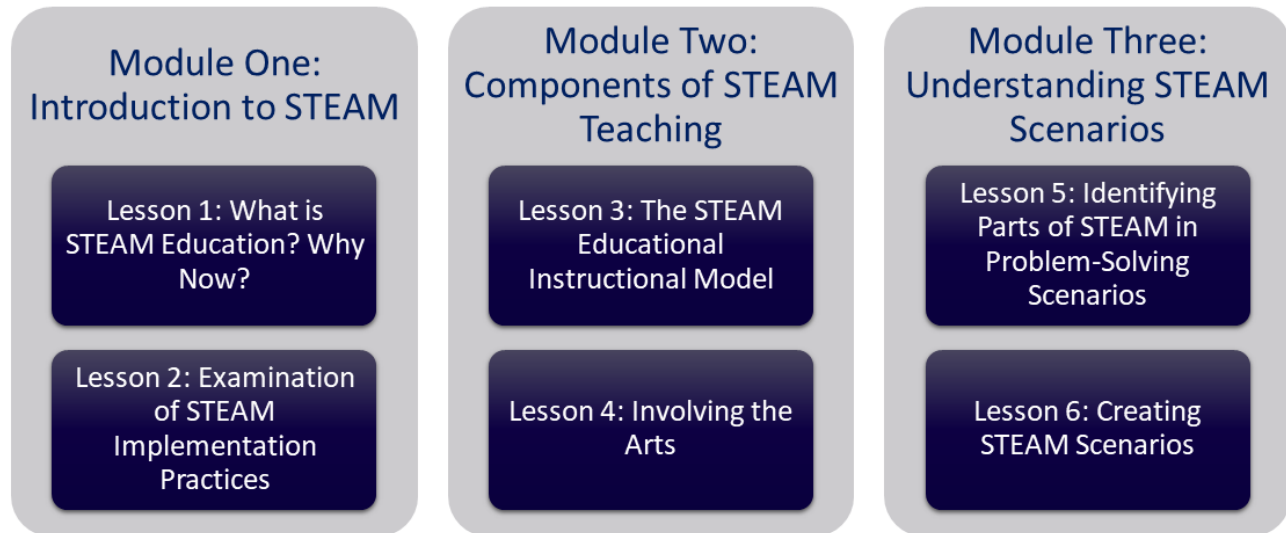


Course Syllabus

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STEAM: Education



NOTE: When you complete Module 1, Module 2 will become available. When you complete Module 2, Module 3 will become available.

Course Description

As the first in a series of four STEAM Education courses, this is a continuing education course which means that it is asynchronous and lightly-moderated by the instructor, plus it utilizes self-assessment. In this way, we've included many examples, rubrics, and suggested ideas to help you extend your thinking. The course is designed with maximum flexibility meaning that you can do this course at your own pace, whenever that suites you. However, we've included a recommended schedule and timeline.

The *STEAM: Education* course introduces STEAM teaching. It will introduce the topics of transdisciplinarity, problem-based learning, technology integration, and adding the arts. It will focus on two aspects of STEAM teaching, which include problem-based learning and the infusion of the arts.

The *STEAM: Education* course can be applied to the STEAM Education University of Pittsburgh Certificate or the online M.Ed. If you decide to continue, the second course, *STEAM Transdisciplinary Approaches*, will focus on the other main tenets of STEAM (transdisciplinarity and technology integration). The goal for this course is for participants to leave with a sound understanding of how to create a problem-solving scenario that is aligned to standards, which will foreground the unit planning in the subsequent course. The third course, *STEAM Implementation*, is where you will try out these

ideas in your context. The fourth course, *STEAM Assessment*, focuses on formative and summative assessments for STEAM.

Learning Outcomes

After completing this course, you will be able to:

- Explain how STEAM practices and principles differ from STEM practices and principles
 - Identify the components of STEAM instruction and the SCALE (STEAM Classroom Assessment of Learning Experiences) model
 - Apply STEAM principles and practices to understand the differences between STEAM and PBL
 - Analyze how arts and makerspaces can support student-directed inquiry
 - Create STEAM scenarios that align with STEAM standards
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Prerequisites

There are no prerequisite courses for STEAM Education.

Required Materials and Skills

All assigned readings and videos are integrated into the Canvas modules. Suggested due dates are listed on the [course schedule](#). This course contains video content, so you will need to have access to speakers and/or headphones.

You should check the course Canvas site regularly and respond accordingly. The course requires students to use many online tools and websites, so basic fluency with accessing Internet resources is a required competency. Course participants should also be comfortable performing basic computing skills, including attaching files to email messages, creating and saving documents in word processing programs, and backing up files.

Technical Assistance

For technical assistance with this online course, please reference the Help hyperlink in the Canvas navigation menu.

Instructional Strategies

This course will draw on video lectures, readings, activities, and assignments.

Assessment Strategies

Assessment strategies will include self-assessment of work including written papers, lesson design, comparing and contrasting strategies, and more.

Grades

All required assignments must be submitted for the successful completion of the course. Monitor your progress using the Grades hyperlink in the course navigation menu. Assignments are noted as graded via points.

Each assignment is calculated using a point system then converted to a percentage that corresponds to the percent weight of the assignment (see assignment descriptions above for the percentage weight of each assignment). Your percent scores for all assignments are then totaled to give your overall course percentage. The following scale will be used to determine your final letter grade. **Take notice that your assignment and total course percentage to one decimal point in order to provide a more balanced reflection of your learning across all individual and group projects.**

94.0% - 100.0% = A

90.0% - 93.9% = A-

87.0% - 89.9% = B+

84.0% - 86.9% = B

80.0% - 83.9% = B-

77.0 % - 79.9% = C+

74.0% - 76.9% = C

70.0-73.9% =C-

64.0%-69.9=D+

60.0%-63.9%=D

Below 60% is failing.

Plagiarism and Academic Integrity

Students in this course will be expected to comply with the [University of Pittsburgh's Policy on Academic Integrity](http://www.cfo.pitt.edu/policies/policy/02/02-03-02.html) (<http://www.cfo.pitt.edu/policies/policy/02/02-03-02.html>).

Accessibility

Canvas is ADA Compliant and has fully implemented the final accessibility standards for electronic and information technology covered by Section 508 of the Rehabilitation Act Amendments of 1998. Please note that, due to the flexibility provided in this product, it is possible for some material to inadvertently fall outside of these guidelines. Here is some [more information on Accessibility within Canvas](https://community.canvaslms.com/docs/DOC-2061-accessibility-within-canvas) (<https://community.canvaslms.com/docs/DOC-2061-accessibility-within-canvas>).

Copyright Notice

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Disability Services

If you have a disability for which you are or may be requesting an accommodation, you are encouraged to contact both your instructor and the Office of Disability Resources and Services, 140 William Pitt Union, at 412-648-7890 or 412-383-7355 (TTY) as early as possible, but no later than the fourth week of the term or visit the Office of Disability Resources website as early as possible, but no later than the 4th week of the term. DRS will verify your disability and determine reasonable accommodations for this course.

Participation

You are expected to engage in online discussions and peer review. Your active participation is necessary both for your own learning and that of others. This includes checking your pitt.edu email and Canvas once daily. Therefore, students are expected to “attend” all classes, arrive on time, and be prepared to participate in respectful ways. If it is necessary for you to be away from the Canvas course other than university closings, please inform the instructor in advance regarding the reason for the absence, so that we can make a plan for your success

Late Submission of Assignments

Assignments will NOT BE ACCEPTED past the due date unless an agreement is worked out with your instructor for an extension PRIOR TO the original due date. All major assignment due dates are posted on your Canvas calendar **AT THE BEGINNING of the semester** so please be aware of these due dates and plan accordingly.

- If for any reason a section instructor determines an assignment due date needs adjustment for their section this will be discussed in class and the section instructor will have the final say.

If you contact the instructor for an extension prior to the due date of the assignment please know that extensions are not automatic. Reasonable justification is needed for an extension to be granted and it is left up to the discretion of the instructor to determine reasonableness. Extensions must be made at least 24 hours prior to the due date for an assignment. Any extension will include a new, agreed-upon submission date. No assignments will be accepted after the extension deadline has passed. Note that late assignments will have the lowest priority for grading and feedback.

Writing Standard

The quality of your ideas, as well as your presentation, will be taken into consideration when assigning grades. You are expected to produce written documents that are easily read, well organized, clearly understood, grammatically correct, and include no spelling errors. Your grade will be reduced if you fail to attend to these aspects of our written assignments.

Academic Integrity

Students in this course will be expected to comply with the University of Pittsburgh's Policy on Academic Integrity (www.cfo.pitt.edu/policies/policy/02/02-03-02.html[Links to an external site.](#) (<http://www.cfo.pitt.edu/policies/policy/02/02-03-02.html>)). Any student suspected of violating this obligation for any reason during the semester will be required to participate in the procedural process, initiated at the instructor level, as outline in the University Guidelines on Academic Integrity. This may include, but is not limited to, the confiscation of the examination of any individual suspected of violating University Policy. Furthermore, no student may bring any unauthorized materials to an exam, including dictionaries and programmable calculators.

Sexual Harassment

The University of Pittsburgh is committed to the maintenance of a community free from all forms of sexual harassment. Sexual harassment violates University policy as well as state, federal, and local laws. It is neither permitted nor condoned. It is also a violation of the University of Pittsburgh's policy against sexual harassment for any employee or student at the University of Pittsburgh to attempt in any way to retaliate against a person who makes a claim of sexual harassment. Any individual who, after thorough investigation and an informal or formal hearing, is found to have violated the University's policy against sexual harassment, will be subject to disciplinary action, including, but not limited to, reprimand, suspension, termination, or expulsion. Any disciplinary action taken will depend upon the severity of the offense. For more information, see the Web site: <https://www.pitt.edu/~provost/har.html>[Links to an external site.](#) (<https://www.pitt.edu/~provost/har.html>).

Diversity and Inclusion Statement

I consider this classroom to be a place where you will be treated with respect, and I welcome individuals of all ages, backgrounds, beliefs, ethnicities, genders, gender identities, gender expressions, national origins, religious affiliations, sexual orientations, ability – and other visible and nonvisible differences. All members of this class are expected to contribute to a respectful, welcoming and inclusive environment for every other member of the class.

Names and Pronouns

I will gladly honor your request to address you by your name and pronoun (that may differ from the school records). Please advise me of this preference early in the term so that I may make appropriate changes to my records. You may email me at cquigley@pitt.edu (<mailto:cquigley@pitt.edu>) or tell me in person in class, whichever is most comfortable to you! I want to be sure you feel yourself and comfortable in our class community.

Copyright Statement

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G-grades

















If unforeseen events (such as major illness) prevent a student from timely completion of course work he/she may request a meeting with the instructor to discuss the possibility of earning a “G” grade for the term. If both student and instructor agree to the “G” grade, they collaboratively write a document that describes, in detail, what the student needs to do to complete the required course work and the time frame (not to exceed one academic year) within which he/she must do so. Upon receiving all work, the course instructor would evaluate the work and send it forward to the Associate Dean a request for the permanent grade.

Assignments

There are two major types of assignments for this course, online discussions and a variety of written assignments including peer review. The discussions are worth 30% of your total grade and the other assignments are worth 70%. Below the course, summary outlines the details of those assignments. The assignments each have rubrics.

Course Summary:

Date	Details	
Wed Jan 8, 2020	 Introduce yourself! (https://canvas.pitt.edu/courses/22817/assignments/41486)	due by 11:59pm
Mon Jan 13, 2020	 Lesson 1 Discussion: Introduction to STEAM Education (https://canvas.pitt.edu/courses/22817/assignments/41493)	due by 11:59pm
Mon Jan 20, 2020	 Lesson 1 Assignment: STEAM Reaction Reflection (https://canvas.pitt.edu/courses/22817/assignments/41400)	due by 11:59pm
Mon Jan 27, 2020	 Lesson 2 Discussion: Visioning for STEAM Education (https://canvas.pitt.edu/courses/22817/assignments/41494)	due by 11:59pm
Mon Feb 3, 2020	 Lesson 2: Reflecting on STEAM Cases (https://canvas.pitt.edu/courses/22817/assignments/41401)	due by 11:59pm

Date	Details	due by 11:59pm
Mon Feb 10, 2020	 Lesson 3 Assignment: STEAM Instructional Approaches Chart (https://canvas.pitt.edu/courses/22817/assignments/41402)	due by 11:59pm
Wed Feb 12, 2020	 Lesson 3 Discussion: STEAM Instructional Approaches (https://canvas.pitt.edu/courses/22817/assignments/41509)	due by 11:59pm
Mon Feb 17, 2020	 Lesson 4 Assignment: Compare STEAM and PBL (https://canvas.pitt.edu/courses/22817/assignments/41403)	due by 11:59pm
Wed Feb 19, 2020	 Lesson 5 Assignment: STEAM in Action (https://canvas.pitt.edu/courses/22817/assignments/41405)	due by 11:59pm
Mon Feb 24, 2020	 Lesson 5 Discussion: Challenges with STEAM (https://canvas.pitt.edu/courses/22817/assignments/41511)	due by 11:59pm
Wed Feb 26, 2020	 Lesson 5 Assignment: Investigating STEAM Practices (https://canvas.pitt.edu/courses/22817/assignments/41404)	due by 11:59pm
Mon Mar 2, 2020	 Lesson 6 Discussion: Art in STEAM (https://canvas.pitt.edu/courses/22817/assignments/41516)	due by 11:59pm
Wed Mar 4, 2020	 Lesson 6 Assignment: Adding Art through Makerspaces (https://canvas.pitt.edu/courses/22817/assignments/41406)	due by 11:59pm
Mon Mar 23, 2020	 Lesson 7 Assignment: Identifying STEAM (https://canvas.pitt.edu/courses/22817/assignments/41407)	due by 11:59pm
Wed Mar 25, 2020	 Lesson 8 Assignment: Creating STEAM Scenarios for Peer Review (https://canvas.pitt.edu/courses/22817/assignments/41408)	due by 11:59pm
Mon Mar 30, 2020	 Lesson 8 Discussion: Creating your Problem Scenario (https://canvas.pitt.edu/courses/22817/assignments/41514)	due by 11:59pm
Mon Apr 6, 2020	 Lesson 8 Assignment: Peer Review Grade for STEAM Scenarios (https://canvas.pitt.edu/courses/22817/assignments/41510)	due by 11:59pm
Mon Apr 13, 2020	 Lesson 9: REVISED Final STEAM Scenario (https://canvas.pitt.edu/courses/22817/assignments/41409)	due by 11:59pm
	 About Me (https://canvas.pitt.edu/courses/22817/assignments/126749)	
	 Course Evaluation (https://canvas.pitt.edu/courses/22817/assignments/41399)	
	 Submit Peer Feedback for STEAM Scenarios (https://canvas.pitt.edu/calendar?event_id=1900&include_contexts=course_22817)	