UNIVERSITY of GUELPH

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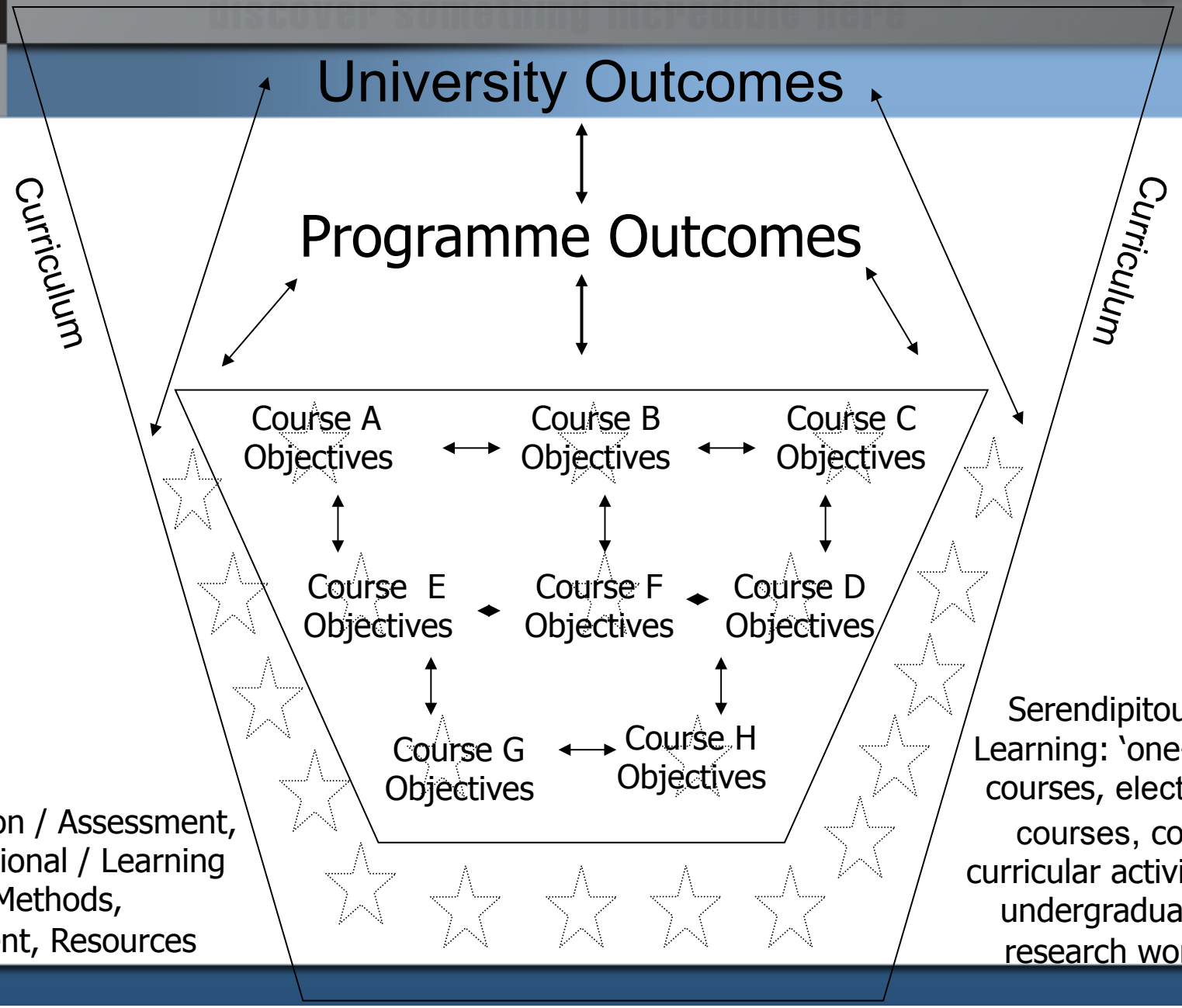
Engineering – Possible Curriculum Development Processes

Peter Wolf

Outcomes Flow



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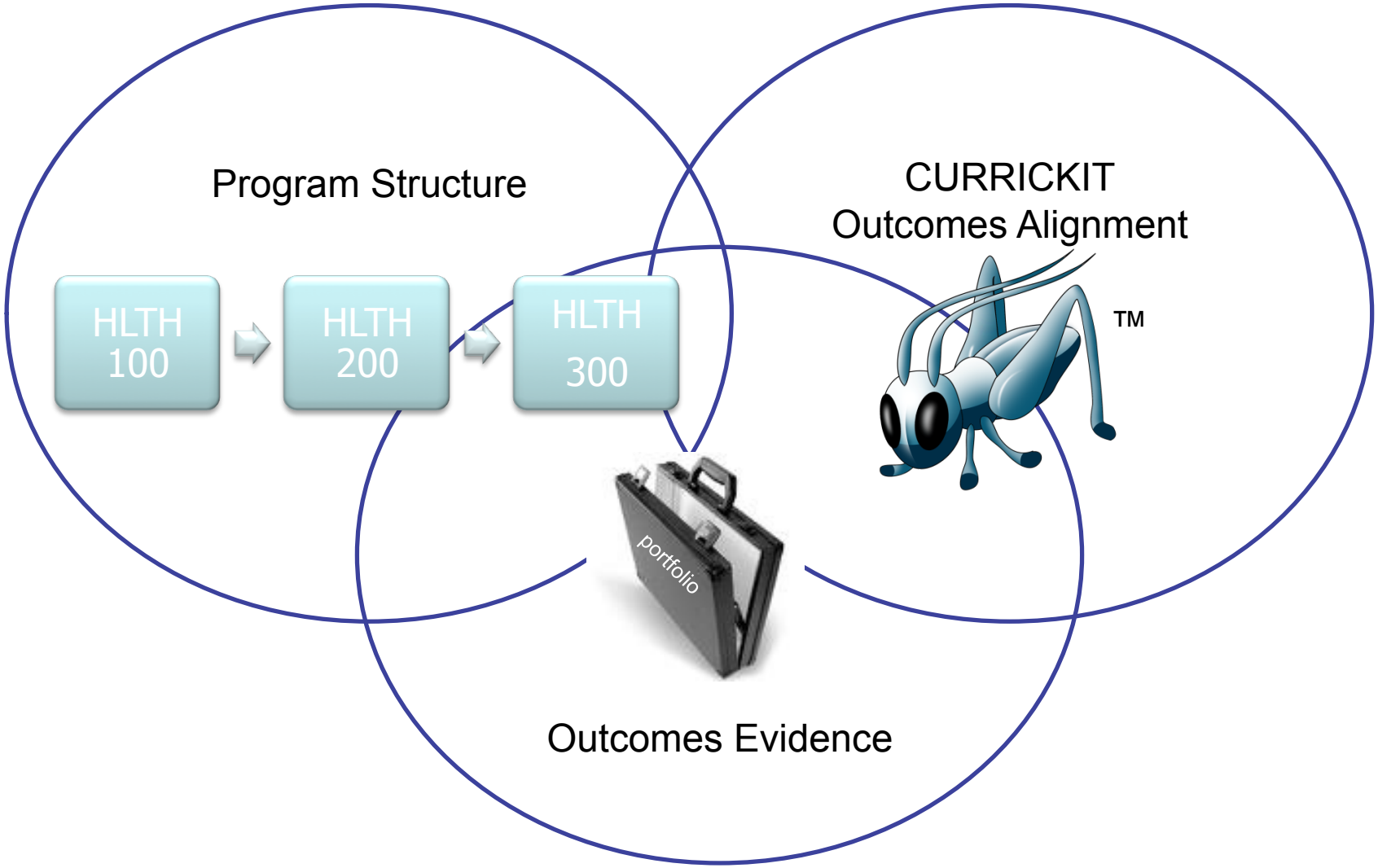
Curriculum Mapping Done Three Ways



Course Progression Maps

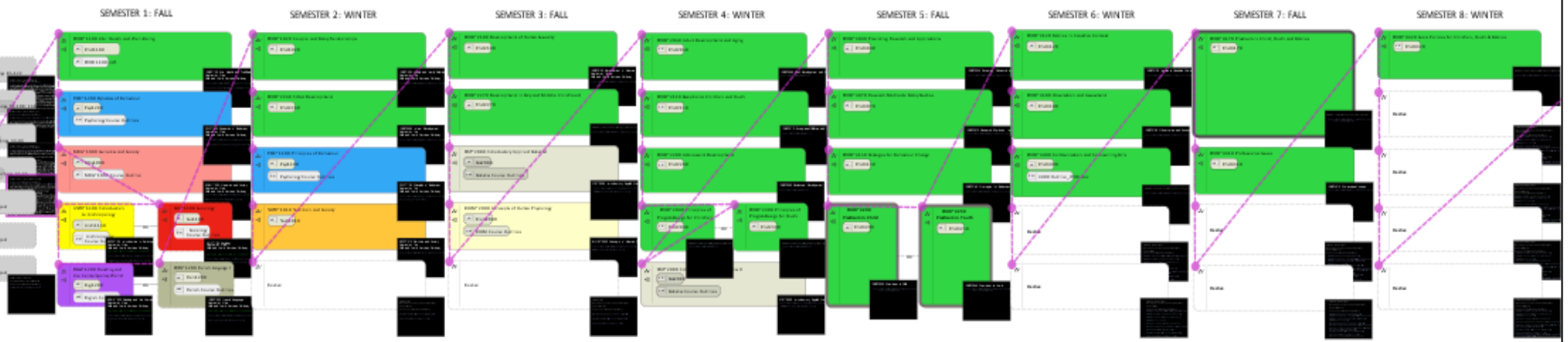
Purpose:

- to create a visual representation of student progress through curriculum
- to explore curriculum flow, coherence, and the order and balance of required and elective courses for the entirety of the degree program

Data collected from:

- Calendars
- Course outlines
- Curriculum committees

Course Progression Map



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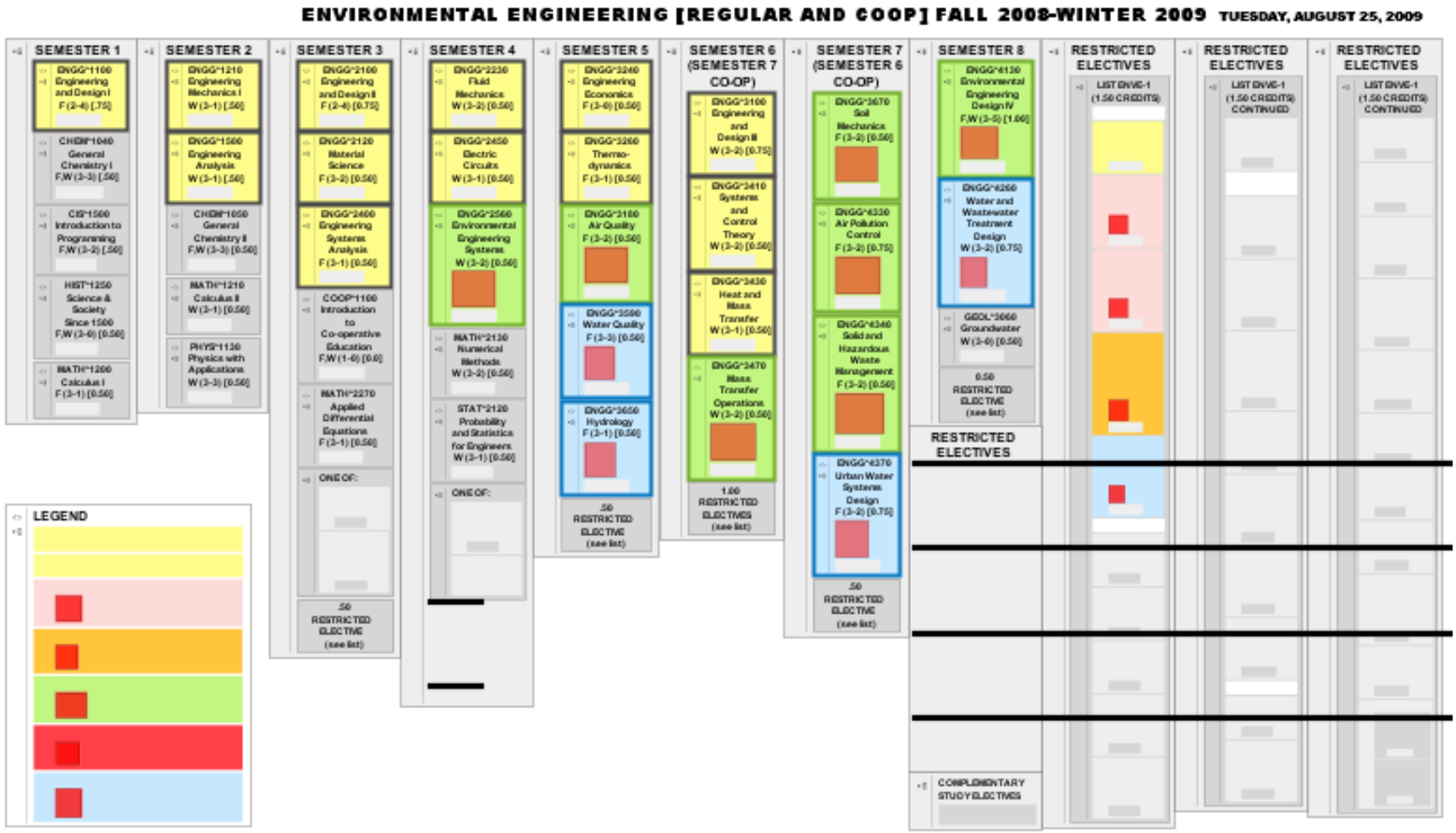
Course Progression Map



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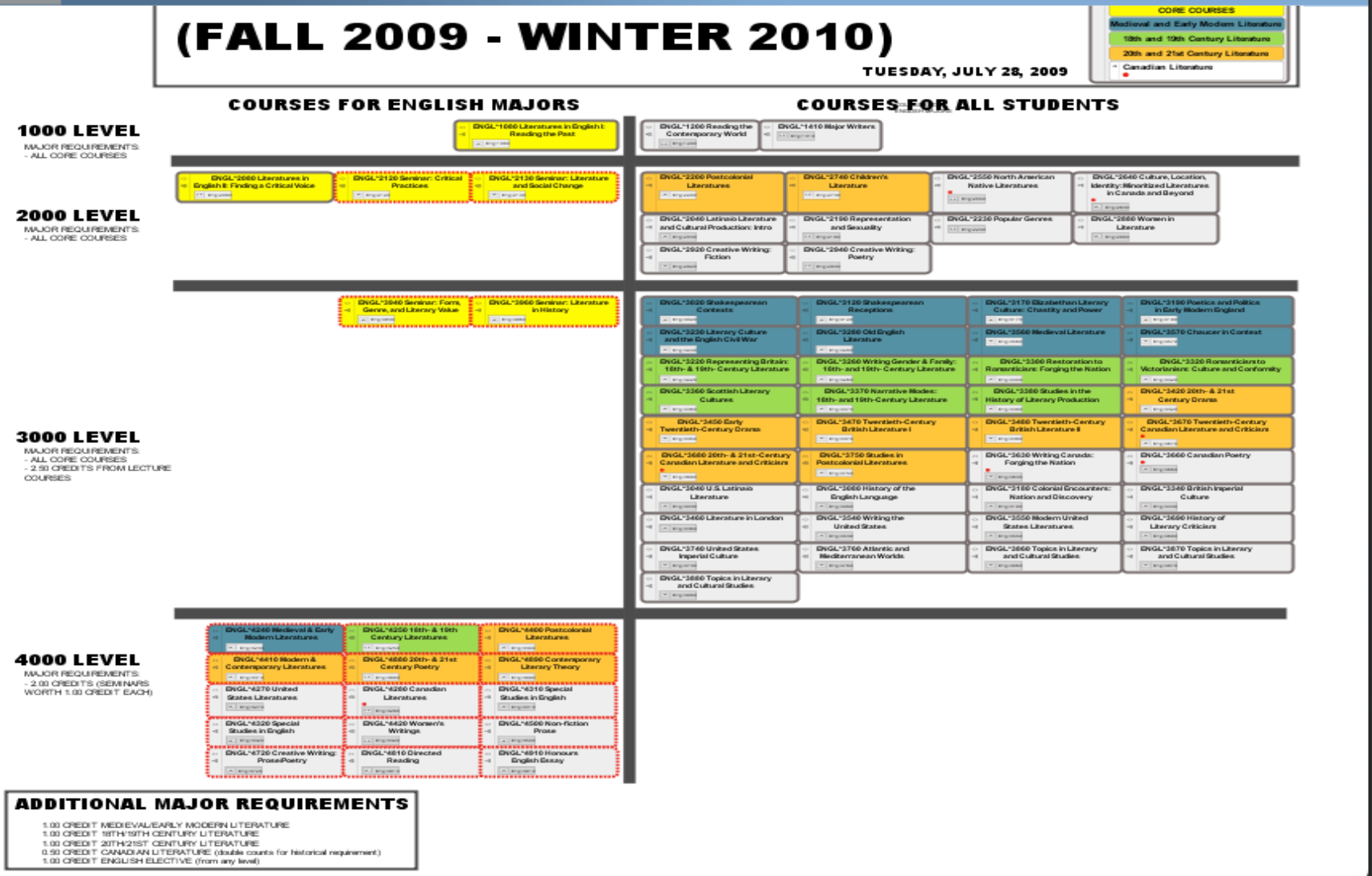
Course Progression Maps



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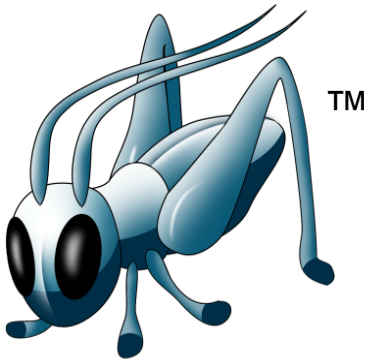
Curriculum Alignment Maps

Purpose:

- to match learning outcomes (knowledge, skills and values) with the instruction and assessment methods used in the individual courses that make up the curriculum

Data collected from:

- Faculty
- Course outlines
- Curriculum committees



CurricKit
Curriculum Mapping at the University of Guelph

Administration | Projects | Course Surveys | Logout

Currently logged in as: ***rgorrie***

University of Guelph Demo

Main | **Courses** | Knowledge, Skills and Values | Instructional Methods | Assessments | Survey | Reports

ADD

Course					Action
TSS*1000 Teaching Support Services Test Course					REMOVE ADD COMPONENT
COMPONENT TYPE	COMPONENT NAME	INSTRUCTOR	SURVEY TYPE	SEMESTER	
Lecture Section	01	Richard Gorrie(rgorrie)	Instructor	F09	EDIT DELETE
Lecture Section	02	Rich Couto(rcouto)	Instructor	F09	EDIT DELETE
UNIV1100 Intro to University Learning					REMOVE ADD COMPONENT
COMPONENT TYPE	COMPONENT NAME	INSTRUCTOR	SURVEY TYPE	SEMESTER	
Lecture Section	01	Peter Wolf(pwolf)	Instructor		EDIT DELETE
UNIV2200 Problem-Posing					REMOVE ADD COMPONENT
COMPONENT TYPE	COMPONENT NAME	INSTRUCTOR	SURVEY TYPE	SEMESTER	
Seminar	01	Peter Wolf(pwolf)	Instructor	fall	EDIT DELETE
UNIV3300 Experiential Learning					REMOVE ADD COMPONENT
COMPONENT TYPE	COMPONENT NAME	INSTRUCTOR	SURVEY TYPE	SEMESTER	
Lab	01	Peter Wolf(pwolf)	Instructor		EDIT DELETE

CurricKit
A Curriculum Mapping Toolkit

Administration | Projects | Course Surveys | Logout

Currently logged in as: ***pwolf***

Engineering

Main | Courses | **Knowledge, Skills and Values** | Instructional Methods | Assessments | Survey | Reports

ADD

Knowledge, Skills, and Values	Action
ENGG Communication Skills	REMOVE
ENGG Design	REMOVE
ENGG Economics and Project Management	REMOVE
ENGG Ethics and Equity	REMOVE
ENGG Impact of Engineering on Society and the Environment	REMOVE
ENGG Individual and Team Work	REMOVE
ENGG Investigation	REMOVE
ENGG knowledge base	REMOVE
ENGG Life-long Learning	REMOVE
ENGG Problem Analysis	REMOVE
ENGG Professionalism	REMOVE
ENGG Use of Engineering Tools	REMOVE

12 associated Knowledge, Skills and Values

CurricKit
Curriculum Mapping at the University of Guelph

Administration | Projects | Course Surveys | Logout

Currently logged in as: ***pwolf***

University of Guelph Demo

Main | Courses | Knowledge, Skills and Values | **Instructional Methods** | Assessments | Survey | Reports

ADD

Instructional Method	Action
Blackboard (WebCT)	REMOVE
Demonstration	REMOVE
Field Trip	REMOVE
Formal Group Work	REMOVE
In-class Writing	REMOVE
Laboratory/Tutorial	REMOVE
Media	REMOVE
Practicum	REMOVE
Problem-based Learning Modules	REMOVE
Reading	REMOVE
Research	REMOVE
Self-reflection/Journal	REMOVE
Seminar	REMOVE
Student Presentation	REMOVE

14 associated Instructional Methods

University of Guelph Demo

ADD

Assessment	Action
Case Analysis	REMOVE
Externship/Field Placement/Co-op	REMOVE
Graphics (Maps, Plans, Schematics, Blueprints)	REMOVE
Oral Presentation (Individual)	REMOVE
Participation (In-class)	REMOVE
Participation (On-line Discussions)	REMOVE
Portfolio/Journal/Reflective Writing	REMOVE
Poster	REMOVE
Project (Group)	REMOVE
Self/Peer Evaluation	REMOVE
Test/Quiz/Exam (> 25% of Final Grade)	REMOVE
Written Assignment (≤ 5 pages)	REMOVE

12 associated Assessments

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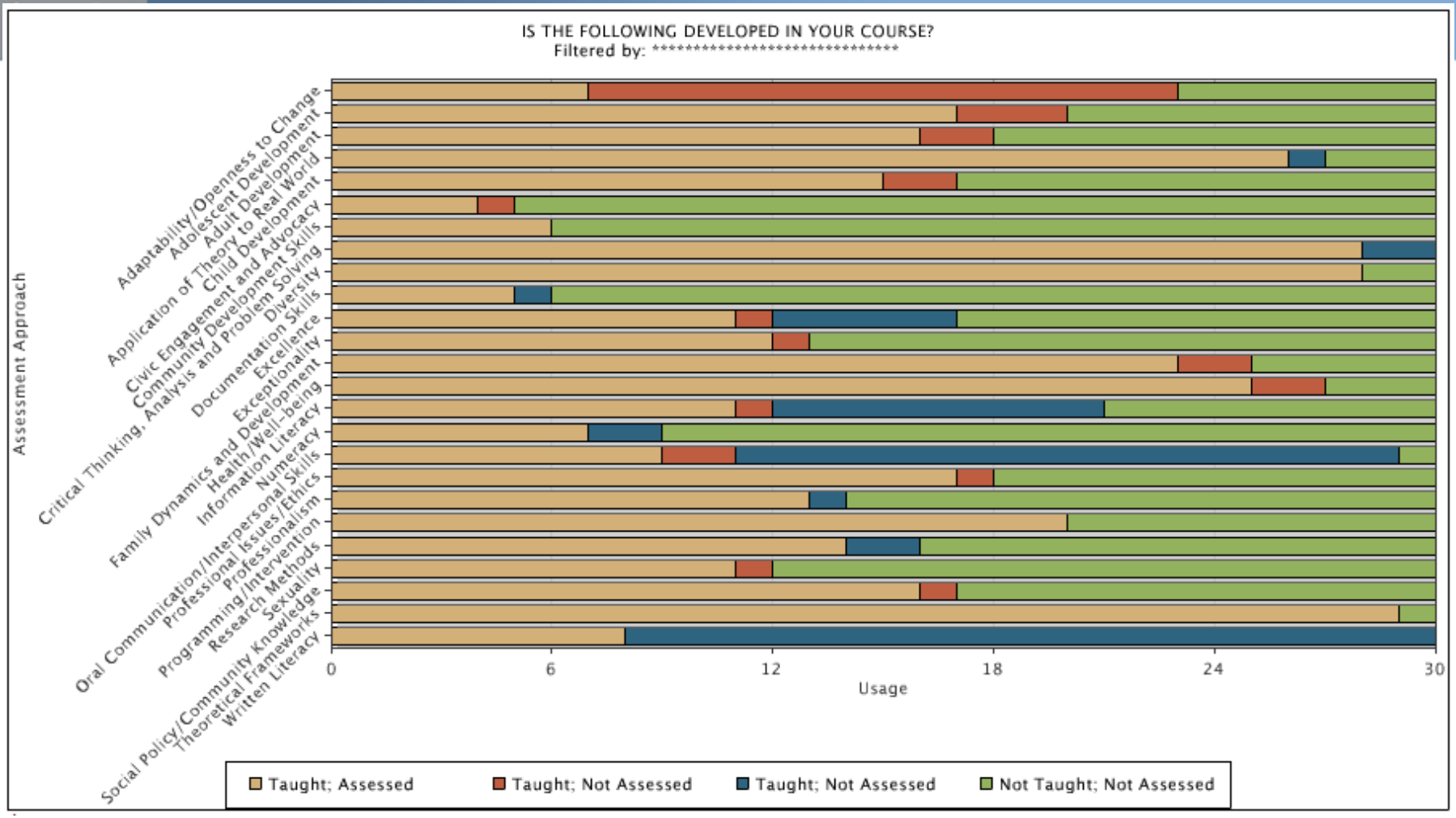
ADD

Survey Questions

What instructional strategies and pedagogical techniques do you use in your course?
What formal assessment approaches do students engage in for this course?
Is the following developed in your course?
What is the level of sophistication expected for the following? (Please evaluate at the highest level expected.)
Please specify how each quality is Taught and/or Assessed
How are the total marks available to students distributed over the course of the semester?
Do you allow your students to select from optional assignments or optional weighting of assignments? If so, please specify.
Do you have any general comments?


IS THE FOLLOWING DEVELOPED IN YOUR COURSE?
Filtered by: ********************************
Assessment Approach
Adaptability/Openness to Change
Adolescent Development
Adult Development
Application of Theory to Real World
Child Development
Civic Engagement and Advocacy
Community Development Skills
Critical Thinking, Analysis and Problem Solving
Diversity
Documentation Skills
Excellence
Exceptionality
Family Dynamics and Development
Health/Well-being
Information Literacy
Numeracy
Oral Communication/Interpersonal Skills
Professional Issues/Ethics
Professionalism
Programming/Intervention
Research Methods
Sexuality
Social Policy/Community Knowledge
Theoretical Frameworks
Written Literacy
0
6
12
18
24
30
Usage
Taught; Assessed
Taught; Not Assessed
Taught; Not Assessed
Not Taught; Not Assessed

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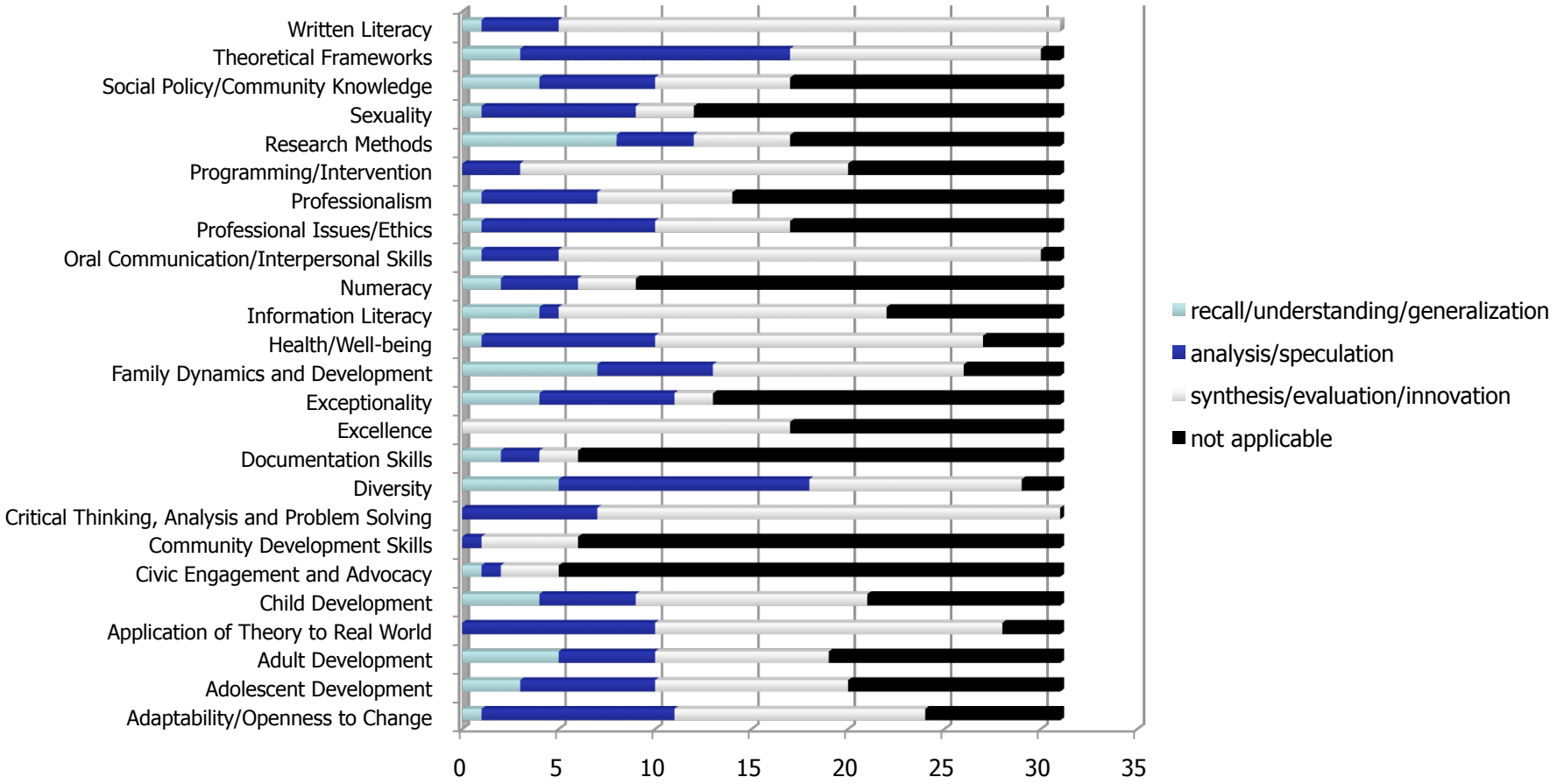
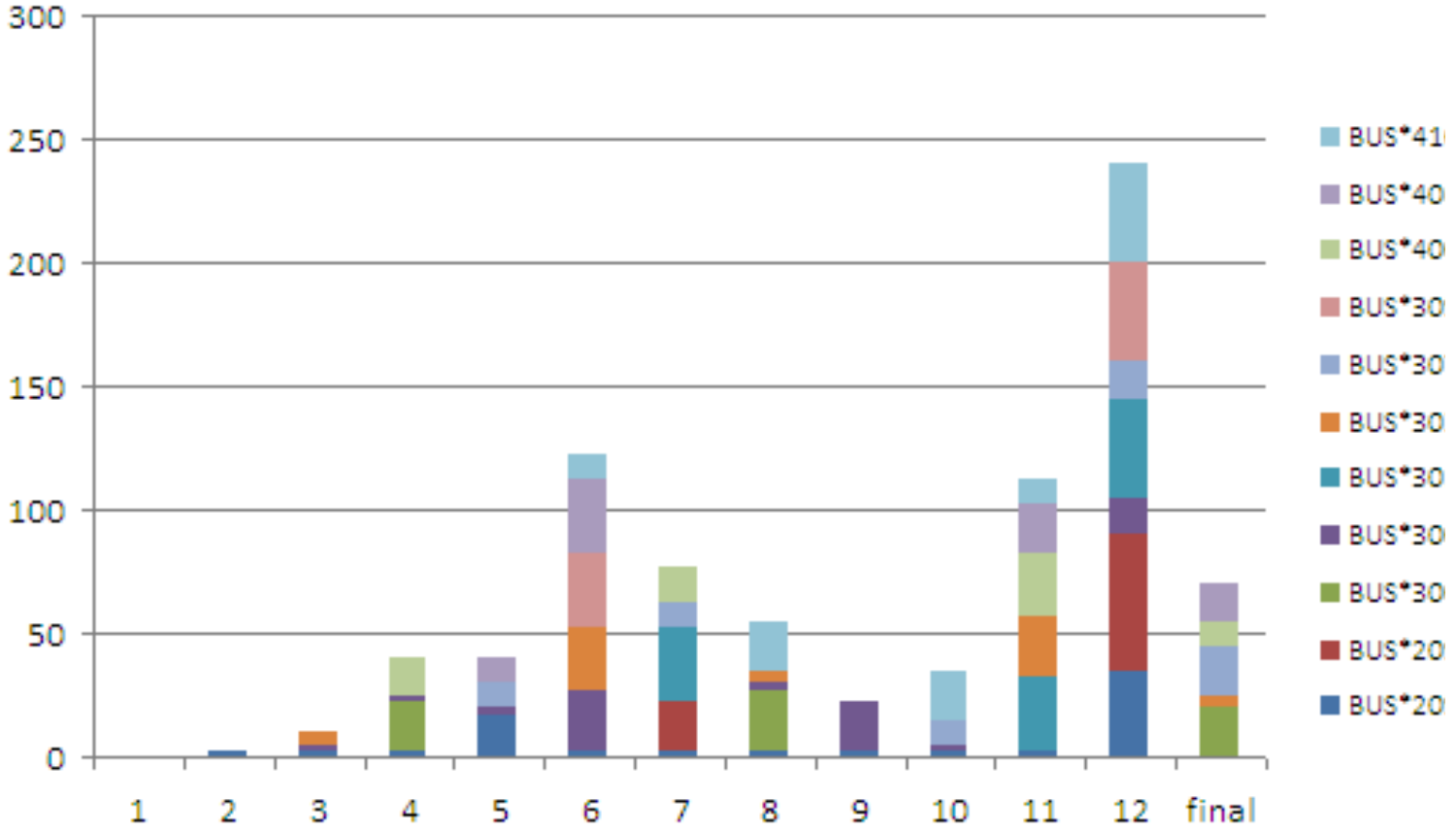
Level of Sophistication Expected

What is the level of sophistication expected for the following?
(Please evaluate at the highest level expected.)

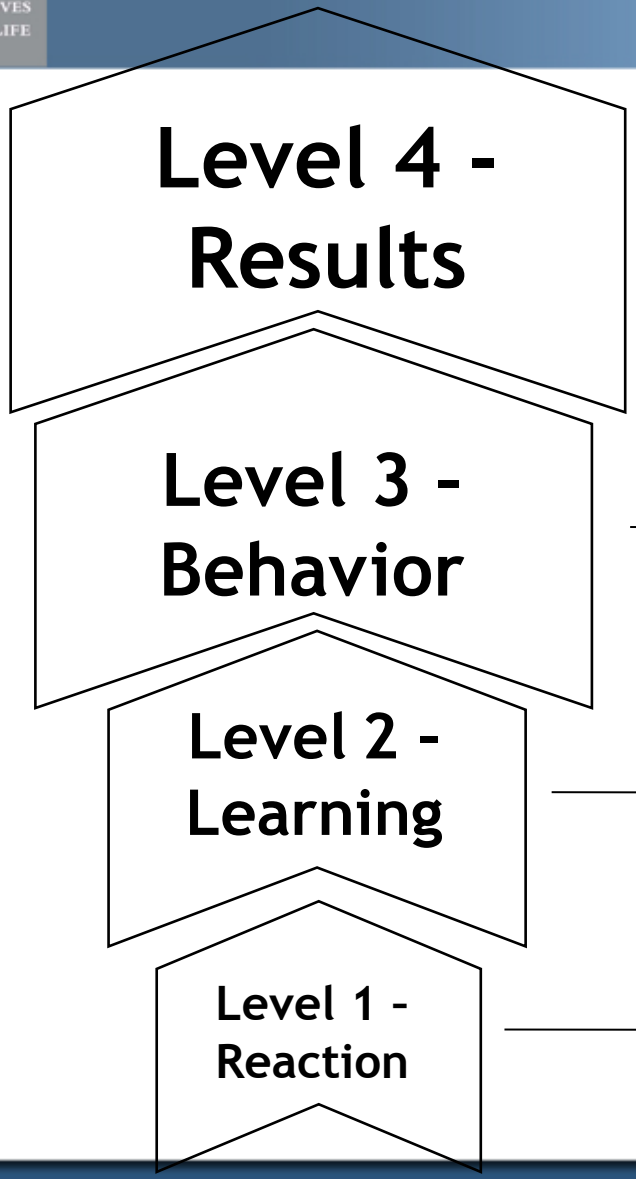


changing lives improving life
discover something incredible here

Total Grades Available by Week
All Courses/All Semesters



Kirkpatrick's Four Levels of Evaluation



Key Question: Did the students achieve desired outcomes of the programme of study?

Timing: Usually done 3 months – 2 years after learning experience

Key Question: Are the newly acquired skills, knowledge, or attitude being used by the learner after the learning event is completed?

Timing: Usually done 1 month – 3 months after learning

Key Question: Did the students achieve the desired learning objective(s)?

Timing: Usually done immediately or soon after learning

Key Question: What was the student reaction to the learning environment?

Timing: Usually done immediately or soon after the learning event(s)

Kirkpatrick, D. (1994). *Evaluating Training Programs: The Four Levels*. San Francisco: Berrett-Koehler

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Department of Food Science

Curriculum Assessment Plan

Method	Participants	Frequency	Kirkpatrick Level	Questions /Issues Explored
Exit focus group lunch	Graduating students	Annual	Levels 1/2	- Describe your most enjoyable learning experiences at Guelph? - Comments on other aspects of your Guelph experience Clubs? Academic Support? - Describe your most important learning experiences at Guelph? - What would you drop from the food science curriculum? Why? -What would you add to the food science curriculum? Why?
Web survey	Recent graduates (2-3 years)	Tri-annual	Levels 3/4	- Describe three of your most significant undergraduate learning experiences. - What three aspects of your undergraduate learning experience are of the most benefit to you in the work place or more generally in life? Explain. - Please suggest changes to help us improve the program. What would you add to or drop from the curriculum? Other changes? - What advice would you give to a first year food science student at Guelph? - Describe one or more ways in which your Food Science education has helped (is helping) your organization fulfill its mission or meet its objectives.

UNIVERSITY of GUELPH

CHANGING LIVES IMPROVING LIFE

Department of Food Science

Curriculum Assessment Plan

Method	Participants	Frequency	Kirkpatrick Level	Questions /Issues Explored
Focus group lunch	Employers	Tri-annual	Levels 3/4	- Describe in what ways the content and objectives of the programme match or do not match your expectations of Food Science graduates? - What do you look for when hiring? - Based on your experience with graduates employed in your company, how well do our graduates meet your expectations? - Describe one or more ways in which the food science programme at Guelph has helped graduates help your organization fulfill its mission or meet its objectives. - Please suggest one or more changes to help us improve the program. What can we do to better prepare our graduates for employment in the food industry? - What advice would you give to a recent or soon-to-be graduate of Food Science?
Review of previous reports	Professional association	Tri-annual	Levels 2/3/4	- Data was used to extract goals and competencies as well as the vision for the ideal graduate.

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CHANGING LIVES IMPROVING LIFE

Department of Food Science

Curriculum Assessment Plan

Method	Participants	Frequency	Kirkpatrick Level	Questions /Issues Explored
Half-day retreat	Faculty and graduate students	Annual	Levels 2/3	- Regarding the undergraduate Food Science programme, what are its: ▪Strengths? ▪Weaknesses? ▪Opportunities? ▪Threats?

Evidence of Learning

Goal:

- To view student efforts (through assignments) in their development of the KSVs that make up the program outcomes.

Data collected from:

- Faculty
- Curriculum Committees
- Students

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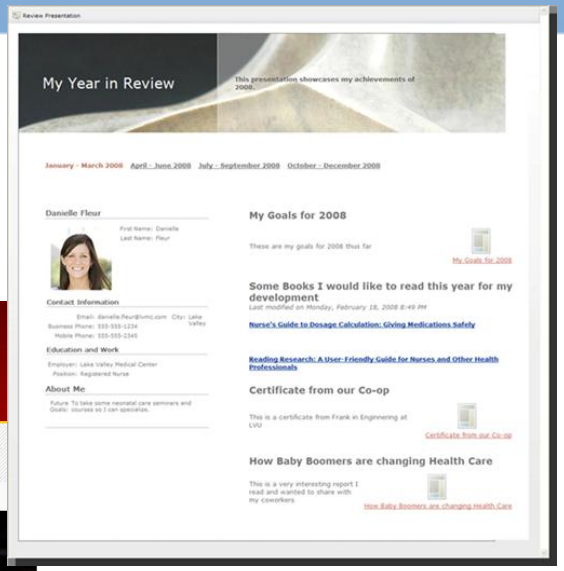
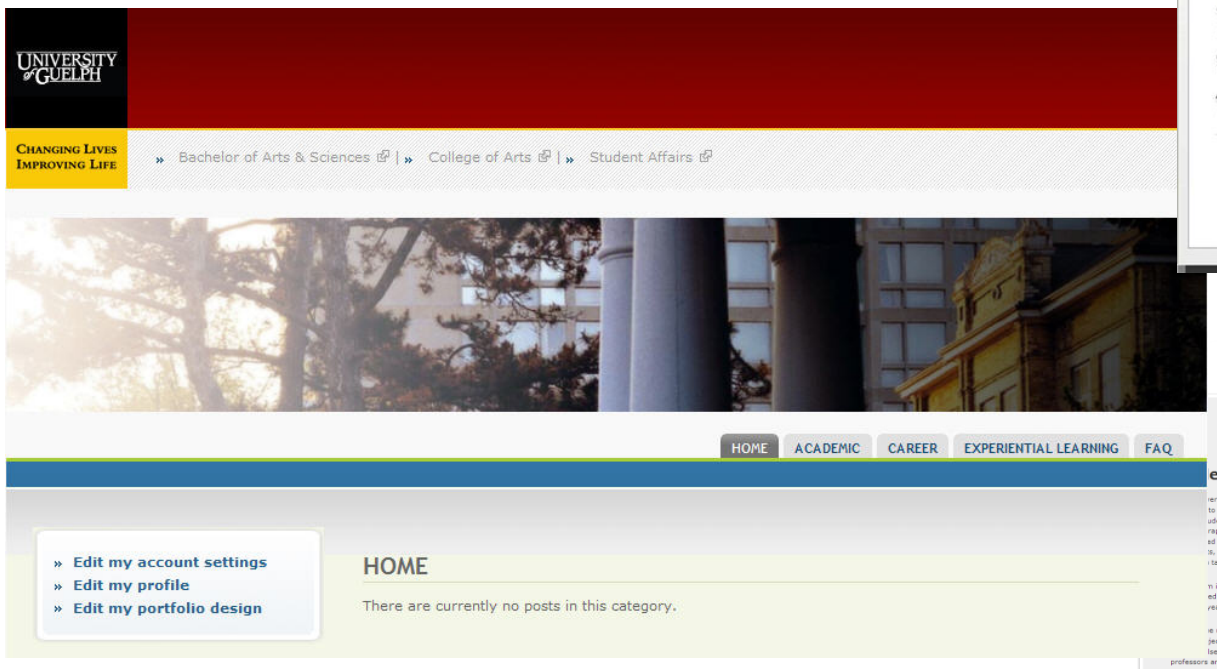
E-Portfolios





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Curriculum Development Processes at the University of Guelph

Peter Wolf