Taylor Institute
Curriculum Review Series #1

Introduction to Curriculum Review

UNIVERSITY OF CALGARY
Taylor Institute for Teaching and Learning
Educational Development Unit

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Curriculum Review at the University of Calgary

Understanding Curriculum

Curriculum, with Latin roots – 'currere' means running of the course (Pinar, 2011), a racecourse. In an academic environment, our curriculum – the race course, becomes prescribed and described as the program of study, made up of a series of individual courses. Toombs & Tierney (1993) also describe curriculum as 'an intentional design for learning negotiated by faculty in the light of their specialized knowledge and in the context of social expectations and student's needs.

However, curriculum is not static, but remains fluid and dynamic, ever changing. With learning being interpreted and experienced differently by diverse participants, making it important that we develop an awareness of our curriculum as constructed everyday by participants in our educational program. How are our participants experiencing the 'race course' – what is their lived experience? Are we meeting identified program learning outcomes? How best can we enhance the learning experience of our participants?

Definition of Curriculum Review (CR)

The curriculum review process provides an evidence-based means to answer questions we may have about our program. At the University of Calgary, curriculum review is defined as:

> An academic, staff-led critical examination of each undergraduate and course-based master's program for the purpose of optimizing the learning outcomes of that program (University of Calgary, 2015, p. 3).

At the University of Calgary, curriculum reviews are a formative component of the overall quality assurance strategy and are focused on the continuing development of students' learning experiences. The curriculum review process will generate an action plan for improving the program, and the impact of the review will be determined by evidence of implementation success (University of Calgary, 2015, p. 2).

Benefits of Curriculum Review:

The main benefit of curriculum review is to improve the student learning experience by:

- Articulating the strengths of a program
- Identifying specific actions to address gaps within an academic program
- Increase discussion and collaboration between instructors and others who play a role in the program
- Improve teaching and learning practices
- Provide an opportunity for critical reflection on the program's curriculum
- Provide evidence to guide decision-making within the program
- Understand the relationship among courses within a program

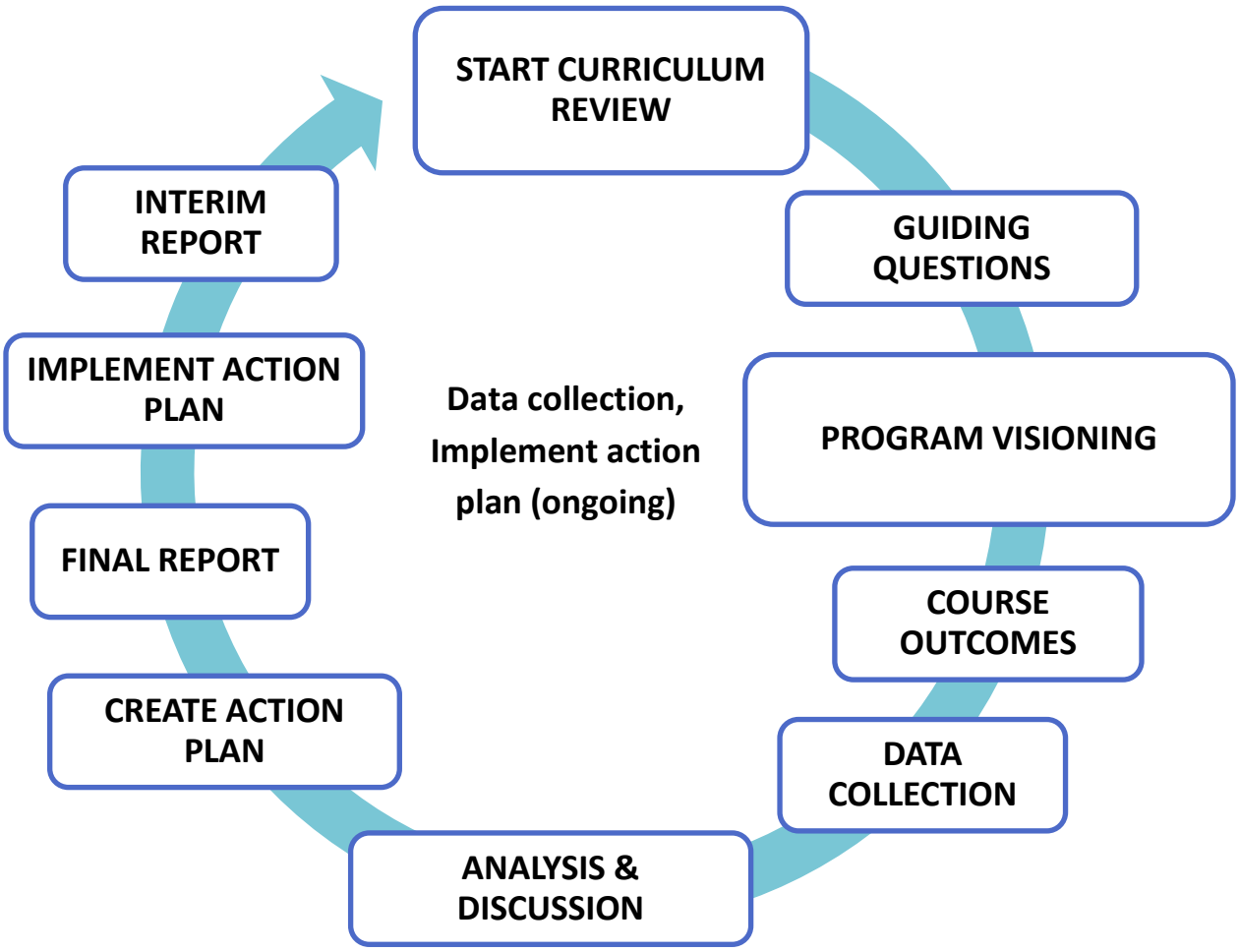
Guiding Principles of Curriculum Review at the University of Calgary

The curriculum review process at the University of Calgary is guided by the belief that the process will be faculty –led, evidence informed, focus on improving student learning, encompass a program level perspective, and an on-going effort to continuously improve the program.

Contributions from and Collaboration among Instructors	• Faculty-led investigation • Contributions from and collaboration among instructors
Evidence-informed	• Several data sources are used to inform discussion on the curriculum • Data sources may include - standard report from OIA, curriculum mapping data, student surveys
Focus on Student Learning	• Frame the discussion to put the focus on enhancing the student learning experience
Program Level Perspective	• Examines the program as a whole • Considers the learning experience of students throughout the program
Continuous Improvement	• Iterative process to be conducted every 5-7 years • Action plan to guide the implementation of changes over time

Curriculum Review Process

Curriculum review at the University of Calgary is an iterative process that involves the components highlighted below:



Guiding Questions

What are Guiding Questions?

Guiding questions are critical questions or concerns that guide the curriculum review process (University of Calgary, 2015). Different faculties will be interested in exploring different aspects of their curriculum, from broad encompassing questions, to specific curricular concerns. Identifying questions to guide the curriculum review process provides a focus for the entire process.

Guiding questions in the curriculum review process will:

- Define the programs investigation
- Support the identification of the type of data to collect during the process
- Structure the action plan of the report
- Form the foundation of the interim report

For more information please refer to the manual found at:
https://curriculummapping.weebly.com/uploads/1/4/9/0/14908434/handout_cr_2_guiding_questions_timeline_creating_review_plan_2018_01_11.pdf

Examples of guiding questions

General questions:

- What are the strengths of the program?
- How are program-level learning outcomes (PLOs) addressed in specific courses of the program? Are there any program-level learning outcomes that are not adequately addressed?
- Looking at the scope and sequence of the courses within the program, are there any gaps and/or overlaps in learning outcomes? If so, where?

Accreditation:

- If your program has an external accrediting body, you might add guiding questions to fulfill their requirements to allow you to complete both accreditation and the U of C's curriculum review process simultaneously.

Purpose of the program:

- How current is the program? What is being emphasized? Are we preparing graduates for traditional and/or emerging roles?
- What careers do graduates of the program go on to have?
- How can we make the program more innovative?

- What is the right balance of discipline-specific courses and interdisciplinary courses to give students a solid grounding in the discipline yet enhance their learning of broader perspectives? What might a multidisciplinary approach look like?

Students:

- Who are our students?
- Why is there so much drop-off in registration after the introductory course? Why do students decide not to continue in the discipline?
- What aspects of the program are problematic for students and how might we address them?
- What do students want out of the program? What are their career goals?
- What percentage of alumni go on to graduate studies at our institution?

Student learning experiences:

- To what extent do teaching and learning activities across the program scaffold student learning, building it from an introductory level to more complex concepts? Is there a need for more diversity of teaching and learning activities used in the program?
- What high-impact educational practices (Kuh, 2008) do we have in our program, and where are they located? Do we need to any or distribute them differently across the program?
- What aspects of the National Survey of Student Engagement (NSSE) do we excel at? What results are we dissatisfied with, and how might we address them?
- How might we plan a non-traditional learning experience for students? What would that look like? How would it be scaffolded and assessed?
- How are we connecting theory to practice? What improvements should be made in this area?
- What teaching methods are currently being used? Is there sufficient diversity?

Student assessment:

- To what extent do student assessment strategies across the program support and capture student learning? Is there a need for more diversity of student assessment strategies used in the program?
- What are the DFW rates (grades of D or F, withdrawals) for the program? What is the rate to completion? If the statistics are not reasonable, what measures should we take to improve?
- How do we approach formative feedback across the program?
- Are our policies around (grading, deferrals, etc.) effective or do we need to set/ examine specific policies?

Prerequisites:

- Do we have the right prerequisites for upper-level courses?
- Are more prerequisite courses needed for students to be successful in upper-level courses? Less?

- Is a lack of prerequisite courses in certain upper-level courses problematic for students in terms of their success in certain upper-level courses? Do they have the necessary understanding in order to succeed in these courses?

Consistency across sections of a course:

- What approaches are different instructors taking to multiple sections of a course? How consistent are course outcomes, student learning experiences, and student assessments? Are there any issues, especially in courses that are prerequisites for other courses?
- How much flexibility should we give different instructors in multiple sections of a course to bring their own expertise and research interests to the learning experience?

Content coverage:

- Are students getting opportunities to acquire foundational knowledge in the field?
- Is there a balance between foundational knowledge/ content and other curricular concerns such as critical thinking and communication?
- To what extent does the program facilitate student learning of (writing skills, critical thinking, professionalism, innovation, research skills or other initiative or strategy being targeted)? How can improvements be made?

Core courses:

- Do we have the right core (required) courses in the program?
- How are the content and theories in core courses built upon in subsequent courses? How are we scaffolding student learning throughout the program?
- Is there adequate flexibility in the program to allow students to take courses of interest to them, such as the embedded Sustainability Certificate?

Time to completion:

- Where are the bottlenecks in the program and how do we resolve them?
- What courses have high percentages of failure rates and/or withdrawal?
- What courses are out of sequence or offered in the wrong term?
- Who is graduating from our program, and who isn't? Why do students transfer out of the program?

Intended and Perceived Curriculum:

- How effective are instructors at conveying course expectations to students? What is the difference between the intended curriculum and what students actually learn (the perceived curriculum)?

Academic integrity:

- How do students learn about academic integrity? Are we doing enough and the right things in this area?

- How do we help students who are struggling?

Staffing:

- Where should we put our resources? Should we be "realizing efficiencies", lowering class sizes, using sessional instructors more/ less?
- Do we concentrate on the learning experience in service courses that have students from all faculties (for example, first-year tutorials) or dedicate more resources to advanced courses that have more of our majors?

Faculty/ department and institutional priorities:

- How does our program align with graduate attributes, at the faculty and/or institutional level?
- Does our program align with strategic priorities?
- How are Indigenous perspectives being incorporated into the program in terms of Indigenous pedagogies and/or content?
- Are there any new or emerging priorities or initiatives that we should examine as part of our review; for example:
    - How do we enhance mental health and wellness in our students and staff?
    - What are our priorities regarding technology integration into teaching and learning?
    - What are our priorities regarding the internationalization strategy?
    - How is experiential learning enacted in the program and what opportunities exist to further incorporate it?

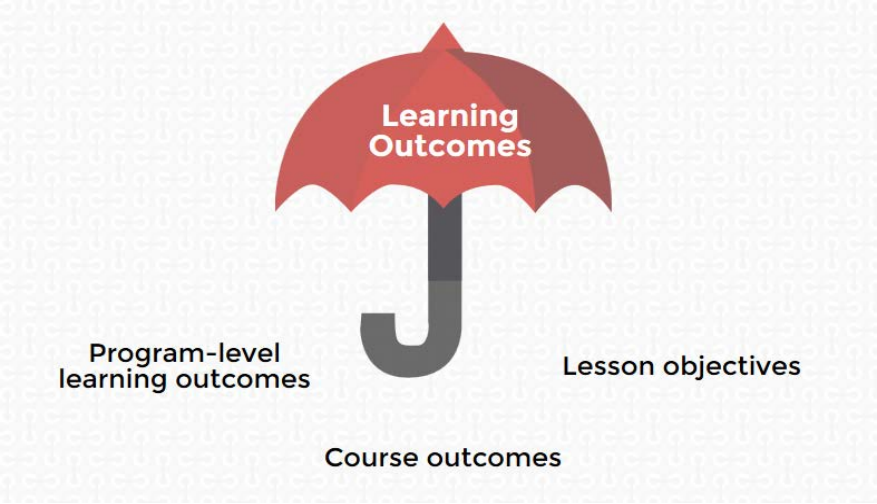
Non-majors:

- Which of our courses are required by students in other faculties/ programs?
- To what extent are our courses meeting the needs of non-major students?

Learning Outcomes

A learning outcome is "an intended effect of the program educational experience that has been stated in terms of specific, observable, and measurable student performance" (Veltri, Webb, Matveev & Zapatero, 2011). They define the knowledge, skills, and attitudes that students should be able to attain by the end of a unit of study.

An Example of Learning Outcomes for a Program



- **Graduate attribute:** Communication
- **Program-level learning outcome:** Students will be expected to write an evidence-based research paper.
- **Course Outcome:** Students should be able to evaluate the literature and select appropriate sources to support their arguments.
- **Lesson Objective:** Students should be able to use a standard citation style in their written work.

Program-level Learning Outcomes (PLOs)

Program-level learning outcomes state the intended knowledge, skills, and abilities that students are expected to meet by the end of a program. They are statements that communicate what is critical, intentional, and special about the program.

For example, a program-level learning outcome might be:

> By the end of the program, students will be expected to write a paper that incorporates academic literature.

For more information about PLOs please refer to the manual found at:
https://curriculummapping.weebly.com/uploads/1/4/9/0/14908434/handout_cr_3_plos_2017_10_23.pdf

Course Outcomes

Course outcomes are statements of what students should be able to accomplish after completing the course. They state the knowledge, skills, and attitudes that students should be able to attain by the end of the course. They are generally more specific than a program-level learning outcome, but not as granular as a lesson objective, however they should be in alignment with both.

An example of a course outcome that will map directly back to the program–level outcome above will be:

> By the end of the course, students should be able to find appropriate peer-reviewed academic articles to use in their written work.

For more information on course outcomes please refer to the Course Design Manual found at:
http://ucalgary.ca/taylorinstitute/teaching-community/sites/default/files/resources/course_design_program_manual_2014_12_18.pdf

Curriculum Mapping

Curriculum mapping is the process of associating course outcomes with program-level learning outcomes and aligning elements of courses with a program, to ensure that it is structured in a strategic, thoughtful way that enhances student learning (Adapted from Harden, 2001).

It provides an effective strategy for articulating, aligning, and integrating learning outcomes across a sequence of courses, and explicitly identifying to students, instructors, administrators and external stakeholders how student learning outcomes are delivered within a degree program (Uchiyama and Radin, 2009). Borin (2010) adds that as a visual approach, curriculum mapping can be used to analyze the underlying framework of a program.

What is being mapped?

- Course outcomes to program-level learning outcomes
- Student assessments to course outcomes
- Teaching and learning activities to course outcomes
- Optional: Program committees can identify other things they want to map, such as faculty initiatives or a strategic focus. For example, they might want to map where writing skills are being developed throughout the program

Sample curriculum map

	TLA'S	Program–level Outcome #1	Program–level Outcome #2	Program–level Outcome #3	Program–level Outcome #4	Program–level Outcome #5
Course Outcome #1	Lecture, readings	*	*			
Course Outcome #2	Case-study Reflection	*				
Course Outcome #3	Lecture, reading	*			*	
Course Outcome #4	Reading Discussion	*				
Course Outcome #5	Lecture	*	*	*	*	

Benefits of Curriculum Mapping

- Enhance standards of excellence in student learning
- Align the courses within a program with the program-level learning outcomes, teaching and learning activities, and assessment
- Ensure graduates have opportunities to acquire desired knowledge, skills and abilities
- Evidence-based means of evaluating programs
- Account for program quality and for accreditation purposes
- Foster discussions about curriculum within a faculty or department
- Faculty are more engaged in discussions about the overall program goals when they see how their courses fit into the program (Metzler, Rehrey, Kurz & Middendorf, 2017)
- Articulate tacit understandings about a program
- Promote continuous improvement approach
- Document program strengths (Uchiyama & Radin, 2009; University of Calgary, 2015; Wolf, 2008)
- Identify specific actions to address gaps within an academic program

For more information on curriculum mapping please refer to the manual found at: https://curriculummapping.weebly.com/uploads/1/4/9/0/14908434/handout_cr_4_curriculum_mapping_2017_11_20.pdf

Other Data Sources for Curriculum Review

In additional to data from the curriculum review process, various sources of data can be used to inform decisions made during the curriculum review process at the University of Calgary.

Mandatory data sources

- Standard Report from the Office of Institutional Analysis (OIA)
    - Demographic information
    - NSSE engagement indicators and responses (%) for specific questions
- Output of curriculum mapping
- Data from students (such as data from surveys, focus groups)

Other potential data sources

There are many potential sources of data which could inform a curriculum review. The classification scheme that follows has been adapted from Worthen, Borg and White (1993), and is not exhaustive.

1. Data collected directly from individuals associated with the program, including students, alumni, and instructors:
    a. Self-reports: attitudes, opinions, satisfaction, behavior, or history
        i. Surveys or questionnaires: administered on paper, orally, by telephone, by computer, or in person. Eg. annual student exit survey, satisfaction survey
        ii. Interviews, Eg. exit interviews
        iii. Focus groups
    b. Teaching and learning artifacts
        i. Quantitative student performance indicators, Eg. test results, grades on assignments
        ii. Assignments: papers, essays, discussion board posts, portfolios (including digital portfolios) and other indicators of student learning
        iii. Learning activities: simulations, debates, presentations in person or online
        iv. Personal records such as journals or logs
2. Data collected from existing organizational information or formal repositories or databases
    a. Records
        i. Standard Report from the Office of Institutional Analysis
        ii. Program documentation
        iii. Past curriculum and unit reviews
    b. Curriculum mapping data (collected from instructors)
    c. Canadian Graduate and Professional Student Survey (CGPSS)
3. Data collected through unobtrusive measures
    a. Environmental scan or an examination of similar programs across the province or across Canada
    b. Literature review
4. Data collected by an independent (external) reviewer, often associated with accreditation

    a. Open-ended observations
    b. Reports and reviews which may include other data collection methods
5. Other data sources as identified by the review lead
    a. Current or potential employer data

Analysis and Discussion

The success of the curriculum review process is not about collecting perfect sets of data, but about using the data collected to inform meaningful, collaborative discussions to inform decisions made about the program (Kenny, 2014).

During the analysis phase of the curriculum review process, data collected from the curriculum mapping process, OIA, NSSE, and students' survey/interviews, are discussed. These discussions guide decisions on what direction the faculty or department would take to address findings from the data.

Questions for Review Leads:

- How will you encourage instructors to take a thoughtful, reflective approach to mapping their courses? To the curriculum review process in general?
- What strategies might you use to engage instructors in the process of analyzing the data? How might you help them make sense of the data? How might you guide them through a process of analyzing data (including various sources) and making recommendations based on the evidence?
- How might you approach a discussion with instructors on curriculum topics? What strategies do you have to keep the discussion productive, focused and positive?

Ways to Involve People in Data Analysis

These suggestions are just a starting point and not an exhaustive list:

- All-faculty retreat (and provide food)
    - Invite some student reps as well, perhaps from your student council
- Discussion at a department meeting
- Add data to a Desire2Learn discussion board, allowing all to access the data and comment when it fits into their schedule
- Ask for volunteers to form a working group to take on the work of data analysis
    - Consider student volunteers for this working group
- Invite sessional instructors in on the conversation (a great professional development opportunity for them)
- Prepare an initial analysis and send it to all faculty for feedback and recommendations
- Involve your Undergraduate Curriculum Committee in the analysis and report writing

For information on analyzing curriculum mapping data please refer to the manual found at: https://curriculummapping.weebly.com/uploads/1/4/9/0/14908434/handout_cr_5_analyzing_cm_data_2018_01_22.pdf

Action Plan

Recommendations from the analysis phase are documented in an action plan which outlines the steps that must be taken by the faculty or department to achieve set goals. The action plan identifies action that should be taken, roles responsible for the action, and the time frame required to achieve the goals set by the faculty or department. The action plan defines a road map for the faculty or department's curriculum for the next five years.

A sample action plan is shown below:

Recommendation	Action Item	Timeline for Implementation	Lead Responsibility
Focus on written communication in the program	Invite a guest presenter from the Student Success Centre at strategic points in the program to present on writing skills	1 year	Program Coordinator, Instructors
	Find room in the budget to allot one teaching assistant to the writing-intensive courses at the 300-level	2 years	Department Head
	Diversify assignments in courses that do not have any written assignments other than the midterm and final exam	1 year	Instructors
Rationale: • The program's curriculum mapping data (chart 3) shows a gap in achieving our written communication program goals. • Data from the student survey indicate a need to increase the amount of formative feedback being given to students in the program.			

For more information on writing the action plan please refer to the manual at:
https://curriculummapping.weebly.com/uploads/1/4/9/0/14908434/handout_cr_6_action_plan_and_final_report_2018_01_03.pdf

Final Report

A final report will be prepared for use within the program and for submission to the Provost's Office. This will include:

Curriculum Review Internal Report

Written by the Review Lead in consultation with the review team, the internal report will include a summary of the program context, a checklist of the process followed, and the findings and action plan emerging from the Curriculum Review, including points of alignment with the University of Calgary Academic Plan.

Curriculum Review Public Report

The Curriculum Review Public Report will include a summary of the program context, the guiding questions, and the action plan emerging from the Curriculum Review (University of Calgary, 2015, p. 3).

The final report will be accompanied by an approval form that is signed by the dean or designate, and in the case of a review of a Master's level program, the form will also be signed by the Dean of Graduate Studies (University of Calgary, 2015).

Examples of completed public curriculum review reports can be found at:
http://www.ucalgary.ca/provost/activities/reviews

Roles and Responsibilities

Review Lead

- Is a faculty member
- Acts as a project manager
- Makes decisions about the review process
- Tracks the progress of the review
- Delegates responsibilities

Review Team

- Includes all full-time faculty teaching in the program; sessional instructors are invited to participate
- Provide feedback on program-level learning outcomes
- Maps the curriculum for courses they teach
- Can assist with data analysis and generating the action plan

Unit Lead

- Department Head or Associate Dean responsible for the unit
- Makes decisions
- Approves the CR internal and public reports
- Supports the process as needed (University of Calgary, 2015)

Students

Students can be involved in curriculum review in a variety of ways, such as the following suggestions:

- Use a survey, interviews or focus groups to gather data on student perceptions of the program
- Include student representatives on the review team (undergraduate and graduate, different specializations, etc.)
- Hire an RA to do work such as implementing surveys and focus groups
- If you have a student council or committee, get feedback from them at strategic points of the process and input into the action plan

Educational Development Consultants

- From the Educational Development Unit of the Taylor Institute for Teaching and Learning
- Provides consultative expertise when needed
- Supports the process with resources and templates
- Provides facilitative leadership for working sessions as time permits

Roles and Responsibilities (contd.)

As consultants or facilitators, we can play a role in your curriculum review. The chart below provides some ideas for involving us in the process.

Your Role	Our Role
Make decisions, eg. data collection strategy	Provide guidance and strategies
Arrange workshops and set agenda	Provide options for curriculum mapping
Support curriculum mapping	Advise, provide templates, instructions for your customization
Write the CR report	Provide feedback
Implement the action plan	Facilitate a session to introduce the process or discuss the review

Dissemination and Curriculum Reviews

Dissemination of the results of your curriculum review at a conference or as a journal article may be possible.

- Faculty or Department: Check with your Associate Dean of Teaching and Learning, dean and/or department head. You will likely need several levels of approval.
- CFREB: Get ethics approval or a certificate of exemption.

Some of the issues we have encountered:

- Secondary use of data
- Using student data? What sort of data?
- How have people been informed about process and dissemination?
- Are the data publicly available? For example, are course outlines posted online? Expectations of privacy? Impact on professional aspects?
- Data presented in aggregate or individual?
- Use of proprietary data (faculty, department)

Curriculum Review and Dissemination: Helpful Links

Research Activities Exempt from CFREB Review:
http://www.ucalgary.ca/research/files/research/150130-cfreb_research_exempt_from_review.pdf

Mount Royal University Guidelines for Differentiating between Quality Assurance and Research:
http://research.mtroyal.ca/wp-content/uploads/2015/01/QAguidelines.pdf

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For more information:

Provost and Vice-President (Academic): Quality Assurance Reviews
http://www.ucalgary.ca/provost/activities/reviews

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Articles, resources and curriculum mapping templates:
http://curriculummapping.weebly.com/

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