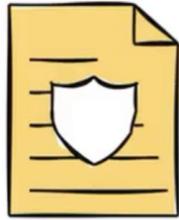
PRODUCT



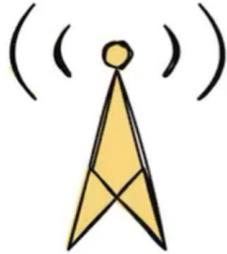
PROCESS

WHAT SHOULD WE BE ASSESSING?

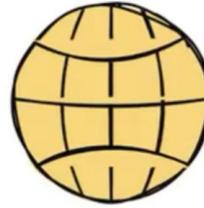
MOST PRESSING CONCERNS REGARDING GEN AI



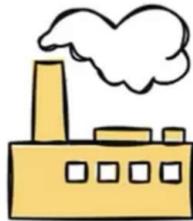
PRIVACY



MISINFORMATION



BIAS



ENVIRONMENT



ETHICS

Talk is cheap: why structural assessment changes are needed for a time of GenAI

Thomas Corbin^a , Phillip Dawson^a  and Danny Liu^b 

^aCentre for Research in Assessment and Digital Learning (CRADLE), Deakin University, Melbourne, Australia;

^bDVC Education Portfolio, The University of Sydney, Sydney, Australia

DISCURSIVE



CLEARLY COMMUNICATED INSTRUCTIONS

STRUCTURAL



ROBUSTLY DESIGNED ASSESSMENTS

AI Assessment Scale and Briefs

MTU Responsible use for AI Working Group



Member	Affiliation / Speciality	Member	Affiliation / Speciality
Dr. Haithem Afli	ADAPT Research Centre	Aileen Kennedy	Assistant Registrar
Ellen Bamber	V.P. for Education, Cork SU	Dr. Violeta Morari	Dept. of Mathematics
Dr. Larkin Cunningham	Dept. of Computer Science	Cliona Moynihan	Dept. of Marketing and Int. Bus.
Patricia Doyle	Dept. of Organisation & Pro. Dev.	Roisin O Grady	Student Engagement Officer
Dr. Tom Farrelly	Dept. of Social Sciences	Dr. Thomas O Mahony	TLU
Dr. Michael Hall	Head of School (Social Sciences)	Dr. Mubashir Rehmani	Dept. of Computer Science
Sinead Hanrahan	Digital Scholarship Librarian	Dr. Jeremiah Spillane	Dept. of TEL
Dr. Marian Hurley	Dept of Marketing and Int. Bus.	Dr. Angela Wright	Dept. of Organisation & Pro. Dev.

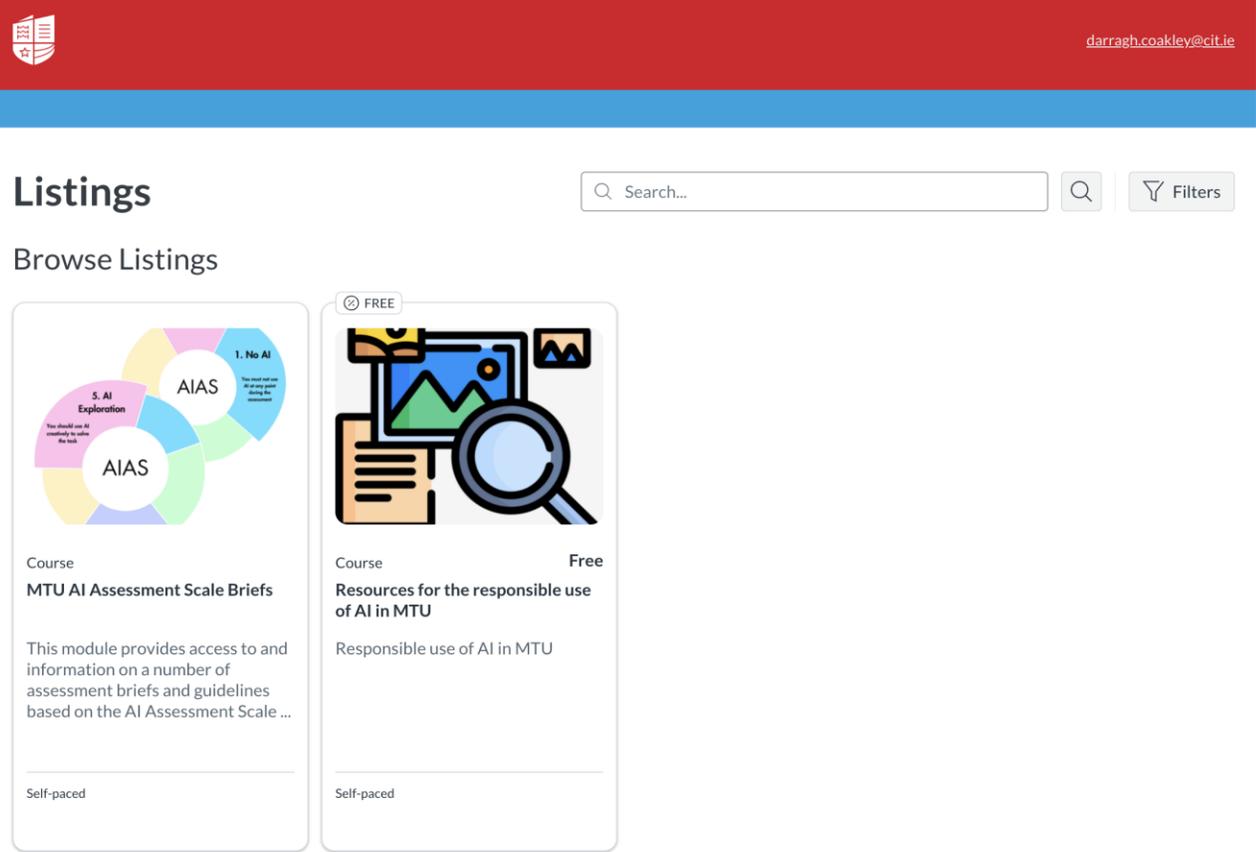
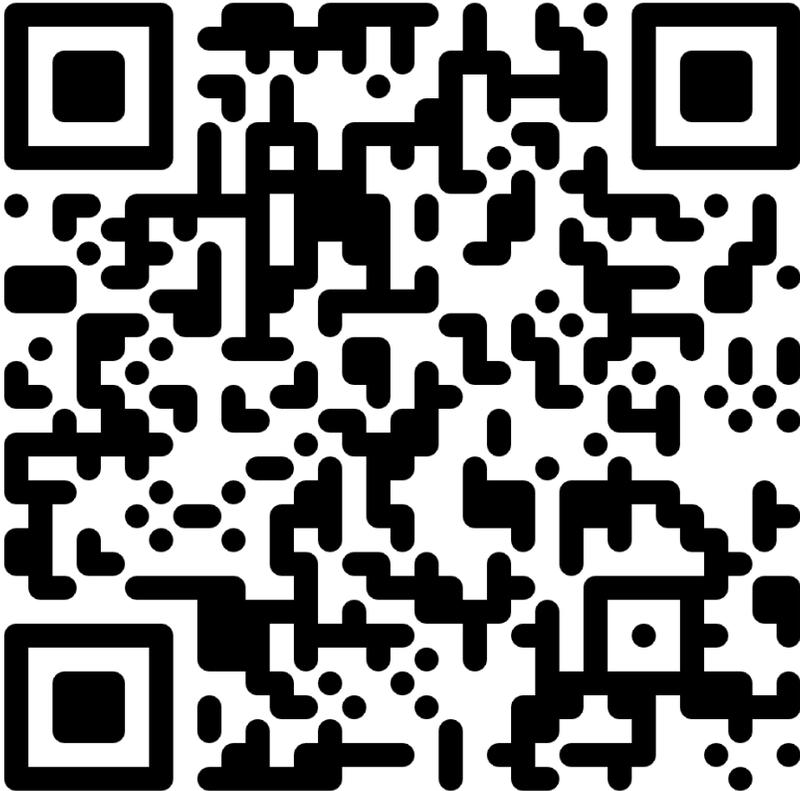
AI Assessment Scale

1	NO AI	The assessment is completed entirely without AI assistance in a controlled environment, ensuring that students rely solely on their existing knowledge, understanding, and skills You must not use AI at any point during the assessment. You must demonstrate your core skills and knowledge.
2	AI PLANNING	AI may be used for pre-task activities such as brainstorming, outlining and initial research. This level focuses on the effective use of AI for planning, synthesis, and ideation, but assessments should emphasise the ability to develop and refine these ideas independently. You may use AI for planning, idea development, and research. Your final submission should show how you have developed and refined these ideas.
3	AI COLLABORATION	AI may be used to help complete the task, including idea generation, drafting, feedback, and refinement. Students should critically evaluate and modify the AI suggested outputs, demonstrating their understanding. You may use AI to assist with specific tasks such as drafting text, refining and evaluating your work. You must critically evaluate and modify any AI-generated content you use.
4	FULL AI	AI may be used to complete any elements of the task, with students directing AI to achieve the assessment goals. Assessments at this level may also require engagement with AI to achieve goals and solve problems. You may use AI extensively throughout your work either as you wish, or as specifically directed in your assessment. Focus on directing AI to achieve your goals while demonstrating your critical thinking.
5	AI EXPLORATION	AI is used creatively to enhance problem-solving, generate novel insights, or develop innovative solutions to solve problems. Students and educators co-design assessments to explore unique AI applications within the field of study. You should use AI creatively to solve the task, potentially co-designing new approaches with your instructor.



Perkins, Furze, Roe & MacVaugh (2024). The AI Assessment Scale

<https://corkcatalogue.mtu.ie/browse/aimtustaff>



The screenshot shows the 'Listings' page on the MTU catalogue. At the top right, the email address 'darragh.coakley@cit.ie' is visible. Below the header, there is a search bar with the text 'Search...' and a 'Filters' button. The main heading is 'Listings', followed by 'Browse Listings'. Two course cards are displayed:

- Course 1:** MTU AI Assessment Scale Briefs. The card features a circular diagram with 'AIAS' in the center and five segments: '1. No AI', '2. AI', '3. AI', '4. AI', and '5. AI Exploration'. The description states: 'This module provides access to and information on a number of assessment briefs and guidelines based on the AI Assessment Scale ...'. It is labeled as 'Self-paced'.
- Course 2:** Resources for the responsible use of AI in MTU. The card features an icon of a laptop with a magnifying glass over a document. It is labeled as 'Free' and 'Self-paced'. The description is: 'Responsible use of AI in MTU'.

AIAS Briefs

Using the AIAS for Essays Briefs

How to use the AI Assessment Scale for Essay Based Assessments

1. Identify an existing Essay assessment which needs to be redesigned for the Gen AI era.
2. Consider which point on the AI assessment scale you feel is appropriate for this assessment.
 1. This essentially determines whether you are comfortable with students using generative AI tools in completing this assessment.
 2. And how much or little / in what assessment activities use of genAI is appropriate.
3. In your assessment brief, clarify to students what point on the AI Assessment Scale is appropriate. To do so you may
 1. Re-write your assessment brief for your specific discipline, drawing on the sample essay briefs (aligned to the 5 levels of the AI Assessment Scale below).
 2. Supplement or amend your assessment brief (i.e by copying and pasting content from the AI Assessment Scale Essay Brief Supplements below).

AI Assessment Scale (AIAS) Essay Brief Examples

[AIAS Essay Brief Example - Level 1](#) ↓

[AIAS Essay Brief Example - Level 2](#) ↓

[AIAS Essay Brief Example - Level 3](#) ↓

[AIAS Essay Brief Example - Level 4](#) ↓

[AIAS Essay Brief Example - Level 5](#) ↓

◀ Previous

Next ▶

Technology Use Guidelines

Permitted AI use:

- Research assistance and information gathering
- Generating initial drafts or sections that you then critically review and improve
- Suggesting structure and organization
- Helping with editing and clarity
- Summarizing research materials

Not permitted AI use:

- Submitting AI-generated content without significant human review and enhancement
- Using AI to replace your own critical analysis of the topic
- Failing to verify factual claims made by AI tools

Other permitted technology:

- Electronic databases and library resources
- Word processing software
- Reference management software
- Collaborative tools for working with AI

Assessment Workload & Opportunity

Assessment Workload & Opportunity



Factors influencing academic misconduct



Poor integrity awareness

Student-teacher relationships

High-impact pedagogical practices

Constructive feedback

Workload & time constraints

Stress and pressure to succeed

Peer influence & cheating culture

Risk & benefit

Easier access & opportunity

Gender

Miles PJ, Campbell M, Ruxton GD. Why Students Cheat and How Understanding This Can Help Reduce the Frequency of Academic Misconduct in Higher Education: A Literature Review. *J Undergrad Neurosci Educ.* 2022 Jun 1;20(2):A150-A160. doi: 10.59390/LXMJ2920.

Rettinger, D., & Bertram Gallant, T. (2022). *Cheating Academic Integrity: Lessons from 30 Years of Research.* Wiley

Workload, time & stress (Yr1, Sem2)



Week 4: Lab (2%); Lab (2%); Lab (2.5%); SAQ (15%); SAQ (30%)

Week 5: Lab (2%); Lab (2%); Lab (2.5%); In-class Exam (20%)

Week 6: Lab (2%); Lab (2%); Lab (2.5%); Report (10%); SAQ (20%); Report (20%)

Week 7: Lab (2%); Lab (2%); Lab (2.5%); Perf. Eval. (10%); MCQ (15%)

Week 8: Lab (2%); Lab (2%); Lab (2.5%); SAQ (35%)

Week 9: Lab (2%); Lab (2%); Lab (2.5%); In-class Exam (30%)

Week 10: Lab (2%); Lab (2%); Lab (2.5%); Open-book Exam (15%)

Week 11: Lab (2%); Lab (2%); Lab (2.5%);

Week 12: Lab (2%); Lab (2%); Lab (2.5%); Report (10%); SAQ (35%); SAQ (35%)

Week 13: Report (10%); Project (50%)

Reducing assessments & enabling feedback

Dynamic Control of Fan and Hinged Plate System System Design and Modelling INTR8033_28672

Dept. of Electrical & Electronic Engineering
Munster Technological University
Cork, Ireland

Draft
Section 1

Draft
Section 2

Draft
Section 3

Actionable Feedback from

Examples

Tutor

Peers

Abstract— This report outlines the design and modelling of a fan and plate control system, focusing on the derivation and validation of transfer functions. The system was set up and interfaced, followed by the collection and analysis of open-loop and closed-loop data to model the system's behaviour. Initial transfer functions were estimated graphically and subsequently refined using the MATLAB System Identification Toolbox. Filtering techniques were briefly explored to reduce noise in the angle signal, enhancing data quality for future control system development. The resulting model demonstrated strong alignment with the rig's response, providing a solid foundation for the design of closed-loop controllers in Semester 2.

Keywords—MATLAB; Simulink; Control Systems; Transfer Functions; PWM; Feedback Control; System Modelling

I. INTRODUCTION

Control systems are an integral part of modern society, providing the foundation for precise and efficient process management across various industries. They ensure systems operate safely, effectively, and with optimal performance. A critical aspect of developing these systems is modelling, which involves creating virtual representations of real-world processes. This approach allows engineers to predict behaviour, test scenarios, and refine performance before implementation. By integrating accurate models with control systems, industries can create reliable and high-performing solutions that meet even the most demanding requirements. Many of the principles and ideas explored in this report align with those detailed in [1].

This report focuses on designing a control system for a rig consisting of a fan and a hinged plate. The objective is to control the fan's speed to adjust the angle of the hinged plate. Key tasks include assembling the rig, interfacing it with a computer, and developing a model in MATLAB to control the system. This model will provide the foundation for further developments, including more advanced control strategies in semester 2.

II. SYSTEM DESIGN

The system consists of a rig that supports a horizontally hinged plate positioned in front of a controllable fan. The fan, a Sanyo Deski 9GA Series model, is powered by an external supply and rated at 12 VDC and 220 mA. It is placed so that its airflow pushes against the plate. As the fan's speed changes, the

force on the plate varies, causing its angle to shift. The primary objective of this system is to maintain the plate's angle at a desired setpoint by adjusting the fan's speed through a PWM signal.

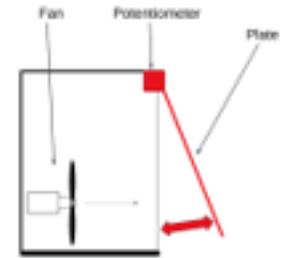


Fig. 1. Sanyo Deski 9GA Series Fan

To regulate the fan's speed, a Pulse Width Modulated (PWM) signal is employed. A PWM signal is a digital output that alternates rapidly between on and off states. By varying how long it remains on during each cycle (a measure known as the duty cycle), the fan's speed can be adjusted. Although the fan continually receives a steady 12 V DC supply, this rapid switching makes the digital signal function similarly to an analog control, effectively changing the average voltage the fan experiences and thus influencing its speed.

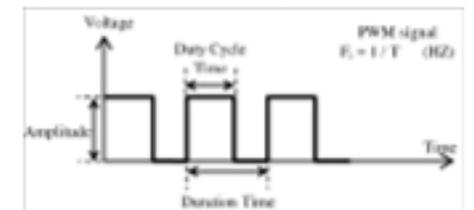


Fig. 2. PWM signal example [2]

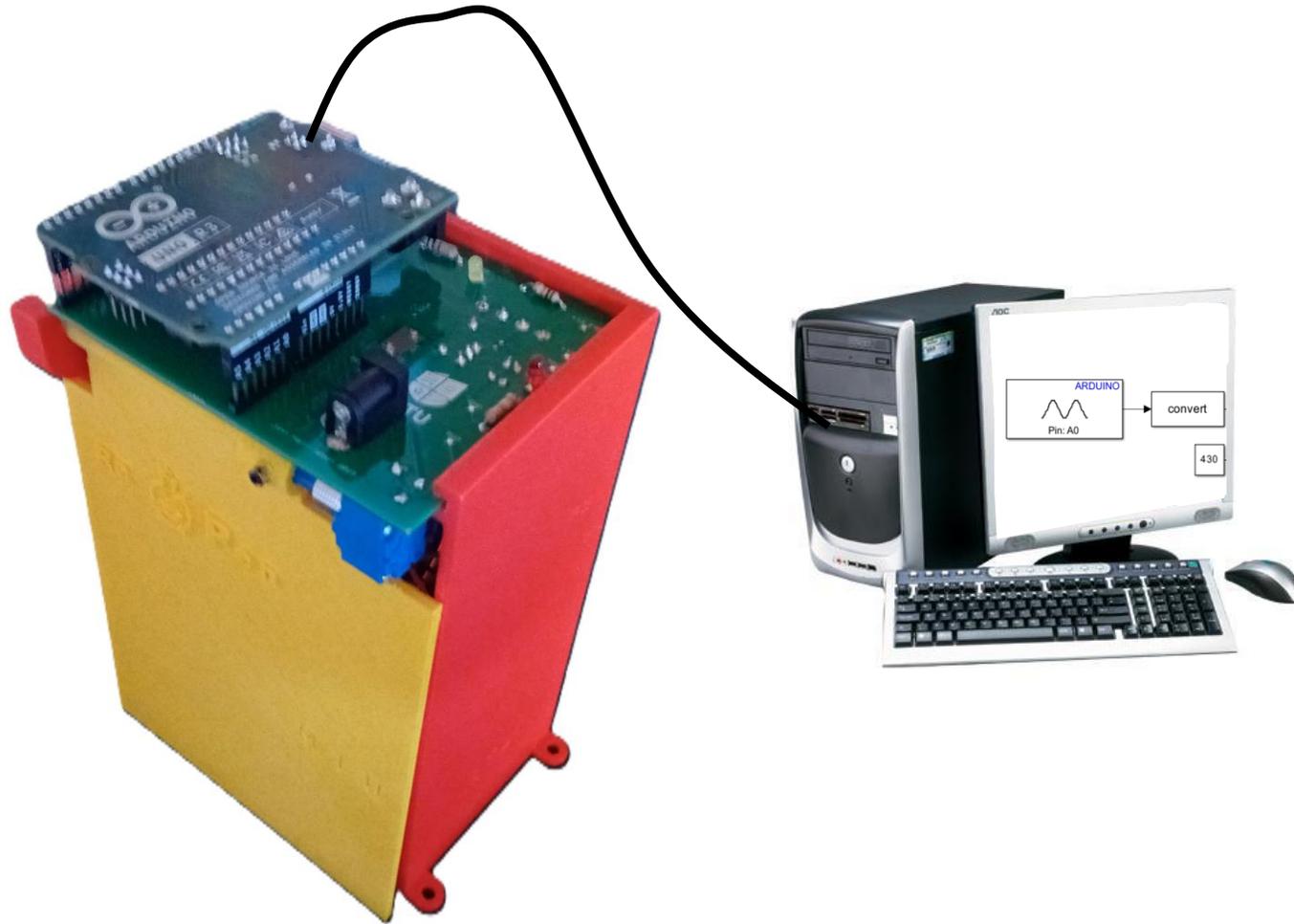
Exploring Opportunity

Dynamic Control of Fan and Hinged Plate System

System Design and Modelling INTR8033_28672

Ian Hanley

Dept. of Electrical & Electronic Engineering
Munster Technological University
Cork, Ireland
i.hanley@mycit.ie



Abstract— This report outlines the design and modelling of a fan and plate control system, focusing on the derivation and validation of transfer functions. The system was set up and interfaced, followed by the collection and analysis of open-loop and closed-loop data to model the system's behaviour. Initial transfer functions were estimated graphically and subsequently refined using the MATLAB System Identification Toolbox. Filtering techniques were briefly explored to reduce noise in the angle signal, enhancing data quality for future control system development. The resulting model demonstrated strong alignment with the rig's response, providing a solid foundation for the design of closed-loop controllers in Semester 2.

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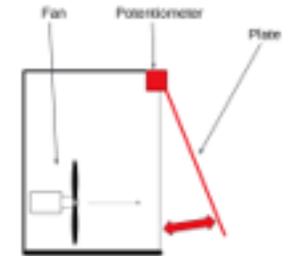


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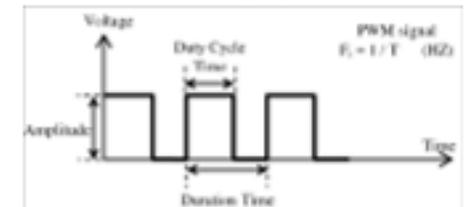


Fig. 2. PWM signal example [2]

Example AI Prompt



I am a fourth-year engineering student.

For my System Design and Modelling module I need to interface a custom built fan-and-plate rig to MATLAB, acquire data and develop a model.

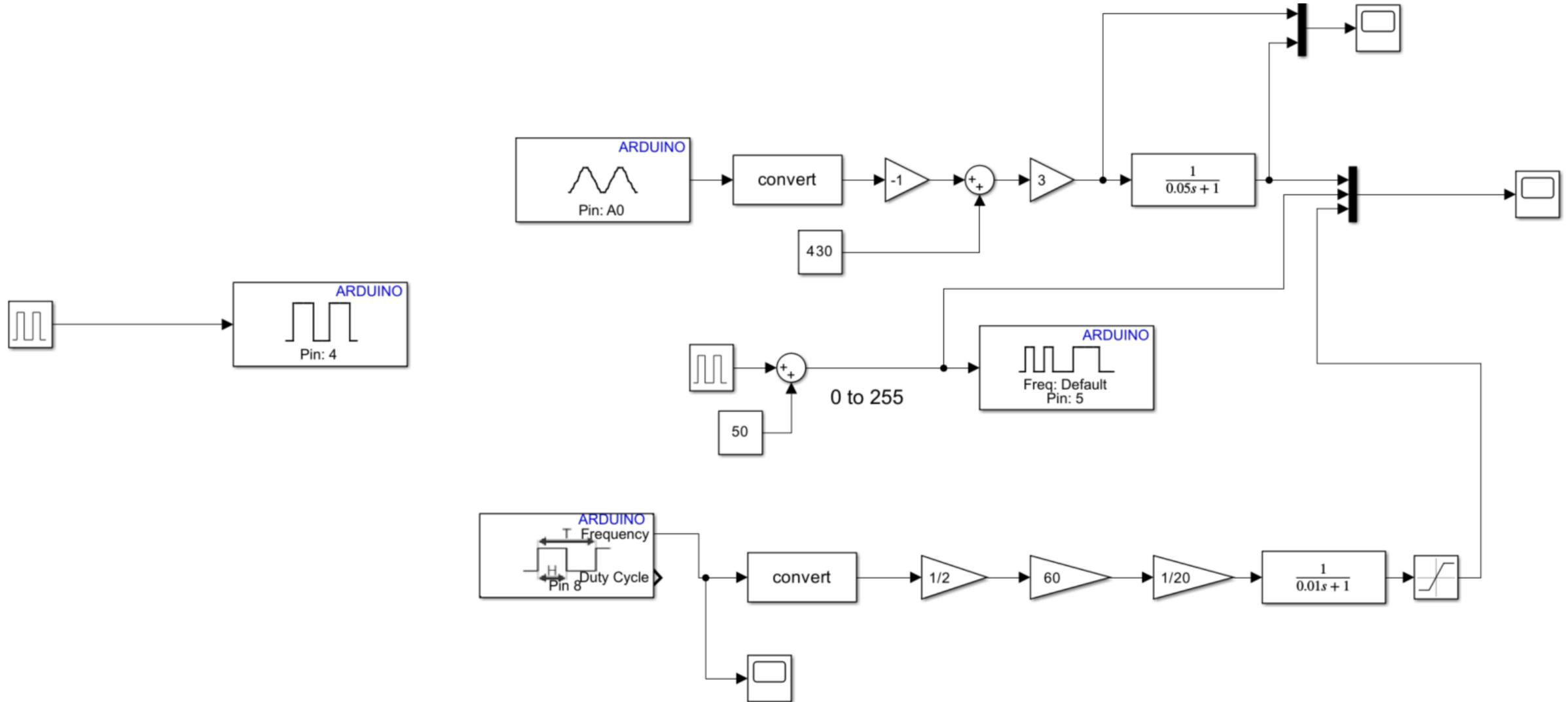
I have created the attached interfacing model using Simulink.

I need to explain this for my first report.

I would like you to act as an engineer with experience in control, modelling and interfacing.

Can you please explain what the components in this diagram are doing and why they are there.

Attached interfacing model



Response from ChatGPT

🧩 2. Analog Input (Pin A0) → Convert → Scaling and Offset → First-Order Filter

- **Block:** Arduino analog input block (Pin A0)
- **Purpose:** Reads an analog voltage signal — most likely from a position sensor such as a potentiometer or inclinometer measuring the plate angle.
- **Convert & Scaling:**
 - The raw signal is converted into engineering units (e.g. degrees).
 - You have a **gain of -1** followed by an **addition of 430**, then a **gain of 3**.
 - **Negative gain:** Inverts the signal so that increasing plate angle gives increasing positive output.
 - **Offset (430):** Calibrates the zero point (e.g. sets 0° when the plate is level).
 - **Scaling ($\times 3$):** Converts voltage or ADC counts to real-world units like degrees.
- **First-order filter ($1 / (0.05s + 1)$):**
 - Acts as a **low-pass filter** to remove measurement noise from the sensor signal.
 - The 0.05 s time constant gives moderate smoothing without too much delay.
 - This makes your model identification cleaner and control more stable.

High-Impact, Authentic Pedagogical Practices

Authentic Assessment



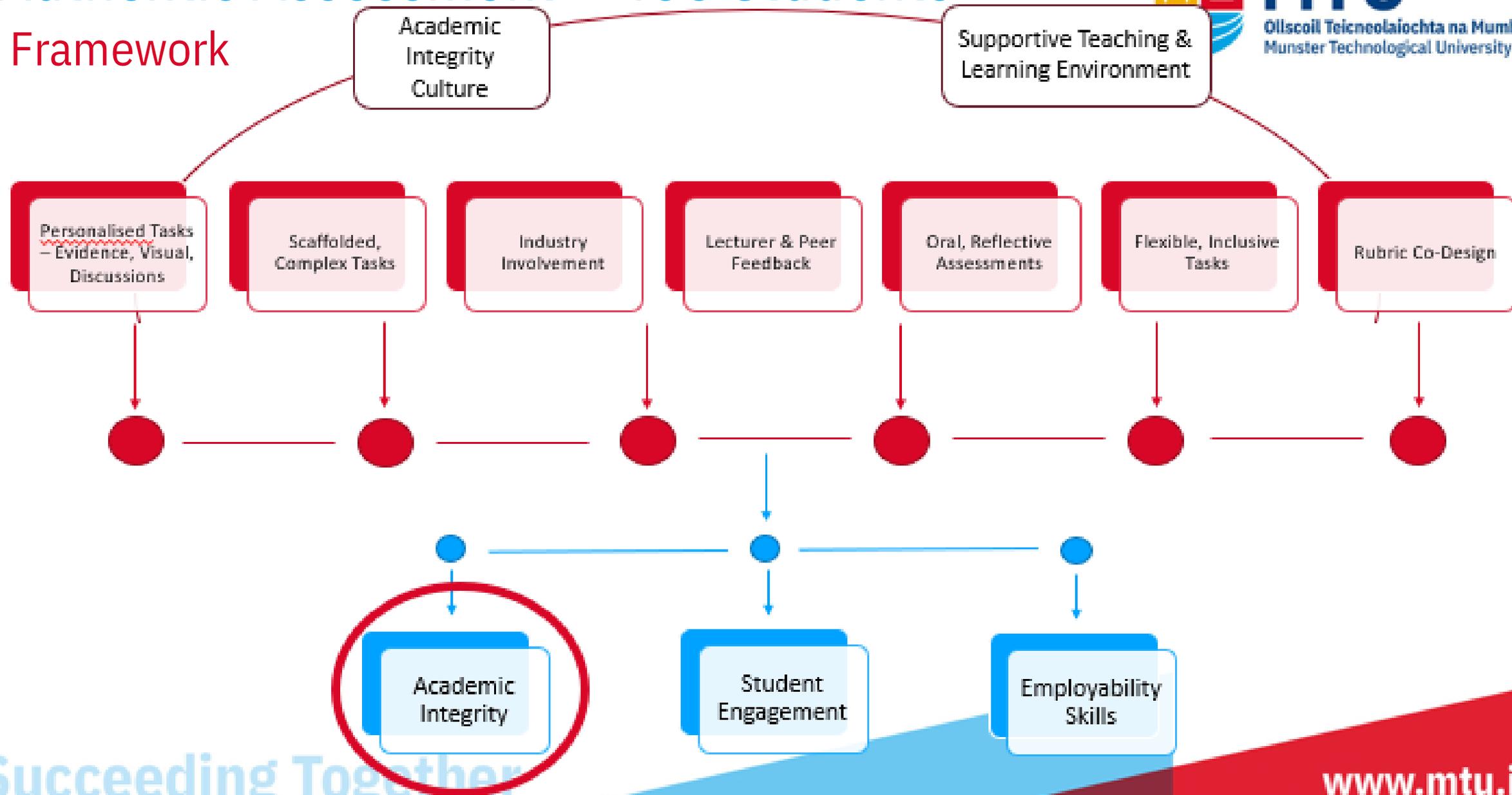
Definition

Authentic assessment actively engages students by creating immersive, real-world experiences that enhance deep learning, self-reflection, and self-evaluation, empowering students to become autonomous learners and active participants in the assessment process (Jopp, 2020).

Examples – Live Cases, Site Visits, Industry Placement, Project-Based Assessments, Portfolio Development, Simulations, etc.

Authentic Assessment – 400 Students

Framework



AA Weekly Implementation



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Ollscoil Teicneolaíochta na Mumhan
Munster Technological University

Week 1

- Introduction to Industry Partners and Real-World Issue

Week 2

- Workshop - Rubric Co-Design

Week 3

- Rubric Finalised

Week 4

- Students Reflect

Week 5

- Students Gather Evidence, Create Mind Maps/Storyboards

Week 6

- Workshop - Students Critique Past Exemplars

AA Weekly Implementation Cont'd



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Week 7

- Students Submit Draft Assignments

Week 8

- Students Provide and Receive Feedback on Drafts

Week 9

- Lecturer/Student Meetings to Provide Feed-Forward

**Week
10**

- Students Finalise Assignments

**Week
11**

- Student Presentations

**Week
12**

- Student Reflection on Authentic Assessment Experience



Digital Scrapbook

- Student Journey
- Canva / Word / PowerPoint
- Concise Written Analysis
- Evidence Gathering, Mind Maps etc.
- Level 3/4



Risk of Entries

- The Marina Market offers a personalised experience due to the face-to-face interaction with vendor staff and also through the production of food, creating a connection and building brand loyalty between the customer and Marina Market.
- This is a reputation difficult to replicate.
- Many people travel from far and wide to purchase from the vendors on-site.

*From a survey we conducted



Exemplar Workshop Steps

STEP	DESCRIPTION
 Exemplars	Select and share a poor, average, and strong exemplar
 Group analysis	Students analyse and rank the exemplars collaboratively
 Class discussion	Discuss what makes strong work effective as a class
 Reflection	Students discusses or post 1–2 takeaways
 Improved understanding	Lecturer connects insights to rubric and assessment

Assessment Co-Design Steps

STEP	DESCRIPTION
 Draft brief	Lecturer shares last year's assessment brief
 Group talk	Students discuss unclear or improvable aspects
 Lecturer rounds	Lecturer circulates to clarify and gather feedback
 Student Changes	Students post two improvement suggestions with reasons
 Revised brief	Final brief shared with explanation of adopted changes

Research Insights – Academic Integrity



Student Quotes: Assessment Type, Understanding, Self-Regulation

‘Being allowed to freestyle with the scrapbook format, and ideally **make it look as we wanted it to**, was inspiring’

‘I was looking forward to presenting our idea as I was really **proud of it**’

‘The exemplar workshops helped me to **understand** what **standard of work** was needed to **achieve a good mark**’

‘As part of the rubric co-design, I had the opportunity to examine the brief breakdown in greater detail and gain a **clearer understanding** of how the **marks were allocated**’

‘All students felt their **opinions** and thoughts were **valued** - became a **driving factor in wanting to do well in this module**’

‘I felt **involved** and **in control of my own marks** and felt **heard**’

‘It **gave me responsibility** around my project and its direction’

Benefits to Staff

Authentic Assessment & Design

Improves academic integrity

Boosts student engagement

Develops graduate attributes

Clarifies standards & fairness

Enhances feedback and reflection

Engaging and varied marking

Benefits to Students

Succeeding Together



Industry Involvement



Involve Students in Initial Decision



Set Expectations



Develop Relationships



Extended Campus



MTU

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Munster Technological University

Thank You!

For more information, please email: TLU_Team@mtu.ie

www.mtu.ie