

Micro-Badging: 2020-2021

Course Length: Each Course is
1 Hour of PD Cr.

Intended Audience: Current professionals or rising educators seeking specialized learning and professional development.

ITEEA's STEM Center for Teaching and Learning™ (STEM CTL) is offering two micro-badging series focusing on safety in the STEM classroom and digital learning. Transitioning into the blended learning environment is an on-going struggle for educational leaders in various curricular areas. These courses are intended to support teachers currently in the field or aspiring educators with an interest in learning a variety of tools and subjects that could be applied to their field.

Our micro-badging series includes ten digital literacy and ten safety professional development courses via virtual flipped classrooms. Participants may register for any number of professional development sessions, for a total of up to 20 hours.

2020-2021 Digital Literacy Micro-badging Series

September 1, 2020: Effective Online Teaching: *Learn Best Practices When Teaching Online.*

This digital literacy micro-badge course is intended for current professionals and future educators seeking to implement new strategies when teaching online. Participants will read and summarize articles with topics in the areas of effective and active learning. This course will also have participants analyze a portion of text from a current lesson to determine the readability level to compare with the intended audience level.

October 1, 2020: Technology Use vs. Integration: *An Evaluative Model to Measure the Effectiveness of Technology Use/Integration in the Classroom.*

This course is design for current educators and students who are interested in using effective technology in the classroom. Participants will discuss technology use versus technology integration and be provided with resources to effectively integrate technology in their classroom. Participants will also reflect on past or current usage of integrated technology. This session will look at and explain a model to be used to examine data associated with technology usage.

November 1, 2020: Ethics with Computer Science and Coding: *Discover a Set of Moral Principles that Cover Common Issues with Computer/Technology Usage.*

This micro-badge session is intended for future educators and current instructors who teach a course that utilize computers or various technology. This session will provide resources for various curricular courses such as, AP Computer Science or a STEM course that would require computers. This course will have participants read and reflect on an article to identify areas of concern and implement a new guideline or strategy for an ethical learning environment. Participants will then create a contract that can be used by students in their course.

December 1, 2020: Best Practices When Delivering Online Content: *Best Practices When Delivering Online Content: Engage in Ways to Deliver Online Instruction Effectively.*

This micro-badge course is designed for teachers to effectively engage students with the use of digital tools. In this course you will reflect on difficulties associated with teaching or delivering online instruction and brainstorm new engaging strategies. This course will introduce a variety of digital tools to use to transform in class lessons to suite the online environment.

January 1, 2021: The Flipped Classroom: *Learn Cutting Edge Ways to Effectively Use Tools in the Classroom in a Collaborative Environment.*

This micro-badge session is intended for any teacher to apply a flipped classroom to their lessons. Participants will brainstorm and discuss what a flipped classroom looks like and what pros and cons might become a result of this instructional method. The steps in order to implement a flipped classroom and additional resources will be available to help tailor to specific curriculum. Participants will then use brainstormed strategies, steps, and learned tools, to record a lesson using the flipped classroom approach.

February 1, 2021: Blended Learning Tools for Teachers and Students: *Engage in an Educational Style Enabling Students to Learn in a Hybrid Online/Traditional Environment*

This course is designed for teachers wanting to effectively blend online learning. Participants will discuss various learning environments from hybrid to traditional and how to incorporate blended learning. Participants will then use a tool from provided resources to practice and demonstrate a blended lesson.

March 1, 2021: Video Integration: *Learn Different Strategies/Tools to Use Videography and Multimedia to Engage Students in Learning.*

This digital literacy micro-badge session is designed for future educators and current professionals who want to incorporate more video strategies in their instruction to better engage students. In this course, discussions and resources are provided for participants to practice with various multimedia and video tools to recreate a previous lesson.

April 1, 2021: Augmented Reality and Virtual Reality: *Learn How to Interact with Digital Data/Tools within the Real World via Applications.*

This course is intended for educators to implement new tools to effectively blend digital applications to enhance student learning. This course is also intended for anyone interested in learning more about Augmented Reality and Virtual Reality and will provide the tools to help integrate into lessons. This session will have attendees examine how to interact with digital data to use to help enhance student achievement through augmented and virtual reality tools.

May 1, 2021: Creative Assessment and Literacy Tools to Enhance Learning: *Don't Forget to Annotate, and be Creative with Assessing your Students! Learn to Use Different Assessment Tools While Documenting in Proper Formatting.*

This micro-badge session is designed for anyone wanting to use a variety of assessment strategies, especially for online instruction. This course will allow participants to discuss and compare previous assessment strategies with provided new assessment ideas and tools. This course will also have participants create or use a previous lesson to design and implement a new way to assess students while teaching online or in a hybrid environment.

June 1, 2021: Computing Technology Innovation: *Learn Creative Ways to Benefit the Students through Changing the Way we Use Technology for the Greater Good!*

This micro-badge session is designed for anyone interested in learning about computing technology and educators to learn about their current technology use in the classroom. This course covers topics of technology, innovation, and computing and will provide the participant with resources they can practice and implement in their own classrooms and via virtual instruction.

2020-2021 Safety Micro-badging Series

September 1, 2020: General Safety Topics in STEM Education: *Examining the progress of safety in STEM education and reviewing ten recommendations for a safer school year.*

This safety micro-badge course is geared towards current education professionals and students interested in implementing and ensuring a safe STEM environment. General safety topics specific towards STEM education will be discussed as well as what it would like to prepare students to be STEM literate if students were not introduced to safety as a core component of instruction. During this course, you will have the opportunity to reflect on your current laboratory rules and re-develop more focused safety rules to be implemented for your course.

October 1, 2020: Safer Lab Design and Maintenance: *A well-maintained lab is a safer lab. Explore strategies to involve students in laboratory maintenance.*

This course is designed for any student or current professional interested in maintaining a safer lab environment. This course introduces common problems in a laboratory classroom and encourages discussions regarding classroom spaces in the K-12 STEM education. During this course, you will examine correlations between laboratory spaces and accident rates and design a Lab Safety Checklist to implement in your own class.

November 1, 2020: Chemical Safety: *Fostering a culture of STEM lab chemical safety.*

This safety micro-badge session will introduce students and professional educators to a culture of chemical safety. Articles and discussions will include how teachers and instructors notify others and instruct with proper usage of chemicals, how to effectively clean common items in a STEM lab, and how to implement safety guidelines. In this course, you will review OSHA and

American Chemical Society guidelines and reflect to apply these guidelines to develop a safe lab with rules for your students to follow.

December 1, 2020: 3-D Printing Safety: *Can 3-D printers cause harm?*

This course is for anyone who currently uses 3D printers or those who have the likelihood of working with one in the future. This session includes various articles discussing proper equipment usage, safety, and health concerns. In this session, participants will discuss tradeoffs and learn how to minimize risks associated with 3D printing.

January 1, 2021: The Work Permit System; Safety in the Workplace (focus on workplace readiness): *Holding students accountable for their actions.*

This session is designed for current educational professionals and future instructors with a goal of effectively engaging students during safety instruction in the classroom. This course will have participants reflecting and discussing the need for safety instruction in STEM education and showcase innovative strategies for more engaging safety instruction to allow for more student ownership.

February 1, 2021: Safety in the Robotics Lab: *From drones to battle bots, students build the most ingenious things but, is safety a concern?*

This safety micro-badge course is designed for those with an interest in robotics or anyone who currently instructs a robotics course. This class will have you read and review risks associated with robotics, specifically drone usage. Participants will review OSHA's Industrial Robots and Robot System Safety standards and be provided additional resources in order to create rules specific to the intended robotics course taught.

March 1, 2021: Handheld and Portable Tools: *Enhancing technology and engineering in STEM classrooms; exploring safer tool usage.*

This course is designed for students and professional educators interested in familiarizing themselves with handheld power tools and implementing these tools safely in the classroom.

This course will offer tips on proper tool usage including guidelines and instructional resources.

Participants in this class will review, discuss, and share a tool, chosen by choice, with the goal to develop safety guidelines to implement in the classroom.

April 1, 2021: Large Power Tools: *EbD course safety videos, hand and power tool guidelines, and more!*

This micro-badge safety course is intended for anyone who currently works with large power tools or anyone interested in using these tools. Participants in this course will receive an overview of large power tools and be provided additional resources to help guide educators with usage in their classroom. This course will have you review tool and machine safety guidelines developed by Cornell University and various articles to complete a Tools Lab Safety Checklist use in your class.

May 1, 2021: Safer Makerspaces (focus on interdisciplinary considerations): *Building in safer practices from the beginning.*

If you are interested in converting your classroom to a makerspace or STEM Lab this safety course is intended for you. This course will introduce the steps needed to convert your classroom into an effective lab space while taking into consideration proper design, safety, and liabilities.

Participants in this course will review various articles consisting of safe equipment usage in nontraditional classroom spaces and then create rules, procedures, checklists, and drawings to create and showcase your own makerspace.

June 1, 2021: Accident Reports! *A blessing and a curse. An introduction to liability for technology and engineering design teachers.*

This course is intended as an introduction to liability safety concerns for current and future technology and engineering educators. Participants in this course will read articles to brainstorm strategies to implement into the classroom to avoid incidents and legalities. Accident report forms and injury report forms will be reviewed and discussed to create an Accident Report Form and Accident Log to be used in STEM labs.