Preparing for Academic Review

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• Which parts of the academic review are you looking forward to completing?

• Which are the ones you are least excited about?
What is more important to you? Destination or Journey?
Learning Outcomes

Learning outcomes are direct statements that describe the knowledge, skills, and habits of mind that students are expected to reliably demonstrate after a learning experience.

1. Identify desired learning outcomes
   What knowledge, skills, and habits of mind do I want students to demonstrate?

2. Verbs are important
   Use action verbs like:
   - design
   - create
   - diagnose
   - evaluate
   - extrapolate
   - predict

3. Plan instructional activities
   What learning experiences will I design to help them achieve the intended outcomes?

4. Get the students on board with learning outcomes
   How will I share the learning outcomes with students?

5. Design suitable assessment strategies
   How will I know students have achieved those outcomes?

Klodiana Kolomitro. Design: Queen's University Marketing.
Accountability towards:

- Students
- Employers
- Accreditation bodies
- Grant organization

Graduates are not completely prepared for the workforce

Lack of emphasis on transferrable skills: communication skills, teamwork, critical thinking, etc
Outcome-Based Curricula is:

• **Outcome driven**, where every stated outcome *can be assessed*.

• Centered around the **needs** of the students and other stakeholders.

• Centered around **intentional** outcomes and those must be assessed using appropriate **performance indicators**.
Why is it important to know the outcomes *prior* to planning and teaching?
Why Learning Outcomes?

1. Provide clear direction for educators when making instruction and assessment decisions.
2. Help students take ownership of their learning.
3. Set shared expectations between students and instructors.
4. Provide a program level overview of learning across courses and years.
Why learning outcomes?

A study synthesizing:

800 meta-analyses
50,000+ studies
200+ million students

found that explicit outcomes and assessment has one of the largest effects on learning...

Why Learning Outcomes?

Computer assisted instruction
Time on task
Teaching quality
...
Problem solving teaching
Professional development
Self-questioning
Creativity programs
Metacognitive strategies
Spaced vs. mass practice
Feedback
Reciprocal teaching
Explicit objectives and assessment
Formative evaluation to instructor
Student self-assessment

800 meta-analyses
50,000+ studies
200+ million students
Backward Design: Planning with the End in Mind

- What do I want them to learn?
- How will I know they have learned it?
- How will I design the learning so that all will learn?

(Wiggins and McTighe, 1998)
STAGE 1
Program Vision

STAGE 2
Develop/Validate Program Learning Outcomes

STAGE 3
Collect Evidence

STAGE 4
Discuss & Interpret Evidence
Complete review

STAGE 5
Implementation Plan of Recommendations
A program’s purpose should be:

**What do you do?**  **For whom?**  **For what benefit?**

As well as...

1. **be student focused**
   help students achieve outcomes and is therefore driven by their needs

2. **aligned with larger goals**
   be aligned with that of the Faculty or School which in turn is aligned with that of the institution
Learning Outcomes

• Learning outcomes are direct statements that describe the **knowledge, skills, and habits of mind** that students are expected to reliably demonstrate after a learning experience.

• They describe learning that is **significant and durable**—learning that really matters in the long term.
By the end of this course, successful students will be able to...

- Choose an action verb
- Statement providing disciplinary context

Apply
Compare
Design

Grounded in the discipline
Anatomy of a Learning Outcome

Verb: Sets the level of expectation

Critically evaluates information for authority, currency, and objectivity in order to conduct quality research

Content: Descriptions of what students do

Context: conditions/setting by which students demonstrate the outcome
Notice that...

Statements are about what students will do not what they will hear about:

Not

Students will learn about Mezirow’s theories of transformative learning

But rather:

Students will apply Mezirow’s theories of transformative learning in the process of making-meaning of their experience
Verbs are important

- Verbs like *identify, define, follow, & list* connote memory-based learning

- Verbs like *evaluate, critique, create, & justify* connote more cognitively complex or deeper learning
Beware of vague verbs

- Understand
- Know
- Appreciate
- Gain knowledge of
- Be aware
- Cover
- Learn
- Realize
- Comprehend
- Become acquainted with

How can these be assessed?
**ICE Model**

**Factual recall of basic information**
Define, describe, explain, label, match, identify, list, locate, recognize

**Articulate relationships and make connections**
Apply, compare, contrast, classify, organize, categorize, distinguish, interpret, integrate, modify, rate, solve

**Predict outcomes in novel situations**
Design, diagnose, evaluate, extrapolate, judge, predict

(Wilson, 1999; Fostaty Young & Wilson, 2000)
Examples

*Cultural Studies* – Students will be able to apply interdisciplinary perspectives to examine ways in which culture is formed, practiced and constituted.

*Art History* – Students will interpret art works to establish a perspective on the subject matter and the meaning of their imagery (iconography).

*Drama* – Students will be able to examine both the structure of the modern "musical" and its production methodology.

*Environmental Studies* – Students will be able to effectively communicate perspectives on complex environmental challenges to both professional and lay audiences.

*Chemistry* – Student will be able to apply quantitative principles to effectively describe the nature of chemical reactions.
Engineering Problem Analysis—Students iteratively apply critical and creative thinking approaches to develop solutions to client-based engineering problems.

Engineering Communication – Students summarize and convey technical information concisely, accurately and clearly to a general audience.

Engineering Design – Students apply design methodologies and processes with an emphasis on the ideation and prototyping phase in single and multi-disciplinary projects.

Impact of Engineering—Students devise solutions for engineering problems that incorporate technical, financial, social, environmental and legal factors.
Achievable
Observable
Measurable
**Specific:** Says exactly what the learner will be able to do

**Measurable:** Can be observed and demonstrate the extent to which the outcomes has been met

**Active:** Uses an active verb that implies change

**Relevant:** Is aligned to the needs of the students and other stakeholders

**Time-bound:** Implies target dates. “By when” is the outcome achievable
Provincial DLEs

Institution Outcomes

Program Level Outcomes

Course Level Outcomes

EXAMPLE:

Application of Knowledge

Research-Focus; Practice-Orientation

Integrate concepts, methods, and perspectives from multiple disciplines and apply those to complex environmental issues

Employ systems concepts and interdisciplinary perspectives to explain principles of environmental sustainability
Benefits of Curriculum Mapping

- Show how courses relate to one another and to the overall program outcomes
- Reveal gaps as well as redundancies in the curriculum
- Increase faculty collaboration and collegiality
## Example 1: Course Outcomes Mapped to Program Outcomes

<table>
<thead>
<tr>
<th>Program Learning Outcomes</th>
<th>Course Learning Outcomes</th>
<th>X-100</th>
<th>X-107</th>
<th>X-340</th>
<th>X-450</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relate, explore, and evaluate the influences of many of the major fields in this discipline.</td>
<td>1.1 To relate the practice of health promotion with the social determinants of health.</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td>1.2 To explore various concepts that affect physical health, aside from exercise and nutrition, in order to learn about new ideas and how they impact physical health.</td>
<td></td>
<td>I, C</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1.3 To recognize and define key concepts in public and population health.</td>
<td></td>
<td></td>
<td>C, E</td>
<td></td>
</tr>
<tr>
<td>2. Conduct and apply multidisciplinary, independent research and analysis using a range of theories and approaches.</td>
<td>2.1 To conduct and apply principles of scientific research to develop a research proposal on a health-related topic.</td>
<td></td>
<td></td>
<td></td>
<td>C, E</td>
</tr>
<tr>
<td></td>
<td>2.2 To apply the principles of knowledge translation and knowledge mobilization tools in order to promote knowledge exchange between researchers and practitioners.</td>
<td></td>
<td></td>
<td></td>
<td>E</td>
</tr>
<tr>
<td></td>
<td>2.3 To appreciate the different applications of qualitative and quantitative methods in the study of global health.</td>
<td></td>
<td></td>
<td></td>
<td>C, E</td>
</tr>
<tr>
<td>3. Communicate accurately and reliably in an oral, written, and visual format to a range of audiences.</td>
<td>3.1 To research and report on appropriate health promotion information in order to demonstrate research and writing skills</td>
<td>I, C</td>
<td>C</td>
<td>C</td>
<td>E</td>
</tr>
<tr>
<td></td>
<td>3.2 To articulate the variety of theories of addiction and their role in problem definition</td>
<td>I</td>
<td></td>
<td></td>
<td>E</td>
</tr>
<tr>
<td></td>
<td>3.3 Effective listening and speaking skills in order to facilitate effective communication</td>
<td>I</td>
<td></td>
<td>C</td>
<td>E</td>
</tr>
</tbody>
</table>
Example 2: Bar Chart Number and Depth of Course Outcomes per Program Outcome
Engineering Graduate Attribute Development (EGAD) Project
Curriculum Mapping: Assessment Approach by Graduate Attribute:

- KB: ENGR 111, ENGR 142, ENGR 171
- PA: ENGR 102, ENGR 131, ENGR 151
- EC: ENGR 101
- LL: ENGR 101
- TW: ENGR 101, ENGR 103
- IM: ENGR 101, ENGR 103
- EE: ENGR 101
- CO: ENGR 101, ENGR 102, ENGR 103
- DE: ENGR 101, ENGR 131
- IN: ENGR 101, ENGR 102, ENGR 103
- ET: ENGR 101, ENGR 102
- PR: ENGR 101, ENGR 103