

# LEARNING TASK EXAMPLES

Examples of Learning Task ideas from University of Waterloo faculty.



## History

### **The Objective:**

To analyze historical arguments; take a position and back the position with appropriate evidence in a well written essay.

### **The Learning Challenge:**

Essays are worth a major part of the course grade (60%). Feedback after the essay is too late to improve efforts. Goal: allow time to discuss essay during the development of the ideas for the essay, clarify understanding, receive feedback, prior to submission of essay.

### **The Task:**

Course will have 3 essay assignments; each essay will have a learning task associated with the essay. The task will involve working in small groups. Instructor will post questions to guide the student in thinking about the essay question. Members of the group will review each others ideas and discuss the development of the essay online. Both essay and learning task will have an assigned mark (as a unit) to comprise the 20% of course grade for each essay. The instructor is considering different ways to break down the 20%, for example:

Task 1 (15%) + Essay 1 (5%) = 20%

Task 2 (10%) + Essay 2 (10%) = 20%

Task 3 (5%) + Essay 3 (15%) = 20%

### **The Feedback:**

1st level feedback: The task will involve group review (peer feedback) as the students discuss their developing ideas online.

2nd level feedback: The instructor will monitor the discussions and offer guidance but not solutions by asking questions such as the following if it seems the conversation is getting off track.

### **Time and Space:**

Reduces workload on instructor marking by using peer feedback initially with coaching from the instructor. By the time they get to the final essay, the students have had lots of practice and feedback and final result should be better.

## Religious Studies

**The Objective:**

To discuss and analyze different perspectives. To connect course concepts to real life experience.

**The Learning Challenge:**

In the on campus course, the class time was spent in discussion. The challenge came when the course was offered in an online format. How could an effective online environment be created for the DE students to engage in meaningful discussion? Students need to connect the information to students' own experiences and discussing the concepts based on reactions to readings (vs just listening to the lectures).

**The Task:**

Students given the readings and given 2 or 3 questions to discuss in their online groups. Questions are designed to help the students reflect on the readings and apply the concepts to their situation.

**The Feedback:**

1st Level Feedback: (peer feedback ).

2nd Level Feedback: Group leader summarizes the groups' comments. Instructor reads group summaries and provides generic feedback to full group through the announcements. Lectures also reinforce the topics.

**Time and Space:**

Instructors' time is saved by no longer needing to respond to individual student. Instructor's respond to group responses

## Kinesiology

**The Objective:**

Define and demonstrate an understanding of factors related to the measurement of flexibility.

**The Learning Challenge:**

Lab time is at a premium. Students come to lab without being prepared. They don't look at the experiment ahead of time. They don't know what equipment they need and a lot of time is wasted doing basic things.

**The Task:**

Students complete an online unit before each lab. They are asked questions that they must answer correctly and submit on line before coming to lab. They must make a 'good faith effort' to complete the questions.

**The Feedback:**

Feedback: The questions are marked automatically and students get feedback so they know whether they know the basic information they need to be prepared for the lab.

**Time and Space:**

Students come to the lab prepared to start the activity. Use of online time as an alternative to a face to face time in the lab being wasted while they figure out what they are supposed to do.

## Mathematics 1

### **The Objective:**

To write and analyze mathematical proofs.

### **The Learning Challenge:**

Students learn by doing, not viewing. In typical algebra class, the instructor does proofs on blackboard (assuming students understand and have a background in set theory). Goal: to have students develop their understanding of proofs by doing the activity and analyzing their proofs to discover misunderstandings.

### **The Task:**

Instructor gave a general explanation about the axiomatic method, starting with non-defined concepts of set, element and belonging. Then, went into the first definition, subset.

First Task: Find new propositions that could be made from these concepts. Students came up with the empty and universal sets, the binary operations of union and intersection and about five different theorems up to De Morgan's laws.

Next task: Write the proofs.

Next task: Analyze the proofs, on the blackboard, as a group.

### **The Feedback:**

1st Level Feedback: (peer feedback). Students attempted to write proofs and analyze proofs as a group. More capable students able to coach less capable; knowledge building through scaffolding.

2nd Level Feedback: Coaching and expert guidance from instructor who coaches students through the process.

### **Time and Space:**

Use of classroom time changed significantly from the lecture approach to an interactive classroom. Students achieved understanding by actively engaging with the material.

## Mathematics 2

**The Objective:**

To solve mathematical problems relevant to actuarial science.

**The Learning Challenge:**

Students tend to ask for help before they've attempted to solve their own problems. Goal: to have students struggle with the problem and self-assess to determine what they need to know.

**The Task:**

Students given a problem to solve (similar to the text book examples). They then attempt to solve the problem on their own. If they still don't understand, they can ask for help but must show work they've done to demonstrate they have made an effort, in order to get help (ie. cannot just say "I don't understand").

**The Feedback:**

1st Level Feedback: (feedback with guidance). Student submits task. The correct answer is given to the student. If their answer is wrong, they are encouraged to review the module and look for similar examples from the text book so that they can evaluate their attempt and see where they went wrong. (automatic generic feedback )

2nd Level Feedback: If after attempting to solve the problem again, students use the submission tool to show the professor their work and seek guidance (individual feedback). Note: they must have made an attempt to solve the task and show their work in order to get assistance.

**Time and Space:**

Instructors' time is saved by no longer needing to respond to students first attempts at solving the problem. Some students will be able to solve the problem after they receive the generic/automatic feedback.

## Biology

**The Objective:**

Describe and compare the processes of mitosis and meiosis.

**The Learning Challenge:**

Students often fail to understand a basic concept and so do very poorly on a whole series of problems. They don't receive feedback to these problems until several weeks into the course.  
Goal: Develop practice exercises with automatic feedback.

**The Task:**

Practice exercises, using images, animations and tasks. Students move through a progressive set of questions. Can only move forward if they get the correct answer.

**The Feedback:**

Student submits answers and receives automatic feedback. Feedback provides hints to students who give incorrect responses. (automatic/generic) Hints help students to figure out the correct response.

1st level feedback: Automatic/generic/feedback with guidance as student submits answers to practice questions.

2nd level feedback: Individual feedback from instructor to the 'real' questions.

**Time and Space:**

Reduces workload on instructor marking by using automatic feedback during the practice questions. The practice questions will increase the students' ability to give correct responses to future questions that will be marked by instructor. It is less time consuming to mark correct answers.

# Accounting 1

**The Objective:**

To make ethical business decisions.

**The Learning Challenge:**

Business ethics is complex and it is difficult to gain understanding without experiencing a real situation and having to make a decision.

**The Task:**

Students must choose an ethical course of action to a business dilemma (ie. what should 'Joan' do in this situation). Students are given a 'case study' that describes the problem from a the perspectives of a number of different stakeholders in the company. The student must decide the course of action that should be taken, from an ethical standpoint.

The students are divided into small online groups. Each group member reads the case scenario and decides what 'Joan' should do, and submits their answer on line to be read by the other group members. A group member does not have access to the responses from other members of the group until they have made a submission.

**The Feedback:**

1st Level Feedback: (peer feedback). After all students have submitted what an ethical decision would be, from their perspective, the students discuss their responses and how and why their views may differ from each other.

2nd Level Feedback: (group feedback) After viewing the online submissions and the students discussions, the instructor can bring this information to a face to face discussion in class to expand upon the ideas presented.

**Time and Space:**

Instructors' time is saved by no longer needing to respond to the all of the online discussions (can scan through/does not need to respond to group work online). Group feedback is given during class time. In class, students can share and discuss responses and ethical issues raised. Instructor provides coaching and expert guidance.

Marks are given based on participation in the online discussion and the quality of the discussion. The student gains a deeper understanding of the ethical issues by taking the perspective of the business person, sharing ideas with peers as well as receiving feedback in class from the instructor.

## Accounting 2

### **The Objective:**

To change the use of the lecture time to focus on student misconceptions and questions about the topic.

### **The Learning Challenge:**

The instructor usually uses the lecture time to cover a pre-determined amount of information. However, students are diverse in background knowledge/understanding of the course concepts. There may be specific areas of the content that students find problematic and would like to spend more time discussing to clarify the information. Also, there may be some issues that students may wish to spend more time discussing because they find the topic/concept/issue particularly interesting.

### **The Task:**

Prior to the class, students review the online lecture and complete a One Minute Summary (OMS) online. The OMS poses specific questions to provide the instructor with information about student misconceptions and questions:

#### OMS Questions

1. Create a multiple choice question for this module. Include the answer. Post the question and answer to the Multiple Choice Question Bonds conference area.
2. What single question would you like to have asked the instructor?
3. What single change would have made this module better?

### **The Feedback:**

**Student-instructor feedback:** The Teaching Assistants for the course receive the OMS comments from the students that provide student – instructor feedback. The Teaching Assistants prepare a OMS, to give to the instructor, that summarizes the student comments.

**Instructor-student feedback:** The instructor reviews the summaries and modifies the lecture to cover the students' questions/misconceptions. Students receive feedback in class through the lecture.

### **Time and Space:**

1 Instructor; 10 Teaching Assistants (TA'S); 800 students

### **Student Task: OMS**

Each Student (800) reviews online lectures and submits a OMS online, pointing out any learning bottlenecks they encountered while reviewing the lecture.



### **Teaching Assistant Role**

Each TA is responsible for 80 students (10 TA's x 80 students each = 800 students). Each TA scans 80 OMS online, viewing 20 in detail to look for common concerns/questions.

Each TA prepares a OMS to provide the instructor with a summary of the student comments.



### **Instructor Role**

Instructor reviews the ten OMS, provided by the TA's and adjusts 40% of class time to address instructional bottlenecks identified by the students and summarized by the TA's

## Engl 102B: Major Forms of Literature: Novels and Poetry (W04)

Two types of online learning tasks are used in this course:

### 1. *Assignment preparation tasks*

Instructional challenge: poor quality of essays in poetry section of course.

*Objective: to help students perform better on assignments/produce better essays.*

#### ▪ **Essay Proposal Task**

Students submit an essay proposal to the TA/instructor about a fortnight before the first essay is due.

The task asks them to provide their thesis statement, 3 key ideas, a sample sentence containing a source citation, and a list of works cited. TA/instructor gives feedback prior to submission of essay with the expectation that this will produce better essays.

#### ▪ **Poetry discussion Tasks**

After a lecture on a feature of poetry (eg form, figures of speech, prosody, voice and persona etc), students log into their group discussion boards to discuss these elements with reference to two poems assigned to their group. These discussions continue throughout the term, always in the same group, with the same poems, but discussing a different attribute of the poem each week. This discussion is intended to inform their essay on poetry and help them produce a better paper. (No group deliverable is required.)

#### ▪ **Information Literacy Tasks**

These are optional, and designed to give students guidelines on what plagiarism is and how to avoid it, and how to cite sources properly using MLA citation style.

### 2. *Novel Discussion Tasks*

Instructional challenge: students read texts passively, uncritically.

*Objective: to give students the opportunity to discuss the novel with each other outside of class time, exchange ideas with each other and in the process learn to become active readers of text.*

- Students are given some guiding questions and asked to discuss with each other their responses to the novels covered in the course as they are reading them. Guidelines for how to read texts actively are also provided, and students are encouraged to compare their responses to those of their peers, and, as they do so, to consider how their experiences (both textual and life) inform their reading of the text. This takes discussions out of the classroom and online.

## Phil 202 – Gender Issues

### **Stereotypes task**

Instructional challenge: addressing student misconceptions

*Objective: to help students probe assumptions and think critically about a particular topic covered in the course (eg, stereotypes in this case).*

Steps in the Stereotypes task include the following:

1. Students post individual reflections on a topic (stereotypes), prior to completing the assigned readings.
2. Once they have posted their reflections, the system allows them to read the submissions of others in their group thus testing their ideas against alternate views.
3. They are then directed to the assigned readings on the topic.
4. Once they've completed their reading, they log into their group discussion boards to discuss how their assumptions and views were challenged/ changed in light of their peer's responses to the same questions and to the assigned readings. In their group discussions, they reassess their initial assumptions and ideas.
5. Finally, a discussion leader posts a group position paper/discussion summary to a general discussion board, which is then accessed by the entire class.

The instructor gives feedback to the initial reflections and to the final group deliverable.

## Psych 396 – Research on Behavioral Neuroscience

Psych 396 is a seminar course with two sections of about 21 students registered in the W04 term. The instructor identified several instructional challenges for this course which he hoped UWONE would help to address:

- Students came into the course with very different degrees of previous exposure to the biological sciences, **which made pitching the anatomy lectures at the right level a challenge**. Some had a solid background in the biological sciences, others very little. Objective: to gain an understanding of where the students were struggling with the material prior to lecture and therefore to make better use of lecture time.
- **Students traditionally struggled with writing good scientific abstracts, which formed part of the requirement for one of the course assignments**. Objective: to help students understand what comprises a good scientific abstract, and to enable them to produce better abstracts for their assignment.
- **Level of student engagement with peer presentations**. Traditionally, group presentations are a good learning experience for the presenting groups but less so for the non-presenters. Objective: to up the level of engagement of non-presenting students in the presentations of their peers.
- **Information Literacy skills**. Objectives: to enable students to cite sources properly on written assignments using APA style, enable them to navigate the library resources better (ie, using Journal indexes such as Medline, PsychInfo, Web of Science), help them write better annotated bibliographies.

Colin developed three types of learning tasks to address these challenges and Laura Briggs, our library liaison developed 2 info lit tasks:

- One Minute Summaries (in the Neuroanatomy modules) - individual
- Abstract task (individual)
- Group Presentation Preparation Task (in groups)
- InfoLit tasks (individual)

Learning tasks, detail description:

### 1. **One Minute Summaries**

*Objective: to alert the instructor to areas of particular student difficulty in the course content so that he can then address these in the lecture (better use of lecture time).*

Steps in this task include the following:

- a. Students complete the required readings.
- b. Students submit a *One minute summary* asking them to outline the areas of particular difficulty or any other issues that arose from the readings which they would like addressed in the lecture that week. (This is set up as a simple web form). This is due a day before the lecture.
- c. The instructor reads the submitted OMS forms, addresses the areas of difficulty in lecture, and posts websites of interest for those students who had questions of a general interest nature.

### 2. **Abstract task**

*Objective: to help students write better abstracts/ perform better on a course assignment.*

Steps in this task include:

1. Students are given a heuristic to help them identify the elements required in creating a good scientific abstract.
2. In the online environment, they are then directed to 4 abstracts prepared by the instructor, some of which are good, others poor. They are asked to give the abstract a grade out of 5 using the heuristic as a guide, and providing some commentary to support/justify the grade they gave. (This is done via a simple task form/web form).
3. Once they have submitted the task, instructor feedback is immediately available. The instructor has prepared and posted this “generic” feedback prior to submission of the task; the feedback includes the grade he would have assigned, together with a rationale for the grade. Note: students are only allowed access to this generic feedback after they have submitted their task.

4. Students then create an abstract to accompany a paper or presentation to be given in the course as part of the course requirements.

### 3. **Presentation Preparation Task**

*Objective: to engage students more actively in their peers' group presentations*

Steps in this task include the following:

1. Each student in the course is assigned a group and an article to discuss as part of a group presentation. Group members meet online to discuss how their article might contribute to a group presentation, and to formulate a topic.
2. Once the topic is finalized and approved by the instructor, the presenting group submits an abstract or other advance material that describes the presentation. This is submitted four days prior to the group presentation to the instructor, who posts it online for all students to access and who (privately) gives it a grade out of 5.
3. Two days prior to the group presentation, non-presenting students are asked to post questions about the presentation to the presenting group via a general class discussion board. Non-presenters are asked to design their questions with a view to helping the presenting group to focus their presentation on areas of interest and/or difficulty. Each participant in this activity receives two bonus marks.
4. The presenters read their peers' questions and comments and make appropriate modifications to their presentation.
5. The presenters make their presentations, and everyone is happy. ☺

### 4. **Information Literacy Tasks**

The LT3 liaison librarian worked with the instructor to develop the following tasks:

- a. **APA citation task** – designed to help students cite paper-based and web sources using APA style. Feedback delivered automatically by the system.
- b. **PSYCHINFO task** – designed to help students learn how to find journal articles using PSYCHINFO, which they are required to do for one of their assignments. Feedback automatic.
- c. **Annotated bibliography task** – designed to help students learn how to produce an annotated bibliography that is both descriptive and evaluative, which they are required to do for one of their assignments. Feedback is automatic.

## **Engl 102A: Major Forms of Literature: Short Stories & Drama (F03)**

Two types of online learning tasks are used in this course:

### 1. **Short Story Discussion Tasks**

Instructional challenge: students unprepared for lecture; students do not have the skills to read texts covered in the course critically/actively.

*Objective: to ensure that students are prepared for lecture by giving them the opportunity to discuss the short stories with each other prior to class; to encourage students to become active readers of text as they exchange ideas with each other.*

- Students are split into groups of 4 or 5 and are asked to discuss key features of the short stories to be covered in the upcoming lecture. A student leader submits a summary of the discussion which the instructor reads prior to the lecture.
- Feedback was given in lecture.
- The instructor noticed a significant increase in in-class discussion as a result of these tasks; also student satisfaction high (refer to ALT-C paper—pp 11-12—in “Papers” section of Code Bunny).

### 2. **Essay Proposal Task**

Instructional challenge: students produce poor essays

Students submit an essay proposal to the TA/instructor about a fortnight before the first essay is due.

The task asks them to provide their thesis statement, 3 key ideas, a sample sentence containing a source

citation, and a list of works cited. TA/instructor gives feedback prior to submission of essay with the expectation that this will produce better essays.

### **PACS 201: Roots of Conflict and Violence (F03 & W04)**

PACS 201 is an interdisciplinary course with about 80 students registered in the F03 term and 71 in W04. The instructor identified two instructional challenges for this course which she hoped UWONE would address:

- **Traditionally, students struggled with the sheer volume of information presented in the course textbook;** specifically, unable to identify the salient points or synthesize it with the info presented in other parts of the course – with the result that they are at sea when examined on a textbook-related issue in the final exam.  
**Objective:** to help students analyze and synthesize the information presented in the course text, so that ultimately they are able to produce for themselves a textbook study guide which would help them prepare better for the final exam.
- **students' poor information literacy skills. Objective:** to have students cite sources properly on written assignments; help them to understand what plagiarism is and how to avoid it.

Larissa designed two types of online tasks to address these challenges:

- Study Guide tasks (in groups)
- Info Lit tasks (individual)

Plus a **One Minute Summary** task which students are expected to complete at the end of each of the four modules of the course

- to gauge how well they are grasping the material, whether there are any major learning bottlenecks, and provides an opportunity for students to give her feedback about any area of the course they don't like.

#### **Study guide tasks**

- **These tasks were collaborative:** students were expected to work in groups to answer a series of questions about the particular chapter assigned to them with the goal of producing a study guide for that chapter.
  - each group was responsible for 2 study guide tasks through the term (not overly onerous)
  - Group size was kept small (3-5)
  - Thorough instructions were provided; team roles were identified (discussion leader; task submitter)
  - Questions were designed to help them identify salient points; analyse them in terms of course objectives; synthesize material with other aspects of course
  - incentive: participation mark; help them do well in the final exam; plus one of these would be chosen to appear in final exam
  - Discussion leader: set up threads, reported on group functioning; Task submitter: posting single group deliverable – deadline Monday 5pm
- Managing student expectations: no instructor feedback in the discussion board – this was strictly the students' area
- Instructor feedback was reserved for the submitted summary of the group's discussion; feedback was prompt and specific, in the general board (demo).

#### **InfoLit tasks**

A librarian worked with Larissa to design a citation and plagiarism task which were tailored around one of the assignments (ie included info on how to cite paper-based and web sources using Chicago Style 1), to help students prior to their written assignment.

#### **Feedback**

Delivered automatically by the system.

#### **Response - student quotes culled from OMS (F03):**

"I thought that the discussion boards worked very well, it allows for much more well-organized argument as each participant can review and perfect their argument before they present it." (Paul Lehmann)

“For the online aspect I would have had the groups get together in class once, just to meet one another. But other than that this is great and there is 2 different groups perspectives on what is important in each specific chapter. Which in the end will make it easier to study.” (Ashley Flanagan)

“i like this whole internet thing a lot and i don't have a problem with doing these assignments over the internet. Great idea Professor!” (Antonio DiFebo)

**German 272: German Thought and Culture (W03 & W04)**

Ger 272 is an elective course with a total registration of 45 students in the W03 term & 36 in the W04 term. The instructor identified two instructional challenges for this course which he hoped UWONE would address:

- students are unprepared for class – they haven't done the readings;
- students are ill equipped to write essays; lack analytical/critical thinking and information literacy skills; typically performed poorly on term essays and essay component of final exam. Objective: to have students perform better on assignments; teach info lit and analytical skills; show students how to locate scholarly resources.

James designed three types of online tasks to address these challenges:

- Class preparation tasks
- Info Lit tasks (with assistance from liaison librarian) – these were designed to help students prepare for and perform better on assignments
- Weekly Review tasks

**Class preparation tasks**

- These tasks were collaborative: discussion questions were posted each week based on the week's assigned readings. In groups, students were to discuss the questions, then an appointed leader was responsible for posting the group's summary of the discussion by noon of the date of the lecture.
  - each group was responsible for 1 pre-class task every 3 weeks
  - discussion very effective: content driven, small size of groups (3); timing of tasks – each group responsible for 3 pre-class tasks over the 9 weeks that the online component of this course ran— one online deliverable every 3 weeks (InfoLit tasks interspersed)
  - resulted in improved class discussions – at least 1/3 of class had engaged with course content quite extensively prior to the lecture
- No instructor feedback in the discussion board – this was strictly the students' area
- Instructor feedback was reserved for the submitted summary of the group's discussion; feedback was prompt and specific.

**InfoLit tasks**

Librarians worked with James to design tasks which were tailored around the assignments, to help students perform better on assignments and guide them as to locating relevant library resources.

Assignment	Learning Task
1. Write book review on a book about German culture (list of 75 books provided).	1. MLA citation quiz (automatic fb) 2. Cite book chosen in MLA format.
2. Read a review written on the book reviewed in Part 1 and interact with it – write a paper.	2a. Book review MLA style quiz (automatic fb). 2b. Cite chosen review in MLA format. 2c. How to locate book reviews – identifying indexes.
3. Read a scholarly article on a topic covered by the book the student read in Part 1; comment on the issue (ie write an academic paper) based on work done in Parts 1 and 2.	3a. Journal article MLA style quiz (automatic fb). 3b. How did you find your journal article? 3c. Cite chosen article in MLA format.

**Feedback**

Some automatic; some provided by liaison librarian for German and Slavic Studies – (both specific/generic)

### **Weekly Review tasks**

These were individual, aimed at giving students practice, on a weekly basis, with synthesizing material covered in the lecture and through the readings into a short-answer/essay format response to key questions. TA provided feedback individually; the instructor noticed significant improvement in essay component of final exam.

#### **Results - student quotes (W03):**

“I thought the task was a really good exercise; I often have difficulty finding the proper way to cite sources, but this showed me where to find resources that could help.”

“I just wanted to say that I really think the pre-class activities are a great idea! By having these I feel motivated to read the essays. As well, the fact that we have to go online and work as a team, figuring out the answers together is also something that I think is a really great idea.”

(Also, student questionnaires in W04 indicated that the students enjoyed and benefited from the tasks quite substantially).