

Course Syllabus



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 and self-assessment. 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/202604/pages/course-schedule). (<https://canvas.pitt.edu/courses/202604/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 self-assessment of work including written papers, lesson design, comparing and contrasting strategies, and more.


Grades

As a continuing education learning experience, this course utilizes self-assessment. 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/). (<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)  (<https://community.canvaslms.com/docs/DOC-2061-accessibility-within-canvas>).

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Course Summary:

Date	Details	Due
Wed Jun 28, 2023	 About Me (https://canvas.pitt.edu/courses/202604/assignments/1153827)	due by 11:59pm
	 Lesson 1c: STEAM Reaction Reflection (https://canvas.pitt.edu/courses/202604/assignments/1153831)	due by 11:59pm
Mon Jul 3, 2023	 Lesson 2b: Reflecting on STEAM Cases (https://canvas.pitt.edu/courses/202604/assignments/1153832)	due by 11:59pm
	 Module 1 Discussion and Peer Responses (https://canvas.pitt.edu/courses/202604/assignments/1153829)	due by 11:59pm
Wed Jul 5, 2023	 Lesson 3b: STEAM Instructional Approaches Chart (https://canvas.pitt.edu/courses/202604/assignments/1153833)	due by 11:59pm
Mon Jul 10, 2023	 Lesson 4a: Compare STEAM and PBL (https://canvas.pitt.edu/courses/202604/assignments/1153834)	due by 11:59pm
Wed Jul 12, 2023	 Lesson 5: STEAM in Action	due by 11:59pm

Date	Details	Due
	(https://canvas.pitt.edu/courses/202604/assignments/1153835)	
	 Lesson 5a: Investigating STEAM Practices (https://canvas.pitt.edu/courses/202604/assignments/1153836)	due by 11:59pm
Mon Jul 17, 2023	 Lesson 6c: Adding Art through Makerspaces (https://canvas.pitt.edu/courses/202604/assignments/1153837)	due by 11:59pm
	 Lesson 7b: Identifying STEAM (https://canvas.pitt.edu/courses/202604/assignments/1153838)	due by 11:59pm
Wed Jul 19, 2023	 Module 2 Discussion and Peer Responses (https://canvas.pitt.edu/courses/202604/assignments/1153828)	due by 11:59pm
Mon Jul 24, 2023	 Lesson 8: Creating STEAM Scenarios (https://canvas.pitt.edu/courses/202604/assignments/1153839)	due by 11:59pm
Wed Jul 26, 2023	 Peer Review of Final STEAM Scenario (https://canvas.pitt.edu/courses/202604/assignments/1153841)	due by 11:59pm
Mon Jul 31, 2023	 Lesson 9: Final STEAM Scenario (https://canvas.pitt.edu/courses/202604/assignments/1153840)	due by 11:59pm
	 MEd in C&I Portfolio Milestone #1 (https://canvas.pitt.edu/courses/202604/assignments/1209148)	due by 11:59pm
Wed Aug 2, 2023	 Course Evaluation (https://canvas.pitt.edu/courses/202604/assignments/1153830)	due by 11:59pm
	 Submit Peer Feedback for STEAM Scenarios (https://canvas.pitt.edu/calendar?event_id=1105405&include_contexts=course_202604)	