

LEARNING OUTCOMES – A BASIC OVERVIEW

**SECTION A: DEFINITIONS**

**WHAT IS CURRICULUM MAPPING?**

Curriculum mapping is an effective strategy for aligning and integrating learning outcomes across a sequence of courses and clarifying how each course contributes to program goals and how these goals contribution to institutional expectations. The sequence of courses and learning outcomes should show a progression of learning and reflect the appropriate degree level expectations.

Purpose of Curriculum Mapping

* To ensure students learn the most important skills, ideas, attitudes, and values of the discipline or profession
* To clarify what the program aims to achieve and to communicate clear expectations to students
* To improve quality and effectiveness of program based on actual student achievement
* To facilitate curriculum alignment and improve program coherence
* To identify potential gaps in the curriculum
* To identify for both students and employers what successful graduates will know, believe or have the skills to do

**DEGREE LEVEL EXPECTATIONS**

Undergraduate (UUDLEs) and Graduate (GDLEs) Degree level expectations were developed by the Ontario Council of Academic Vice Presidents and provide the expected learning outcomes, skills and creative and intellectual development that university students for both undergraduate and graduates in Ontario should possess upon completion of their degree. Trent University has specified Undergraduate and Graduate Degree Level Expectations (UUDLEs and GDLEs). Student level of learning should reflect the appropriate degree level, BA/BSc, MA/MSC, or PhD.

**PROGRAM GOALS**

Program Goals are broad statements indicating the knowledge, skills, abilities, attitudes, perceptions or value that students will have accomplished upon completion of the program. What should a graduate know or be able to do at the point of graduation. What should describe what a program is expected to accomplish; they should be essential, significant and consistent with rationale for the program. Clear and articulate statements describe the knowledge, skills, abilities, attitudes, perceptions, or values that students will have accomplished upon completion of the program.

**STUDENT LEARNING OUTCOMES**

Student Learning Outcomes are clear, concise and measurable statements that demonstrate what students need to learn to achieve program goals. Learning Outcomes are more specific than Program Goals; they are speciific, measureable and attainable; they demonstrate how the student will achieve the skill, knowledge, ability described in the program goal.

**ASSESSMENT METHODS**

Assessment methods are tools and techniques used to determine and measure student achievement. Learning outcomes require assessment that appropriately reflect the level of skills and competencies expected of the students in the field. Evaluation methods must be reliable and relevant; they should be measurable and provide direct evidence of meaningful application; students will demonstrate the ability to apply the required skill or knowledge. The methods of assessment will be used to evaluate what students are actually learning through their experiences.

**SECTION B: CURRICULUM MAPPING PROCESS**

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| **STEP** | **DESCRIPTION** |
| STEP 1 | Academic Unit reviews Undergraduate Degree Level Expectations (UDLES) or Graduate Degree Level Expectations (GDLES)  Map Program Goals to Degree Level Expectations. Individual programs goals should map to 1 or more degree level expectations.  *Question to ask:*  *For each program goal, with which degree level expectation(s) does it align?* |
| STEP 2 | Academic Unit develops/reviews Program Goals to meet Degree Level Expectations. Program Goals are broad, more general statements regarding the knowledge, skills and abilities students will achieve by the end of the program. As a guide only, a program may have 6 to 10 goals for the overall degree program. Program Goals should map directly to Degree Level Expectations, and may map to 1 or more Degree Level Expectations. Students need to clearly understand what is expected of them upon graduation.  *Question to ask:*   * *What do you want your students to achieve by the time they graduate from the program?* * *What are the ideal attributes a program graduate should achieve?* * *What should students know and be able to do upon graduation?* * *What key knowledge, skills, values and attitudes should students possess upon completion of the program?*   i.e., By the end of the program, successful students graduating will \_\_\_\_\_? |
| Step 3 | Academic Unit develops student or course-level Learning Outcomes for each Program Goal. 3 to 5 outcomes per goal are recommended.  Each learning outcome should be meaningful and identify a unique knowledge and skill to be attained. Each learning outcome should begin with an observable action verb followed by a statement specifying the learning to be demonstrated (see Section C: Cognitive Skills and Action Verbs)  Learning Outcomes should be:   * Specific – focus on specific category of student learning; if it is too broad it will be difficult to measure * Measureable – data can be collected to measure student learning * Attainable – outcome is attainable; realistic expectation of student   *Question to ask:*   * *What knowledge, skill or abilities should the student demonstrate?* * *What specific demonstrable skill or knowledge will the student learn?* * *How will students know they have achieved the learning outcome?* * *Is the outcome measureable/attainable?* |
| Step 4 | Academic Unit provides Illustrative Examples – align Methods of Assessment/Evaluation Methods with Degree Level Expectations (document and demonstrate how students will know they have attained the knowledge, skill, ability. Tools and techniques should be varied and appropriate to level of learning.  Multiple and varied assessment tools should be used to show that students have achieved learning outcomes and can apply knowledge and skills. Assessment may include: multiple-choice quizzes, exams, fill in the blank questions, application exercises, essay assignments, case studies. Assessment methods should reflect and be appropriate for the level of learning.  *Question to ask:*   * *How is student assessment achieved and how can it be measured?* * *How will the learning outcome be measured?* * *Is the assessment appropriate for the level of learning?* |
| Step 5 | Academic Unit maps all required courses to Degree Level Expectations (UDLES or GDLES), showing that the degree clearly meets the level of learning: Hons Bachelor, Masters, Doctoral level.  This allows a detailed view of courses relevant to meet degree level expectations, and helps to identify potential gaps in curriculum where specific knowledge, skills and values may need to be development, added and/or revised.  When mapping courses to Student Learning Outcomes, academic unit may wish to identify level of learning that the course provides:   * Introductory Level (I): outcome is achieved at introductory level – assumes limited or no prior knowledge * Reinforcement Level (R): outcome is reinforced; assuming introduction in previous course * Proficiency (P): outcome is mastered or met; intro and reinforcements in prior courses   *Questions to ask:*   * *How does the course contribute to the achievement of 1 or more of the learning outcomes?* * *Which courses meet the stated learning outcomes?* * *What level of proficiency does this course meet?* |

**SECTION C: COGNITIVE SKILLS AND USE OF ACTIVE VERBS**

*Based on Bloom’s Taxonomy of Educational Objectives there are 5 levels from lowest to highest cognitive skills.*

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| Cognitive Skill | Definition | Verbs to describe student learning; outcome should be observable, measureable and able to be demonstrated |
| Knowledge/ Information Gathering | Recall or remember facts without necessarily understanding them | * Define, list, recognize, describe, identify, state, select, know, observe, locate, indicate, outline, relate |
| Comprehension/ Deeper Understanding of Knowledge | Understand something that has been communicated without relating it to anything else | * Characterize, describe, explain, identify, locate, recognize, sort, review, relate, clarify, interpret, summarize, transform, compare, report, translate |
| Application/Use of Knowledge | Use ideas and concepts to solve problems in particular situation | * Choose, practice, employ, solve, use, demonstrate, implement, compute, investigate, predict, produce, perform |
| Analysis/ Compare and Contrast | To break information into its components; focus on interrelationships | * Analyze, categorize, compare, deconstruct, determine evidence and conclusions, appraise, debate, question, relate, distinguish, examine, survey, differentiate |
| Evaluation/ Judging the Outcome | To judge the value of material or method based on definite criteria | * Assess, critique, evaluate, rank, rate |
| Synthesis/ Original of or New Creation | Create something new by putting different parts of different ideas together as a whole | * Construct, design, formulate, organize, synthesize |

**SECTION D: EXAMPLES OF PROGRAM GOALS AND STUDENT LEARNING OUTCOMES**

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| Degree Program | Program Goal | Student Learning Outcome |
| Environmental Geoscience BSc | Awareness of techniques and approaches used in geoscience, including their limitations and assumptions. | * Students will be able to select and apply the appropriate method for a particular problem. * Students will understand the essentials of data quality assurance and control. |
| Child & Youth Studies BA | Ability to interpret and evaluate different methods and approaches n the research fields of children and adolescents. | * Students will be able to develop, design and conduct research interviews and interpret the data into written reports. * Students will be able to effectively communicate knowledge and resources about specific issues in child and youth. |
| Educational Studies MA | Identify and acknowledge the limits of their research activity and findings, and seek alternate interpretations of findings to expand their awareness of the limits and potential contributions of new knowledge in relation to previous related research. | * Students will critique research including identifying sources of error, omission and validity concerns, and suggest improvements for methods and knowledge building. |

**DIAGRAM: CURRICULUM MAPPING**

*Development of learning outcomes is an ongoing process and should be reviewed periodically to ensure students are meeting degree expectations and have acquired the knowledge and skills in their discipline or profession at time of graduate. Period analysis of the overall program maintains the integrity and coherence of the program.*