Course Syllabus

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Course Description

As the first in a series of four STEAM Education courses, it is asynchronous and graded by the instructor, plus it utilizes peer review. In this way, we've included many examples, rubrics, and suggested ideas to help you extend your thinking.

The *STEAM: Instructional Design* 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: Instructional Design* 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 assessment 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 of STEAM and PBL
- Analyze how arts and makerspaces can support student-directed inquiry
- Create STEAM scenarios that align to STEAM standards

Prerequisites

There are no prerequisite courses for STEAM Education.

Required Materials and Skills

You need to purchase one book for this course. It is titled "Educator's Guide to STEAM Education" by Teacher's College Press by Cassie Quigley and Dani Herro. You can purchase the hard copy or the e-book. Either version is fine! All videos are integrated into the Canvas modules. Due dates are listed on the **course schedule. (https://canvas.pitt.edu/courses/256910/pages/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, discussion boards, and assignments.

Assessment Strategies

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

Grades

All required assignments must be submitted for successful completion of the course. Monitor your progress using the Grades hyperlink in the course navigation menu. Assignments are noted as complete or incomplete. You will receive points and a final grade for this course.

Plagiarism and Academic Integrity

Students in this course will be expected to comply with the **University of Pittsburgh's Policy on Academic Integrity. (https://www.education.pitt.edu/)**

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)** .

Copyright Notice

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Course Summary:

Date	Details	Due
Tue Jun 25, 2024	**About Me (https://canvas.pitt.edu/courses/256910/assignments/1476523)**	due by 11:59pm
	Lesson 1c: STEAM Reaction Reflection (https://canvas.pitt.edu/courses/256910/assignments/1476528)	due by 11:59pm
Thu Jun 27, 2024	**Lesson 2b: Reflecting on STEAM Cases (https://canvas.pitt.edu/courses/256910/assignments/1476529)**	due by 11:59pm
	Module 1 Discussion and Peer Responses (https://canvas.pitt.edu/courses/256910/assignments/1476524)	due by 11:59pm
Sun Jun 30, 2024	**Lesson 3b: STEAM Instructional Approaches Chart (https://canvas.pitt.edu/courses/256910/assignments/1476530)**	due by 11:59pm
Tue Jul 2, 2024	**Lesson 4a: Compare STEAM and PBL (https://canvas.pitt.edu/courses/256910/assignments/1476531)**	due by 11:59pm

Date	Details	Due
Sun Jul 7, 2024	Lesson 5: STEAM in Action (https://canvas.pitt.edu/courses/256910/assignments/1476532)	due by 11:59pm
Tue Jul 9, 2024	Lesson 5a: Investigating STEAM Practices (https://canvas.pitt.edu/courses/256910/assignments/1476533)	due by 11:59pm
Thu Jul 11, 2024	Lesson 6c: Adding Art through Makerspaces (https://canvas.pitt.edu/courses/256910/assignments/1476534)	due by 11:59pm
Sun Jul 14, 2024	Lesson 7b: Identifying STEAM (https://canvas.pitt.edu/courses/256910/assignments/1476535)	due by 11:59pm
	Module 2 Discussion and Peer Responses (https://canvas.pitt.edu/courses/256910/assignments/1476525)	due by 11:59pm
Tue Jul 16, 2024	Lesson 8: Creating STEAM Scenarios (https://canvas.pitt.edu/courses/256910/assignments/1476536)	due by 11:59pm
Sun Jul 21, 2024	Peer Review of Final STEAM Scenario (https://canvas.pitt.edu/courses/256910/assignments/1476538)	due by 11:59pm
Tue Jul 30, 2024	Course Evaluation (https://canvas.pitt.edu/courses/256910/assignments/1476527)	due by 11:59pm
	Lesson 9: Final STEAM Scenario (https://canvas.pitt.edu/courses/256910/assignments/1476537)	due by 11:59pm
Thu Aug 1, 2024	MEd in C&I Portfolio Milestone #1 (https://canvas.pitt.edu/courses/256910/assignments/1476526)	due by 11:59pm
	Submit Peer Feedback for STEAM Scenarios (https://canvas.pitt.edu/calendar?event_id=1306507&include_contexts=course_256910)	