

*GACIP Summit Plus 2020*

# Speed Update: Engineering Collaboration for Online and Remote Education (E-CORE/CIEL) Project

Presented by Liz DaMaren, Project Coordinator

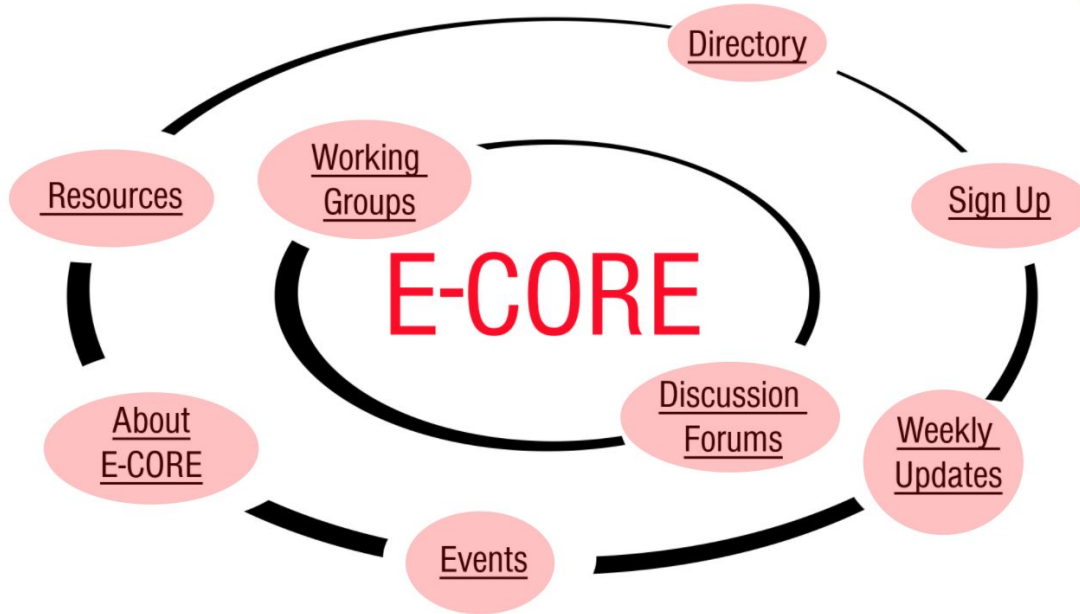
# About E-CORE/CIEL

- Started as a collaboration by multiple groups (CEEC, CEEA, EGAD, EDC) in response to the shift to online learning
- Focus on providing supports for instructors across the country as needs arose
- Supports have taken the form of resources, events, and more

# ceea.ca/ecore

Welcome to the **E**ngineering **C**ollaboration for **O**nline and **R**emote **E**ducation web hub.  
Feel free to explore:

CIEL (Français)



# Resource Collection: Quick Guides

**An E-CORE Quick Guide to Building an Inclusive Virtual Community**

This guide provides guiding questions and support for thinking about how to engage students and build an inclusive community within online learning environments. To continue the conversation on this topic, visit the [Building an Inclusive Virtual Community Discussion Forum](#).

**Community building impacts learning:**

- Community building increases student participation and engagement.
- A feeling of belonging to a community increases student health, trust, and academic performance.
- Social presence has been linked to increased social interaction.
- How can student engagement and community building increase your course learning outcomes?
- What opportunities for interaction are already embedded in your course design?
- What tools are available for encouraging or fostering student interactions in your course?

**Guiding Questions for Instructors:**

- How can you build an inclusive virtual community?
- How can you increase student participation and engagement?
- How can you increase student health, trust, and academic performance?
- How can you increase social interaction?
- How can you increase student engagement and community building?
- How can you increase your course learning outcomes?

**An E-CORE Quick Guide to Open Educational Resources (OER) & Creative Commons Licensing**

This guide provides an introduction to Open Educational Resources (OER) and educational material licensing. It provides links to further articles from universities and organizations across Canada.

**What are Open Educational Resources?**

While there are institutional variations in wording, the core definition of OER is consistent. Here's an example:

"One definition is that Open Educational Resources (OER) are teaching and learning materials the available online for anyone to use, whether you are an instructor, student or self-learner. Examples include full courses, course modules, syllabi, courses, textbook assignments, quizzes, lab and activities, pedagogical materials, games, simulations, and many more resources contained in digital collections from around the world."

**How can I use OER in my classes?**

When contemplating how to integrate OER into your classes, it is useful to consider the lessons learned from previous efforts. Here is a clearly defined process for following your OER option.

**1 Video Styles**

Consider various lecture styles such as videos shot in course relevant locations (e.g. workplaces, outside).

**An E-CORE Quick Guide to Web-Based Collaborative Design Tools**

This Quick Guide is for instructors of engineering design courses/projects. Given the remote learning conditions, there is a need for students' ability to collaborate as closely as possible to the benefits of working together in person. To continue the conversation on this topic, visit the [Web-Based Collaborative Design Tools Discussion Forum](#) thread.

**Course Design Tips**

**1 Video Styles**

Consider various lecture styles such as videos shot in course relevant locations (e.g. workplaces, outside).

**2 Live values for online courses**

can provide estimates of the note learning. Keep the objective workload of a course

**3 Into weeks**

weekly modules on your student e-nts can ease the expectations for manage their time.

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**An E-CORE Quick Guide to Remote Assessment**

This guide provides support for assessment planning and design for remote course delivery in engineering (although most principles person delivery). It provides a starting point to help frame thinking and identify key resources as part of holistic course design. For more conversations on this topic, visit our [E-CORE discussion forums](#).

**Initial questions to ask yourself**

- What is the intent of the assessments you are planning? (consider the points in the box to the right)
- Do the assessments align with the intended learning described by your learning outcomes and the learning activities you will have students participate in?
- What data will the assessments give you, how will you use it, and how do you know you can trust it?
- Are the assessments practical for you, the students, any graders, and others in the course? And consider factors such as workload, resources and technology required, time to administer and return, and so on.

**Assessment is not just about grades**

Remember to consider the multiple roles assessment

- Feedback:** assessment feedback lets students to know how they are doing and adjust and adapt teaching efforts and methods.
- Learning:** the act of recalling information and using powerful learning tool.
- Motivation:** assessments provide students extra study, and it holds them accountable to their course.
- Evaluation:** assessments are used in measuring instructor/program performance.

**Elements influencing misconduct**

- Pressure on students, whether through competition for high grades or pressure to pass
- Rationalization by students that misconduct is acceptable (e.g. "everyone's doing it" or that potential rewards outweigh the risks)
- Opportunity exists for students to engage in misconduct

**Strategies to enhance integrity**

- Reduce pressure: more low-stakes flexible grade weighting; less focus on high-stakes exams
- Reduce rationalization: integrity of communication of expectations at the start of the course
- Reduce opportunity: limited exam randomized questions; high-level online proctoring tools

**An E-CORE Quick Guide to Remote Proctoring for Instructors**

This guide provides support for instructors considering implementing proctored online exams. It provides a starting point to help determine if proctored exams are appropriate and outlines important considerations for their use. For more in-depth conversations on this topic, visit our [E-CORE discussion forums](#).

**Reasons for using remote proctoring**

- Supports students in making the right choices about academic integrity by reducing the influence of **misconduct, rationalization and opportunity**
- Ensures fairness for all students during individual assessments by doing two things:
  - Discouraging the use of unauthorized aids
  - Discouraging unauthorized collaboration
- Protects the confidentiality of exam questions by reducing the sharing of questions within a cohort writing at staggered times or across cohorts

**Choose your proctoring approach**

Method and Examples	Pros	Cons
<b>Commercial proctoring software or service</b> Video surveillance including fully automatic AI-driven live authentication and proctoring, or a hybrid	<ul style="list-style-type: none"> <li>Record of activity available for post-proctoring</li> <li>Lockdown browser option</li> <li>Students don't see each other</li> <li>Scalable</li> </ul>	<ul style="list-style-type: none"> <li>Requires camera, microphone, reliable internet connection</li> <li>May not available in some countries or compatible with some accessibility accommodations or software</li> <li>Student privacy concerns</li> </ul>
<b>Real-time observation:</b> In-house solution using video collaboration tools such as Zoom	<ul style="list-style-type: none"> <li>No recording of biometric data</li> <li>Immediate intervention upon detection of suspicious activity</li> </ul>	<ul style="list-style-type: none"> <li>Requires camera, microphone, reliable internet connection</li> <li>Students can see each other</li> <li>DIY checking creates privacy risks, set-up and exam start complicated</li> <li>Need at least 1 observer for each 16:30 students</li> <li>Unknown compliance rate</li> <li>Student concern about potential misconduct is unresolved</li> </ul>
<b>No proctoring:</b> Use of integrity pledge alone	<ul style="list-style-type: none"> <li>No student concerns about privacy</li> <li>Easy to implement, scalable</li> <li>No special equipment required</li> </ul>	

**Does your institution support remote proctoring?**

- Remote proctoring is generally achieved either through the use of specialized software or services, or by real-time observation via a video-based collaboration tool (e.g. Zoom)
- Not all institutions allow remote proctoring
- Due to **privacy laws**, only use applications or methods provided and permitted by your school (e.g. Examity, Proctorio, Proctortrack, Proctorio);

**An E-CORE Quick Guide to Document Scanning Solutions**

This guide provides recommendations on tools and methods for students to scan documents for online submission of assignments and exams.

**Primary Considerations**

- The primary considerations in selecting a scanning solution include:
  - Speed:** at which you can scan and assemble a multiple pdf document.
  - Ease of use:** during the scanning process to properly capture each page (see below)
  - Quality of the final scanned product:**
  - Protection of your privacy and data:** can you use the tool without an account? do you control where your files are stored?

**Some Scanning Tools to Consider**

These common scanning tools are all free (other than the computer scanner) and offer similar functionality and operation.

Tool	Free	Account creation	Automatic color and high resolution	Vertical scanning speed	Scanning position and filters	File name creation	Privacy protection	Note
Adobe Scan	●	●	●	●	●	●	●	Requires signing up for an Adobe ID. Account adds many output options.
Microsoft Office Lens	●	●	●	●	●	●	●	Excellent page deflection; a Microsoft account adds many output options.
Genius Scan	●	●	●	●	●	●	●	Can struggle to detect pages, especially in non-flat conditions.
Computer scanner	●	●	●	●	●	●	●	Flatbed scanners (low) and sheetfed scanners (flat) have high quality but low portability and are not free.

Legend: ● Excellent ○ Good ○ Fair ● Poor

# Resource Collection: Other Guides

Engineering Collaboration for Online and Remote Education

An **E-CORE** Checklist for **Remote Course Design**

CEEA/ACCG

<b>Course structure</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> LMS course site setup and structured to clearly communicate course structure, activities, how to communicate with instructor, accessing grades, accommodations, required hardware/ software, recommended working time.</li> <li><input type="checkbox"/> Learning outcomes aligned with assessment and instruction, broken down by week/module</li> <li><input type="checkbox"/> Student learning time planned for all activities</li> <li><input type="checkbox"/> Course structured into weeks/blocks/modules</li> <li><input type="checkbox"/> Coordinate major activities with other courses as relevant</li> </ul>	<b>Assessments</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> Build for multiple purposes (repeated practice, regular feedback, motivation/accountability, evaluation)</li> <li><input type="checkbox"/> Follow university policies about assessment</li> <li><input type="checkbox"/> Provide rubrics/evaluation schemes/examples</li> <li><input type="checkbox"/> Accommodations/equity access/academic integrity considered</li> <li><input type="checkbox"/> Provide sufficient time for technology issues, onboarding/uploading during tests</li> <li><input type="checkbox"/> Communication to students about exam requirements, materials, and handling issues</li> </ul>
<b>Synchronous teaching approaches</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> Instruction provided to students about using necessary applications, notice that sessions are recorded</li> <li><input type="checkbox"/> Synchronous sessions recorded and posted</li> <li><input type="checkbox"/> Scheduled regular virtual office hours for Q&amp;A</li> <li><input type="checkbox"/> Provide opportunity for engagement/activity using chats, short quizzes, on-screen annotations, etc.</li> </ul>	<b>Asynchronous teaching approaches</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> Quality organized, and lab recording</li> <li><input type="checkbox"/> Static versions of material overview/review</li> <li><input type="checkbox"/> Videos in short segments (10-15 min)</li> <li><input type="checkbox"/> Opportunities for tasks/practice</li> <li><input type="checkbox"/> Permissions obtained for external content</li> </ul>
<b>Interactivity &amp; Engagement</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> Interaction between students (e.g. discussion forums, working groups)</li> <li><input type="checkbox"/> Opportunity for students to provide regular feedback to instructor</li> </ul> <p><i>If teams used:</i></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Groups formed, instructions on effective learning, professional behavior, opportunity for team contracts and regular peer evaluation</li> </ul>	<b>Equity</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> Equitable access considering student network (including country-timezones, language, access to hardware/resources)</li> <li><input type="checkbox"/> Student privacy ensured</li> <li><input type="checkbox"/> Plan for universal design (i.e. handle range of needs)</li> <li><input type="checkbox"/> Plan for how to check in on participation/engagement</li> </ul>
<b>Physical Materials</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> Textbook - plan for electronic or shipped</li> <li><input type="checkbox"/> Specialized hardware/material shipped, with instructions including safety</li> </ul>	<b>Instruction team</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> Training prepared for facilitating sessions, grading, etc.</li> <li><input type="checkbox"/> Necessary hardware and workstations available for TAs</li> <li><input type="checkbox"/> Schedule periodic check-ins</li> </ul>

Resources used to prepare this checklist: [QM Course design guide](#), [QM Emergency Checklist](#), [Remote Teaching: A Practical Guide](#)

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Author: Brian Frank Distributed: September 11<sup>th</sup>, 2020



UNIVERSITY OF TORONTO  
FACULTY OF APPLIED SCIENCE & ENGINEERING

## Student Experience - Supporting Student Mental Health in the Virtual Classroom

Checklist & Considerations

Engineering Collaboration for Online and Remote Education

An **E-CORE** Guide to **Virtual Icebreakers: a Community Building Tool**

CEEA/ACCG

While online environments support learners in many ways, the feeling of distance between the instructor, peers, and the environment can make relationship building with your students a challenge.<sup>1</sup> This Guide provides you with one tool for addressing this challenge. If used effectively, the resulting feelings of belonging to a community can create an atmosphere of comfort and trust, which in turn encourages students to participate by sharing knowledge, asking questions and supporting peers. Social presence has also been found to be intrinsically motivating for students, with learner satisfaction increasing with levels of social interaction.<sup>2</sup>

Icebreakers are fun activities that help people get to know each other and can potentially ameliorate the perceived distance in online learning environments. If you can successfully foster a sense of community within your course, this will help diminish feelings of remoteness, enhance the educational experience of your students, and allow for effective learning.<sup>2</sup>

**Key Considerations In Choosing An Icebreaker:**

- Keep in mind **equity and accessibility** when employing icebreakers. What internet connectivity and/or technology constraints might your students have? Are there any privacy concerns? Try to be thoughtful in your choices on how to engage in the activity to support different constraints (e.g. synchronous and asynchronous).
- Themed icebreakers** are more effective at the beginning of the term, as they help build relationships and establish comfort in the space. It is recommended to use more **academic themed icebreakers** once students know each other and are ready to jump into group discussions.
- Remember to **privately** employ online discussion boards, however **online misconduct** is a concern - especially with anonymity. It is important to start with the assumption that your students are honest and want to learn. Be honest with your students about your own struggles and remind them that you still expect them to conduct themselves respectfully, even when they are anonymous. Provide examples of academic misconduct and opportunities for discussion academic integrity (i.e. through the discussion board, using reflection questions).
- Be **prompt**: What have you learned about acting with integrity from this experience, and how might this apply to your future academic or professional decisions?
- Some collaborative platforms have settings that can be turned on to filter inappropriate content (e.g. [Padlet](#)).

# Resource Collection: Open Course Materials

## E-CORE Course Materials Links

The tables below contain links to course material in the form of Open Educational Resources (OERs). These course materials have been developed with the intention to share broadly and are shared under Creative Commons Licensing. For more information, see the [E-CORE Quick Guide on OERs and Creative Commons Licensing](#).

Click on the headings below to expand the table of relevant links. If you have suggestions for links to add to any of these sections, please contact us at [ecore@ceea-aceg.ca](mailto:ecore@ceea-aceg.ca).

+ [Open Educational Resource \(OER\) Rubrics](#)

+ [Institutional Open Course Materials](#)

+ [Open Educational Resource \(OER\) Links](#)

+ [Creating and Using OER](#)

+ [Discipline-Specific OER Hubs](#)

+ [Non-Open Content Platforms](#)

# Past Webinars

## Sharing Open Educational Resources (OER)

Session Facilitator: Jonathan Verrett (UBC)

Contributors: Agnes d'Entremont, Jonathan Verrett, Negar M. Harandi (UBC), Deena Salem, Rick Sellens (Queen's), Michelle Spence (UoFT) + OER SIG

Wednesday, July 29, 2020, 12:00 – 1:00pm (EDT)

[See Recording + Slides Here](#)

## Assessments – A Primer for Remote Teaching

Session Facilitators: Brian Frank (Queen's), Carol Jaeger (UBC), and Pete Ostafichuk (UBC)

Tuesday, July 21, 2020, 3:30 – 5:00pm (EDT)

[See Recording + Slides Here](#)

## Labs – Lessons Learned from Shifting Online (Session 1)

Presented by the University of Alberta in collaboration with E-CORE  
Session Facilitators: Steven Knudsen, Calynn Stumpf, Roberto Gallardo Bobadilla, and Abiy Wubneh

Tuesday, July 14, 2020, 4:00 – 5:00pm (EDT)

[See Recording + Slides Here](#)

## Design – Blank Sheet Virtual Engineering Design Course Workshop

Session Facilitators: Patrick Dumond, Grant McSorley, Rubaina Khan

Friday, July 18, 1:00 – 3:30pm (EDT)

[See Recording + Slides Here](#)

## Supporting Student Mental Health in the Virtual Classroom

Session Facilitators: Melissa Fernandes (UoFT) and Cori Hanson (UoFT)

Thursday, September 3, 2020, 1:00 – 2:30pm (EDT)

[See Recording + Slides Here](#)

## Building Resilience Through Mindfulness: A Primer for Engineering

Session Facilitators: Janna Rosales (MUN) and Andrew Safer (Safer Mindfulness, Inc.)

Monday, August 31, 2020, 12:30 – 2:00pm (EDT)

[See Recording + Slides Here](#)

## Assessments 3 – Simple to Grade Approaches

Session Facilitators: Brian Frank (Queen's), Carol Jaeger (UBC), and Pete Ostafichuk (UBC)

Thursday, August 27, 2020, 2:00 – 3:30pm (EDT)

[See Recording + Slides Here](#)

## Course Design 1: Principles, Tools, and Networking

Session Facilitators: Brian Frank (Queen's), Carol Jaeger (UBC), and Pete Ostafichuk (UBC)

Friday, August 21, 2020, 12:30 – 2:00pm (EDT)

[See Recording + Slides Here](#)

## Assessments 2 – Auto-Graded Assessments

Session Facilitators: Brian Frank (Queen's), Carol Jaeger (UBC), and Pete Ostafichuk (UBC)

Thursday, August 20, 2020, 2:00 – 3:30pm (EDT)

[See Recording + Slides Here](#)

## Labs – Lessons Learned from Shifting Online (Session 3)

Presented by the University of Waterloo in collaboration with E-CORE  
Session Facilitators: Jenn Coggan, Cheryl Newton, and Orion Bruckman

Thursday, August 13, 2020, 11:00am – 12:30pm (EDT)

[See Recording + Slides Here](#)

## “If I Could Turn Back Time”: A Role-Play-Based Workshop on Academic Integrity & Assessment Design in a Remote Technical Course

Session Facilitators: Audrey Benmergui (UoFT), Dr. Deborah Tihanyi (UoFT), Cori Hanson (UoFT)

Monday, August 10, 2020, 2:00pm – 3:30pm (EDT)

[See Recording + Slides Here](#)

## Labs – Lessons Learned from Shifting Online (Session 2)

Presented by Memorial University of Newfoundland in collaboration with E-CORE  
Session Facilitators: Caroline Koenig, Lori Hogan, and Syed Imtiaz

Contributors: Caroline Koenig, Lori Hogan, Syed Imtiaz, Salim Ahmed, and Ramin Azargohar

Thursday, August 6, 2020, 1:30 – 3:00 pm (EDT)

[See Recording + Slides Here](#)

## Finding and Using Open Educational Resources (OER)

Session Facilitators: Jonathan Verrett (UBC) and Agnes d'Entremont (UBC)

Contributors: Agnes d'Entremont, John Dickinson, Nadine Ibrahim, Grant McSorley, Deena Salem, Michelle Spence, Jonathan Verrett + OER SIG

Tuesday, August 4, 2020, 12:00 – 1:00 pm (EDT)

[See Recording + Slides Here](#)

# Upcoming Workshop: Managing Instructor Workload in Online Courses

- Support for instructors who felt overwhelmed this semester
- Partnering with the Taylor Institute for Teaching and Learning at the University of Calgary
- Strategies and tips for managing and reducing instructor workload in an online environment
- **Wednesday, December 16th, 11:00AM - 12:30PM (EST)**
- Registration open now: [ceea.ca/events](https://ceea.ca/events)

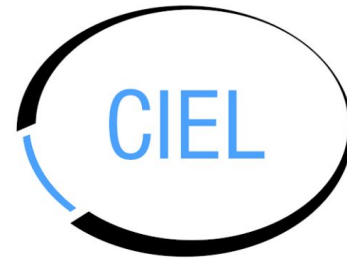


# Communities of Practice

- Space for instructors to share experiences, ask questions, & seek just-in-time support from colleagues
- 7 groups that have met biweekly this semester:
  - Student Experience
  - First-Year Instructors
  - Design Education
  - Teaching Assistants
  - Non-Technical Course Instructors
  - Assessment
- Over 170 attendees across the sessions

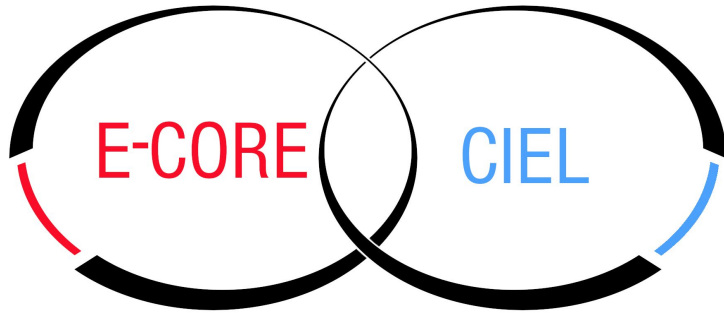
# Francophone support: CIEL

- Branch of E-CORE dedicated to:
  - Identifying and helping to address concerns unique to the francophone community
  - Build bridges and share resources between anglophone and francophone communities
- CIEL Presentation is up next!



# Plans for 2021

- Continuing to pivot to provide just-in-time supports for instructors
- Expanding our network of Communities of Practice and events to provide more spaces for people to connect and learn together
- Investing more in supports for our francophone institutions/instructors
- Working with our partners to help grow the engineering education landscape in Canada



Thank you!

Drop by our lunch table to  
learn more about the  
E-CORE/CIEL Project!