

Course Syllabus



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Instructor and Course Details

Instructor: Dr. Veena Vasudevan

Email: veenav@pitt.edu (<mailto:veenav@pitt.edu>)

Phone: 412-383-0297

Office: WW Posvar Hall 5131

Office Hours: By Appointment

Office Hours: TBA

Contacting Your Instructor: Email is the best way to get in touch with me. University guidelines require students and instructors to use university email accounts to conduct course-related electronic correspondence, so please only use yourID @pitt.

Email Response Time: You can expect a response to your email inquiries within 36 hours, excluding weekends and university holidays.

Course Number: IL 2007

School: School of Education

Department: Teaching, Learning, and Leading

Term: Fall 2024

Class Location: Online

Course Description

This course focuses on transdisciplinary teaching as a way of incorporating STEAM content in classrooms. Transdisciplinarity includes attention to problem-based learning, and content and technology integration by offering students authentic problems to solve. The goal for this course is for the participants to conceptualize the components of transdisciplinary teaching, create and refine a transdisciplinary unit plan, and peer evaluate one another's unit plans.

*Students will use unit plans from this course when participating in the fourth course (STEAM Implemented) work to demonstrate proficiency.

Learning Outcomes

After completing this course, students will be able to:

- Define transdisciplinary and identify how to apply authentic problem scenarios to components of transdisciplinarity
- Explore the use of technology and robotics in schools and determine how technology can be integrated into STEAM teaching
- Develop a STEAM unit plan based on problem-based learning
- Identify challenges to STEAM instruction and discuss ways to overcome those challenges

Prerequisites

IL 2008 (STEAM Instructional Design) is a prerequisite for this course.

Required Materials and Skills

All assigned readings and videos are integrated into the Canvas modules you will complete. Due dates are listed on the [course schedule \(https://canvas.pitt.edu/courses/286284/pages/course-schedule\)](https://canvas.pitt.edu/courses/286284/pages/course-schedule). This course contains video content, so you will need to have access to speakers and/or headphones. Additionally, we will be using the same book from the first STEAM Course ([An Educator's Guide to STEAM](https://www.amazon.com/Educators-Guide-STEAM-Engaging-Real-World/dp/0807761389#:~:text=%E2%80%99s%20Guide%20to%20STEAM,while%20tying%20) [↗](https://www.amazon.com/Educators-Guide-STEAM-Engaging-Real-World/dp/0807761389#:~:text=%E2%80%99s%20Guide%20to%20STEAM,while%20tying%20) <https://www.amazon.com/Educators-Guide-STEAM-Engaging-Real-World/dp/0807761389#:~:text=%E2%80%99s%20Guide%20to%20STEAM,while%20tying%20>) and you will need to purchase the [Hummingbird Premium Kit with Microbit](https://store.birdbraintechnologies.com/collections/hummingbird-bit/products/hummingbird-bit-premium-kit) [↗](https://store.birdbraintechnologies.com/collections/hummingbird-bit/products/hummingbird-bit-premium-kit) <https://store.birdbraintechnologies.com/collections/hummingbird-bit/products/hummingbird-bit-premium-kit>)

Students should check their Pitt accounts and the course Canvas site regularly and respond accordingly. This 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.

For technical assistance with the online course site, students should contact **412-624-HELP (4357)** or Email helpdesk@pitt.edu.

Instructional Strategies

This course will draw on individual and group problem solving, online discussions, scaffolded investigations, reflective and summative writing, peer-review, online lecture, and demonstration of learning via products.

Assessment Strategies

Assessment Strategies will include ongoing observation of learner activity in online forums, evaluation of written participation, work, and projects.

Grading Policies

All points and grades will be communicated via the Grades tab in Canvas. This will allow me to post grades and comment on your progress as well as provide you with ongoing feedback on your progress in the course. All late work, except in extreme circumstances, will lose 10% of the total grade.

I will return your graded work within 72 hours, excluding weekends and official university holidays.

Graded Work

I will calculate your grade using a 100-point scale. Points are distributed as follows:

Grading Breakdown

Assignment	%
Discussion Boards	30%
Assignments	70%
TOTAL	100 %

Grading Scale

The following table breaks down the point ranges associated with each letter grade:

Grading policy

Percentage (%)	Letter Grade
94 - 100	A
90 - 93	A-
87 - 89	B+
83 - 86	B
80 - 82	B-
74 - 79	C
69 - 73	D

Graded Activities

Participation and Discussion Boards (https://canvas.pitt.edu/courses/286284/discussion_topics) (27 points): You are expected to log in to the course Canvas site weekly, complete each module's requirements by the deadlines listed in the [course schedule](https://canvas.pitt.edu/courses/286284/pages/course-schedule) (<https://canvas.pitt.edu/courses/286284/pages/course-schedule>) below, and contribute to all discussion boards on time. For this portion of your grade, you will complete 8 graded discussion activities. The first discussion activity is worth two points; the remaining eight activities are worth three points each.

Assignments (<https://canvas.pitt.edu/courses/286284/assignments>) (24 points): You will complete a series of assignments ranging between 3 and 10 points each. Please visit the Assignments table in the navigation menu for complete assignment details.

Course, School, and University Policies

School of Education Mission

We ignite learning. We strive for well-being for all. **We teach.** We commit to student, family, and community success. **We commit to educational equity.** We advocate. We work for justice. **We cultivate relationships.** We forge engaged partnerships. **We collaborate.** We learn with and from communities. **We innovate and agitate.** We pursue and produce knowledge. We research. **We disrupt**

and transform inequitable educational structures. We approach learning as intertwined with health, wellness, and human development. We address how national, global, social, and technological change impacts learning. **We shape practice and policy.** We teach with and for dignity. We think. We dream. **We lead with integrity.** We are the School of Education at the University of Pittsburgh.

Attendance Learning is a social process. You are expected to log on to Canvas and work through the modules weekly, be an active participant on the discussion boards, and collaborate with students in the course. In the event of prolonged absences in which you do not participate in the prior (due to sickness or family emergency), you should contact me via email or phone. Absence from online classes (failure to log in and progress in the course each week) is not a valid excuse for failing to meet deadlines or fulfill course requirements, and it will result in a deduction of participation points. Extreme emergencies will be handled on an individual basis.

Email Because privacy regulations stipulate that faculty and staff communicate with students only through authorized University channels, please use your University email account or Canvas's messaging system to contact me.

Copyright All materials found in this course are strictly for the use of students enrolled in this course and for purposes associated with this course; they may not be retained or further disseminated. Clemson students, faculty, and staff are expected to comply fully with institutional copyright policy as well as all other copyright laws.

Privacy Policy This course is designed with your privacy in mind. If, however, you feel that an assignment or technology tool undermines your right to privacy, please contact me immediately. We will work together to determine an alternative assignment that will help you achieve the course learning outcomes.

Online Conduct Appropriate online academic conduct means maintaining a safe learning environment based on mutual respect and civility. All participants in Pitt online courses are expected to behave professionally by adhering to these standards of conduct:

- Never transmit or promote content known to be illegal.
- Respect other people's privacy as well as your own.
- Forgive other people's mistakes.
- Never use harassing, threatening, embarrassing, or abusive language or actions.

Online communication that fails to meet these standards of conduct will be removed from the course. Repeated misconduct may result in being blocked from online discussions, receiving a grade penalty, or being dismissed from the course. Such misconduct in the online environment may also be reported to officials for appropriate action in accordance with University policy. If you ever encounter inappropriate content in our course, please contact your instructor with your concerns.

Late Assignment Policy

The pace of the class requires that you do not fall behind in assignments; thus, late assignments will not be accepted unless arrangements have been made with the course instructor **in advance of the due date**. If an extension is needed for assignments, this must be arranged before the due date and will be granted for only the most extenuating of circumstances. All assignments are due by 11:59pm on the due date unless otherwise noted on Canvas. Late assignments will be penalized 10% for each day late (including weekends). No assignment will be accepted after three days past the due date.

Note: if you are granted an extension with an agreed-upon new due date and the assignment is not turned in by that date, there will be no credit given for the assignment.

Revising assignments

If your work on an assignment is graded below 80% you may revise and resubmit it one time. However, you should consult with the course instructor before doing so. **This consultation should be made within one week of receiving your returned assignment.** Resubmissions should be submitted with the original submission. The highest grade you can receive on a resubmitted assignment is an 80%. This will replace your original grade.

University, Departmental, and Course Policies:

Academic Integrity

Students in this course will be expected to comply with the University of Pittsburgh's Policy on Academic Integrity. 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 outlined 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.

Disability Services

If you have a disability that requires special testing accommodations or other classroom modifications, you need to notify both the instructor and Disability Resources and Services no later than the second week of the term. You may be asked to provide documentation of your disability to determine the appropriateness of accommodations. To notify Disability Resources and Services, call (412) 648-7890 (Voice or TTD) to schedule an appointment. The Disability Resources and Services office is located in 140 William Pitt Union on the Oakland campus.

TLL Departmental Grievance Procedures:

The purpose of grievance procedures is to ensure the rights and responsibilities of faculty and students in their relationships with each other. When a student in DIL believes that a faculty member has not met

his or her obligations (as an instructor or in another capacity) as described in the Academic Integrity Guidelines, the student should follow this procedure:

1. The student should talk directly to the faculty member to attempt to resolve the matter.
2. If the matter cannot be resolved at that level, the student should talk to the relevant program coordinator.
3. If the matter remains unresolved, the student should talk to the associate chair of DIL
4. If needed, the student should next talk to the SOE associate dean of students.
5. If the matter still remains unresolved, the student should file a written statement of charges with the dean's designated Academic Integrity Administrative.

Civility Commitment

As future or current teachers, we will operate from a standpoint that everyone believes that all students deserve a quality education in a safe setting. The same can be said for university learning. A university classroom is, by definition, space where a free exchange of ideas must happen, but where consideration for others, their views, and their life experiences is also paramount. When you are uncomfortable with an idea, it is your right to speak up about that. As we learn with and about people with very different life experiences and beliefs from our own, it is imperative that we respect these perspectives and use respectful language in discussing and challenging ideas. Carefully consider your language choices to ensure that all learners feel safe and valued. If at any time, you are uncomfortable please feel free to speak out and/or speak to me privately.

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.

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 veenav@pitt.edu (<mailto:veenav@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

These materials may be protected by copyright. United States copyright law, 17 USC section 101, et seq., in addition to University policy and procedures, prohibit unauthorized duplication or retransmission of course materials. See Library of Congress Copyright Office and the University Copyright Policy.

Statement on Classroom Recording

To ensure the free and open discussion of ideas, students may not record classroom lectures, discussion and/or activities without the advance written permission of the instructor, and any such recording properly approved in advance can be used solely for the student's own private use.

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 forward to the Associate Dean a request for the permanent grade.

Food/Housing Insecurity

Many students, both undergraduate and graduate, experience housing and/or food insecurity that can impact their academic work and general health. Please know there are resources available to you that are confidential. Of course, you are welcome to speak with me if you need support in contacting the right people/offices:

Pitt Pantry

[Food pantry \(https://www.sustainable.pitt.edu/student-organizations/pitt-pantry/\)](https://www.sustainable.pitt.edu/student-organizations/pitt-pantry/) available to the wider University community






Off-Campus Housing Office:










Find out about [off-campus housing](http://www.ocl.pitt.edu/) (<http://www.ocl.pitt.edu/>)










Technical Support

Contact Pitt IT for technical assistance by submitting a [helpdesk ticket links](https://www.technology.pitt.edu/services) (<https://www.technology.pitt.edu/services>).

Course Summary:

Date	Details	Due
Tue Aug 27, 2024	 Introduce Yourself! (https://canvas.pitt.edu/courses/286284/assignments/1519135)	due by 11:59pm
	 Problem Scenario from First STEAM Course (https://canvas.pitt.edu/courses/286284/assignments/1519151)	due by 11:59pm
Thu Aug 29, 2024	 Lesson 1 Discussion: Defining Transdisciplinarity and Future Work Skills (https://canvas.pitt.edu/courses/286284/assignments/1519130)	due by 11:59pm
Sun Sep 1, 2024	 Lesson 2: Transdisciplinary Teaching Practices (https://canvas.pitt.edu/courses/286284/assignments/1519140)	due by 11:59pm
Tue Sep 3, 2024	 Lesson 2 Discussion: Analyzing a Problem Scenario (https://canvas.pitt.edu/courses/286284/assignments/1519131)	due by 11:59pm
Thu Sep 5, 2024	 Lesson 3 Discussion: Technologies for Education and Technologies for Learners (https://canvas.pitt.edu/courses/286284/assignments/1519132)	due by 11:59pm
	 Lesson 3: Is it Authentic? (https://canvas.pitt.edu/courses/286284/assignments/1519141)	due by 11:59pm
	 Purchased Hummingbird Kit? (https://canvas.pitt.edu/courses/286284/assignments/1519152)	due by 11:59pm
Sun Sep 8, 2024	 Lesson 4 Discussion: Technologies for Collaboration, Design and Creativity (https://canvas.pitt.edu/courses/286284/assignments/1519133)	due by 11:59pm
	 Lesson 4: Create a Student Interest Survey	due by 11:59pm

Date	Details	Due
	(https://canvas.pitt.edu/courses/286284/assignments/1519142)	
Tue Sep 10, 2024	 Lesson 5 Discussion: Understanding Computer Science Values (https://canvas.pitt.edu/courses/286284/assignments/1519124)	due by 11:59pm
	 Lesson 7 Discussion: Merits of Robots in STEAM (https://canvas.pitt.edu/courses/286284/assignments/1519129)	due by 11:59pm
Sun Sep 15, 2024	 Lesson 6 Assignment: Upload Videos blinking led, tri-color, and position servo and coding (https://canvas.pitt.edu/courses/286284/assignments/1519143)	due by 11:59pm
	 Lesson 6 Reflection: Experience with Hummingbird (https://canvas.pitt.edu/courses/286284/assignments/1519144)	due by 11:59pm
Tue Sep 17, 2024	 Lesson 7 Reading and Reflection: Teacher's Experience with Poetry Comes to Life (https://canvas.pitt.edu/courses/286284/assignments/1519145)	due by 11:59pm
	 Lesson 7: Building Robots Where Poetry Comes to Life! (https://canvas.pitt.edu/courses/286284/assignments/1519146)	due by 11:59pm
Thu Sep 19, 2024	 Optional! Upload your Robot and Poetry here (https://canvas.pitt.edu/courses/286284/assignments/1519127)	due by 11:59pm
Sun Sep 22, 2024	 Lesson 8 Discussion: Unpacking Inequity in Technology (https://canvas.pitt.edu/courses/286284/assignments/1519126)	due by 11:59pm
Thu Sep 26, 2024	 Lesson 9: Transform your STEAM Unit to include Hummingbird Robots (https://canvas.pitt.edu/courses/286284/assignments/1519148)	due by 11:59pm

Date	Details	Due
Sun Sep 29, 2024	 Lesson 10: Make and Share a Student Artifact! https://canvas.pitt.edu/courses/286284/assignments/1519128	due by 11:59pm
	 Lesson 10: Make a Student Artifact of the Lesson you Designed https://canvas.pitt.edu/courses/286284/assignments/1519136	due by 11:59pm
	 Lesson 9: Peer Review of Hummingbird in STEAM Unit https://canvas.pitt.edu/courses/286284/assignments/1519147	due by 11:59pm
Tue Oct 1, 2024	 Lesson 10: Self Assessment: Assessing the Student Artifact https://canvas.pitt.edu/courses/286284/assignments/1519137	due by 11:59pm
	 Permission to use your super cool work? https://canvas.pitt.edu/courses/286284/assignments/1519150	due by 11:59pm
Sun Oct 6, 2024	 Lesson 12 Discussion: Connecting STEAM problems to future careers https://canvas.pitt.edu/courses/286284/assignments/1519134	due by 11:59pm
	 Lesson 11: Create a Unit Plan https://canvas.pitt.edu/courses/286284/assignments/1519138	due by 11:59pm
Tue Oct 8, 2024	 Lesson 12: Expand Your Unit Plan - Add additional resources and mentors https://canvas.pitt.edu/courses/286284/assignments/1519139	due by 11:59pm
	 OMET Course Evaluation https://canvas.pitt.edu/courses/286284/assignments/1519149	due by 11:59pm