Engineering/Industrial Technology (Free) NSF Faculty Workshops
"Improving the Effectiveness and Access of Technical Courses"

Faculty will learn how to do the following, and much more:
1. Increase the Hands-On Learning and Skills Development in technical courses
2. Build assessments that accurately measure student's Skills and Knowledge
3. Find and reuse Open Educational Resource material for technical courses
4. Create instructional videos and other learning objects to enhance student learning
5. Find and build interactive online simulations to enhance student learning
6. Utilize virtual machines to access PLC software and simulations, 24/7

Each of these Faculty workshops will consist of three, 2-hour training sessions delivered across the Zoom platform. Faculty can choose one of the following workshops***:***
Faculty Workshop #10: March 25, April 1 & 8, 2022. Times: 1:00pm to 3:00pm EDT.
Faculty Workshop #11: May 13, 20 & 27, 2022. Times: 1:00pm to 3:00pm EDT.

The following graphic shows the different Competency-based/hybrid elements that can be used to improve technical courses:

Workshop Topics:

Session 1:

1. Using parts of CBE to improve effectiveness and access of technical courses
2. Example of 4 Faculty at 4 colleges improving their courses through this project
3. Obtaining and reusing OER material for technical courses (licensing to reusing)
4. Effective assessment models for measuring student skills and knowledge
5. Moving a portion or all of the lecture portion of a course to an online format

Session 2:

1. ADA compliance (CC on videos, Alt-Text on graphics in PDFs)
2. Alignment of curriculum and skills development to employer needs
3. Finding, editing and reusing videos from DOL and NSF repositories
4. Creating effective low cost instructional videos and other learning objects
5. Creating screen-cam videos to teach students how to use software (PLC, CAD/CAM, etc.)

Session 3:

1. Interactive Online Simulation (fluid power, electrical, PLC, etc) to enhance student learning
2. Developing methods of troubleshooting through Online Simulations (Automation Studio)
3. Virtual machines used to give students 24/7 access to simulations and software used in labs (PLC, CAD, CAM, etc.). Very effective for remote learning in basic electrical, motor controls, fluid power, VFDs, PLCs, and more.

(It is important to note that simulations and online learning cannot replace hands-on learning, they can only develop a better understanding of how a technology or circuits should work, better preparing the student for the on campus classroom/lab learning experience.)

This workshop is part of an NSF ATE Project to offer professional development and mentoring services to 2 & 4 year college Technical Faculty, in an effort to improve the effectiveness and/or access of their technical courses, by implementing instructional elements from successful competency-based/hybrid instructional models used throughout the country.

For more information, or to register for these workshops contact Tom Wylie (Project PI) at Northwest State Community College, Archbold, Ohio. Email: twylie@northweststate.edu
Or Sarah Stubblefield , Project Manager, at Northwest State, Email: sestubblefield@northweststate.edu

For additional information about this NSF ATE Project, go to the project website at: https://ate.is/Scaling_CBE