Learning-Centered Activities

After reading books like Terry Doyle's *Learner-Centered Teaching* or Ambrose et al's *How Learning Works*, you may:
- See value in facilitating active learning in your course;
- Want to enhance student engagement and student learning;
- Intend to collect more data about students' progress throughout the course; and
- Plan to create opportunities for students to engage in goal-directed practice and receive targeted feedback;

but if you don't have much experience facilitating active learning, you may not have concrete ideas for activities that would work well in your context.

The purpose of this handout is to give you a variety of ideas for activities that can be used to accomplish various learning goals you may have for your students. You can review this list and select activities that align with your goals, teaching style, and teaching context, or you can use the ideas here to create new activities. (This is not an exhaustive list.) As you incorporate activities into your course, please note:
- Incorporating activities into your course requires planning;
- Some activities will go well on the first try, and some will require a process of trial and error to get right;
- Design (before class) and facilitation (in class) are both factors in the effectiveness of an activity and students' motivation to engage in it; and
- If the activity has multiple steps or phases, providing clear instructions (like on the projector), sharing the purpose of the activity, and explaining the desired behaviors maximizes the learning effects.

Reviewing and Integrating What They've Learned	
Activating & applying prior knowledge (Helps students to recall and transfer what they have learned.)	❏ Prompt students to recall material they learned earlier in the course or in a previous course. They can do this verbally or in writing, or you can give a recall quiz or game. This is a great way to begin a whole course, a new unit or module, or a class session. ❏ Begin class by giving students a low-stakes assignment or activity that prompts them to recall and apply knowledge or skills learned in the previous week(s). ❏ Quick Inventory: List a series of about 10 to 15 topics with definitions and ask students to identify whether the definitions are correct or incorrect. ❏ Create a game in which students engage in timed quizzing/drilling of simple facts that they need to memorize.

| Clarifying concepts/ Identifying or correcting misconceptions

(Helps to ensure incorrect or incomplete old knowledge does not interfere with learning new knowledge.) | ❏ Misconception Check: Discover the class's preconceptions with short writing prompt (like on a note card) or a low-stakes quiz (using paper, iClicker, or Kahoot). Useful for starting new topics.
❏ Muddiest Point: The instructor requests a one-minute written response to the "What was the most confusing part or "muddiest point of today's class for you?" Best used at the end of the class session. You can also ask students for the "clearest point." An instructor can read these, or in a large class, read a sampling and address theme that came up in an online message or at the beginning of the next class session.
❏ Clarification Pauses: Particularly after defining and elaborating on a key concept, the instructor stops talking, lets the material sink in, and then (after waiting a bit) asks if anyone needs to have anything clarified. The instructor might also circulate around the room during these pauses to look at student notes, answer questions, and so forth.
❏ Drawing for Understanding: Students illustrate an abstract concept or idea. Comparing drawings around the room can clear up misconceptions.
❏ Defining Features Matrix: Prepare a handout with a matrix of three columns and several rows. At the top of the first two columns, list two distinct concepts that have potentially confusing similarities (e.g., hurricanes vs. tornadoes). In the third column, list the important characteristics of both concepts in no particular order. Give your students the handout and have them use the matrix to identify which characteristics belong to each of the two concepts. Collect their responses, and you'll quickly find out which characteristics are giving your students the most trouble.
❏ Reciprocal teaching: As a small-group activity, students prepare for class by learning the material on their own. Then, they must prepare to teach it, including by anticipating questions their peers might have. Then, in class, they come together and teach the material to each other. Last, small groups can debrief in the larger class and the instructor can clarify as needed. |

Fitting concepts into prior knowledge / Interpreting new concepts or materials (Helps students to build more complex knowledge structures.)	❏ Concept Mapping: In groups, students write keywords onto sticky notes and then organize them into a flowchart. Or individually, students draw the connections they make between concepts. ❏ In writing or out loud, students explain how a new concept connects to or builds on other concepts they have learned. ❏ Students do an assignment or activity in which they have to apply both a new concept and an old one, and then explain what they did and why.
Developing Students' Thinking	
Practicing analysis and evaluation (Helps students to understand analysis and evaluation as thinking processes with multiple steps; helps students practice disciplinary ways of thinking.)	❏ Give students an example (case, text, object, etc.) and a list of parts or features they need to be able to identify and distinguish. Students attempt to identify/ distinguish all of their parts/features on their own, and then compare their answers in a group. ❏ Part 1: Students examine several examples (cases, texts, objects, plans), and by comparing and contrasting them, generate a list of the distinguishing parts or features. ❏ Part 2: Students are given a new example and prompted to identify the distinguishing parts or features and explain how they are functioning similar to or different than one of the previous examples. ❏ Part 1: After analyzing many examples, students generate criteria by which they can judge examples. This is best done in small groups and then moving to the full class. ❏ Part 2: Students evaluate examples using the criteria generated by the class ❏ Students find examples in the world and bring them back to class for analysis and/or evaluation
Proposing Solutions to Problems	❏ Students choose problems or issues they want to explore and write down everything they already know (or think they know) about it before doing research. ❏ Students receive a complex problem or issue they need to solve and have a small-group discussion in which they analyze it in some depth before proposing solutions. (Prompts will help guide students' discussions.)

	❏ Individual students do research to explore the consequences of a problem, including who is affected, when, how, how much, etc. Then, they report back to their group. ❏ Individual students do research to explore the history of a problem and various ways other people have tried to solve it. Then, they report back to their group. ❏ Students persuade a particular audience that the problem is a problem, or that they should take action to solve it. ❏ After analyzing a problem, students propose three solutions and describe the positive and negative consequences of each one. ❏ After analyzing a problem, students propose a solution and try to convince a particular audience that it is logical and feasible. ❏ Groups supporting different solutions debate the merits (and weaknesses) of each approach online or in class.
Applying a theoretical lens	❏ In writing or out loud, students explain a theory or framework in their own words. ❏ Students practice using a theory or framework to interpret an example (case, text, object, plan). ❏ Students use two (or more) different theories to interpret an example (case, text, object, plan), and discuss the differences in the interpretations. ❏ After they become skilled at applying various theories/frameworks, students review examples, discuss which theory is most appropriate to apply, and justify their answers. ❏ Students role play that they are theorists discussing a topic or example, and make interpretations and arguments from their different perspectives.
Generation (Invites students to use their knowledge to create something new.)	❏ Student-Generated Test Questions: Students create likely exam questions and model the answers. Variation: same activity, but with students in teams, taking each others' quizzes. ❏ Students create a product, business, plan, etc. (They can do this individually or in groups, and it can be a small or large project.)

	❏ Students connect course material to the "real world" by generating case studies or scenarios in which the course material could be applied.
Assess Their Own Learning	
Interpreting a task (Helps students to assess whether they understand the task; helps faculty determine whether students have correctly interpreted the task.)	❏ In writing or out loud, students explain what a project description or other assignment is asking them to do.
Assessing knowledge and skills (Helps students to monitor and evaluating their own learning; helps students to reflect on and improve their learning strategies.)	❏ Give students a diagnostic quiz that will help them to identify their strengths and weaknesses in a particular area. Provide resources they can use to correct misconceptions and get extra practice. ❏ Circle or Check: Pre-make a handout that has a list of topics you expect for students to learn/practice during a class session. At the end of the session, students can check the ones they mastered and circle the ones they didn't. You can collect these or they can keep them. This could also be done with iClickers. ❏ Students attempt to answer a question individually. With iClickers, they select the answer they think is correct. Then, they rate their confidence in their answer. Next, they discuss the same question again with a partner or small group. With iClickers the select the answer they think is correct, and then rate their confidence about their new answer. At the end of the activity, student can reflect on and discuss the experience.
Immediate targeted feedback (Gives students opportunities to check their work and their learning in real-time.)	❏ Student Questions (Group-Decided) – Stop class, group students into fours, ask them to take five minutes to decide on the one question they think is crucial for you to answer right now. ❏ Retrieval practice: An initial study session followed by the administration of a free recall test in which the students recall as much of the information as possible. Students then restudy the material and a second free recall test is administered. ❏ [Two-stage](#) exam: Students first complete and turn in the exam individually, and then, working in small groups,

	answer the exam questions again.
Mid-semester self-assessment	❏ Informal (ungraded) knowledge survey: List concepts or skills students should have learned so far in the course and asks them to self-evaluate their level of mastery or their confidence. ❏ Students can reflect on how much time they're devoting to the class on a weekly basis and the strategies they're using to prepare for the exams or assignments. What might they do differently?
Exam wrappers (Helps students to improve their metacognitive strategies; helps to make exams into learning experiences)	❏ Cognitive wrappers: A short survey given to students that consist of rationale (this is only to help you improve), reflection (how did you prepare for the exam), comparison (what kinds of mistakes did you make?) and adjustment (how will you prepare differently next time?) ❏ Exam wrappers: Ask students to (a) review their test and examine the items they answered incorrectly and (b) reflect on how they prepared for the exam. Students should also look for patterns in their errors.
Reflection activities (Help students to monitor their own learning and synthesize ideas.)	❏ One-Minute Papers: Students write for one minute on a specific question (which might be generalized to "what was the most important thing you learned today"). Best used at the end of the class session. (Sample form) ❏ Harvesting: After an experience/activity in class, ask students to reflect on "what" they learned (articulate it), "so what" (why is it important and what are the implications), and "now what" (how to apply it or do things differently).