ENHANCING your PROGRAMS and COURSES through ALIGNED LEARNING OUTCOMES

AGENDA

"Defining learning outcomes and methods of demonstrating student capability" is one of the four overarching academic goals that will guide the Academic Plan 2018 at KPU over the next 3 years.

9:15 – 9:30   **Pre-Assessment Activity**

9:30 – 9:45   **Introduction:** What is going on with learning outcomes here, there and everywhere?

9:45 – 10:45   **Learning Outcomes**: **Key Concepts in Writing Measurable and Observable Outcomes**
Learning Outcome 1: define and write measurable and observable learning outcomes that encompass a wide range of the cognitive, psychomotor and affective learning domains

10:45 – 11:00   *Break*

11:00 – 12:30   **Connections to Assessment and Evaluation:** **What is the relationship to designing assignments, tests and student demonstration of learning?**
Learning Outcome 2: describe how learning outcomes benefit learners, learning facilitators, and assessors

Connections to Program and Institution: **How do learning outcomes enhance the design of programs, create accountable practices and assist in institutional effectiveness?**

Barriers and How to Avoid Them: **What are the typical barriers to undertaking learning outcomes and how do we overcome them?**
Learning Outcome 3: apply new knowledge to the enhancement and refinement of high quality programs and courses, while contributing to building capacity in faculties and departments as KPU moves forward with implementing Vision 2018

12:30 – 1:30   *Lunch On Own*

1:30 – 2:45   **Review and Apply**
Discipline-specific conversations with faculty groups about how the morning's activities could be applied to programs or courses. **What can we do next to build an aligned course or program with well-written learning outcomes to guide student success?**

2:45 – 3:30   **Synthesis and Support**
Synthesize day's learning and identify supports/resources required for next steps
Learning Outcome 4: provide feedback on resources required to support faculty and institution in moving forward with academic goal related to learning outcomes

3:30   *End*

Introduction

Internationally, Nationally, Provincially and Institutionally - What is going on with outcomes?

Outcomes-based pedagogy has been around for decades. The University of Guelph was a leader in 1987 when they undertook writing their institutional learning outcomes. They have the best collection of resources on learning outcomes on their website.

In Ontario in 2005, the province articulated provincial degree-level expectations for graduates and post-secondary institutions across Ontario undertook learning outcomes development to ensure quality in their programs and alignment with the provincial degree expectations.

In 2010, the Ontario Council of Academic Vice-President's Quality Assurance Framework required that all institutions implement an Institutional Quality Assurance Process and also that each academic unit clearly articulate learning outcomes that are discipline specifics and consistent with institution's academic plans. This has resulted in some institutions having a robust learning outcomes focus related to their Academic Plan and associated activities.

University of Fraser Valley (and soon Vancouver Island University) has institutional learning outcomes that guide the student learning and program development, along with assisting in program review processes.

In the United States, requirements for accreditation and program reviews have seen institutions engaged in learning outcome development for decades as well. Australia and the UK, leaders in the world have expressed learning through well-articulated learning outcomes tied to aligned assessment methods.

Learning outcomes provide a powerful framework upon which to structure curricula. According to Harden et al. (1999; 2007b) learning outcomes:

- help to provide clarity, integration and alignment within and between a sequence of courses;
- promote a learner-centred approach to curriculum planning;
- encourage a self-directed and autonomous approach to learning, as students can take responsibility for their studies, and are able to actively gauge their progress;
- promote a collegial approach to curriculum planning, as instructors collaborate to identify gaps and redundancies;
- ensure that decisions related to the curriculum and learning environment are streamlined;
- foster a philosophy of continual monitoring, evaluation and improvement; and,
- help to ensure accountability and assure quality of our education programs
- learning outcomes help align curriculum and provide structure for student learning.

At the program and course level learning outcomes help define the destination for student learning and in turn allow students to be aware of what is expected of them. PLAR (Prior Learning Assessment and Recognition) is assisted by having learning outcomes as students can see if they know course materials already and where they need to learn more. For transferability and ease in students moving between institutions, learning outcomes also ensure clarity in student expectations and focus of courses and programs.
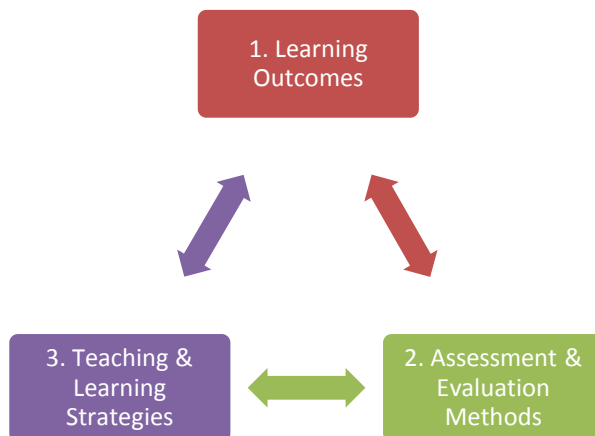
Definition of Learning Outcomes

- broad statements about **intended student learning** after the course (or program) has been completed in terms of the desired end product: what students should know and be able to demonstrate, as well as the depth of the learning that is expected

- **knowledge, skills and values** required by students to demonstrate learning of core concepts and essential components of the course (or program)

- often presented in the **cognitive, psychomotor and affective domains**, but also reflect a range of interacting knowledge, skills and attitudes

- another way to look at learning outcomes is by referring to the 3 H's: the **habits of the head** (what you want students to know); **habits of the hand** (what you want students to be able to do) and **habits of the heart (**what qualities and attributes you want students to have)

- based on unique program situational factors and contexts, the number of learning outcomes that represent a graduate's integrated and essential learning might be demonstrated through:

  - 5-8 broadly-stated COURSE learning outcomes
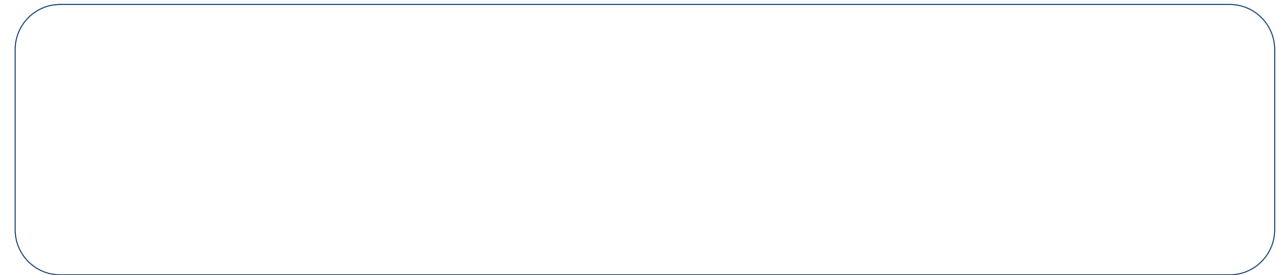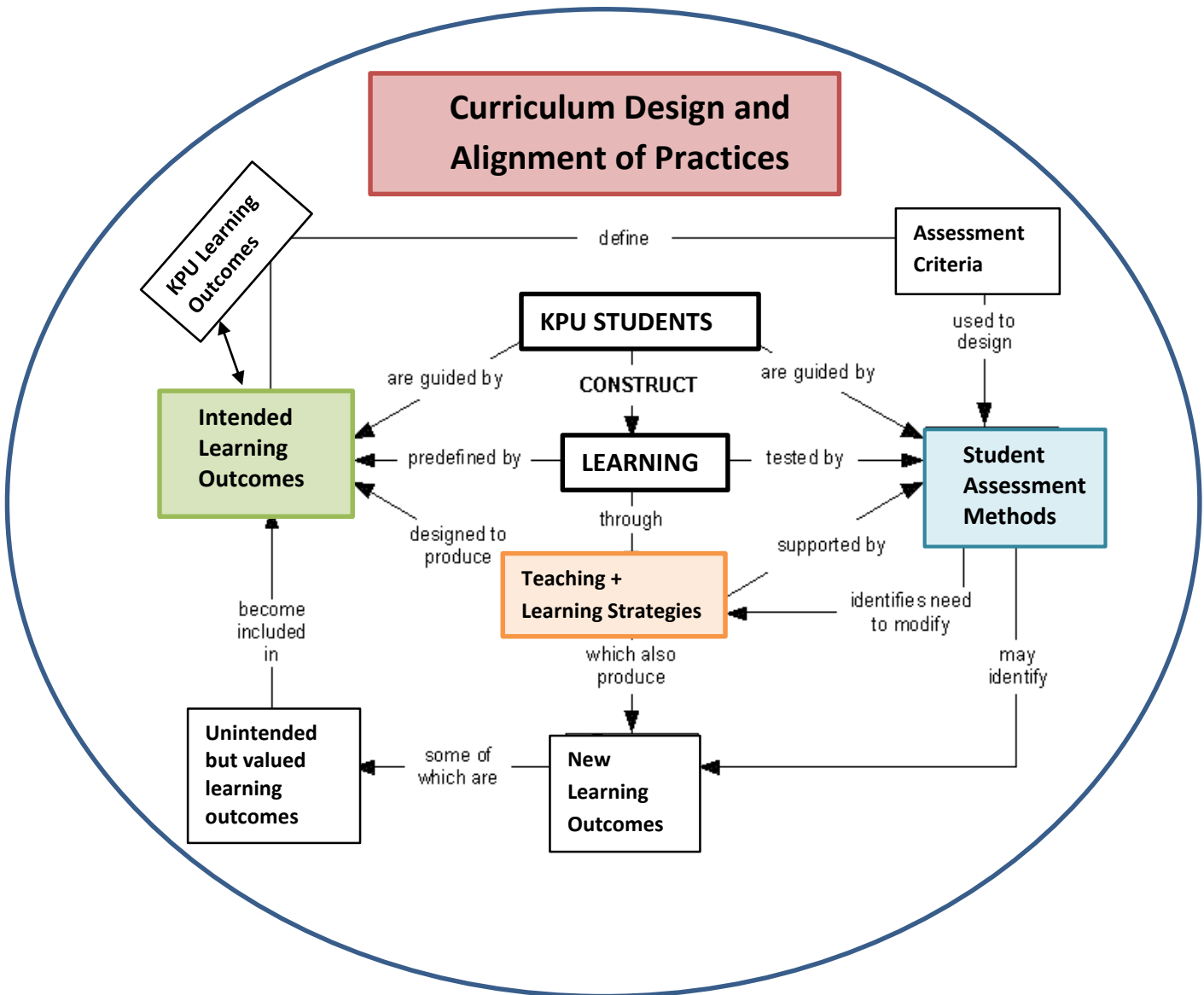 - 10-15 broadly-stated PROGRAM learning outcomes

Note: While you will create learning outcomes as best as you can with the curriculum, course content and student learning in mind, unintended learning outcomes do arise during the progress of a course or over a program's time. Therefore, some learning outcomes may be more constant, whereas other learning outcomes may need to be adjusted, enhanced or created due to learning situations, student needs or course design needs. Learning outcomes are not fixed and should evolve as the course evolves over years and as students engage in their learning experiences.

How Do They Fit Within The Course Design?

- learning outcomes are linked to the assessment and evaluation methods, along with the teaching and learning strategies

- best practice to write/edit your learning outcomes first, before your other methods and strategies are chosen

- keep the learner front and centre at all times during the planning process.

The Learning Outcome Connection: Designing Aligned Courses

Curriculum Design and Alignment of Practices

KPU Learning Outcomes

Assessment Criteria

define

KPU STUDENTS

CONSTRUCT

are guided by

are guided by

used to design

Intended Learning Outcomes

predefined by

LEARNING

tested by

Student Assessment Methods

designed to produce

through

supported by

become included in

Teaching + Learning Strategies

identifies need to modify

may identify

Unintended but valued learning outcomes

some of which are

New Learning Outcomes

which also produce

Modified diagram from Houghton, Warren (2004) *Engineering Subject Centre Guide: Learning and Teaching Theory for Engineering Academics.* Loughborough: HEA Engineering Subject Centre http://exchange.ac.uk/learning-and-teaching-theory-guide/constructive-alignment.html

Difference Between Objectives and Outcomes

Objectives are often written from a **teacher's perspective** and typically are written in terms of their **teaching intentions** and indicate what content they intend to achieve through instruction, curricula, programs or activities: Objectives are focused on specific types of performances that students are expected to demonstrate.

For example:
- This course will use videos and guest speakers to cover the historical events that happened in manufacturing between 1910 and 1950 in Canada.
- This course will present various human resource challenges and explore implications for business decisions.

Outcomes are statements about **anticipated achievements from students**. They are more student-centered and describe what the learner should learn. Learning outcomes are what is hoped for students to learn along their journey and are often precise, specific, and measurable.
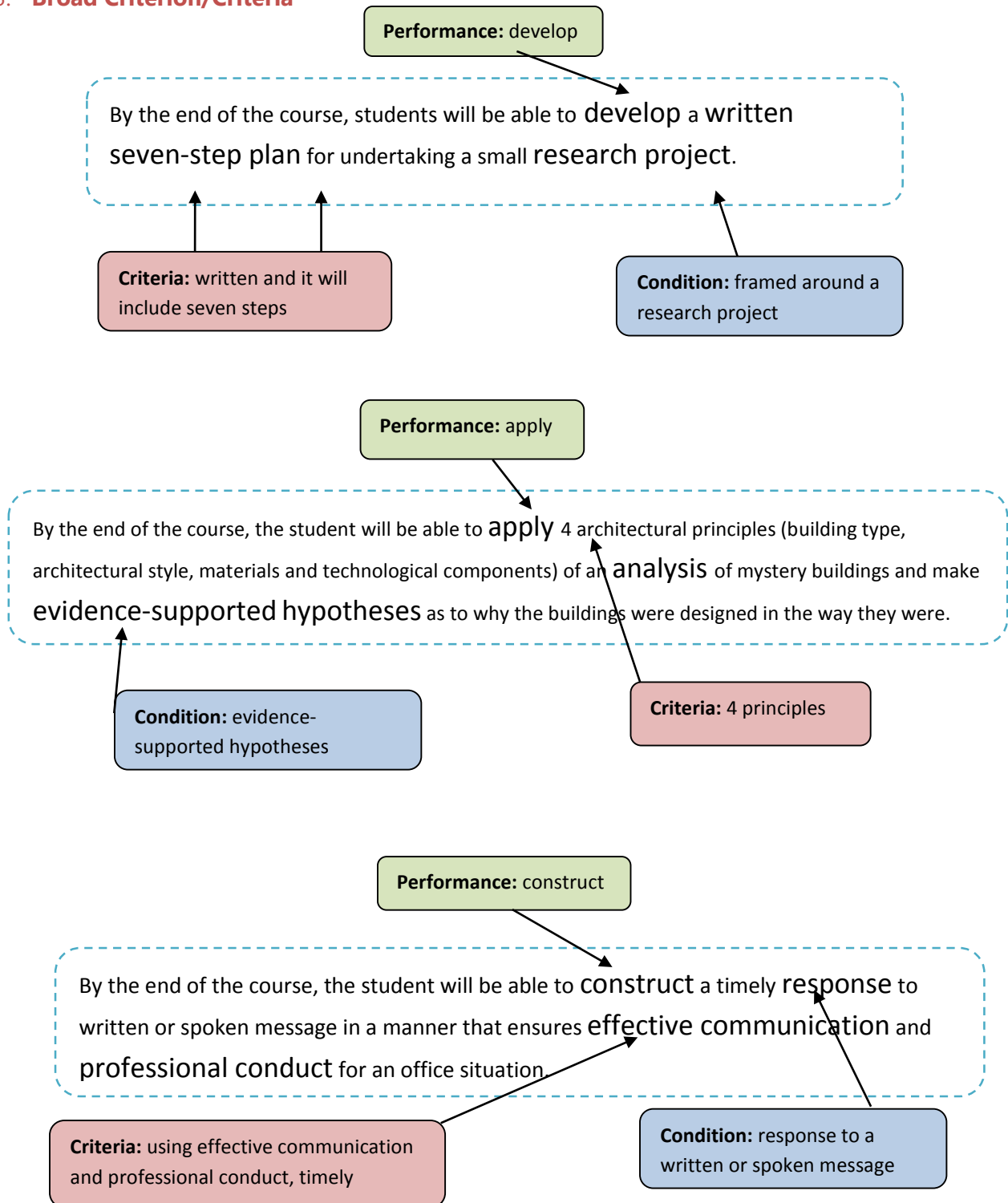
For example:
- By the end of this course, students will explain the core historical Canadian events in manufacturing that happened between 1910 and 1950 through creation of a poster presentation
- By the end of this course, students will describe the four human resource challenges and the associated implications for business decisions through a case analysis of a northern BC town

Progression of Writing a Better Learning Outcome

- **Students will be able to write a lab report.** *(observable behavior – 'write' and object of that behavior – 'lab report')*

  o Students will be able to write a lab report following the institution's lab report format. *(added criterion – following the specific format of institution)*

  ✓ At the end of the lab portion of this course, students should be able to write a lab report following the institution's lab report format. *(added the condition under which the behavior will be occurring – 'at the end of the lab portion of course')*

- **Students will use technology effectively.**

  o Students will use word processing, spreadsheets and presentation graphics to professionally prepare their final business report and project.

  ✓ By the end of this business course, students should be able to effectively use word processing, spreadsheets and presentation graphics to professionally prepare their final business report and project.

Three Parts of a Learning Outcome

1. **Action Word** (Performance)

2. **Learning Statement** (Condition)

3. **Broad Criterion/Criteria**

Performance: develop

By the end of the course, students will be able to develop a written seven-step plan for undertaking a small research project.

Criteria: written and it will include seven steps

Condition: framed around a research project

Performance: apply

By the end of the course, the student will be able to apply 4 architectural principles (building type, architectural style, materials and technological components) of an analysis of mystery buildings and make evidence-supported hypotheses as to why the buildings were designed in the way they were.

Condition: evidence-supported hypotheses

Criteria: 4 principles

Performance: construct

By the end of the course, the student will be able to construct a timely response to written or spoken message in a manner that ensures effective communication and professional conduct for an office situation.

Criteria: using effective communication and professional conduct, timely

Condition: response to a written or spoken message

Creating Well-Written Learning Outcomes

1. Start with an **action verb** that is **measurable** and **observable**. (Part 1) See charts on following pages. It important that the student can demonstrate the learning and you can observe and measure their degree of accomplishment.

2. Follow the verb with a **statement** that indicates the **description of learning** to be demonstrated
(Part 2)

3. End with a **statement** to give the learning outcome **context** and to identify **criteria** for an acceptable performance. Use the words "by" or "through" that will help with stating how the learning outcome will be assessed (Part 3)

4. Be **specific and not ambiguous**. The following verbs are not that specific and do not result in observable demonstrations of student learning. Avoid fuzzy or vague terms when possible.

    ✘ Awareness of
    ✘ Appreciation for
    ✘ Capable of
    ✘ Comprehend
    ✘ Conscious of
    ✘ Familiar with
    ✘ Shows interest in
    ✘ Knows
    ✘ Has knowledge of
    ✘ Learns
    ✘ Likes
    ✘ Memorizes
    ✘ Understands

5. Create a **balanced set** of learning outcomes. Too broad a learning outcome will be difficult to assess, while an extensive list of detailed learning outcomes will limit flexibility and adaptability of the curriculum.

6. Be **concise and clearly state** the intended learning outcomes. Make it friendly for students, faculty and others.

7. The learning outcomes have to be **realistic** (related to the real-world) **and attainable** within the time period of the course or program.

Categories of Learning: Creating a Variety of Learning Outcomes

	Affective (Feelings/Attitudes)	Cognitive (Mental Skills/Knowledge)	Psychomotor (Manual/Physical Skills)
Lower Levels of Learning	**Overview** The student is aware of the situation and is able to control attention to it. The student also is able to be actively involved in the situation and has appropriate responses. ***Examples*** *Respectfully listens to group leader. Participates in discussions and suggests new ideas. Assists colleagues with tasks.*	**Overview** The student retrieves and recalls basic information from memory. Students show their ability to construct meaning from material that results in demonstrating comprehension. This knowledge provides the foundation for other kinds of learning. ***Example*** *Recites a poem. Translates a foreign language paragraph. Explains in own words how to perform the experiment.*	**Overview** The student uses sensory clues to inform his/her motor activity. The student is ready to act and is set to take on a task. ***Examples*** *Able to operate a simple tool. Copy or create art after taking lessons from an instructor. Shows basic balance beam movements with some assistance.*
Medium Levels of Learning	**Overview** The student has a set of internalized values and is able to accept and have commitment to a value. ***Examples*** *Shows sensitivity towards others in awkward situations. Shows problem solving abilities when a situation has arisen.*	**Overview** The student is able to demonstrate an application of knowledge. The student is also able to break down, examine and analyze information. ***Examples*** *Applies formula to a new set of variables. Uses a spreadsheet to calculate taxes. Compares two magazine design proposals in terms of pros/cons.*	**Overview** The student practices a simple skill under the supervision of instructor. The student moves on to carry out that skill by demonstrating confidence and proficiency. The student moves to handling more complex tasks in a smooth manner. ***Examples*** *With fewer errors and through co-ordination of many actions, a final video cut is produced with sound and graphics.*
Higher Levels of Learning	**Overview** The student is able to organize values, resolve conflicts and create a new value system. In addition, the student is able to develop a consistent response to a set of values and use them in a variety of situations. ***Examples*** *Accepts responsibility for one's learning and behavior. Adjusts behavior when new information is presented.*	**Overview** The student is able to problem solve and make judgments through evaluating and supporting information along with creating and designing new knowledge. ***Examples*** *Designs a new experiment to test a concept. Justifies the choice of a position on an issue. Evaluates and ranks the arguments for immediate climate change.*	**Overview** The student adapts motor responses when encountering new situations and problems. The student is also able to create new motor responses for adapting when new skill sets are required. ***Examples*** *Demonstrates advanced and natural movements of tennis strokes without having to take time to think and react.*

Action Verbs Used in the Creation of Learning Outcomes

	Affective (Feelings/Attitudes)			Cognitive (Mental Skills/Knowledge)			Psychomotor (Manual/Physical Skills)		
Lower Levels of Learning	Aid Ask Assist Attempt Choose Conform Discuss Follow Give	Identify Locate Name Observe Perform Question Report Request Respond		Cite Define Estimate Find List Name Recognize Rephrase Select State Transfer Acquire	Clarify Describe Explain Identify Locate Outline Record Report Show Summarize Translate Memorize	Choose Draw File Label Match Recall Relate Review Sort Tell Write Repeat	Choose Detect Differentiate Display Distinguish Explain Identify Isolate Link	Listen Observe Point To Proceed React Relate Respond Select Show	
Medium Levels of Learning	Accept Appreciate Choose Complete Concern Demonstrate Describe Differentiate	Distinguish Explain Express Invite Join Justify Propose Share		Adjust Apply Classify Differentiate Examine Illustrate Inspect Modify Prepare Question Tabulate Use Survey Contrast Organize	Alter Calculate Compare Discriminate Extract Infer Investigate Order Produce Separate Test Dissect Probe Detect Translate	Analyze Categorize Compute Distinguish Extrapolate Interpret Manipulate Predict Relate Solve Uncover Verify Inquire Deduce	Adjust Assemble Build Calibrate Close Construct Disconnect Dismantle Dissect Draw Duplicate	Grind Heat Load Loosen Manipulate Mend Open Organize Replace Rotate Select Sort	
Higher Levels of Learning	Act Arrange Adhere Change Compare Contrast Demonstrate Formulate Generalize	Integrate Influence Mediate Organize Propose Qualify Revise Solve Synthesize		Appraise Assess Compile Choose Construct Design Develop Formulate Implement Justify Propose Rate Reorder Revise Synthesize	Approve Build Compose Conclude Create Devise Diagnose Generate Indicate Organize Prove Rearrange Research Support Transform	Assemble Combine Conceive Confirm Criticize Discover Evaluate Integrate Judge Plan Rank Recommend Resolve Structure Validate	Adapt Alter Build Create Change Combine Compose Construct	Design Devise Initiate Modify Originate Rearrange Reorganize Revise	

Gross & MacKeracher. (n.d)

Examples of Learning Outcomes

Geology: By the end of this course, students should be able to demonstrate how magma geochemistry relates to partial melting of the mantle by contrasting the outcomes of this process in different tectonic regimes through the critical analysis of specific case studies.

Biochemistry: By the end of this course, students should be able to apply the principles underpinning the use of molecular graphics in the design of drugs to illustrate general and specific cases through a computer-based presentation.

English: Students should be able to analyze the relationship between the language of satire to literary form by the close examination of a selected number of eighteenth-century texts in a written essay.

Environmental Studies: Students should be able to evaluate multiple solutions to various environmental and scientific questions and assess potential outcomes to justify optimal and ethical solutions when presented with a number of authentic situations.

Theatre: Use voice, movement and dramatic character and situation to affect an audience through in class and final project presentations

History: Recall factual claims about the past and synthesize them into coherent interpretative arguments through a term paper and final debate project.

References

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Simon, B. and Taylor, J. (2009) What is the value of course-specific learning goals? Journal of College Science Teaching. Nov/Dec: 53-57

Soulsby, E. (2009) How to write program objectives/outcomes. Accessed online at: http://www.assessment.uconn.edu/ , Feb. 9, 2011.

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Checklist for Writing Effective Learning Outcomes

☐ Focus on **outcomes of student learning**, not processes of how you'll teach etc.

☐ Do the outcomes accurately describe what a graduate should know, value and be able to do? Do they describe adequately the unique strengths that a graduate of the program should possess? Are there any specific statements that should be added, consolidated and/or removed?

☐ **Start** each outcome with an **action verb**

☐ Use only **one action verb** per learning outcome

☐ **Avoid vague verbs** such as know and understand

☐ Check that the verbs used reflect the **level of learning required**

☐ Ensure that outcomes are **observable and measurable**

☐ Are the learning outcome statements **concise and specific**?

☐ Could they be **understood by multiple audiences** (e.g. students, instructors, employers, administrators, across institutions)?

☐ Write the outcomes in terms of what the **learner does**, not what the instructor does

☐ Check that the outcomes reflect **knowledge, skills, or attitudes** required

☐ Are the outcomes **reflective of the discipline**? Would the discipline be clear if the statement were read in isolation? If not, what additional detail could be added to provide additional disciplinary context?

☐ Include outcomes that are **woven into the entire** course

☐ Check that there are the **appropriate number** of outcomes

☐ List the **sub-outcomes** for each outcome (if required)

☐ Check that the outcomes fit within **program and course goals**