Pedagogical Guidance for Remote Teaching

The University's Teaching Remotely website provides guidance on setting up tools such as Canvas and Zoom to enable online instruction. Additionally, the office of Academic Technology Solutions (ATS) will be offering trainings on using Canvas and Zoom for remote teaching.

To supplement these resources, this guide:
1. Summarizes some good pedagogical practices for the transition to remote teaching.
2. Provides models for how you might translate common face-to-face teaching practices to remote practices.
3. Provides a curated list of further references and resources.

Contents

I.   General Approach

1. **Articulate your learning goals and think about how to adapt those to an online setting.** Rather than starting with the tool (Canvas, Zoom, etc.), begin by thinking in concrete terms about:
   a. what you want your students to know or be able to do as a result of the course (learning objectives), and
   b. what modes of teaching and learning will help them achieve those objectives.

   Articulate those modes at a goal-oriented level (think, for example, of "presenting content," rather than "lecturing") and then think about how you can translate those in multiple modalities online (e.g. presenting content via text and images on a page in Canvas; synchronous video lecture in Zoom; asynchronous video presentation using Panopto, etc.).

2. **Identify a mix of asynchronous and synchronous tools.** The advantage of synchronous tools like Zoom is that it more closely approximates a face-to-face learning experience than students consuming content on Canvas or watching a pre-recorded video from Panopto. But synchronous tools have limits, including: Internet bandwidth requirements for video; students are more likely to get distracted in long Zoom sessions; and some students may have challenges making it to a live session due to being in different time zones. **When you do go synchronous, consider limiting it and intentionally supplementing with an asynchronous follow-up.** For example, you might do a 20-minute Zoom lecture during your canonical class time, and then ask students to complete an activity on their own which they upload to Canvas. And be sure to record the session and make it available to students who missed.

3. **Set and communicate expectations.** Transparent expectations are even more important in unusual circumstances, so consider posting these in an [announcement](#) on Canvas. Identify the "regular" expectations you establish for students and think through how to adapt those to an online context. Some areas to consider:
   a. What are the various ways that students may *participate* in class (e.g. verbal discussion and/or text chat during a Zoom session, posting reflections in Canvas, etc.)? Good practice is to identify more than one option for students to engage with you and their peers and to practice and demonstrate their understanding.
   b. How might you adjust your *deadlines* and policy on late work?
   c. How can you allow for *flexibility* if students are in different time zones, are having difficulty accessing technology or the internet, or are otherwise facing extraordinary circumstances?

4. **Be flexible.** Sometimes the technology won't work as intended or students will encounter challenges. When this happens, step back, reflect on what your learning goals are, and think about alternative strategies for students to work on meeting those goals. Teaching and learning is about engaging students with new knowledge, and then giving them opportunities to practice that knowledge and receive feedback. Finding new and creative ways to do this is the intellectually interesting work of teaching.

II. Other General Considerations

- **Approach your students with empathy.** This is an extraordinary time for teaching and learning and for life in general. Conveying that you care about your students, their health and well-being, and their learning helps to cultivate a sense of community and belonging. Acknowledge the challenges of the current time and, if you are comfortable doing so, check-in on how they are doing and share a bit about your own current experiences.

- **Communicate early and often.** Even if you don't yet have a plan for how you will adapt, be in touch with your students as soon as possible to:

   1. introduce yourself,
   2. let them know how you will be communicating so they know to regularly check email, Canvas, etc., and
   3. set the tone. Aim for a positive tone, conveying the idea that "we're in this together" and that you are excited to engage with their ideas this quarter.

- **Be intentional about tone.** Remote teaching means more written communication to students in emails, on Canvas, and so forth. To help foster a productive, learning-focused environment, aim for a tone that is positive, respectful, inviting, and perhaps even fun. You want to articulate clear, high expectations for students, and to do so in a way that conveys enthusiasm about the material and students' engagement with it, and that fosters an atmosphere of trust, intellectual encounter, and scholarly inquiry. Overall, aim to convey that you care about your students and their learning.

- **Cultivate community.** "Social presence" is one of the central challenges of remote teaching, so devote time and space to having your students connect with each other (and you) at the outset. For example, you might ask students to post brief reflections and/or videos introducing themselves, describing where they are, and explaining how they plan to study while learning remotely.

- **Assess your students' access to materials and technology.** Consider circulating a brief survey to determine your students' access to relevant books, computers/devices, broadband internet, and other relevant resources.

- **Get feedback from students.** As you try out new strategies, debrief with students on how it goes. What are you doing that is most helpful for their learning? What are some things you might do differently? You can do this with an informal conversation at the end of a session, with a Google survey, etc.

- **Keep it simple.** Focus on, say, two key digital tools (likely Canvas and Zoom), at least to begin with, and think about how you can use them to provide a few structured learning experiences. If there are other tools you are used to using, then you should continue using those.

- **But also look for opportunities to be creative.** Once you have the foundational structure set up using Canvas and Zoom, think about innovative ways to engage students in an online format. For example, rather than assessing students using a conventional essay or exam, can you have students record a short video of themselves explaining a key concept using Panopto? Are there opportunities to invite guest speakers to "Zoom in" to talk with your students?

III. Models for Transitioning Common Face-to-Face Practices to Remote Teaching

This section presents models for how you might translate common face-to-face teaching practices to remote practices. While there is no single, best way for doing this, the idea here is to suggest some possible structures that you can adopt and adapt, or to spur your own thinking on how to do this. Elements of these can be mixed and modified in a variety of ways depending on your needs and preferences.

You may already regularly do many of these things in your teaching, but it is worth highlighting how "regular" practices (emailing the syllabus to students before class begins, having students post reading responses on Canvas, etc.) are essential tools in online teaching.

Topics
A. Before Class Begins
B. Teaching by Discussion
C. Interactive Lecturing
D. Assessing Student Learning
E. Creating an Inclusive Environment
F. Teaching Lab Classes

A. Before Class Begins: Communicate, Set Expectations, and Assess

Even before the quarter gets underway in a face-to-face class, you might get in touch with students to introduce yourself, send the syllabus, or ask them to complete a small assignment for the first class.

How can this be translated online?

Some considerations for what this might look like for an unexpected online course:

- **Communicate with your students right away.** Even if you don't yet have a plan for how you will adapt, be in touch with your students as soon as possible to
    1. introduce yourself,
    2. let them know how you will be communicating so they know to regularly check email, Canvas, etc., and
    3. set the tone. Aim for a positive tone, conveying the idea that "we're in this together" and that you are excited to engage with their ideas this quarter—whether it's over Zoom, via discussion posts, in their written work, etc.

- **Set and communicate expectations.** Transparent expectations are even more important in unusual circumstances, so consider posting these in an announcement on Canvas. Identify the regular expectations you establish for students and think through how to adapt those to an online context. Some areas to consider:
    1. What are the various ways that students may *participate* in class (e.g. verbal discussion during a Zoom session, posting reflections in Canvas, etc.)? Good practice is to identify more than one option for students to engage with you and their peers and to practice and demonstrate their understanding.
    2. How might you adjust your *deadlines* and policy on late work?
    3. How can you allow for *flexibility* if students are in different time zones, are having difficulty accessing technology or the internet, or are otherwise facing extraordinary challenges?

- **Assess their prior knowledge.** Have students complete an ungraded pre-assessment task—a low-stakes (perhaps ungraded) writing assignment, a quiz, a survey, or another form of background knowledge probe—before the course begins to get a sense of what they know coming into the class or how they think about the key concepts of the course. The quiz function on Canvas or a Google survey are good options for this.

B. Teaching by Discussion: Read, Reflect, Live Video Discussion

Whether in the Core, in upper-level major courses, or in graduate seminars, one common mode of teaching and learning goes like so:
- Students read materials (texts, images, articles, etc.) and are asked to analyze and/or reflect on them in a number of ways (e.g. What is the structure and key evidence of the argument? How do the ideas and themes relate to those of other works in the course? How does this lead me to think differently about the topic?)
- Students come prepared to discuss the readings and their responses with their peers, with the aim(s) of deepening their understanding, encountering difference perspectives to grapple with, and so on.
- As part of this process, the instructor may provide some remarks to help clarify the material, provide context, bring in scholarly perspectives not contained in the assigned material, and so on.

How can this be translated online?

- **Create a module in Canvas** that contains the reading materials and any activities you'd like students to complete before the class meeting.
    o Name the module so it is clear to students what it is, perhaps with the topic and date of the course meeting.
    o **Add readings**:
        ▪ Add a PDF or other documents by adding a *File*.
        ▪ Link to online materials by adding *External URL*.
    o **Provide guidance** with discussion questions, contextualizing remarks, or other content with:
        ▪ Text, images, and other sources by adding a page.
        ▪ A short video you record using Panopto. Add the video to your Module by adding an *External Tool*, selecting *Panopto Video*, and then selecting the appropriate video.

- **Prompt students to reflect** on the readings before class, by adding a discussion or assignment to the Module.
    o Be sure to provide clear instructions and expectations for these postings. Questions to consider:
        ▪ How do you want students to engage with the readings? Should they offer interpretations? Critical comments? Questions for their peers?
        ▪ Should you ask students to reply to their peers' posts in Canvas? Or perhaps to bring their questions and comments for peers to the live discussion?

- Will these be graded? If so, how—with a quality grade, for completion, etc.? Note that lower-stakes, ungraded work may help to alleviate the anxiety over needing to do more of this kind of work as a result of moving to an online environment.

- **Hold your live video class** meeting using Zoom. Some considerations for holding this session:
    - Think about how you can **establish a welcoming environment** in the video conference setting. If you're comfortable doing so, check in with students to see how they are doing, share a trivial anecdote about your life, etc. The idea is to cultivate "social presence," something that needs to be more intentionally done in an online setting.
    - **Articulate the goals and plan** for the class at the beginning.
    - Share a Word doc via Zoom to use as **a virtual chalkboard**. Consider posting this to the appropriate Canvas Module after class is over.
    - Break students into **small discussion groups** using Zoom's breakout rooms function.
    - **Record the class session** to make it available to students who face challenges due to technology or internet issues, scheduling difficulties, or obstacles posed by sickness and other circumstances.
    - **Limit the time** and supplement the discussion with an asynchronous component—a low-stakes writing assignment, further discussion on Canvas, etc.

C. Interactive Lecturing: Engaging on Zoom; Active Learning with Canvas/Panopto

In larger courses, instructors might give lectures, often with slides. To make a lecture an active learning experience, instructors will often incorporate activities for students to reflect on and process new information, discuss with their peers, and do a bit of in-class assessment.

How can this be translated online?

- **Create a module in Canvas** that contains the reading materials and any activities you'd like students to complete before the class meeting.
    - Name the module so it is clear to students what it is, perhaps with the topic and date of the course meeting.
    - **Add readings**:
        - Add a PDF or other documents by adding a *File*.
        - Link to online materials by adding *External URL*.
    - **Provide guidance** with discussion questions, contextualizing remarks, or other content with:
        - Text, images, and other sources by adding a page.
        - A short video you record using Panopto. Add the video to your Module by adding an *External Tool*, selecting *Panopto Video*, and then selecting the appropriate video.

- **Plan for your video lecture and activities:**

    Option 1: Synchronous (live) lecture using Zoom.
    - Click "Share" to share your slides so students can view them and follow along.
    - **Articulate the learning objectives** and plan for the class at the beginning.

    Make it engaging:
    - Use the annotate feature to add dynamism to your presentation, highlight key points on your slides, add text on the fly, etc.
    - Use chat to field "back channel" questions. If you have a TA, task them with responding in the chat.
    - Use breakout rooms to break up the lecture with small group discussions.
    - Use the polling feature to check in to provide a moment of processing and assess student understanding.

      o   ***Limit the time*** and consider an asynchronous follow-up activity.

Option 2: Asynchronous (prerecorded) lecture using [Panopto](#).
- o Talk over slides to add a visual element to the lecture.
- o Build each video around one clear learning objective.

    Make it active:
- o Keep videos short—10 minutes is a good rule of thumb. Student attention wanes for longer videos.
- o Add periodic [quizzes](#) for students to reflect and check their understanding.
- o Create ***active learning "chunks"*** to put in Canvas modules: short, objective-driven videos, followed up by activities that ask students to practice, apply, or reflect on their new knowledge. Activities can be created using [assignments](#)—but not everything has to be graded!

D. Creating an Inclusive Environment

"Inclusive learning and teaching in higher education refers to the ways in which pedagogy, curriculum, and assessment are designed to engage students in learning that is meaningful, relevant, and accessible to all. It embraces a view of the individual and individual differences as the source of diversity that can enrich the lives and learning of others." (Hockings, 2010) It is an approach that pays attention to the varied backgrounds and abilities of all students and in order to create a supportive environment that allows each student to be fully present, contribute to, and learn from various diverse perspectives.

How can this be translated online?
- **Consider low-tech and asynchronous assignments**. Parenting students and students without access to devices with mics and cameras, internet, or a quiet space to video may have a more challenging time accessing synchronous class.
  - o Consider technologies that can work on a phone, in case students don't have access to a reliable computer, have spotty wi-fi or big data plans.
  - o Discussion, presentations, debates that might be completed in Zoom could be substituted with an assignment in a different format that meets the same course objectives. Students might write a pro/con issue comparison memo, in lieu of participating in a classroom debate.
  - o Ask students to record their presentation using simple technology (such as a cell phone or their computer) and send it to the instructor or full class.
  - o Ask students to submit a written script of a presentation to assess content knowledge and other skills like persuasive thinking. This substitution is most appropriate if oral communication is less of a core objective for the course.
- **Make learning materials accessible. Distribute** materials in an accessible format such as Word or a tagged PDF. Generally, accessible documents are first produced in Word, converted to PDF and then checked for accessibility. See Zoom for learning how to caption your lectures and videos. **Refer to** Student Disabilities Services **for several options for creating accessible documents.**
- **Be intentional and transparent**. Choose digital tech that allows you to achieve a curricular goal and/or allows student participants to achieve a learning outcome, and state clearly to students the materials they will need. Communicate how these technologies fit into the context of assignment goals, the ways that the students will engage the assignment, and how you plan to assess their work/contributions.
- **Establish and maintain a classroom community**. Allow space and time for students to connect with you and as a class.
  - o Students might record or write a short reflection (perhaps posted on Canvas) on where and how they are working on course-related assignments during the campus closure.
  - o Engage students in a "temperature check" weekly. It is harder to tell how students are doing when you are in a virtual space, so this can help to get a read of the virtual room. It can also help students to feel more comfortable, warming up to speak online.

- o If making videos, try to use a program that allows you to show your screen and your face, remembering that you are the human connection to the curriculum. Consider posting short videos in response to questions students post on a discussion forum.
- **Consider creating norms for your online space**. Consider offering norms such as:
  - o Be present. Each class will be packed, so prepare yourself to be engaged throughout. Be free from distractions such as driving and/or multitasking.
  - o Listen carefully to whomever is speaking in the virtual room.
  - o One mic. Try not to interrupt, and if you do, apologize.
  - o Use personal pronouns and gender-conscious language.
  - o We start on time and end on time.
  - o We expect your full and safe participation in our online sessions.
- **Have an array of instructional activities**, as active learning benefits all students.
  - o Examples of instructional activities: Quick writes, Small group discussions, Debates, Digital gallery walks, Graphic organizers, Quick polls
- **Foster Inclusive Participation**
  - o Check in on access at the start of a discussion. Make sure no one has difficulty accessing a strong internet connection, a quiet space, a device, or a mic or camera. Try to point them to campus resources.
  - o If the topic is not privileged or sensitive, check in with students to see if they would be comfortable with recording the session and post these online. We may have students who become ill or have technical difficulties mid-session. Recordings allow those students to have access to the class at a later date.
  - o Use the raise hand function to track who would like to speak.
  - o If you want to do a person-to-person check-in, let students know in advance that you will be calling on everyone and give them time to think of their responses to promote equity and support in their vulnerability on the platform and with one another.
  - o As students are sharing out, pause to invite anyone to speak who has not spoken yet.
- **Create group work protocols -** If you use the breakout rooms function of Zoom
  - Be clear about what time you will have everyone return so they know how to pace their group work. Use the broadcast function to let them know when they should transition in their groups from one person to another and to remind them when to come back.
  - Consider assigning group roles, such as Timekeeper, Facilitator, Reporter, Recorder, and Harmonizer to increase accountability to one another and ensure that everyone participates.
  - Allow students to alternate roles so that each week they are included and provided with different responsibilities.
- **Regularly gather feedback on how the class is going.** You will want to know how students are responding to the online environment, including how well they are able to participate. Ask students for feedback on how well discussions are going and any technological or interactive challenges students may have. For example, students with slower internet connection speeds may find it difficult to respond quickly in a synchronous discussion and a chat box may work better for the class. Another student may notice that particular students' voices are missing. Offer opportunities for feedback in a variety of forms, including 5- minute free-writing posts to Canvas, an anonymous Google form, a targeted email, or using class time to invite students to text or talk on the phone with a peer in the class and then reporting out.

Resources
[Inclusion, Equity, and Access While Teaching Remotely](#) (Rice University)

E. Assessing Student Learning

Assessment of student learning means thinking about the work we ask students complete so they can practice and get feedback on their learning, and so that instructors can evaluate their understanding. This captures both graded student work—essays, quizzes, exams, projects—which can help students be accountable for their learning, as well as low-stakes, informal, ungraded activities that allow students (and instructors) to check-in on their understanding.

How can this be translated online?

- Low-stakes quizzes are easily translatable online, as are reading reflections, essays, or other projects that students can submit using assignments on Canvas. Indeed, the more asynchronous your remote teaching plan, the more it will likely ask students to complete work on their own for the instructor to review and provide feedback on at a later time.

- Grading and providing feedback is made easy using speedgrader.

- Higher-stakes exams, on the hand, can pose challenges, given the difficulties with remote proctoring.

In light of this, consider the following for your assessment plan (adapted from Indiana University):

- **Embrace short quizzes.** Short, low-stakes quizzes are a great way to keep students engaged and have them reflect on the material, particularly if they are interspersed with short video lectures.

- **Move beyond simple facts.** Basic recall questions can leverage the retrieval effect, helping students to reinforce new knowledge. But it is tempting to look up the answers to such questions, so think about moving higher up Bloom's Taxonomy, with questions that ask students to apply concepts to new scenarios.

- **Adapt expectations for student work.** The extraordinary circumstances of remote teaching may limit students' access to resources they need to complete papers or other projects. Team projects may still be possible—and an excellent use of time—but be flexible as teams face challenges with communicating and meeting. Be ready to adapt assignment expectations based on the limitations posed by unexpected or evolving events.

- **Consider alternate exams.** Delivering a secure exam online can be difficult without a good deal of preparation and support, so consider giving open-book exams or other types of exams.

F. Teaching Lab Classes

Lab classes are designed to reinforce scientific principles and practices through hands-on experience and critical reflection. In a typical lab course, students go through a process that looks something like this:
- Students attend the lecture course associated with the lab course, where they are introduced to models, concepts, and theories related to the subject. They may also be introduced to key experiments and a review of the scope and limitations of what is known.
- In the lab, students receive the lab instructions and short introduction to the goals of the lab and key concepts.
- The lab itself takes students through a series of steps and manipulations, and requires students to engage in specific scientific tasks: generating hypotheses, making observations, collecting data, and reflecting on results.
- After the lab, students write a lab report which includes a record of their work and findings, as well some analysis and reconciliation of their results with other results.

How can this process be translated online?
Teaching labs remotely requires a different process. One model is to have students engage in the experimental process on their own time, possibly in groups or pairs, and use class time for questions and further analysis. Here's how that would look:

- **Create a Module in Canvas** that contains reading materials and the virtual lab you'd like for students to complete before the class meeting.
    - To find simulations, look to: PhET / Chem Collective / HHMI Biointeractives / iLabs / NANSLO / LiLa / Molecular Workbench LabXchange
    - Name the module so it is clear to students what it is, perhaps with the topic and date of the lab meeting.
    - **Add readings**:
        - Add a PDF or other documents by adding a *File*.
        - Link to online materials, including simulations by adding *External URL*.
    - **Provide guidance** with discussion questions, contextualizing remarks, or other content with:
        - Text, images, and other sources by adding a page.
        - A short pre-lab video you record using Panopto.
- **Prompt students to reflect** on their lab work with other students by adding a discussion and have students turn their lab assignment by adding an assignment to the module.
    - Be sure to provide clear instructions and expectations for these postings. Questions to consider:
        - In what order do you want students to complete each stage of the module?
        - What questions should students answer in the virtual lab or simulations? How should they observe it or manipulate it? What kind of data should they collect? What form should their results or work come in?
        - If you're creating a discussion, what are the discussion questions? What should students prepare to be ready for class?
        - How will the labs be graded—with a quality grade, for completion, etc.? Note that lower-stakes, ungraded work may help to alleviate the anxiety over needing to do more of this kind of work as a result of moving to an online environment.
- **Hold your live video lab class** meeting using Zoom. Some considerations for holding this session:
    - Think about how you can *establish a welcoming environment* in the video conference setting. If you're comfortable doing so, check in with students to see how they are doing, share a trivial anecdote about your life, etc. The idea is to cultivate "social presence," something that needs to be more intentionally done in an online setting.
    - *Articulate the goals and plan* for the class at the beginning.
    - Share your screen and use a Word doc or Google doc as *a virtual chalkboard*. Consider posting this to the appropriate Canvas Module after class is over.
    - Break students into *small discussion groups* using Zoom's breakout rooms function.
    - *Record the class session* to make it available to students who face challenges due to technology or internet issues, scheduling difficulties, or obstacles posed by sickness and other circumstances.

IV. References and Other Resources
- Remote Teaching Scenarios, from Cornell University.
- Keep Teaching, from Indiana University.
- Inclusion, Equity, and Access While Teaching Remotely, from Rice University.
- Putting Some of Your Course Content Online in a Hurry?, from Vanderbilt University.
- Flower Darby, "How to Be a Better Online Teacher," *The Chronicle of Higher Education*
- Michelle D. Miller, "Going Online in a Hurry," *The Chronicle of Higher Education*
- Michelle D. Miller, *Minds Online: Teaching Effectively with Technology*