WE PREPARE TEACHERS. THEY CHANGE THE WORLD.

THE UNIVERSITY OF TEXAS AT AUSTIN

UTeach Academy of Innovative Teaching and Learning
About UTeach and UTeach Professional Development

UTeach is a university-based secondary STEM teacher preparation program. UTeach began in 1997 at the University of Texas at Austin, and 44 other universities around the U.S. are now implementing UTeach programs.

The UTeach focus on inquiry-based learning is the foundation for UTeach Professional Development. We model inquiry-based learning in our sessions, integrate inquiry with technology, and promote equity for all learners.

Our professional development program reflects some of our core beliefs about teachers:

• Teachers are intellectuals who are eager to improve their practice.

• Teachers feel empowered when they are encouraged and guided to create products for uses specific to their particular contexts.

• Learning experiences for teachers should be designed to draw upon their prior knowledge to construct new understanding through in-depth exploration of concepts.
UTeach Professional Development Framework

- Use technology and tools to solve complex problems
- Engage in collaborative exploration
- Contribute your own diverse experiences
- Develop tangible classroom products
- Get thoughtful and timely feedback
- Become a reflective practitioner
- Develop deeper understanding of content
- Evaluate usefulness of technology and tools
- Learn from current STEM and STEM ed research
- Access learning in a variety of formats
- Get thoughtful and timely feedback
UTeach Academy of Innovative Teaching and Learning

Get your UTeach Academy designation by completing four courses: one required course and then one course each from Groups A, B, and C. All courses are online. Courses can also be taken individually without earning the Academy designation.

**Required course:**
- Foundations of Inquiry Teaching and Learning (4 hours)

**Group A—pick one course:**
- Meeting the Needs of Diverse Learners (8 hours)
- Mentoring Math and Science Teachers (8 hours)
- Engaging Students with Mobile Technology (8 hours)

**Group B—pick one course:**
- Formative Assessment: A Key to Student Success (10 hours)
- Teaching Algebra Through Inquiry (10 hours)
- Tools for Managing Classrooms in the Digital Age (12 hours)

**Group C—pick one course:**
- Learning Through Inquiry in a Flipped Classroom (20 hours)
- Transforming Classrooms for the Digital Age (24 hours)
- Supporting English Language Learners (24 hours)
Foundations of Inquiry Teaching and Learning (4 hours)

Course Overview
Inquiry-based learning is the hallmark of the UTeach program’s model for preparing pre-service teachers and a key element of the UTeach professional development framework for practicing teachers. *Foundations of Inquiry Teaching and Learning* is designed for educators who may not be familiar with, or need a refresher on, inquiry-based learning and the 5E lesson cycle model developed by the Biological Sciences Curriculum Study. The topics in this course will be presented through readings, video examples, and 5E lesson plan samples.

Learning Objectives
Participants will:
- Draw on prior knowledge of inquiry-based teaching and learning strategies to construct new understanding by exploring and studying current research on the relevance of inquiry-based instruction.
- Develop or deepen understanding of the 5E Lesson Cycle to enhance inquiry-based instruction.
- Collaborate with peers to gain insight into inquiry-based teaching practices.

Meeting the Needs of Diverse Learners (8 hours)

Course Overview
Diversity in America’s public schools is a fact, so it’s not a question of whether to differentiate instruction, but how. This course will introduce you to the key concepts of differentiating content, process, and product based on student readiness, interest, and learning profile. You will also learn strategies for implementing each of these differentiated instruction concepts. You will participate in discussions about how to manage a differentiated classroom, focusing in particular on the importance of using assessment to guide individual instruction. The culminating activity will involve reflecting on the differentiated instructional strategies you plan to implement in your own classroom.

Learning Objectives
Participants will:
- Learn strategies for differentiating content, learning processes, and learning products.
- Construct tools for determining student readiness, interest levels, and learning profiles to gather knowledge of each individual student.
- Discuss how to manage a differentiated classroom, with a strong focus on the importance of using assessment to guide individual instruction.
- Reflect on the differentiated instructional strategies planned for and implemented into their own classrooms.
Mentoring Math and Science Teachers (8 hours)

Course Overview
Mentoring programs provide a way to bring on new staff and support them during their beginning years, but mentoring programs are also important for the professional growth of established teachers. A strong mentoring program is the hallmark of a successful school. This course is designed for educators to mentor their colleagues and design successful mentoring programs for their school.

By the end of this course, through video examples, directed readings, practical applications, and personal reflections, participants will be equipped to design and implement a mentoring program that provides for the empowerment of teachers new to the profession and the teachers who mentor them. The course also introduces methods for using technology to assist in the mentoring process. Narrative readings provide participants with examples of ways to implement mentoring and ways to monitor the success of the process.

Learning Objectives
Participants will:
- Explore the process of mentoring with an emphasis on math and science instruction.
- Review ways technology can provide feedback mechanisms for mentees and mentors.
- Design a mentoring plan for their campus or department.
- Create materials to use for training mentor teachers.

Engaging Students with Mobile Technology (8 hours)

Course Overview
Mobile devices (such as tablets and cell phones) are used in schools more and more. One-to-one technology initiatives have also gained popularity with many school districts. Teachers must be thoughtful about how to effectively incorporate this technology into their classrooms. They should be mindful to not allow mobile technology to become simply a shiny textbook from which students do nothing but consume information. Teachers who integrate mobile technology in a sophisticated way enable students to become creators instead of consumers—using technology to achieve a learning outcome that would be difficult, or even impossible, without the technology.

Learning Objectives
Participants will:
- Review current literature to examine educational practices using mobile devices in the classroom.
- Critique sample learning activities that integrate mobile devices.
- Develop an inquiry-based lesson plan that integrates mobile technology.
- Construct a plan for determining the effectiveness of integrating mobile technology into their classrooms.
Formative Assessment: A Key to Student Success (10 hours)

Course Overview
In today’s diverse classrooms, formative assessment is a critical tool to help teachers increase the success of all of their students. This course is designed for educators who are interested in learning more about formative assessment and strategies to improve classroom teaching through the gathering of data associated with student understanding.

By the end of this course, you’ll be equipped to implement a variety of formative assessment techniques that can guide your lesson implementation. The course emphasizes how to use technology to collect formative assessment data. The readings provide teachers with a rationale that supports the use of formative assessment and give narrative examples of ways to implement it in the classroom. Finally, you will be asked to reflect on how you visualize the use of formative assessment in your own practice.

Learning Objectives
Participants will:
• Review current literature about formative assessment.
• Explore effective questioning strategies.
• Review strategies for instant assessment of students with and without technology.
• Create materials for formative assessments to use in the classroom.
• Learn how to determine appropriate teaching strategies based on the data from formative assessments.

Teaching Algebra Through Inquiry (10 hours)

Course Overview
Numerous reports praise the impact of inquiry-based instruction on student learning and retention. While the participants in this course will fully develop a working definition of inquiry-based learning in their own classroom, we can initially define inquiry-based learning in math as a teaching and learning method in which students are creatively engaged in doing mathematics, making conjectures, and communicating results. This course is designed for educators who are interested in learning more about creating and implementing engaging inquiry-based lessons for their students to explore concepts in algebra. Emphasis is placed on having students reason through concepts to develop their own understanding of the patterns and relationships in algebraic processes.

Learning Objectives
Participants will:
• Review research associated with inquiry-based learning.
• Review sample inquiry-based algebra lessons and share observations.
• Develop a definition of inquiry-based learning for their own mathematics classrooms.
• Create, review, and revise inquiry-based algebra lessons.
Tools for Managing Classrooms in the Digital Age (12 hours)

Course Overview
Students in today’s classrooms are collaborators, creative thinkers, information consumers and producers, technologists, problem solvers, and self-directed learners. Teachers are redefining classroom management strategies to maximize the development of these skills and minimize disruptions to teaching and learning.

Learning Objectives
Participants will:
• Research attributes of classrooms in the digital age and discover innovative classroom management tools.
• Design a classroom management plan applicable to their unique teaching settings.
• Interact in discussions with other teachers to share thoughts and strategies for enhancing today’s classrooms.
• Create a technology-based lesson plan to implement in their own classrooms.

Learning Through Inquiry in a Flipped Classroom (20 hours)

Course Overview
The flipped classroom is a much-publicized model. But flipping “bad” instruction won’t lead to good instruction. This course introduces a flipped classroom model that combines key elements of inquiry-based learning and sound student engagement strategies to enhance the learning experience both in and out of the classroom.

Learning Objectives
Participants will:
• Develop unique flipped learning strategies using inquiry-based learning strategies.
• Utilize the 5E lesson cycle model to create inquiry-based flipped lesson plans.
• Practice creating interactive instructional videos, being mindful of incorporating inquiry-based questioning strategies throughout.
• Create assessments for flipped classroom learning objectives that provide timely and thoughtful feedback to students.
• Participate in collaborative discussions with colleagues, including plans for measuring the effectiveness of their flipped classroom practices.
• Create a plan for communicating their intentions and expectations for flipping their classroom to administrators, colleagues, parents, and students.
Transforming Classrooms for the Digital Age (24 hours)

Course Overview
Today’s students are “digital natives” and only know a world in which they constantly have access to unlimited information and the ability to connect with others effortlessly, usually with a mobile phone, tablet, or laptop computer.

How does the practicing teacher use these technologies to enhance student engagement, allow for richer explorations and activities, foster collaboration both in and out of the classroom, and capture formative and summative assessment? How can we ensure that the technologies bring value to our teaching and that the students are using technology safely and appropriately? Where does the use of these technologies fit into a teacher’s curriculum?

This course is designed to help practicing teachers answer these important questions. Through the use of lesson analysis and redesign, in-depth readings, video and audio media, personal reflections, and the creation of a digital “basecamp,” participants will focus on the technologies that are most relevant to their school settings to maximize teacher effectiveness and student achievement.

Learning Objectives
Participants will:
- Compare and contrast a lesson taught with technology and without.
- Create documents to be used for student collaboration and assessment (formative and summative).
- Digitally enhance a lesson from their own curriculum.
- Identify safe, responsible best practices for student and teacher use of technology in educational settings.
- Create a digital basecamp.

Supporting English Language Learners (24 hours)

Course Overview
The course will lead you through a series of learning activities that provide resources and classroom strategies for welcoming English language learners (ELLs) and their families. Topics include providing productive learning environments, understanding language acquisition concepts, providing comprehensible input, using language in classrooms, and supporting your students as they assess their own progress.

Learning Objectives
Participants will:
- Participate in an ELL experience and come to know more about ELLs and their families.
- Explore fundamental language concepts and the process of language acquisition as a way to analyze your own use of language in the classroom and support students’ language development in English.
- Develop a working knowledge of the factors that affect ELLs’ learning of academic content, language, and culture.
- Survey teaching methods that support ELLs students and use this knowledge to plan effective, developmentally appropriate instruction that provides opportunities for formative assessment of content and language goals and consider ways to use findings to make instructional decisions.
- Use an ELL lesson plan supplement and adapt an existing lesson to better meet the needs of ELLs.
- Establish a support network with other educators interested in supporting ELLs.
- Engage in resource sharing and collaborative problem solving.
Interested in discounts and special incentives for UTeach Professional Development? Join the UTeach STEM Educators Association (USEA) and receive these benefits and more! Information about membership in USEA can be found at usea.uteach.utexas.edu.
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