

CourseFlow:

Supporting pedagogic and program design

Jeremie Choquette, Dawson College, CourseFlow Software Developer
Monica Lopez, Dawson College, Pedagogical Counsellor

Oct 28, 2022

SALTISE



Éducation
et Enseignement
supérieur

Québec



OUTLINE

1

Overview of the tool (5 min)

2

Activity Level - Guiding Pedagogy for AL (15 min)

3

Course Level - Sharing and Collaboration (15 min)

4

Program Level - Ensuring Alignment (15 min)

5

Wrap Up/Questions (15 min)



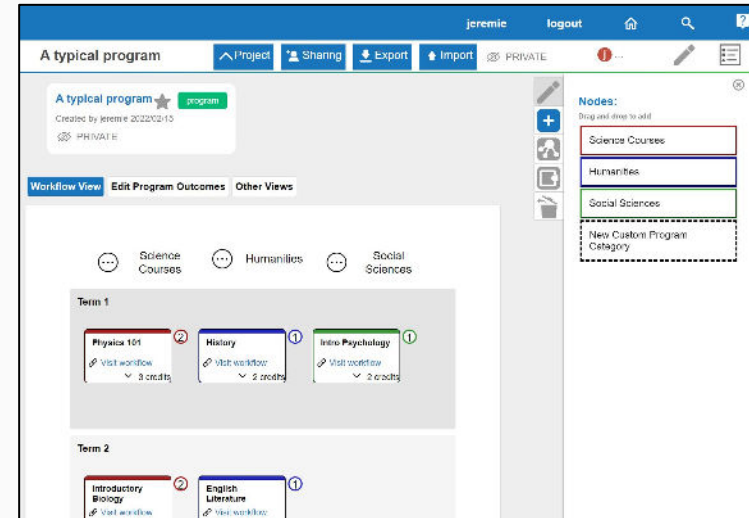
Overview of the tool

The SALTISE designed workflow tool – CourseFlow

Overview: CourseFlow purpose

Tool to support:

- Instructional planning
- Communication of information (workflows)
- Collaboration between educators

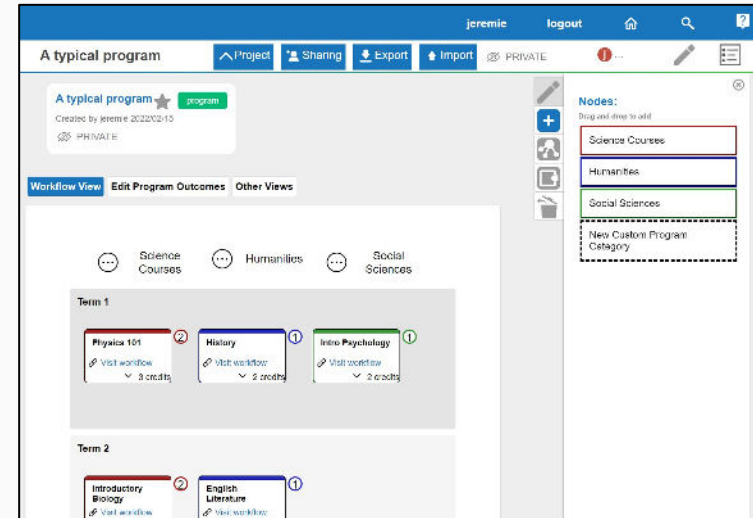


Sample program workflow

Overview: CourseFlow structure

3 levels of Instructional planning:

- Lessons (activity)
- Courses (week by week plan)
- Programs (curriculum)

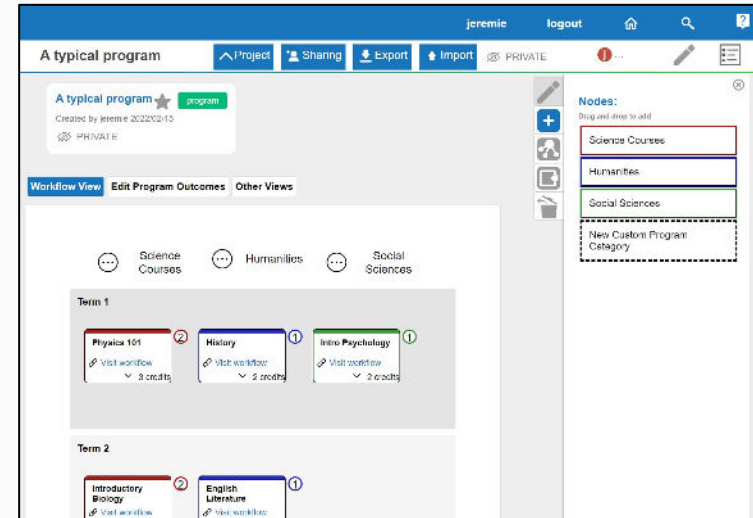


Sample program workflow

Overview: CourseFlow functionality

Supports collaboration:

- Stakeholders:
 - Teachers
 - Pedagogical counsellors
 - Administrators
 - Students (coming soon!)

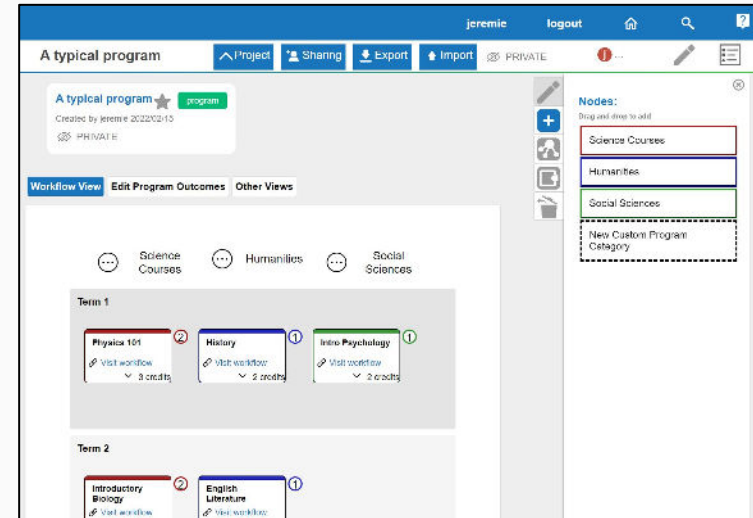


Sample program workflow

Overview: CourseFlow funding & access

- Funded by Entente Canada Québec
- Free to use (and always will be):
 - Sign up

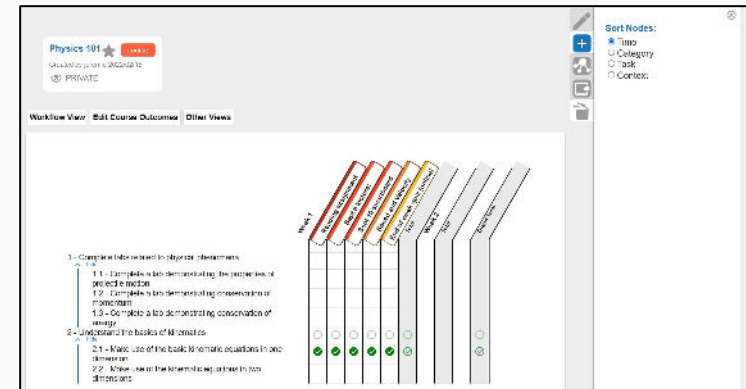
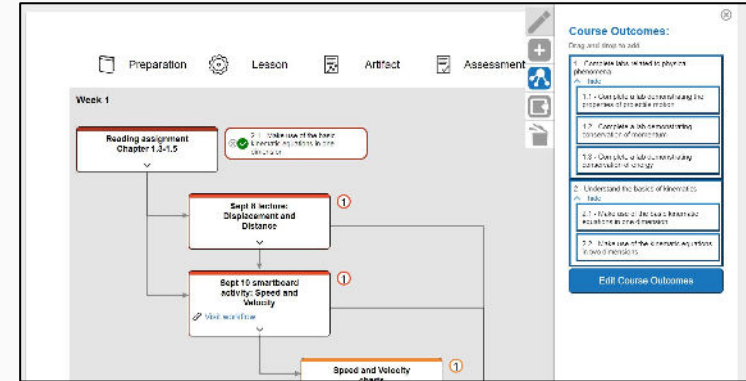
<https://mydalite.org/en/signup/>



Sample program workflow

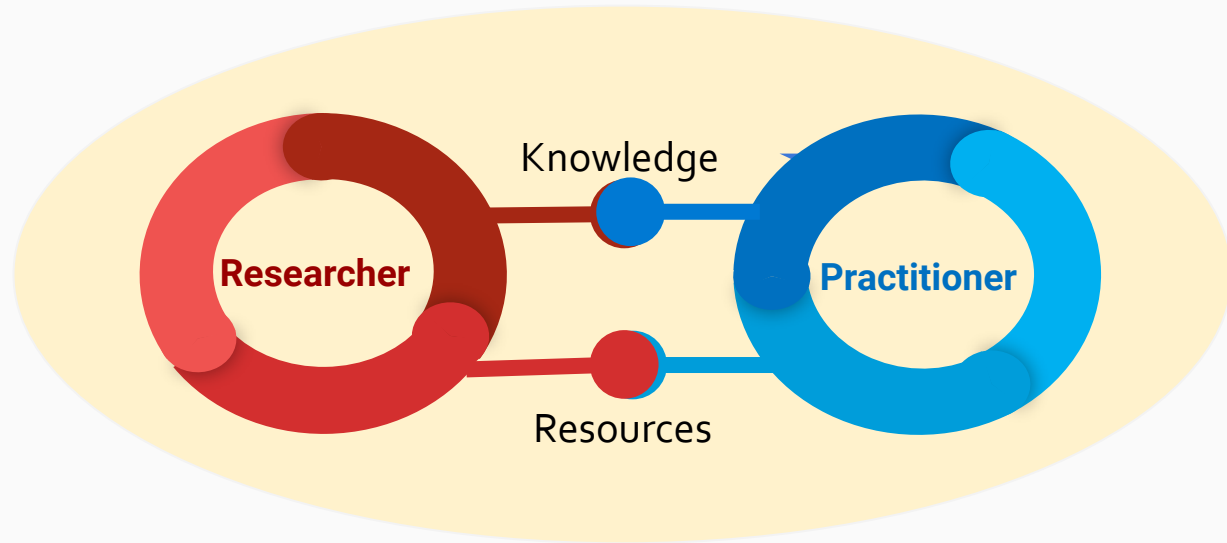
Overview: CourseFlow Features

- Relational database focused on learning outcomes (e.g. competencies, learning objectives), and tracking them throughout a course or program
- Multiple ways to visualize these data
- Multiple ways to organize these data



Overview: CourseFlow Development

- Developed in close collaboration with stakeholders (instructors, ped counsellors)
- Emphasis on feedback
- Research Practice Partnership





Activity level

Supporting Active Learning Pedagogy

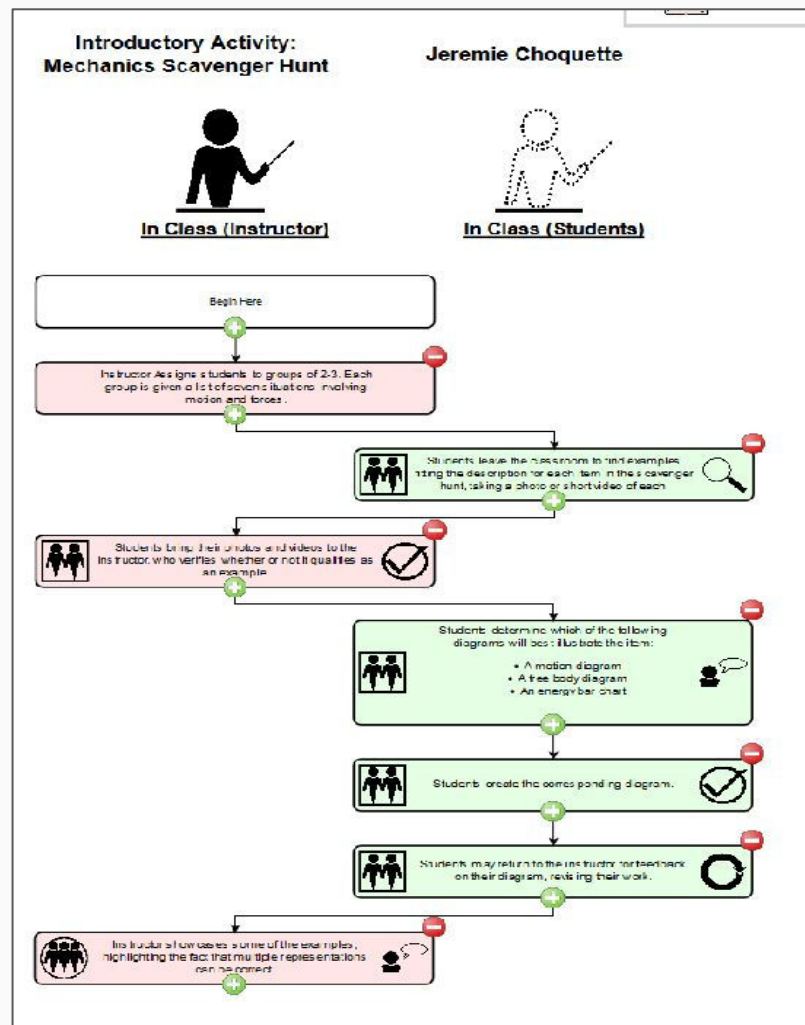
Active learning instruction

- Student-centered instruction
- Activity-centered on higher order thinking
- Diversity of instructional modalities
- Orchestration of instruction
- Evidence-based pedagogy

Workflows

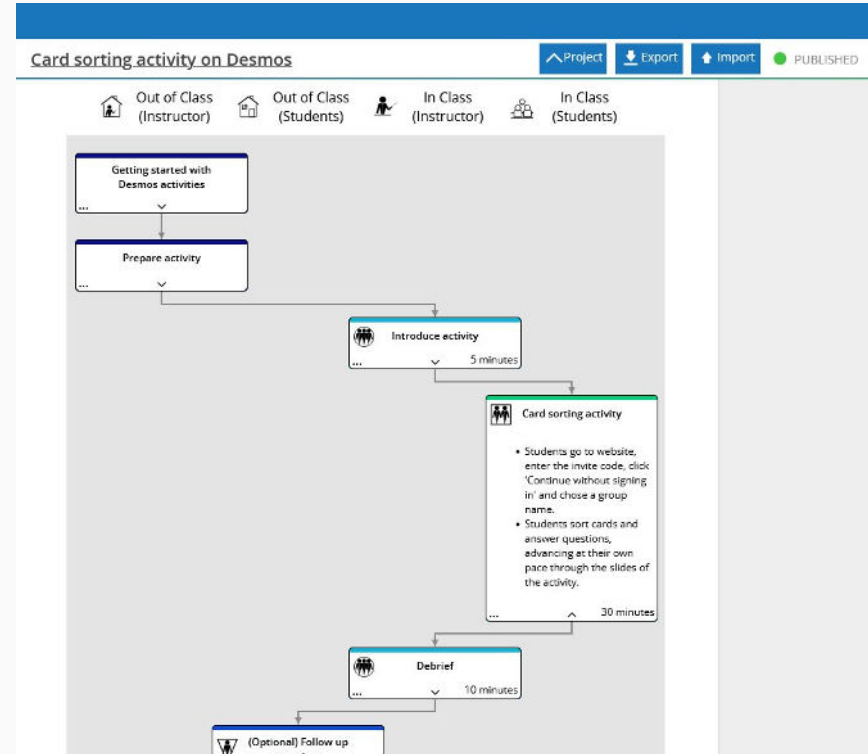
Theoretical
framework:
Scripts &
orchestration

(Dillenbourg, 2007)



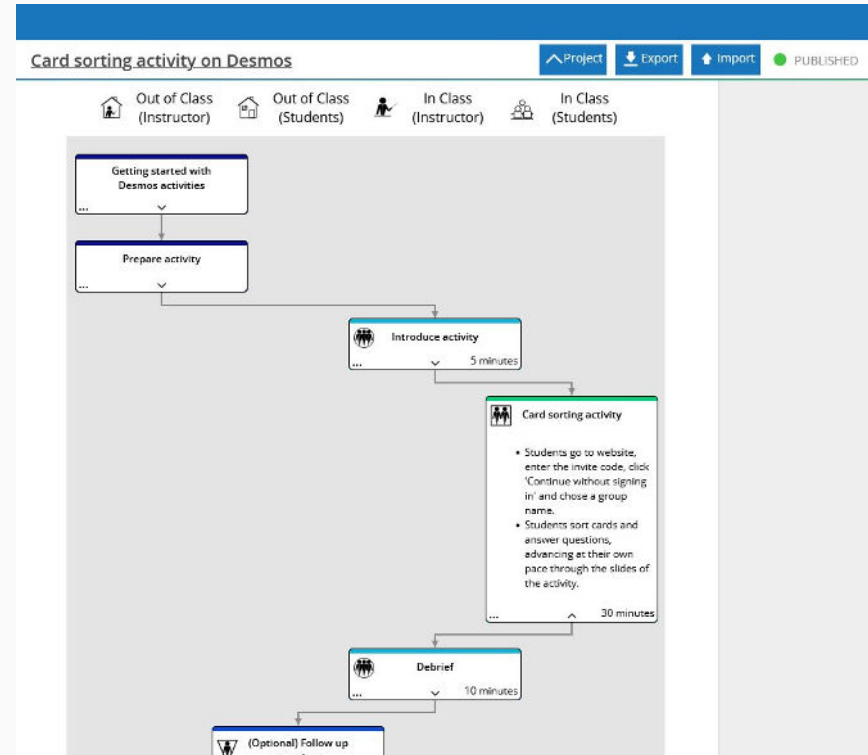
Workflows

- Coherent sequence of instructional tasks associated with learning objectives/outcomes
- Right level of abstraction to make sense (sense making)
- Visual tools to enhance quick analysis



CourseFlow Features

- Sharing and collaboration features added
- Links to external documents/materials



Where can you
find examples?

- saltise.ca → *Resources* → *Active Learning Activities*

Live Demo & Questions

Activity level



Course level

Planning week by week

Course level

Designing coherent Active Learning courses

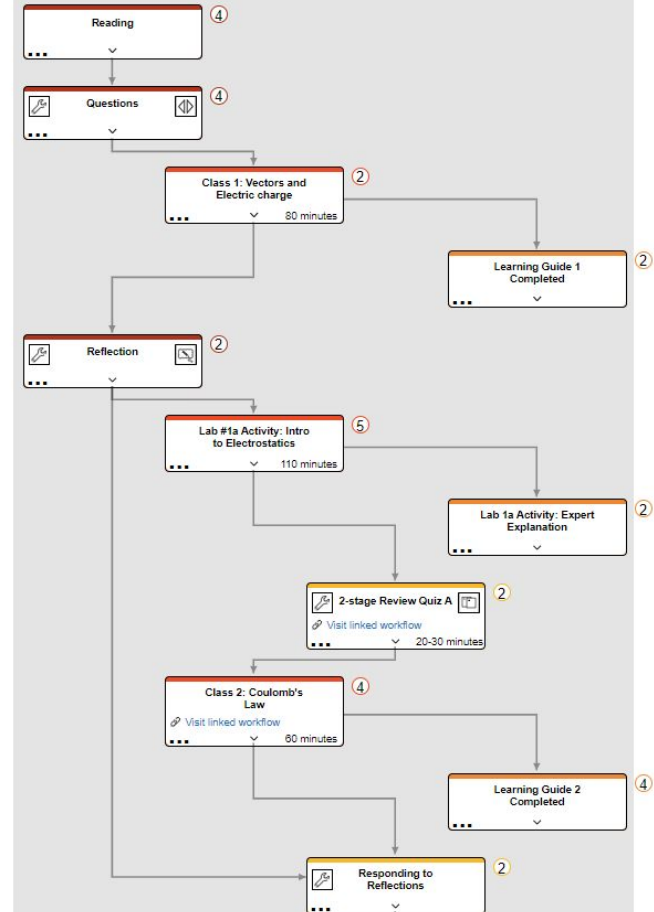
Tracks all components

- Learning outcomes
- Lessons & activities
- Assessments
- Artifacts

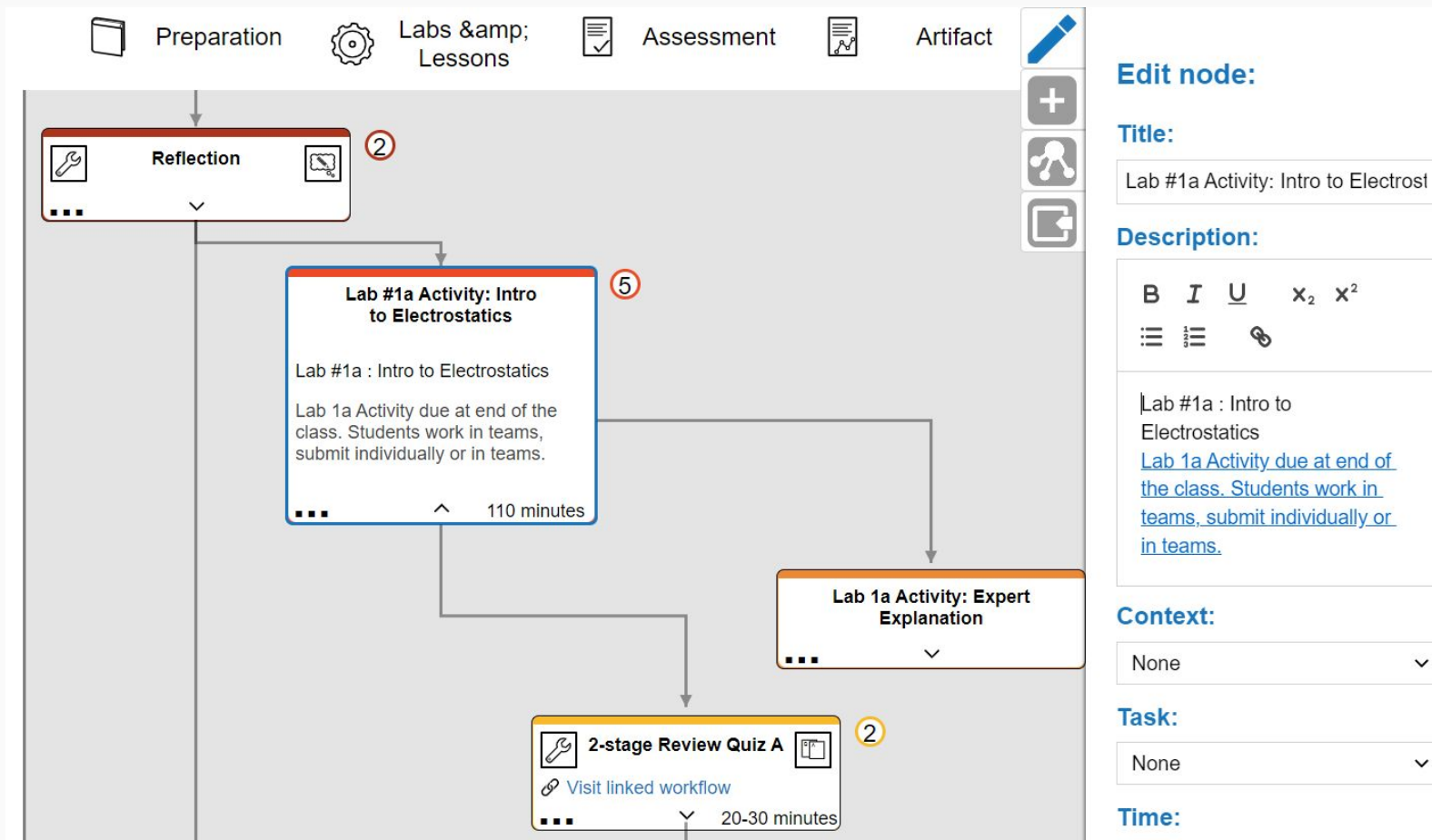
NYB Winter 2020

Preparation Labs & Lessons Assessment Artifact


Week 1





Course level





Course level


 Preparation


 Labs & Lessons


 Assessment



 Artifact














 **Reflection**  ②


▼


 **Lab #1a Activity to Electrostatics**    

Lab #1a : Intro to Electrostatics

Lab 1a Activity due at end of the class. Students work in teams, submit individually or in teams.

... ^ 110 minutes


 OOUS 1.1 - Use of terminology and its associated with static electrical charge



 OOUS 5.1 - Meticulous experimentation

OOUS 5.2 - Appropriate use of measuring instruments

OOUS 5.3 - Critical analysis of results and justification of the steps in the analysis of data

OOUS 5.5 - Experimental verification of specific laws of electricity and magnetism

 **Lab 1a Activity: Expert Explanation** ▼

 **2-stage Review Quiz A**  ②

Visit linked workflow

... ▼ 20-30 minutes




Edit node:

Title:

Lab #1a Activity: Intro to Electrostatics

Description:

B **I** **U** x_2 x^2

Lab #1a : Intro to Electrostatics

[Lab 1a Activity due at end of the class. Students work in teams, submit individually or in teams.](#)

Context:

None ▼

Task:

None ▼

Time:

Course level

	Week 1	Reading	Questions	Class 1: Vectors and Learning Guide 1	Reflection	Lab #1a Activity: Intro	Lab 1a Activity: Expert	2-stage Review Quiz A	Class 2: Coulomb's Law	Learning Guide 2	Responding to	Optional: Lon-Capa	Total	Grand Total
OOUS - Competency: Analyze various situations and phenomena in physics using the fundamental laws of electricity and magnetism ^ hide	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
OOUS.1 - Analyze situations in physics associated with static electrical charge ^ hide	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
OOUS.1.1 - Use of terminology and concepts associated with static electrical charge	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
OOUS.1.2 - Definition and application of Coulomb's Law	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
OOUS.1.3 - Appropriate use of the concept of electric forces and electric fields	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
OOUS.1.4 - Use of vector techniques to solve problems involving Coulomb's Law	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>					<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
OOUS.1.5 - Interpretation of the limits of models; be able to explain field concepts														<input checked="" type="checkbox"/>
OOUS.2 - Analyze situations in physics associated with electric current ^ hide														<input checked="" type="checkbox"/>
OOUS.2.1 - Use of concepts to describe electric current and motion of electric charges.														<input checked="" type="checkbox"/>

Live Demo & Questions

Course level



Program level

Curriculum mapping and alignment

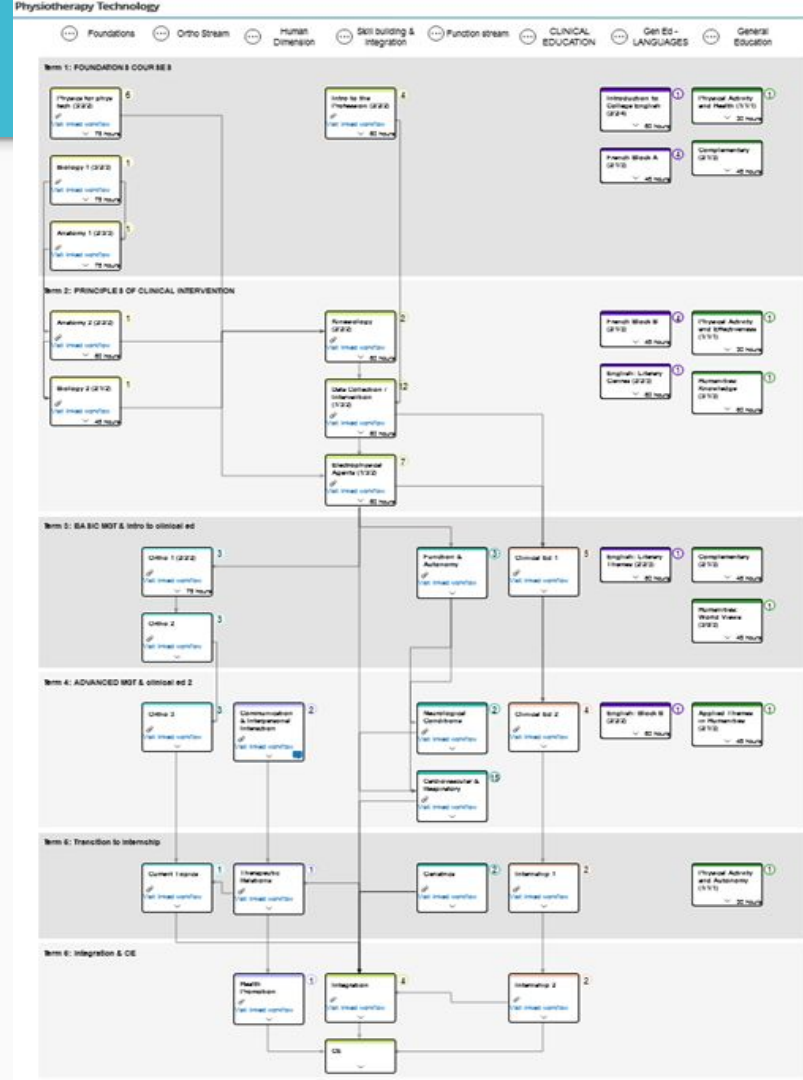
The Pedagogical Counsellor Perspective

Need for tool(s) to facilitate:

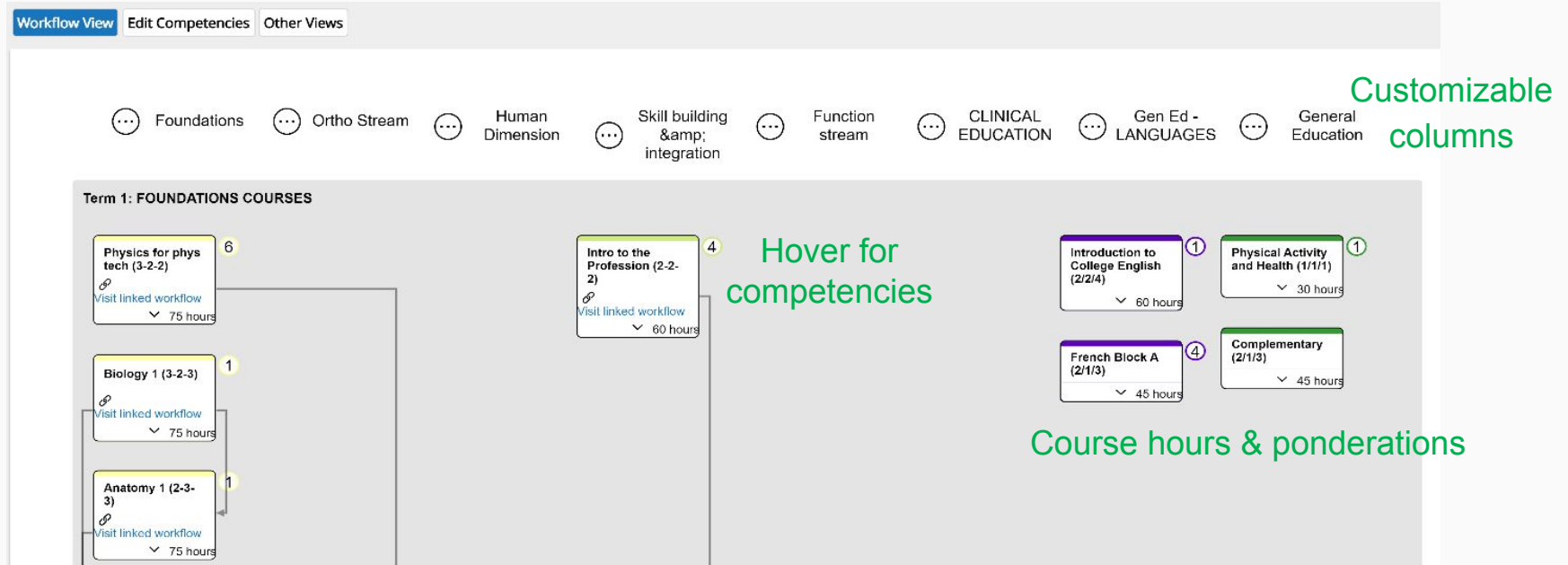
- Visual representation of program structure (courses and competencies)
- Access to program level view and course level view (zoom in and out)
- Transparency and collaboration (faculty teams and ped counsellor)
- Updates and changes (database vs. stand alone documents)

Program level birdseye

- Whole program visual interface: Links the other levels
- Customizable connectors, columns & unit labels
- Colour coding & arrows to indicate relationships between courses

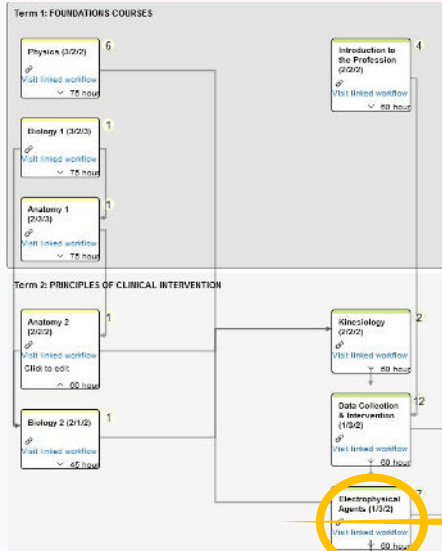


Courseflow program level workflow features

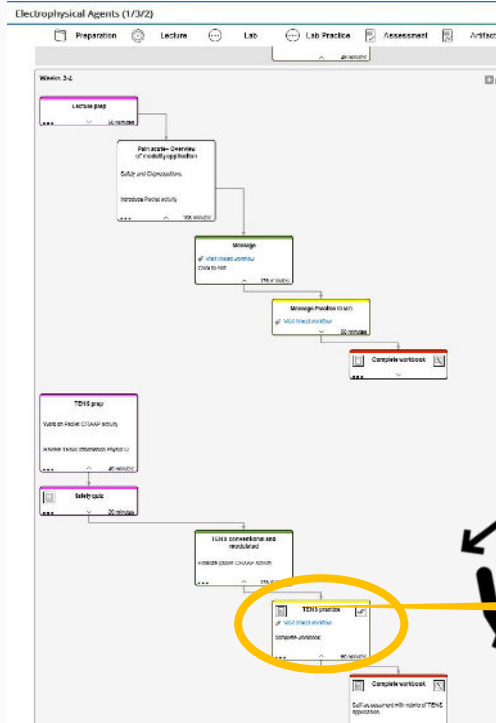


Course level workflow linked to each course "node"

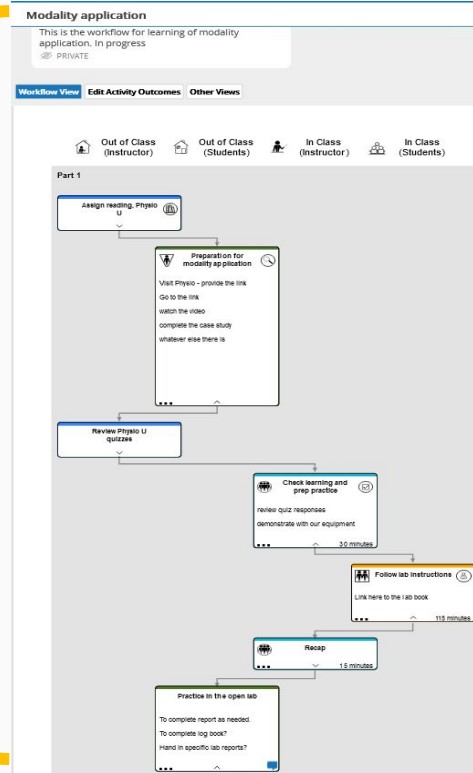
Workflows: 3-level curricular design - drilldowns



Program level workflow

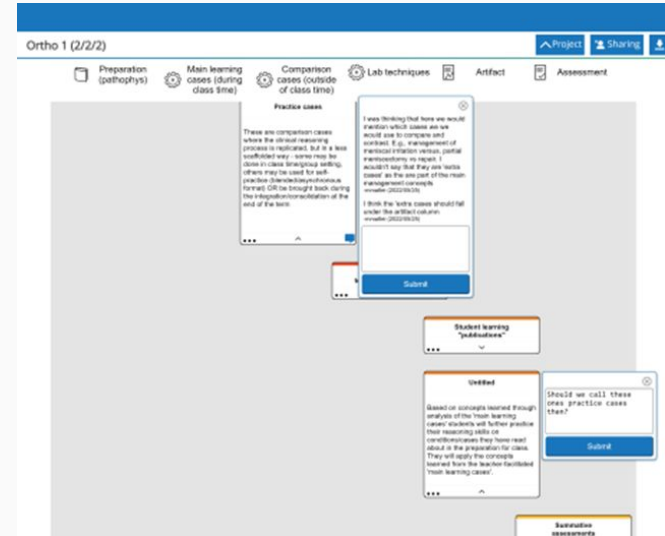
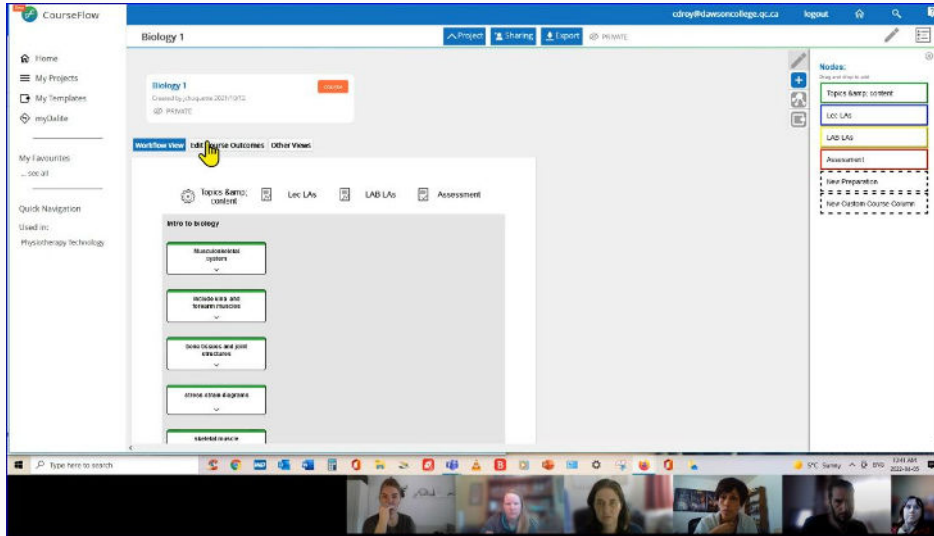


Course level workflow



Activity level workflow

Advantage #1: collaborative design



- Cloud based tool with commenting on any node
- Embracing the PROGRAM APPROACH

Advantage #2: Competency-LO alignment

The screenshot displays the CourseFlow web application interface. At the top, a blue header bar contains the CourseFlow logo, the course name 'Kinesiology (2-2-2)', and user information including the email 'cdroy@dawsoncollege.qc.ca', a 'logout' button, and icons for home, search, and a profile. Below the header, a navigation sidebar on the left lists 'Home', 'My Projects', 'My Templates', 'myDalte', 'My Favourites', and 'Quick Navigation'. The main content area is titled 'Kinesiology (2-2-2)' and includes a description: 'be explored, along with practical exercise prescription principles and protocols.' Below this, there are tabs for 'Workflow View', 'Edit Course Outcomes', and 'Other Views'. The 'Edit Course Outcomes' tab is active, showing a list of four course outcomes. Each outcome is a numbered list of specific learning objectives. To the right of the outcomes list, there is a panel titled 'Edit outcome:' with a 'Code (Optional):' field, a 'Title:' field, and a 'Description:' field. The 'Description:' field contains a rich text editor with various formatting options. Two pop-up windows are visible, each containing a 'Submit' button. The first pop-up is for outcome 1, and the second is for outcome 2.

CourseFlow

Kinesiology (2-2-2)

cdroy@dawsoncollege.qc.ca logout

Project Sharing Export PRIVATE

Workflow View Edit Course Outcomes Other Views

Course Outcomes

- 1 - Explain how various types of movement and exercise are produced by the various musculoskeletal structures
 - 1.1 - Describe the phases of a muscle twitch
 - 1.2 - Identify factors that influence the efficiency of muscle contractions
 - 1.3 - Describe circumstances associated with different types of activity
 - 1.4 - Outline factors influencing strength, mobility and flexibility in normal populations across the lifespan
 - 1.5 - Apply principles to designing strength & flexibility programs in a healthy population
- 2 - Describe how movements are executed in the human body at the biomechanical level
 - 2.1 - Describe how articular surfaces, cartilage, ligaments, and muscles influence both the stability and mobility of joints. (form dictates function)
 - 2.2 - Describe, compare and contrast the fundamental biomechanical properties of various musculoskeletal tissues/concepts of stress, strain, deformation, viscoelasticity, creep
 - 2.3 - Analyze how different types of muscle contractions move, stabilize and control joint motion.
 - 2.4 - Analyse the mechanical forces and constraints placed on anatomical structures along with the effects that these forces have on biological tissues and articulations
 - 2.5 - Describe the biomechanics of normal gait.
 - 2.6 - Describe normal postural alignment, variations, and influencing factors.
- 3 - Explain the involvement of the cardiovascular and respiratory systems in exercise
 - 3.1 - Explain the acute and chronic effects of exercise on cardiac output, stroke volume, heart rate, respiratory rate, and the peripheral vascular systems.
 - 3.2 - Explain the link between types of muscle activity and their energy sources.
 - 3.3 - Perform exercise testing for a healthy population
 - 3.4 - Describe muscle metabolism as an energy system
 - 3.5 - Outline elements of cardiovascular training programs in healthy populations across the lifespan.
- 4 - Describe the effect of exercise on various systems of the human body
 - 4.1 - Describe adaptations to acute and chronic exercise in the cardiovascular, respiratory and musculoskeletal systems

Edit outcome:

Code (Optional):

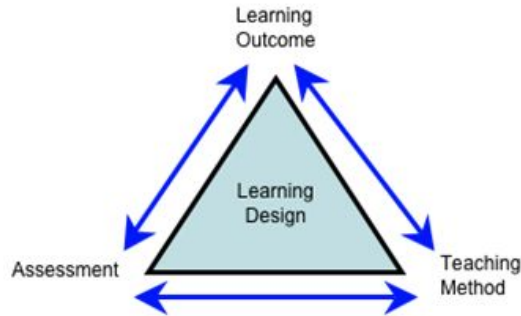
Title:

Description:

Submit

Advantage #3: Course alignment checks

Checks & balances:
The 3 pillars of alignment:



Can you spot the curricular gap?

[illegible]

Advantage #4: Onboarding teachers to new courses

The screenshot shows a web-based course planning tool. At the top, the course is titled 'Ortho 1 (2/2/2)' and is marked as 'PRIVATE'. Navigation tabs include 'Project', 'Sharing', 'Export', and 'PRIVATE'. A sidebar on the right lists 'Nodes' for the course plan: 'Preparation (pathophys)', 'Main learning cases (during class time)', 'Comparison cases (outside of class time)', 'Lab techniques', 'Artifact', 'Assessment', and 'New Custom Course Column'. The main workspace is titled 'Workflow View' and shows a sequence of course components: 'Preparation (pathophys)', 'Main learning cases (during class time)', 'Comparison cases (outside of class time)', 'Lab techniques', 'Artifact', and 'Assessment'. A 'Column explanations' panel is open, showing details for 'Reading OR online/interactive activity', including an entrance ticket requirement and a section on student activities. A 'Facilitated Case Analysis' box is visible at the bottom.

Mentoring from a distance: pedagogical support for newer teachers

How we set up a course plan visually reveals how we think about teaching & learning in the context of that course

Advantage #5: Reporting: Course Frameworks export

A	B	C	D	E	F	G
1	Course Title	Cardiovascular & Respiratory	Ponderation			
2	Course Code		Th/Lab/Individu	2/2/2		
3	Ministerial Competencies		Hours	60		
4	Competency	Title		Time		
5	02AK	Correlate medical information with physical rehabilitation interventions.				
6	02AN.1	Organize the work.				
7	02AN.2	Collect evaluative data.				
8	02AN.3	Implement treatments for analgesic, trophic or compressive purposes.				
9	02AN.5	Apply relaxation techniques.				
10	02AN.6	Design exercise programs to reduce pain and improve circulation.				
11	02AN.7	Teach exercises designed to reduce pain and improve circulation.				
12	02AN.8	Record the information in the chart.				
13	02AW.1	Organize the work.				
14	02AW.2	Document the problems.				
15	02AW.3	Analyze all subjective and objective data.				
16	02AW.4	Determine the treatment plan.				
17	02AW.6	Implement the treatment plan.				
18	02AW.7	Implement a discharge plan.				
19	02AW.8	Record the information in the chart.				
20	Term					
21	Course Outcome	Sub-Outcomes	Competencies	TOPICS	LAs: LEC	LAs: LAB
22	1- Display safe and professional behaviour	1.1- Demonstrate the use of standard infection control practices 1.2- Prepare and organize the work environment to optimize safety and efficiency 1.3- Demonstrate effective body mechanics and safe handling of patients 1.4- Monitor patient condition with vigilance and recognize unforeseen change in category.	02AW.1		Cardiovascular risk assessment	Simulation lab Objective data collection Observation bellringer game
23	2- Describe and explain the pathophysiological elements of a case involving a patient with a cardiovascular and / or respiratory condition	2.1- Identify the pathophysiological processes present in a case 2.2- Describe etiology, risk factors, and typical client presentation. 2.3- Associate conditions with the results of common medical tests that are used to diagnose and monitor them 2.4- Identify the main medical interventions (surgical, pharmacological) for each condition 2.5- Explain how the primary and secondary effects of medical interventions (surgical, pharmacological) may positively or negatively impact physiotherapy interventions 2.6- Recognize and use appropriate medical terminology and abbreviations 2.7- Associate pathological conditions with common rehabilitation interventions	02AK.1 02AK.2 02AK.3 02AK.4 02AK.5	Cardiac conditions and vascular risk factors Medical and surgical interventions Peripheral vascular conditions Acute pulmonary & post-op conditions Obstructive conditions Restrictive conditions	CABG/stroke case (crossover with neuro mgt) Restrictive conditions cases Obstructive conditions gallery walk Background knowledge activator: Kahoot group quiz Clinical case "mining" Chart review scavenger hunt	Observation bellringer game Vascular unit quiz (collaborative) Respiratory unit quiz (collaborative) Final theory exam (collaborative)
24	3- Interpret a well-defined case involving a patient with a cardiovascular and / or respiratory condition	3.1- Identify the responsibilities and limitations in scope of practice imposed by Law 94m including necessity of prerequisites and category. 3.2- Identify relevant information from a client's file that may impact intervention 3.3- Identify any precautions and contraindications for intervention 3.4- Recognize the impact of biological, psychological, environmental and social factors 3.5- Research any new or unclear information using all available resources	02AK.4 02AK.6 02AN.2 02AW.1 02AW.2		CABG/stroke case (crossover with neuro mgt) Obstructive conditions gallery walk Restrictive conditions cases Exercise safety in vascular conditions Chart review scavenger hunt	Vascular unit quiz (collaborative) Final theory exam (collaborative) Mock chart assignment Participant portfolio final DC Respiratory unit quiz (collaborative) Participant portfolio risk assessment Participant portfolio progress note, exercise
	4- Create holistic patient intervention plans for patients with a cardiovascular and / or respiratory condition	4.1- Identify pertinent questions to include in subjective history including functional endurance baseline 4.2- Identify pertinent tests and measures to use when collecting data from a patient with a cardiovascular and / or respiratory condition 4.3- Tabulate a prioritized problem list with respect to identified risk factors, impairments, activity limitations and participation restrictions 4.4- Identify SMART goals that promote patient's cardiovascular and respiratory function 4.5- Choose interventions that focus on maximizing cardiovascular and respiratory function 4.6- Identify members of the interdisciplinary team that may be involved in a particular case and participate in interdisciplinary planning.	02AK.5 02AN.6 02AW.2 02AW.3 02AW.4 02AW.7	Vascular and respiratory data collection	CABG/stroke case (crossover with neuro mgt) Obstructive conditions gallery walk Restrictive conditions cases Subjective data collection BENEFITS of exercise in vascular conditions	Objective data collection Observation bellringer game Cardiac rehab: role play activity Simulation lab Participant portfolio risk assessment Vascular unit quiz (collaborative) Respiratory unit quiz (collaborative) Mock chart assignment Final theory exam (collaborative) Participant portfolio progress note & exercise

Exported version, appearing similar to standard course frameworks

Live Demo & Questions

Program level

Why this tool? Recap of the rationale



Transparency/
student load
management



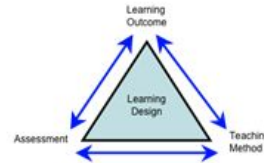
Collaboration:
Team design/
program approach



Communication/
onboarding new
teachers

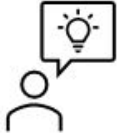


Reducing cognitive
load for both teacher
and student



Curricular alignment
/ongoing curricular
review needs

That's why we like it, what about you?



How do you see
yourself using the
tool?



Anticipated
challenges?



Questions?



Feedback?

Wrap up/Questions

Reminder: sign up at <https://mydalite.org/en/signup/>, then visit <https://mydalite.org/en/course-flow/home>

Merci | Thank you!

Acknowledgements & Thank yous:

RPP co-design colleagues: Cathy Roy, Lee Anne Johnson

SALTISE office: Elizabeth Charles, Janaya Gripper, Chao Zhang, Su Bonafim

Personal: Jean-Francois Briere, Phoebe Jackson, Cathy Roy for allowing us to adapt their slides

SALTISE



Éducation
et Enseignement
supérieur

Québec

