

LEAD: Lifelong Education and Development
Educator's guide

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Welcome!

Welcome to LEAD, a course on Lifelong education and development, designed for graduate students, postdoctoral researchers, and others working in advanced research and learning environments! This course can be used in any discipline, and the assessments are designed to be done authentically as part of each individual learner's current context. All the modules connect directly with learners' own values and goals, and they build skills that they can immediately apply. This document is intended to support educators who are teaching the course. The intention is that an in-person or multi-access course format can be used to build community and augment the course content. We offer suggestions on the syllabus, course structure, and more… but ultimately, the decisions are in your hands (even better if you can co-design with learners).

About the course

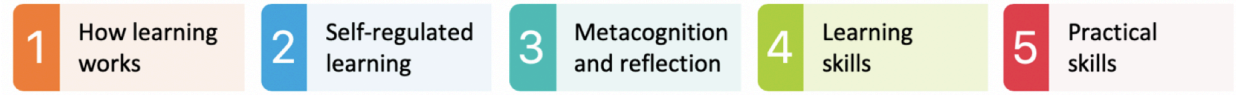
The online version of the course has six modules that can be completed in any order. Designed to equip and empower learners, each module addresses gaps that our team has identified from the literature, students, professors, employers, and others: strategic learning, academic resilience, navigating difficult conversations, project management, and mentorship. There is also an introductory section that guides students to reflect on their values, articulate SMART goals, and identify their current knowledge and needs then develop associated learning strategies (metacognition).

Within the course's modules, learners develop skills in equity, diversity, and inclusion. As a principal investigator, supporting learners in this course means being part of creating more inclusive, equitable, and productive research environments, and supporting students' in their

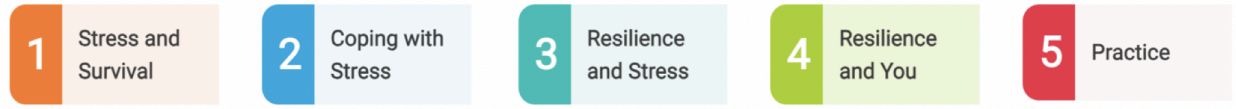
career development. If you are applying for funding from the tri-council agency or other sources that value EDI, consider including your tangible support for learners in this course in your application!

The modules

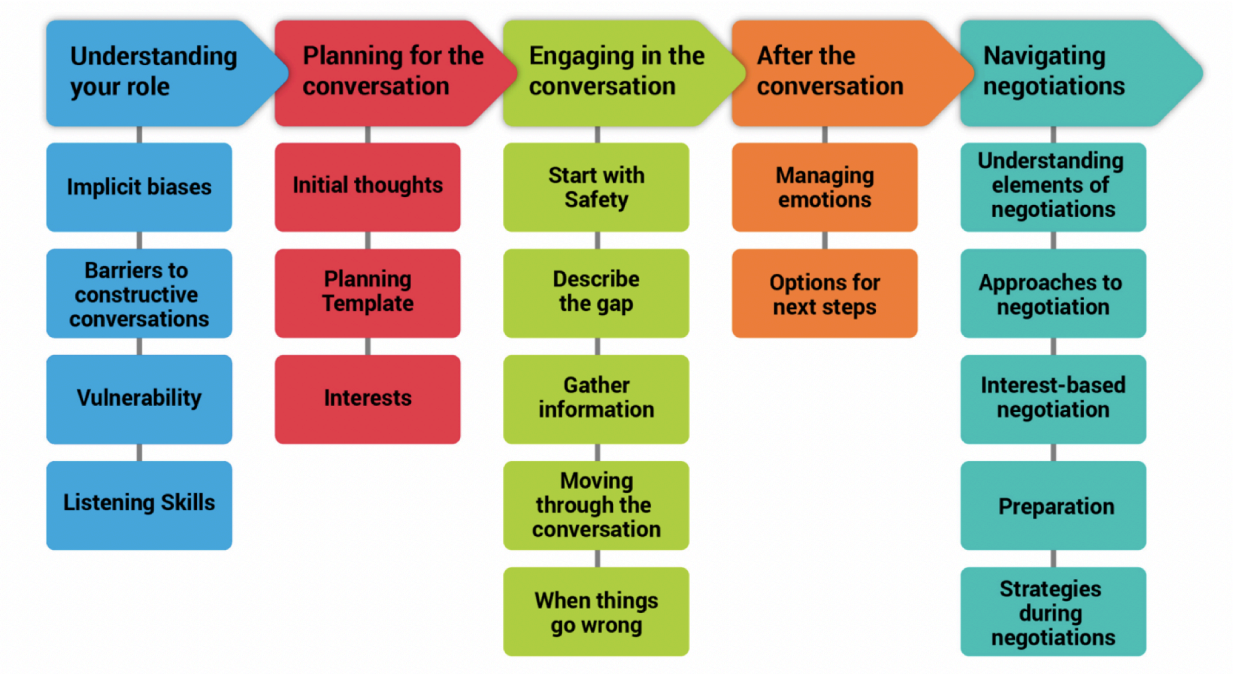
Strategic learning: Most people spend years (even decades!) in formal education settings without learning how learning works, or how to learn effectively or strategically. They are often given lists of tips or simply expected to already know how to learn. The strategic learning module guides learners to use their values in identifying their SMART goals for learning, identifying what they know and don't know and strategizing for their learning (metacognition). They learn how learning works and to apply evidence-based approaches, including learning skills of curiosity, mindfulness, mindsets, and failure, as well as practical skills such as distributed/spaced learning and interweaving.



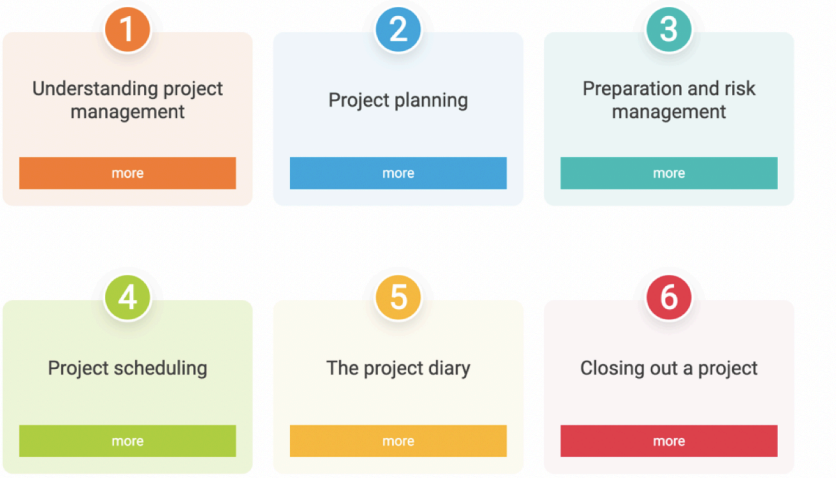
Academic resilience: Increasingly, students are reporting mental health and wellness issues. Students are also increasingly dealing with stress in unhealthy ways, such as avoidance. In the module, students learn about different types of stress and build skills to face stress in healthy ways. We also address important social concepts related to resilience, for example, that it is inappropriate to ask for resilience from individuals from equity-deserving groups facing oppression of basic human rights.



Navigating difficult conversations: These conversations arise in all kinds of situations, such as between people from different cultures, and often include power dynamics, such as between students and professors. The module helps students build skills in navigating these conversations constructively and respectfully. The module helps learners prepare for, plan, engage in, and follow-up after the conversation. We also include an optional section on navigating negotiations, for those engaged in employment discussions.



Project management: Few people explicitly learn how to create a project management strategy, including setting goals, determining which aspects are in- and out-of-scope, managing risks, creating a timeline, etc. As a result, many projects fail or take far longer than necessary.



Mentorship: While mentorship relationships are important and often encountered in academic and professional settings, few people learn to strategically and purposefully approach the relationship, including identifying a suitable mentor/mentee, exploring mentorship models, developing goals and expectations, identifying needs, and ending the relationship.



Generative AI – strategically and responsibly
This module leads learners to use skills they develop other sections of the module, such as identifying values, goal-setting, navigating difficult conversations, and strategic learning, to learn to use generative AI Tegry. The aim is to get past being comfortable with it, and knowing that they can use it responsibly to truly make it a tool that works for them.

How to take or offer the course

The course can be taken by any individual as it is designed to stand alone. That said, there is a lot to be gained by offering it as part of a for-credit course or other learning experience, including enhanced social interactions, collaboratively working through case studies, immediate feedback, etc. Below, we describe a few of the options for this course.

Stand-alone course option

Online: One option is to refer students to the course to take independently. Users have the option of a completely open (to anyone), self-directed course. A certificate is provided upon successful completion to those who register. Registration is not required, as we wanted to provide the option for users to work through the course anonymously if desired.

In person: The course can be taken at the University of Ottawa, in the Faculty of Science; course credit is provided upon achievement (1.5 or 3 credit options). Students who are part of the Ottawa-Carleton Chemistry Institute (OCCI) can enrol in the course. Students in other Faculties at uOttawa can register with their supervisor's and the course instructor's permission. Options are coming soon to other institutions.

Summer Institute: We recently hosted a week-long summer institute; details online. A certificate was provided upon successful completion.

Offer the course in your own context

You can import and adapt the course for your own context. As an open education resource, the course is free and adaptable. Please feel free to use and adapt it as needed to suit your educational context. If you are an educator/professor, we recommend consulting with learners who might take the course to hear their perspectives and needs.

The course will soon be available in French.

Feedback and mailing list

We love feedback and would be delighted to let you know about updates. Please use this form to send us feedback or join our mailing list.

[designated activities for online learners]

If you would like to participate in the concurrent project evaluation, please let us know here [link].

Syllabus → syllabi

H2 train grad student trainers.

Recommendations and templates

In the sections that follow, we provide options and recommendations for offering the course in your own setting, including sample syllabi, learning outcomes, and lesson plans. Please feel free to adapt these to your own context. We would also love to hear about any new activities/approaches that you incorporate!

Promoting social interactions

As we created and piloted the course, students described a need and desire to connect more socially. To that end, we created a Discord space that students can use during the course and beyond.

Discord is an online space where people can interact, share links and documents, comments on others' posts, etc. Past students suggested that some in-class answers or homework could be posted on Discord, to help learners get used to using the space. We created a shared Discord space [link] for anyone who uses the course; a space could also be created just for specific courses if you wish.

Sample syllabus

LEAD: Lifelong education and development

[Course code], [Date]

[Note to educators: the items in square brackets need information or can be deleted. Please feel free to adapt the rest to suit your context.]



Welcome! This course is designed to help you explicitly learn professional and lifelong learning skills that are rarely explicitly taught. Ultimately, our goal with this course is to foster more inclusive, equitable, and productive research environments, and help set you up for success in your career. The online modules for this course are open education resources, co-created by experts from multiple institutions—including graduate students from uOttawa! We hope this course will help you reach your professional and learning goals and look forward to your feedback and other contributions along the way.

Course details

Professor: [*****]
Office: [*****]
Email: [*****] *Please put [course code] in the subject line*

Office Hours: You can drop by or make an appointment.
Communication: We use Discord [can create a Discord space or another conversation space] for communication during and after the course. Please use open channels as much as possible; feel free to use a direct message or email for confidential messages.

[Brightspace]: All the details, information, and announcements for the course are located here. Please check it regularly.

Course format: The course involves completing online module before classses (e.g., readings, videos, assignments, summarizing, and discussions) as well as in-person participation in class (e.g., discussions, activities). The

Classes: Your attendance and participation in classes are key to your success in the course!

Resources will be shared in [Brightspace].

Course modules and schedule

- Introduction, values, priorities, SMART goals, and metacognition, Week 1
- Navigating difficult conversations, Weeks 2–3
- Strategic learning, Weeks 4–5
- Project management, Weeks 6–7
- Invited speakers and discussions, Week 8
- Academic resilience, Weeks 9–10
- Mentorship, Weeks 11–12

Assessment

The assessments are designed to be authentic in that they are done within a context that is meaningful and applicable to something you are currently doing, such as your research. The course is designed to be applicable and adaptable to any discipline.

Co-created with graduate students from the first iteration of the course, these assessments will be discussed and revised with the class.

Participation – 5%
Self-graded: within 48 h of each class, submit a participation mark with a brief justification via Brightspace (see the *Participation* folder)
I encourage you to challenge yourself!

Self-reflection – 40%
For each module (five total)

- Write a short summary
- What are your main take-home learnings/messages (grounded in the module)?
- How will you apply what you learned? Be specific.

Due [date]; feedback can be provided within a week if a reflection is submitted sooner, and you can submit a revised version (by the deadline). Submit a minimum of 4/5.

Written scenario – 40%
For each module (five total)

- Apply the learning outcomes (key knowledge and skills) from the module to a scenario provided or use your own
- Describe how you would address the scenario; be specific (consider applying the activities in the module to the current scenario)

Due [date]; feedback can be provided within a week if a reflection is submitted sooner, and you can submit a revised version (by the deadline). Submit a minimum of 4/5.

SMART goals – 15%
Work with a partner (or someone/some way to be accountable) and help each other track progress toward goals over the semester; write a report (one submission)

- The report needs to be aligned with the SMART goals acronym.
- Consider obstacles/barriers and how you did or will overcome them
- Can be demonstrated through different media (e.g., video, poster, essay). (EN or FR)
- Provide at least one progress measure per week

Due [date].

Learning outcomes

These are ideally included in the syllabus, and align with the modules within the course.

Overarching learning outcomes

- Set SMART goals that reflect your values and priorities.
- Use metacognition skills to assess your ability in each of the areas/modules, and strategize toward achieving your goals.
- Articulate the skills gained in the course and the importance of the skills in connection to professional settings (including graduate school).
- Apply/Translate skills from each module to other courses, research, and life challenges.
- Feel empowered to seek out resources that will support you moving forward.
- Develop mentorship relationships that are equitable, ethical, and sustainable, using evidence-based strategies.
- Prepare for and constructively engage in difficult conversations.
- Demonstrate academic resilience skills, including areas for future learning.
- Develop a community and networking skills (social support network), including with people in different cultures, with different lived experiences, etc.
- Identify implicit expectations that can exist in your role and plan to achieve them.
- Articulate the benefits of working with a diverse community to achieve goals, including the power of our own identities, cultures and lived experiences (individuality).

Strategic learning

1. Describe how learning works.
2. Identify common myths about learning.
3. Reflect on your learning, what makes it difficult, when you are successful as a learner.
4. Use metacognitive skills and related learning skills to rate and justify your current ability toward your knowledge, skills, and values.
5. Identify resources and strategies that you will use to reach your goals.
6. Use metacognition skills to reflect on and monitor your progress toward your goals.
7. Use a variety of evidence-based learning skills to maximize their learning.

8. Articulate the knowledge, skills, and values acquired from the modules and explain how they can be used in other settings.
9. Apply skills from the modules to other courses and life challenges.

Mentorship

- Make use of evidence-based strategies to initiate, develop and sustain equitable, ethical and sustainable mentorship relationships.
- Define effective mentorship, and explore different mentorship models that best meet the needs of their mentees, including Indigenous ones (Murry et al., 2021).
- Develop strategies that can be used to address changing roles and their effects on mentorship relationships (e.g., transitions).
- Write a personal mentorship statement that describes their beliefs and approaches to mentorship.
- Evaluate your readiness for mentorship, as a mentor and mentee.
- Identify how mentorship supports the intersections of academic/disciplinary, and personal/socio-cultural identity development.

Project management

- Set SMART goals.
- Demonstrate project management skills, including identifying/quantifying risks, setting priorities.
- Establish activities that contribute to goal achievement.
- Set timelines/milestones for activities and goals (in- and out-of-scope), including project close-out.
- Develop a project charter for a research project or any other project.
- Describe how to apply PM techniques to a broad range of initiatives, including difficult conversations and personal development goals.

Academic resilience

- Demonstrate academic resilience skills, including areas for future learning.
- Explain the importance of stress for survival and differentiate between acute (i.e., adaptive) and chronic (i.e., damaging) stress.
- Describe the stress response in plain language and identify your own habitual response to stress.
- Describe the stress response in plain language and identify your own habitual response to stress.
- Define resilience and describe its relationship with stress and the stress response.
- Explain the importance of stress for survival and differentiate between acute (i.e., adaptive) and chronic (i.e., damaging) stress.
- Identify and describe specific skills related to resilience that can help us frame and face stress.
- Describe how resilient people frame and face stress through study findings.
- Identify adaptive and damaging stressors in your professional life and prioritize those that need to be mitigated.
- Define resilience and describe its relationship with stress and the stress response.

Navigating difficult conversations

- Prepare for a conversation by identifying types of conversations that can be difficult, self-assessing, identifying your assumptions about the situation (fact vs assumption), identifying potential barriers and elements that can affect the conversation (e.g., shame, armour, cultural knowledge, social knowledge), practicing empathy.
- Planning for the conversation.
- Engage in a conversation by starting with safety (and re-establishing it at any point), describing the gap/issue, gathering information, listening. Move through the conversation by exploring options (and using negotiation strategies), staying flexible, assuming the best in the other person(s), taking breaks as necessary. Decide on a path forward.
- Take steps after the conversation for a continued strengthening of the relationship.
- Special topic: Successfully navigate negotiations (e.g., with a job offer).

Sample lesson plans

Please feel free to adapt any aspect of these plans to your context. We would also love to hear your suggestions through our feedback page [link] so that we might incorporate new ideas for our community of educators. Thank you!

General notes

Classroom

An active learning classroom is ideal, if possible, to facilitate individual work, collaboration, and participation

Participation

We used a combination of anonymous polling (e.g., Mentimeter), in-class tools (e.g., whiteboards, document cameras), and online tools (e.g., Discord, Google Docs).

Routines and expectations

Check-ins: we start each class with a check-in. Either in small groups (2–3) or the full group (if feasible), each person takes a turn. They can briefly say what they've recently been doing (professional or personal), how they're feeling (can be good, bad, or anything in between), or pass—with this activity, we always give the option to pass. Everyone else's role is to simply listen (avoid interrupting, interjecting, comparing, etc.); a few comments or questions at the end may be appropriate.

Pre-work: Students have worked through the module in advance, with co-established guidelines. For example, students in one graduate course decided it would be most equitable to each dedicate three hours to the module rather than aiming to reach a certain section or complete a certain number of activities.

Class 1: welcome, introductions, and introductory module

Intended outcomes for the first class:

- Learning each other's names and a bit about each other
- Hopes and concerns for the course
- Identifying values
- Co-creating an inclusive course environment
- Identify and articulate SMART goals for the semester
- Practice giving constructive feedback
- Brainstorm assessment options

Outline – Class 1

- Welcome to the course! (5 min)
- Plan for the day (list intended outcomes) (2 min)
- Introductions (20 min)

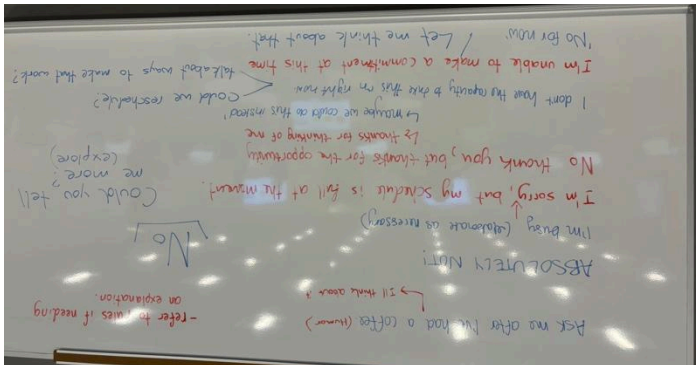
    - *Instructions*: Please share your name, pronouns, a passion, what you had for breakfast or anything else you'd like to tell us, all being optional.
    - Could be done in small groups (including breakout rooms) if the groups are large.
- More information about the course
    - Syllabus
    - Modules (consider describing the design team)
    - Course format
- Hopes and concerns
    - *Instructions*: Using a Classroom response system (or another anonymous question/survey method), please answer the following questions:
        - What do you hope to get out of this course? [open ended]
        - What concerns might you have about this course? [open ended]
        - In what order would you ideally like to do the modules? [ranking, based on list]
    - Review the responses as a class
- What makes for an inclusive course?
    - *Instructions*: let's brainstorm the things that make a course environment a positive one, where people feel comfortable and secure participating?
        - Students shared ideas like keeping personal information/experiences confidential to the class if shared, showing respect to each other (not interrupting, etc), always okay to pass/not participate in an activity, etc.
- Values:
    - The intention for this activity is for you to identify your core three values.
    - *Instructions*: Take 15 minutes to work on your own and identify your core three values. Just three! There is a list provided in the module but you are not limited to any of those.
    - *Discussion*: What was easy about that activity? Hard? Would anyone like to share one of their values?
    - *Wrap up*: We encourage students to take more time following the class to reflect more on these and perhaps adjust/change them. We will return to these values regularly throughout the course as we develop goals, strategies, and plans.
- SMART goal-setting
    - Using the SMART-goal graphic in the module's introduction, review the criteria for a SMART goal
    - Instructions: Using a Classroom response system, identify a SMART goal from a set –
        - Which of the following goals is SMART? [multiple choice]
            - Get a high grade in my first graduate course.
            - Improve my well-being by October.
            - Get a scholarship. It's something my supervisor encourages us all to do.
            - *Design a project management plan for the first stage of my degree by the end of the month, then share it with my supervisor.

We spent the last part of class discussing the assessment: Students shared that it was important to have clear feedback and have a way of monitoring their progress in the course. The students brainstormed ideas in small groups then we made a list that combined the ideas for further discussions. Next, students will identify their preferences and share any concerns. From there, I'll put together some possibilities for the overall scheme for discussion and ideally a final decision by consensus. One of the suggestions involved students proposing their own final grade to me at the end, with a justification that would involve their assessments/activities in the course and a reflection (check out the book "Ungrading" for more info).] We also discussed how much pre-work the students would do before each class.

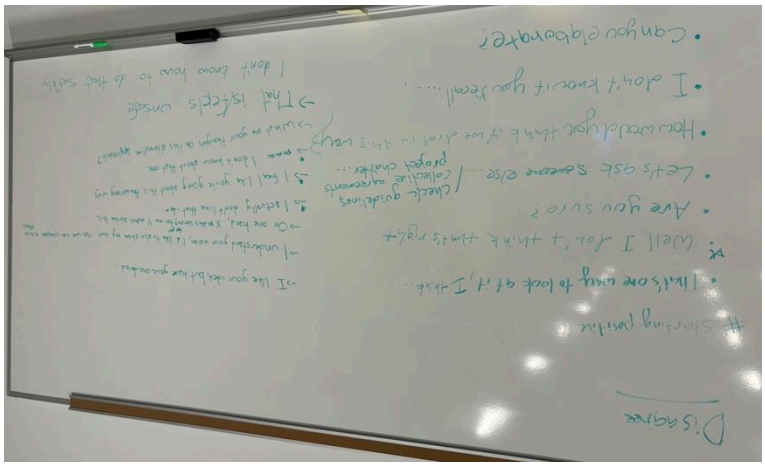
Navigating difficult conversations

1. Good/Bad conversations:
    a. In small groups (2–3), identify a reporter, then brainstorm what good conversations look, feel, and sound like, then repeat the process with bad conversations.
    b. The reporter from each group shared back with the full class; we captured the ideas on a google doc. After each summary, anyone could add in something else.
2. Getting to know ourselves better:
    a. Harvard implicit associations test – pick one to do (individually)
    b. Any surprises?
    c. What might we do with this information? Is it necessarily good or bad? (no, it's how we become aware of our knowledge, experiences, and biases and how we use them)
3. Identifying constructive and destructive actions in a conversation
    a. Watch a video of a conversation, to identify
        i. As many constructive actions (words, physical movements) as possible
        ii. As many destructive actions as possible (label them if possible, eg stonewalling, fogging, etc)
        iii. What might the person have done instead?
4. Listening: 3-person listening activity
    a. In groups of 3, each person is assigned a role of speaker, listener, or monitor
        i. For 3 minutes, the speaker talks about a subject of their choice
        ii. The listener listens attentively, without any interjection, question, or other interruption
        iii. The monitor guards the process, ensuring that the speaker has their full time.
        iv. After 3 minutes, rotate roles until each person has had a turn.
    b. Debrief as a class: what was easy/hard about that (idea that we rarely have conversations where we are fully listened to/not interrupted.
    c. Take home message: how might we engage in conversations where we might fully listen to the other person and try our best to empathize and understand/explore their perspective?
5. Practice: saying no

a. In small groups, brainstorm ways to say no. Write the ideas on a whiteboard. Visit the other groups and review/discuss/add. (e.g., No, I am interested in the project and would like to further explore options, I have reached my full commitment at this time, How does this fit into our project plan?)
b. In small groups, hear a proposal and practice saying no (choose a few different ways; see Appendix I)



6. Practice: disagreeing
    a. In small groups, brainstorm ways to respond if you disagree. Write the ideas on a whiteboard. Visit the other groups and review/discuss/add. (e.g., Could you tell me more about your idea? I disagree. I feel uncomfortable. That feels unsafe. Could we explore some other options?)
    b. In small groups, hear a statement and practice disagreeing



7. If it's not going well: how to re-establish safety and dignity
8. If it didn't go well: what to do
    a. Don't engage in the conversation again
    b. Bring a trusted companion (peer, family member, lawyer, colleague, etc)
    c. Meet with a third party (thesis advisory committee, Chair, mediator, etc)
    d. Establish meeting boundaries: safe location (e.g., public), appropriate time of day, etc.
    e. Seek advice

    f. Report inappropriate behaviour (e.g., to human resources, human rights, Chair)
9. Practice: a difficult conversation
    a. Individually, take a few minutes to prepare for the scenario as person 1 or person 2. Alternatively, a series of scenarios can be provided.
    b. In groups of 2-3, go through the conversation. The third person is a guard for the process (can call a time-out, remind to stay on task, remind about tools in our module, etc)
    c. Using the module as a resource, review the conversation as a group and identify aspects that could be done differently in the future. Emphasis is on the idea that no conversation is perfect and we are not trying to point out what people did wrong, but rather, thinking about how we might constructively improve our approaches in future conversations.
10. Homework: have a mini-difficult conversation

Project management

1. Small groups: Check-in (10 min)
2. Classroom response system questions:
    i. What part of the module did you reach
    ii. How have you been/are you managing your project (reactive vs proactive PM)
    iii. Do you have a work breakdown structure prepared for your graduate studies? (if now, we will be doing it in class)
    iv. What tools do you use to organize your tasks and time?
        - To-do list
        - Priority task list
        - Agenda
        - Block out time
        - Project/Task management software
        - Body doubling
        - Pomodoro
        - Plan the day before
        - Set a time limit to complete each task
        - Other?
    v. Quantify risks: (estimate likelihood-y axis and consequences -x axis)
        - Broken instrument
        - Data collection issue
        - Chemical spill
        - Project scope creep
        - Insufficient funds for materials
        - Project delays
        - Inability to meet degree requirements
        - Project failure
3. Prepare a work breakdown structure for your graduate studies (20 min)
    i. Decide items that are in and out of scope. (10 min)

        - If out-of-scope, will you still do them? Why or why not?
4. Prepare a Gantt chart for your project (or Node and Network)
    i. Peer feecback
5. Homework: review your workbreakdown structure and Gantt or Node and Network chart with your supervisor/advisor and see what aspects could be improved and adjusted.
6. Project charter activity (1 hour)
    i. Given examples of project charters, identify what could be improved, added, or removed. Consider your own project charter(s): what aspects could you improve? (10 min)
    ii. Prepare a project description for the next steps, or use one provided (5 min)
    iii. Prepare a project charter for the project (15 min)
    iv. Review and improve charters (20 min): in group of 2–3, review each others' charters. Start with curiosity and ask questions. Then, provide suggestions to improve the project. Share any concerns (even better if you can also include ways to overcome concerns)
    v. Full class summary (10 min): Summarize your charter and improvements for the group.

Mentorship

Learning outcomes
Refer to module

First hour: Welcome and review
Welcome and check-in (5 minutes)
Exploring mentorship

- Classroom response system word cloud: List 3 words you would use to define/describe mentorship (10 minutes)
- Classroom response system word cloud: List one word to describe the role of a mentee (5 minutes)
- Classroom response system word cloud: List one word to describe the role of a mentor (5 minutes)
- Debrief – what stands out to them from word clouds they have co-generated? (10 minutes)

Reflection question (on PPT or on printed worksheet): (15 minutes; 7.5 minutes for writing, 7.5 minutes for sharing with a partner)

- What makes a good experience as a mentee or mentor? Describe an example that you experienced either as a mentor or mentee. As you complete your description, make sure to also describe what made that experience favourable (i.e., specific activity you completed, ways in which you interacted, etc.).

Debrief – what did they learn from one another's experience? (10 minutes)

Second hour: Working on mentorship plan
Reflection question (on PPT or on printed worksheet): (10 minutes; 5 minutes for writing, 5 minutes for sharing with a partner)
How did the mentorship models resonate with your experiences as a mentee and/or mentor?

Debrief – What did you learn from one another's experience? (10 minutes)

Consider your current professional development needs. Invite learners to complete pages A1, A2, A5, and A6 from PDF worksheets (25 minutes)
Invite learners to share with a peer if comfortable (10 minutes)

Debrief – what did they learn from one another's experience? (10 minutes)

Third hour: Extending your learning and making meaning

- What will be your next step? What help do you need to take that step? (10 minutes)
    - Invite learners to share thoughts anonymously through Classroom response system (5 minutes to input; 5 minutes to debrief)
- What processes or strategies could be implemented in your department to foster the development of mentorship relationships?
- What actions might you want to take?
- What would you like to see happen?

Academic Resilience

- Intro video – show video and have a brief
- Poll: Is stress good or bad? Discuss
- Video/lecture on neuroscience of stress – any changes to perspectives
- Video (2 min): Eustress and distress
    - Activity 1.2
- Video 2.2: coping style
- Slides: Rethinking resilience – coping skills
    - Poll: What are your approaches to stress?
        - § Discuss
        - § Purpose: Ideally, become skilled in all, then use metacognition to apply the appropriate approach(es) to the situation
    - Continue slides with phrases to remember
- Video 2.3: Introduction to stress – why do people respond differently?
- Video 3.1: Intro to resilience
- Activity 4.1: This or That
- Reflection 4.1: Stress and active coping

- Activity 4.2: Doing hard things
- Slides on Stress and Resilience
- Poll: For the cognitive appraisal – frame – reframe – face approach, what are the strengths? Weaknesses?
- Imposter syndrome
    - How to combat imposter syndrome? What are most long-lasting methods?
    - Activity: sticky notes for each person with specific positives
- MAD plan (Mindfulness, Assess and analyze, Disrupt and de-escalate)
    - See worksheet in Brightspace
- Part 5: Practice

GenAI–strategically

- [polling system]:
    - How are you currently using GenAI?
    - What questions do you have?
    - What GenAI policies are relevant for your grad work?
- Choose one of the possible uses listed in the module or elsewhere, ideally one that's relevant to your current context. For example, you may want to have the GenAI tool summarize the state of a research field or area. Consider starting with something that you're very familiar with, before heading into the unknown.
- Evaluate the tool's responses to your prompts. What aspects are correct, incorrect, complete, or missing? Do you think the GenAI tool did a good job? Evaluate the references in the same ways.
- Repeat the previous tasks with another GenAI tool. What is the same, different, or missing altogether? Use your professional judgement / subject-matter expert knowledge.
- What will you need to be aware of as you move into less familiar areas? For example, some people need to remember to validate the references, while others need to practice using a few different prompts to really get the information they're seeking.

- Information about academic regulations and resources in Brightspace (e.g., FRG GenAI policy)

Meet the project team

Alison Flynn: A professor at uOttawa and 3M National Teaching Fellow, her SSHRC-funded research programs investigate postsecondary chemistry education and learning (e.g., metacognition) and investigates equitable graduate student development in advanced research environments (e.g., NSERC CREATE IntBiotech). She has developed and studied many bilingual OERs (e.g., OrgChem101, Growth & Goals, Remote Teaching: PIs and TAs). Alison leads the project team and the modules on strategic learning and navigating difficult conversations; she co-designed the project evaluation/research.

Connor Bourgonje: Originally from Alberta, Connor is now a PhD candidate at the University of Ottawa in the Scaiano Lab. When not exploring the magical world of photochemistry, Connor enjoys watching sports and dreaming of the mountains. He also recently discovered the joy of "birding", and strongly suggests that you try it out. Connor has been involved in developing every module, design decisions, pilot testing, and incorporating student feedback to improve the course.

Tiffany Cheng: [to be completed with bio on Brightspace

Gino DiLabio: *UBC-Okanagan*; Dean of Science and a Professor (Chemistry). Gino brings expertise as an accomplished researcher and educator, as a Department and Faculty leader, and in business, including project management. His research centres on the behaviour of radicals. He holds an associate appointment in the Faculty of Management, led the project management module, and co-designed the evaluation.

Kim Hellemans: *Carleton University*; Associate Dean of Science (Recruitment and Retention) and Assistant Professor (Neuroscience). Kim is a Provost's Teaching Fellow and has received several prestigious teaching awards. Her current research is focused on student mental health and academic outcomes and bring expertise in knowledge mobilization that includes an award-winning podcast "Minding the Brain". Kim leads the academic resilience module, co-leads the knowledge mobilization (KMb) strategy, co-design the course's evaluation, and launch the course at her institution.

Zahra Lalani: [bio]

Jeremy Kerr: *uOttawa*; Chair of Biology, Professor (Biology), and University Research Chair in Macroecology and Conservation. Jeremy is a research leader in macroecology, is active in open and citizen science (e.g., eButterfly), and was highly involved in policy changes as president of the Canadian Society for Ecology and Evolution and on NSERC's Council and executive. Jeremy helps ensure that the course is authentic for diverse research environments, connects with PIs for the pilots, and co-designs the KMb plan.

Leah McMunn: Leah is currently finishing her PhD in the Department of Chemistry and Biomolecular Sciences at the University of Ottawa. She is a first-generation student passionate about decreasing barriers for students entering higher education in STEM by discussing the hidden curriculum. Leah is also avidly involved in conversations about improving mental health, creating strong mentor relationships, and advocating for equity, diversity, inclusion, and respect (EDIR). In her spare time, Leah enjoys exploring local restaurants and cheering on her favourite sports teams.

Sarah McPhedran: [bio]

Ashley Thompson: Carleton University, Adjunct Professor (Neuroscience); Teaching and Learning Services, Educational Developer. Ashley has been recognized with several teaching awards, including the Contract Instructor Teaching Award and the Faculty of Science Teaching Excellence Award. She investigates graduate student mental health in STEM across Canada and pedagogical strategies to improve resilience and mental health. Ashley brings e-learning expertise and leads the development of the resilience module's content.

Bradley Wuetherick; *UBC-Okanagan*; Associate Provost, Academic Programs. Of Métis ancestry, Brad is an internationally recognized scholar of teaching and learning, focused on topics such as undergraduate research (particularly for Indigenous students), mentorship, equity and student success, the scholarship of teaching and learning, and academic development. He has also been in leadership roles for Indigenization activities at UBCO, Dalhousie and Saskatchewan. Brad advised on the course development, KMb, and evaluation.

References

Graduate school should be challenging, not traumatic

To be expanded]