

Programme Outcomes

The dawning of a new era for higher education

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Outline

- **Dual** perspectives on developing a programme
outcomes culture
- Four key **Language:**
Outcomes, objectives,
attributes, expectations...
- **Advice...?**

Key Questions

1. What are the programme outcomes that we want to foster in our students?
2. Where in the curriculum are students encouraged to develop the programme outcomes?
3. How do we know whether our programmes are successful?
4. How do we embed continuous improvement?

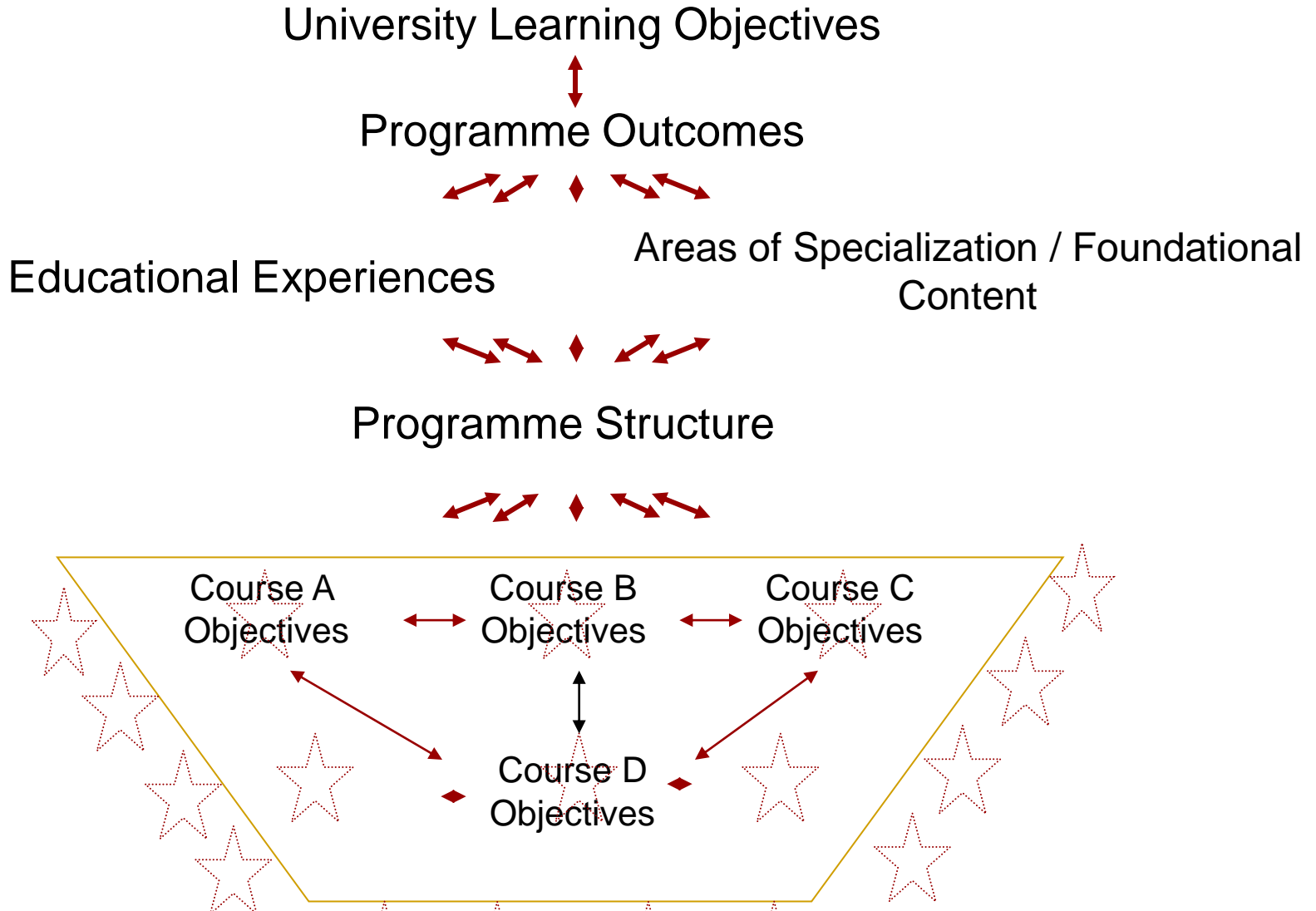


Key Questions

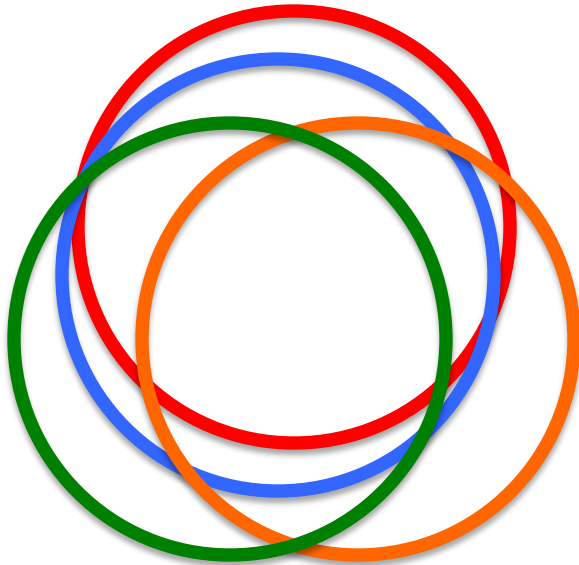
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'Ideal' Curriculum Development Process



Engineering Attributes

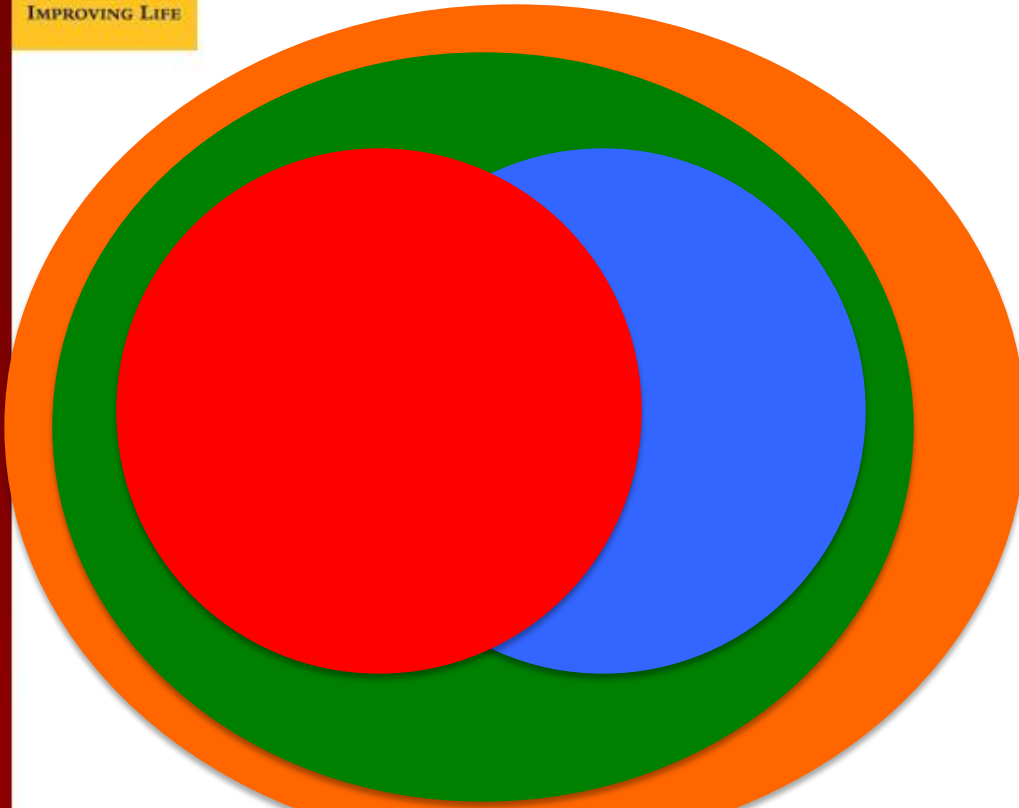


- Canada
- US
- Europe
- International

Value

- Exchanges & mobility
- Insight & perspective

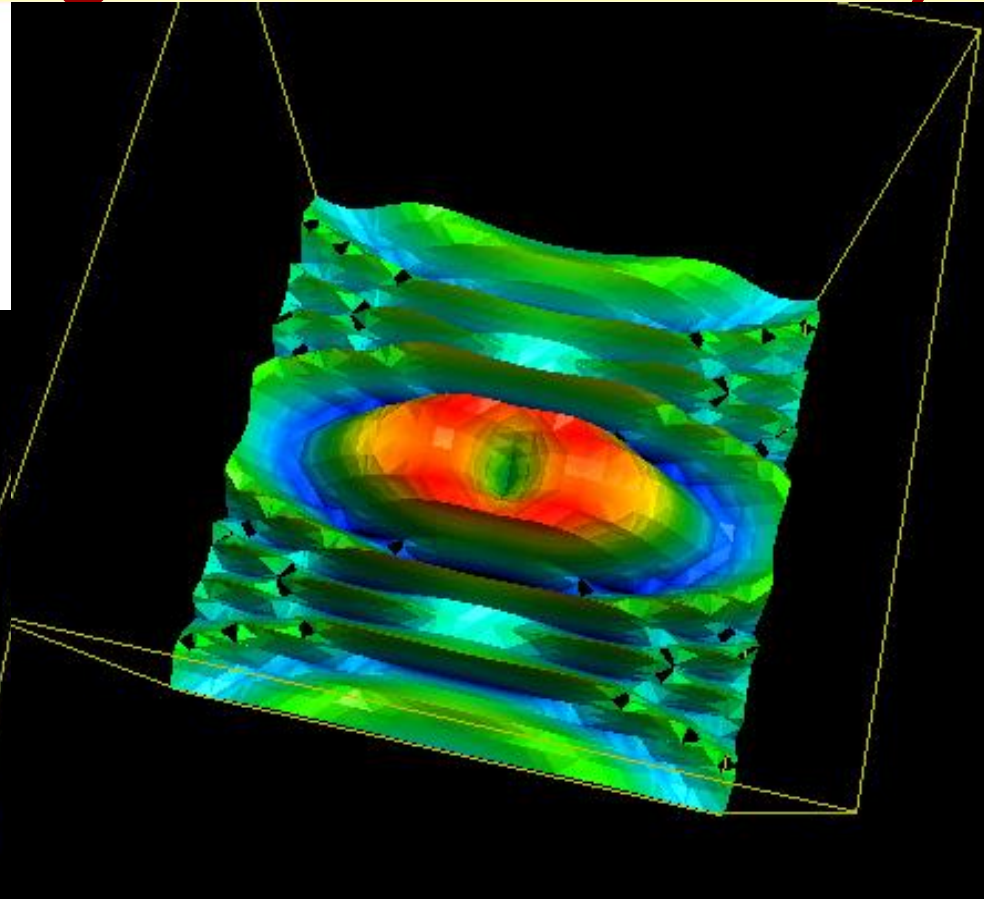
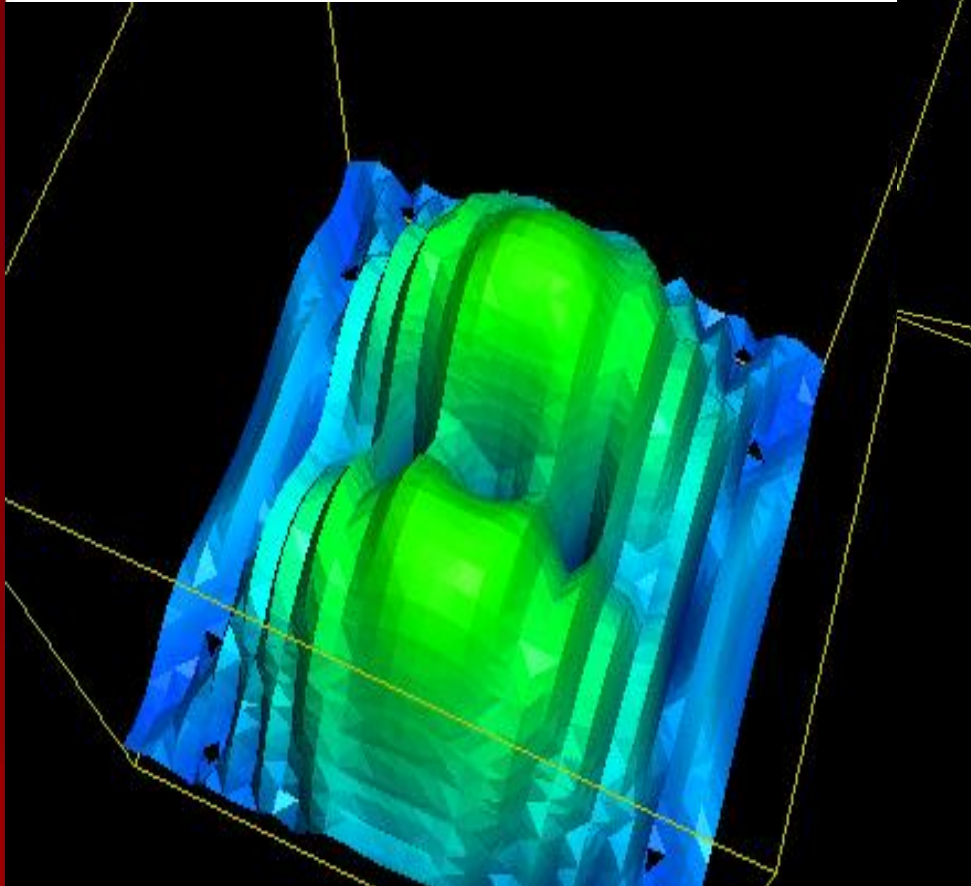
Engineering Expectations



- Accreditation
- + UUDLEs
- + Guelph
- + STUDENT!

Knowl	Critical Thinking	Awareness of Limits of Knowledge
Design	Innovation	Sustainability
Individual & Teamwork	Professionalism	Ethics & Equity
Environ	Things like:	Language, Business, International Development

Autonomy (Programme & Student)



Program Outcomes Refinement

High Level Defining Statements

Outcome Statements

Program Outcomes ...

Problem Analysis

Elements...

Problem Identification

Analysis / Execution

Assess/Reflect/Discuss

Conclusion /
Recommendations

Attitude

Disciplin
Meaning

- Measurable
- In Context
- Consistently interpreted

sta

Ide

Disciplin

Meaning

• Measurable

• In Context

• Consistently interpreted

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University of Guelph Demo

Main

Courses

Knowledge, Skills and Values

Instructional Methods

Assessments

Survey

Reports

Course-by-course info:

- Outcomes

- Assessment

- Learning methods

Survey Questions :

- Which instructional methods

- Which assessment approaches

- For each listed Knowledge, Skills and Values

intentionally foster in this course? At what level of sophistication?

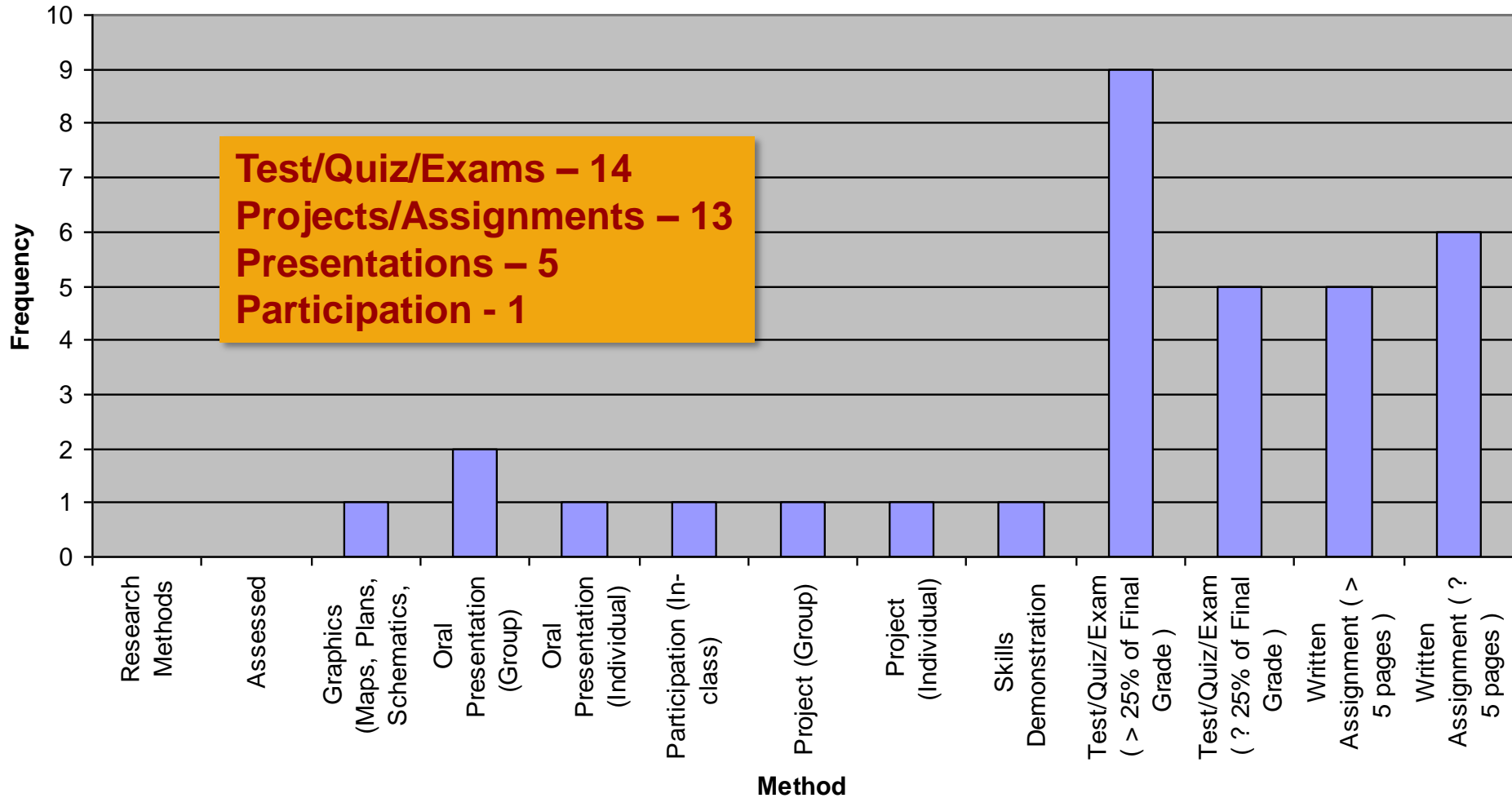
- For those indicated, please specify how /whether each KSV is taught and/or assessed in this course?

- How are the total marks available to students distributed over the course of the semester?

- Comments?

Research Methods

Research Methods - Assessment

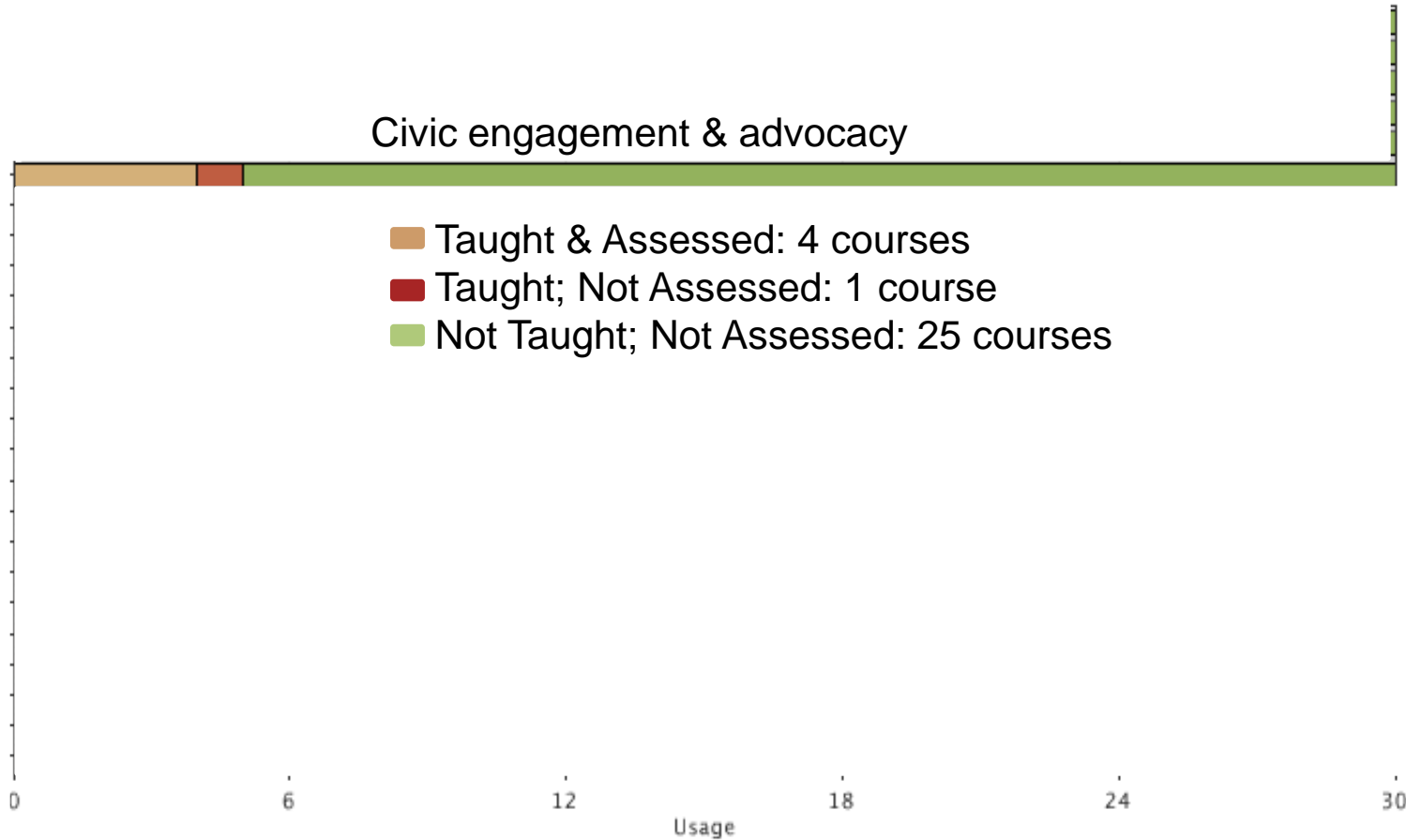


Outcome Focus

IS THE FOLLOWING DEVELOPED IN YOUR COURSE?
Filtered by: *****

Civic engagement & advocacy

Assessment Approach

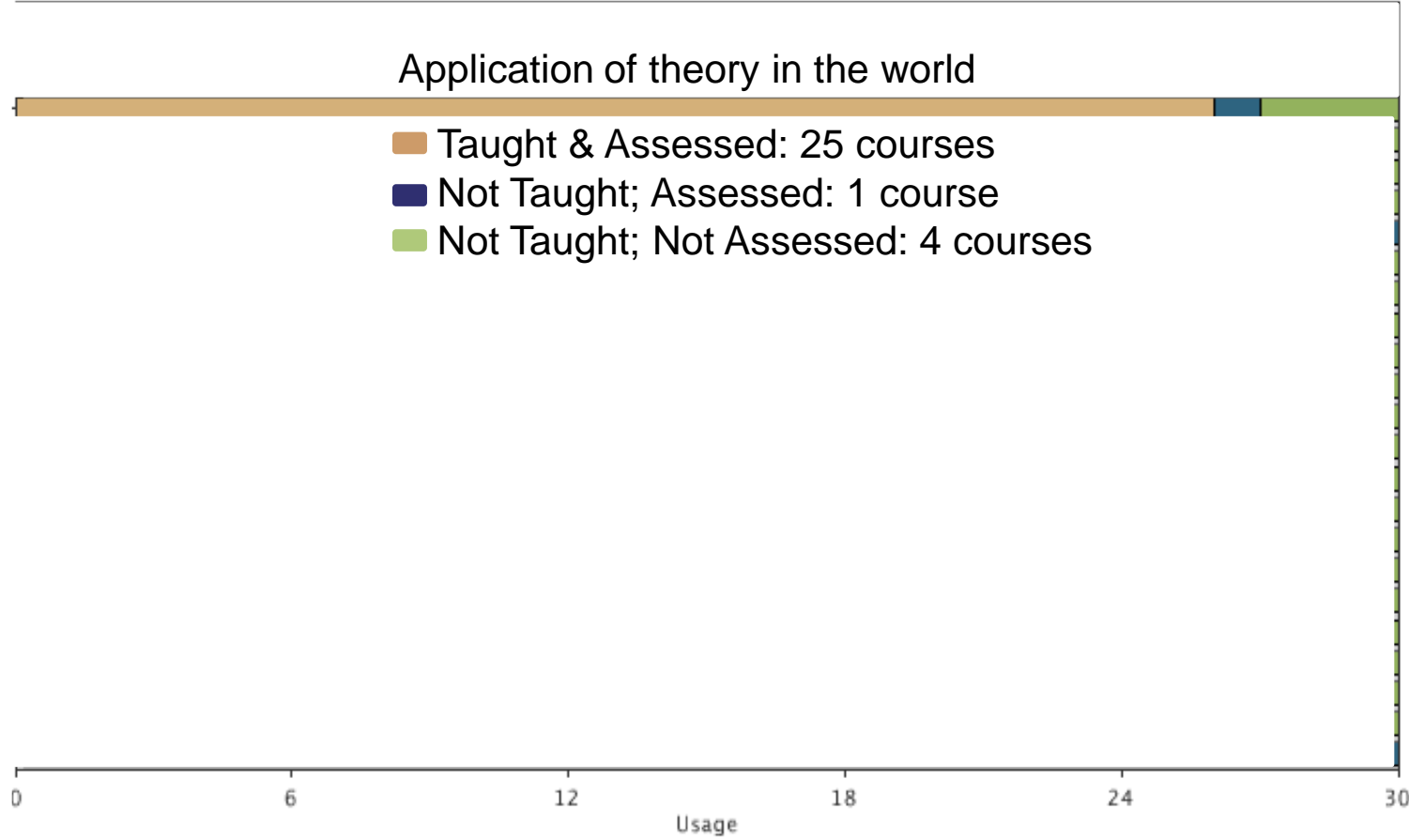


- Taught & Assessed: 4 courses
- Taught; Not Assessed: 1 course
- Not Taught; Not Assessed: 25 courses

IS THE FOLLOWING DEVELOPED IN YOUR COURSE?
Filtered by: *****

Application of theory in the world

- Taught & Assessed: 25 courses
- Not Taught; Assessed: 1 course
- Not Taught; Not Assessed: 4 courses



Assessment Approach

001121

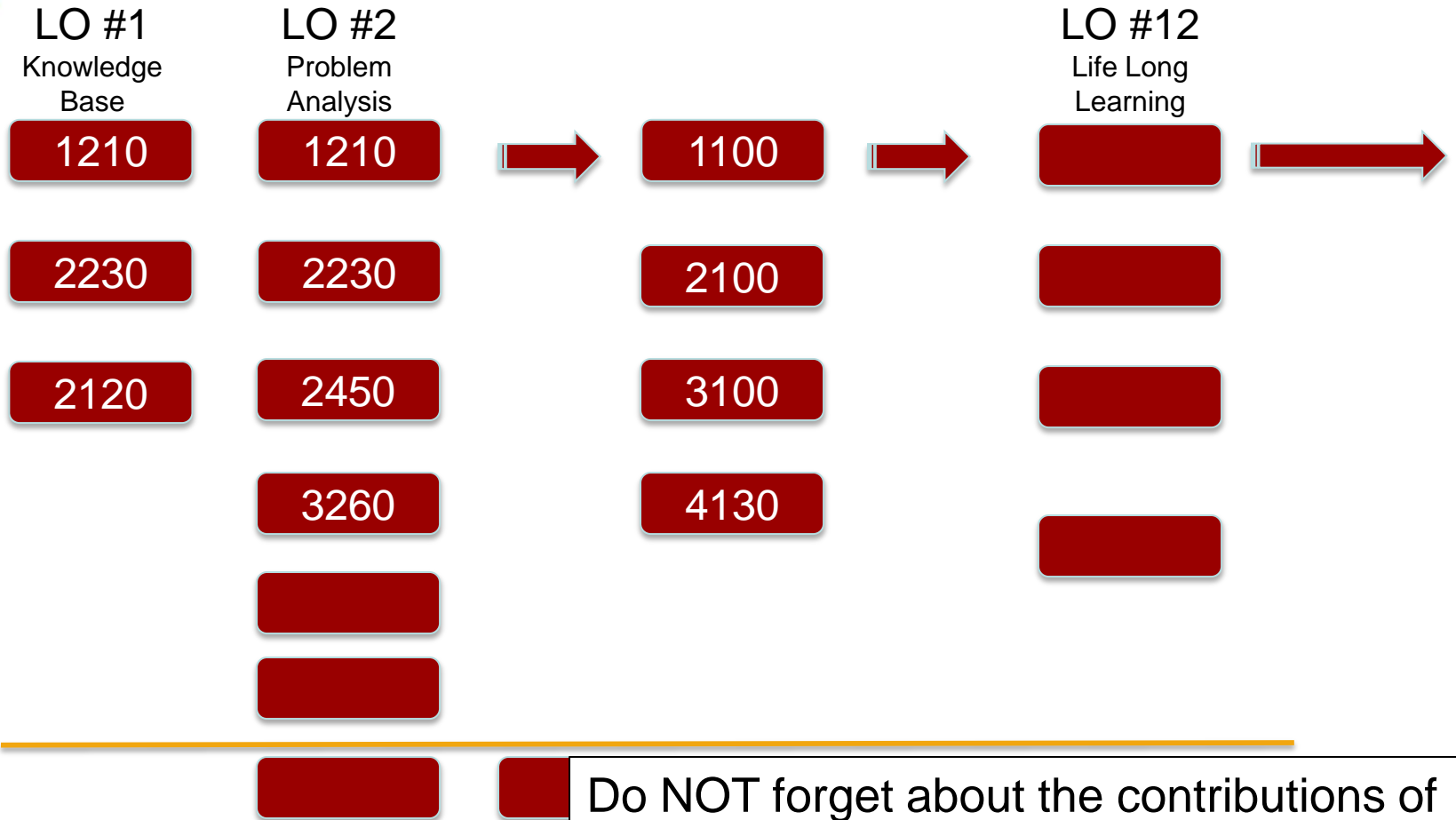
Semester Maps



Next Generation Maps

CHANGING LIVES
IMPROVING LIFE

Courses



Do NOT forget about the contributions of co-curricular and extra-curricular activities in this development.

Next Generation Maps

LO #2 Problem Analysis

Courses

1210

1500

2230

2120

2450

2560

3260

3590

3430

Developing Sequence

Reinforcing

Electives

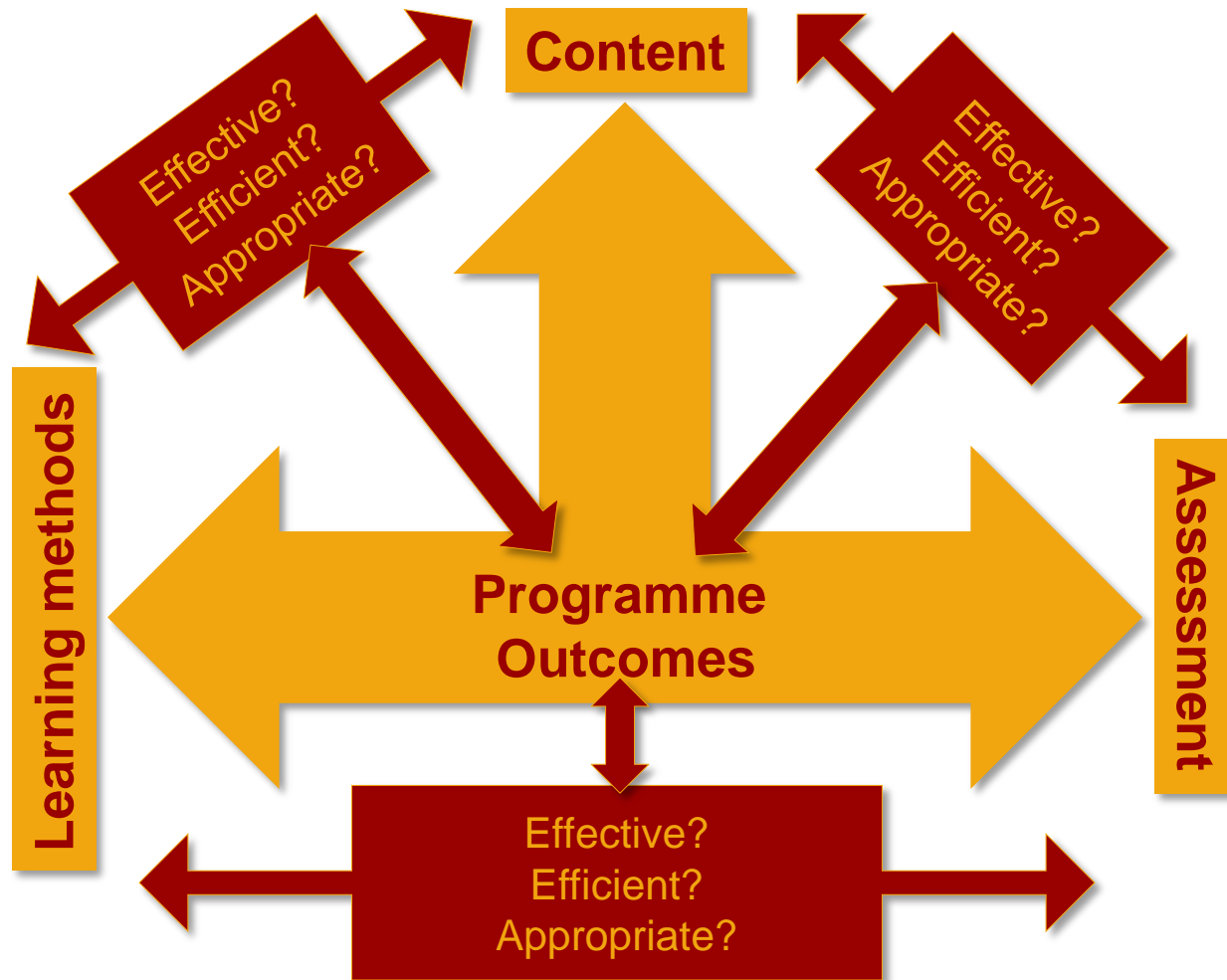


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Programme Assessment



Programme Assessment

- Student work – Tests, assignments, etc.
- 360° consultations
- Curriculum mapping
- External reviews, accreditations, etc.
- Benchmarks, research, literature, etc.
- Student reflection – (e)Portfolios, journals, etc.

Student Reflection

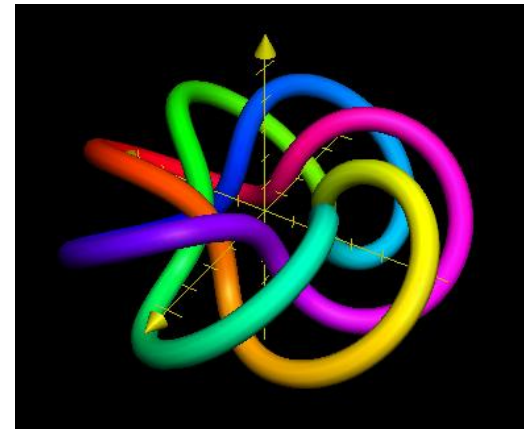
CHANGING LIVES
IMPROVING LIFE

- 40+ courses
- 100's of assignments, projects, etc
- Life experiences

TIME to ...

- Sort
- Reflect
- Self-assess against programme outcomes

To build a learning outcomes-based portfolio
To build a story about who they are



Future

Every student graduates with a learning outcomes based portfolio



Guelph Engineering Portfolio System

[VIEW PUBLIC PORTFOLIOS](#) | [VIEW PRIVATE PORTFOLIOS](#) | [CONTACT](#)

DUMMY STUDENT

- my account
- my courses
- edit portfolio
- view portfolio
- log out

ENGINEERING PORTFOLIO LINKS

- about the system
- credits

FEATURED PORTFOLIOS

Student Portfolio System

At the University of Guelph we are committed to giving our students creative new ways to showcase their work - and they have a lot to be proud of. Through the use of this online portfolio system, students are able to upload projects, labs, programs, pictures, graphs - and virtually anything else into their own personalized space on the web. This is a powerful resources not only for students, but for professors and employers as well. Take a moment to take a look around, and see one of our sample portfolios.



This system is still in the development phase and is going to be implemented to function with the 2nd year design course this coming academic year.

Through the use of this online portfolio system, students are able to upload projects, labs, programs, pictures, graphs - and virtually anything else into their own personalized space on the web. This is a powerful resources not only for students, but for professors and employers as well. Take a moment to take a look around, and see one fo our sample portfolios here.



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This is the main page. From here, you can Log in, if you are a student or professor. If you are a visitor, you may browse or search student portfolios. If you're an employer, we dont' have anything for you yet, but maybe soon.

Any Questions? Feel free to contact us!

Engineering Timeline

- Two years to establish a baseline
- 2014 accreditation deadline
- Beyond 2014 – Ongoing 4-year cycle

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Change...

People

Infrastructure

Curriculum

- **Culture Shift**
- **Hiring**
- **Recognition & Rewards**

- **Teaching Space**
- **Scheduling**
- **Tools**

- **Courses**
- **Assessment**
- **Methods**

Recommended Practices

- Data-informed
- Faculty-driven
- Student-engaged
- Stakeholder-informed
- Culture- & context-specific
- Rigorous & authentic
- Continuous improvement
of sustainable practices
- Resourced & recognized





Continuous PROGRAM IMPROVEMENT

Ongoing engagement in the improvement of curriculum happens through the ongoing collection and interpretation of data.

NAVIGATION

[Home](#)[Accreditation
Related Resources](#)[Continuous Program
Improvement Resources](#)[Our
Mandate](#)[Contact](#)[Glossary](#)

Our Mandate



The EGAD Project's mandate is to develop resources to assist Canadian universities in assessing, evaluating, and improving their engineering programs as required by the [Canadian Engineering Accreditation Board Accreditation Criteria and Procedures Report Section 3.1](#).

It is our intention is to engage engineering educators, students and the engineering community in ensuring that engineering programs graduate students are ready to meet the needs of an increasingly changing and complex society, while at the same time supporting the tenets of academic freedom and respecting the learning culture and resource parameters of individual institutions.

Keep in Sight

- Refining the blend of people, processes & resources
 - Transition requires investment
 - Keeping momentum
- Continuous improvement is at least as important as 'reporting'
- Mistakes will happen



Worth the Effort!

- Superior graduating students
- Evidence of graduating student quality
- Opportunity for individual student & programme autonomy
- Enhanced time & resource usage



Acknowledgements

- Funding
 - University of Guelph
 - NSERC Chair in Design Engineering
- Colleagues
 - Many, many...
 - Natasha Kenny, Richard Gorrie, Rich Couto, Jerry An, Dave Wilson

A Guide to Developing and Assessing Learning Outcomes at the University of Guelph – <http://www.uoguelph.ca/vpacademic/avpa/pdf/LearningOutcomes.pdf>



Images: www.freedigitalphotos.net



Discussion