



University  
of Glasgow

# Using Digital Badges in Monitoring and Students Engagement

**Eur. Ing. Dr. João Ponciano**

*CPE, LLB (Hons), M.Eng (Hons), M.A. (Distinction), PhD*

*MIET, C.Eng, MBCS, CITP, SFHEA, MIEEE, FInstLM*

Vice-Dean Glasgow College UESTC



- The Context: Engineering and the Law
- The Problem: Engaging and monitoring 500+ Students
- The Research: Digital Badges
- The Design of a Solution: Digital Badges in Moodle
- The Results: Student Feedback
- Other Challenges and the future of this work

The Learning Outcomes : On Completion of this course students will be able to

## Ethics

describe ethical principles and analyse case studies from real engineers' experiences, that reflect the relevance of ethics in engineering practice.

## Product Development and Entrepreneurship

appraise and apply product development lifecycle techniques to the specification of innovative sustainable engineering products and/or services.

## Business Law

understand and apply legal principles to resolve identified issues from contractual agreements and wrong doing resulting from the relationship between rights and responsibilities, presenting arguable conclusions.

## Branding & Marketing

recognise and apply strategies for business to business and business to consumer marketing market development using complex market channels.



## Ethics

Ethical Principles / Business Ethics / Engineering Ethics / Corporate Social Responsibility.

## Product Development and Entrepreneurship

Requirements Engineering / Product Lifecycle / Design for Sustainability / Innovations & Inventions/ 5<sup>th</sup> Industrial Revolution.

## Business Law

Contract / Tort (Product Liability) / Employment / Regulations/ Standards / Intellectual Property / Health and Safety.

## Branding & Marketing

B2B / B2C / Marketing Strategies / Marketing Channels / Market Share.

- Glasgow College UESTC Students
- Year 3 of a 4 Year Scottish BEng (Hons) Degree in Electrical and Electronic Engineering with Communications Engineering / Information Engineering
- Dual Award UESTC / University of Glasgow
- IET Accredited qualification under AHEP v3.0

- 15 credits of study / 32 Hours of Tutor contact / Rt-Online Delivery via Zoom
- 2 Blocks of 45min per week of tutor contact.
- Student support via email and Moodle discussion groups

- 25% Coursework Assessment / 75 % End of Course Examination
- Each LO Delivered by Subject Specialist &/or Generalist Engineer.
- 504 Student Population
- 14 Teaching Assistants (Std/TA = 36)



- Identify learning progress with 500+ students.
- Motivate learners to engage in positive learning behaviours.
- Time management.
- Learning pathways and perspective of achievement of learning outcomes.
- Learning in a focused and byte size manner.
- Reward learning and achievement.

- Provide a clearer view of student learning in addition to traditional grades.
- Proving students have mastered a certain topic and are now ready for a more advanced topic.
- Representation of Achievement.

- Students may be exempt from other skill tests or requirements.
- Badges unlock privileges through a prerequisite.
- Badges give students credibility with employers.

- Portable learner records.
- Stackable learning Pathways.
- Skills aligned.
- World's Growing Digital Credential Network (over 25000 Organisations / 160 countries)

- Content dependencies ensure students complete their learning journey as pedagogically planned.



## Formative Assessment



### Lecture 12 - Formative Assessment

**Restricted** Not available unless:

- The activity [Lesson 12 - Health and Safety](#) is marked complete
- The activity [Lecture 12 Recording](#) is marked complete
- The activity [Kinds of Accident](#) is marked complete
- The activity [Electrical Safety and You](#) is marked complete

- Success in Formative Assessment unlocks content and creates expectation and surprise.

## ✚ Lecture 12 - Health and Safety

### ✚ Lecture Learning Material

#### ✚ Lesson 12 - Health and Safety

**Restricted** Not available unless: The activity [Lecture 11 - Formative Assessment](#) is complete and passed

#### ✚ Lecture 12 Recording

**Restricted** Not available unless: The activity [Lecture 11 - Formative Assessment](#) is complete and passed

Access Passcode: JT\*@0zyc

- Weekly checklist guide and remind learner to engage with the study of engineering and the law course.

## Week 1 Checklist

[View checklist](#)[View progress](#)[Edit checklist](#)

All items:



- View Lesson 1 videos ahead of lesson *21 September 2020*
- Review Lecture 1 Material *1 October 2020*
- Read supplementary Lecture Materials *1 October 2020*
- Complete Ethics Exercises *1 October 2020*
- Complete Formative Assessment *1 October 2020*

- Timing is used to ensure continuous learning on a weekly basis and building knowledge foundations to advance through the learning outcomes.

## Week 1 Checklist

[View checklist](#)[View progress](#)[Edit checklist](#)

All items:

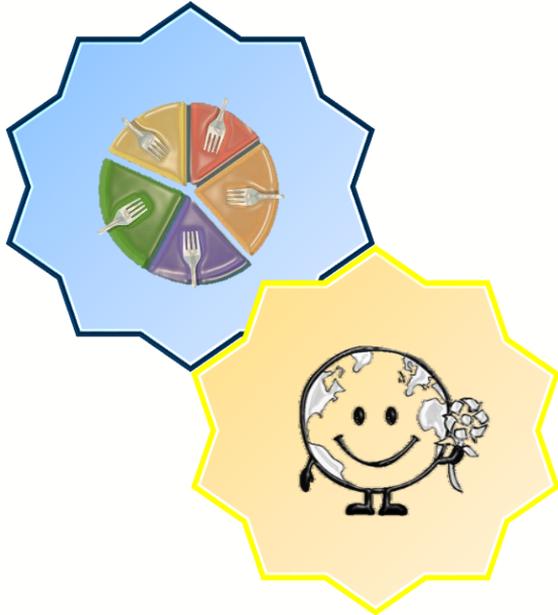
0%

- View Lesson 1 videos ahead of lesson *21 September 2020*
- Review Lecture 1 Material *1 October 2020*
- Read supplementary Lecture Materials *1 October 2020*
- Complete Ethics Exercises *1 October 2020*
- Complete Formative Assessment *1 October 2020*

Even driven criteria for the award of the badge.

- Where students are spending the most time on the course .
- What links they are clicking on and what interests them the most.
- How long they are staying on each lesson and where they lose interest and leave.

Weekly Learning  
Objectives



End of ILO Section

End of Course



- Badges linked with the learning objectives of a weekly lesson.

	<p><b>Lecture 8 Badge</b></p>	<p><b>This badge is for those who complete lecture 8 formative assessment on time.</b></p>	<p><b>Users are awarded this badge when they complete the following requirement:</b></p> <ul style="list-style-type: none"><li>• <b>The following activity has to be completed:</b><ul style="list-style-type: none"><li>◦ <b>"Quiz - Lecture 8 - Formative Assessment" by 21 November 2020</b></li></ul></li></ul>
---	-------------------------------	--	---

- A Learning Outcomes associated badge links with a competency .

	<p>Ethics Badge</p>	<p>This badge is for those who complete lecture 1-4 formative assessment on time.</p>	<p>Users are awarded this badge when they complete the following requirement:</p> <ul style="list-style-type: none"><li>• <b>ALL</b> of the following activities are completed:<ul style="list-style-type: none"><li>○ "Quiz - Lecture 1 - Formative Assessment" by <i>2 October 2020</i></li><li>○ "Quiz - Lecture 2 - Formative Assessment" by <i>16 October 2020</i></li><li>○ "Quiz - Lecture 3 - Formative Assessment" by <i>23 October 2020</i></li><li>○ "Quiz - Lecture 4 - Formative Assessment" by <i>23 October 2020</i></li></ul></li></ul>
---	---------------------	---	---

- The external backpack that students can connect to from your institution website.

<https://eu.badgr.com/backpack/badges>

Manage backpacks

[Add a new backpack](#)

### List of backpacks

Backpack URL	Active external backpack	Actions
<a href="https://badgr.io">https://badgr.io</a>	Yes	 

- Students can connect to an external backpack and share their badges from your course. (Must be enabled on your institution Moodle settings)
- Students may also choose to display any public badge collections from their external backpack on their profile page.

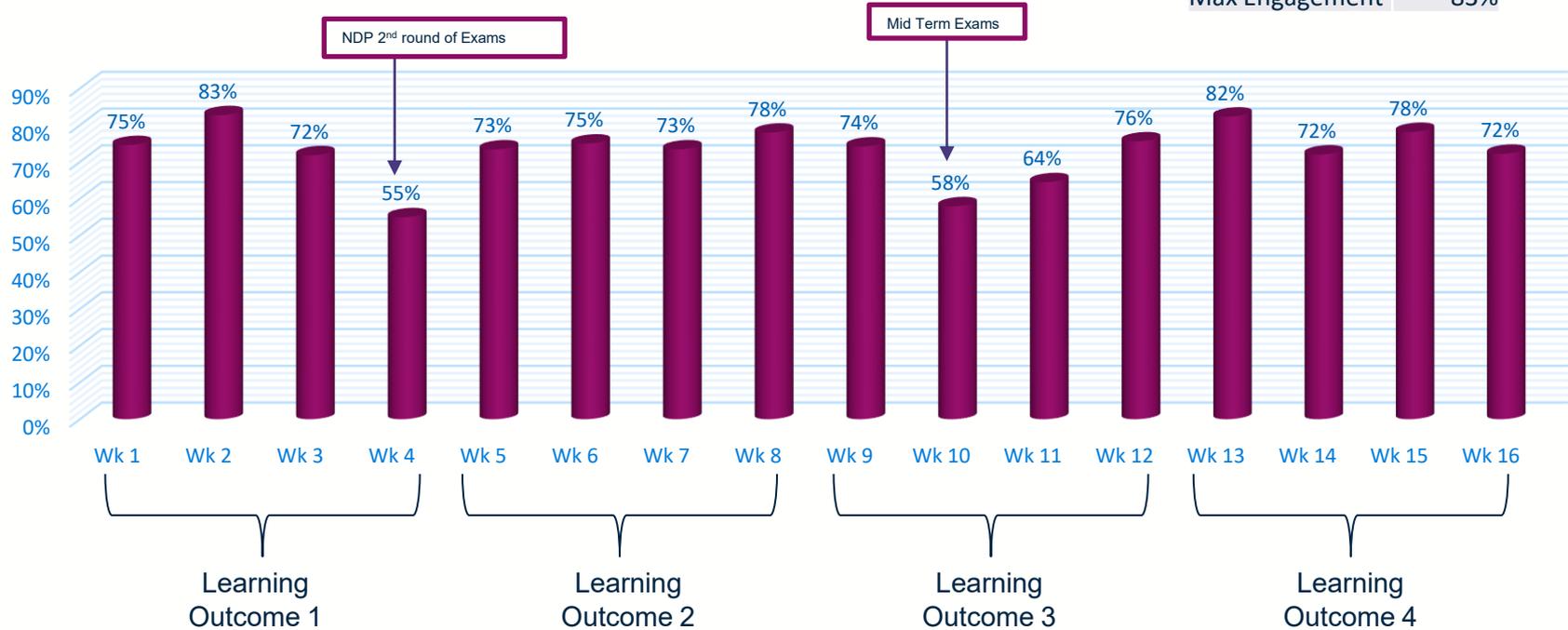


The screenshot shows the Badgr EU user interface. At the top, there is a navigation bar with the Badgr EU logo, a dropdown arrow, and buttons for 'Backpack', 'Pathways', and 'Issuers'. On the right side of the navigation bar are a notification bell icon and a user profile icon with a dropdown arrow. Below the navigation bar, the main content area displays 'Backpack' in large bold text, followed by 'NO BADGES' in smaller text. To the right of this text is a blue button labeled 'Add Badge'. At the bottom of the screenshot, there are two tabs: 'Badges' and 'Collections', with 'Badges' being the active tab.

# Weekly Students Engagement %

Weekly Students Engagement (%)

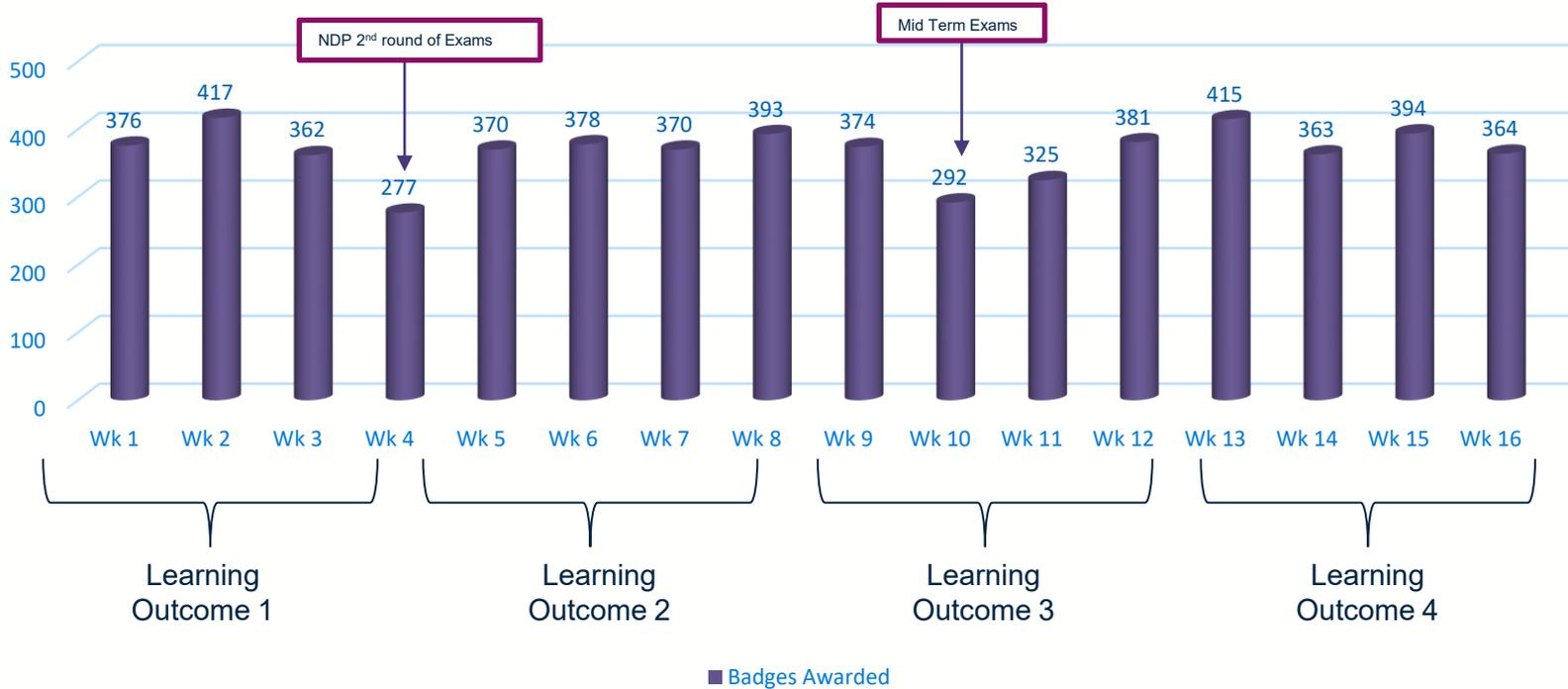
Average	73%
Min Engagement	55%
Max Engagement	83%



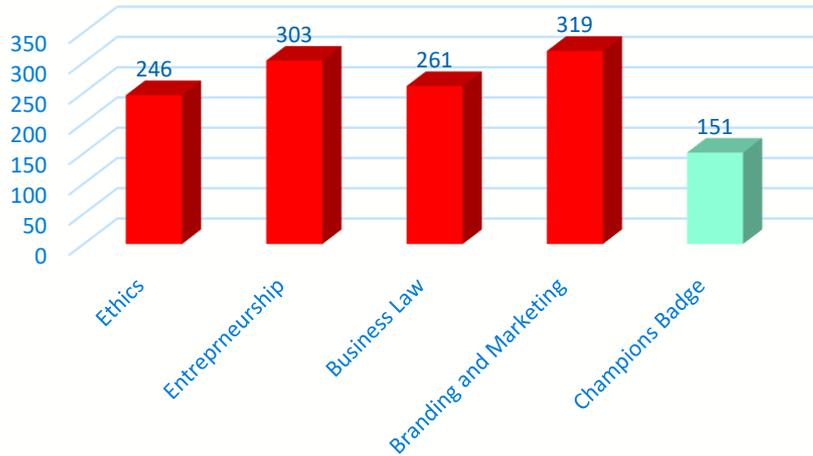


# Student Numbers Engagement

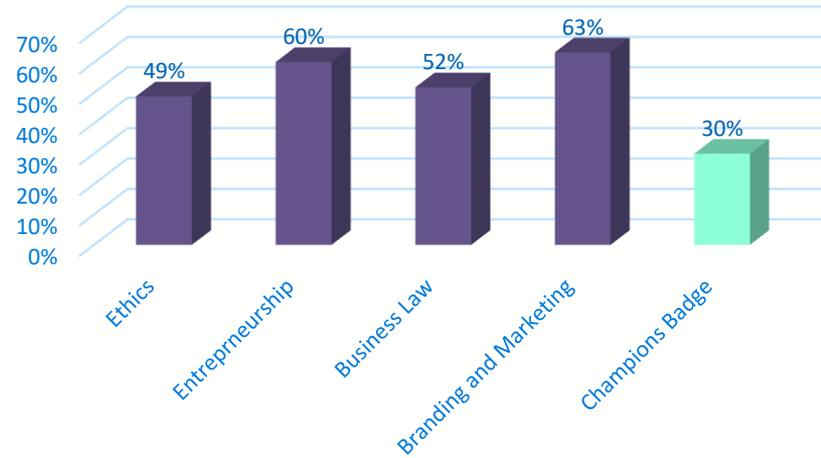
Number of Badges awarded every week out of a total student population of 504



## Badges Awarded per Learning Outcome



## % of Students Obtaining LO Badge





- ***“Enjoyable and easy to follow”***
- ***“I can share my badges on the social networks”***
- ***“I learnt how to be UpToDate with my studies”***
- ***“I enjoyed the collection of badges and I have them all”***
- ***“ There is a lot ot take in in this course but the learner lask list allowed me to know exactly what I had to do every week”***

- Designing Customised lesson Plans (Supported in Moodle)
- Linkages to Engineering Competencies.
- Currency and acceptance.



University  
of Glasgow

# Thank you for Listening

Eur. Ing. Dr. João Ponciano

Joao.Ponciano@glasgow.ac.uk



#UofGWorldChangers



@UofGlasgow