

ETD SESSIONS – CIEC 2020

Engineering Education in an Era of Change

Wednesday, January 29

7:30 AM

ETD Breakfast Meeting (ETD-305)

11:00 AM

Engineering Technology Curriculum (ETD-315)

Moderator: Robert S. Weissbach, IUPUI

This session focuses on development and implementation of engineering technology curriculum, including development of new courses and laboratories, delivery of instruction, pedagogical issues, scheduling, articulation agreements with other programs and distance learning.

Organic Cohorts in Architectural Engineering Technology Successes and Opportunities

Daniel Davis and Elizabeth Perry, University of Hartford

Penn State's Two Step Bachelor Degree (A Hop-Skip Approach)

Joseph Cecere, Penn State Harrisburg

Designing a Low-cost Embedded System Development Board with Convertible Intelligent Layers

Gang Sun and Paul Simmons, Northern Kentucky University

Needs Are in the Driver Seat When Broadening Education, Access and Momentum in Building Automation

Deb Hall, Valencia College

Why are we Failing Technical Writing?

Raymond Floyd, Northwest College

11:00 AM

Marine Engineering Technology and Related Topic (ETD-325)

Moderator: Dinesh Pinisetty, California State University Maritime Academy

Topics in Marine Engineering Technology related to classroom instruction, development of welding laboratory, simulator training for marine engineering technology and development of marine option.

Electro-Marine Engineering Technology: A New Focus Area in Multidisciplinary Engineering Technology

J.R. Porter, J.A. Morgan, M.D. Johnson, M. Kane, Texas A&M University

Simulator Training in the Marine Engineering Technology Curriculum

Keir Moorhead and Dinesh Pinisetty, California State University Maritime Academy

Development of an Undergraduate Welding Laboratory for Research and Education

Hamid Eisazadeh, Old Dominion University

11:00 AM

ECET DHA Board Meeting (ETD-375)

11:00 AM

Training and Workforce Development (ETD-335)

Moderator: Jafar Al-Sharab, Northwestern State University

Higher education can play a critical role in the development of workforce by developing training programs for industry. This must be in conjunction with developing relevant degree programs for the industry which is the end user of our products. Short courses, certifications programs, evening courses and distance learning programs offer other modalities for work force development. Industrial advisory boards also play an important role in keeping the curriculum relevant to industry and developing new training programs. This session will provide a forum for discussions related to training and workforce development.

Texas Instruments and Texas A&M Validation Course Collaboration

Mike Burnett, Rainer Fink and Tom Munns, Texas A&M University

Professional Development Program for Secondary School Teachers to Improve Knowledge and Self-Efficacy in Energy Science

Pankaj Sharma, Eric Deemer, Denny Putra, Tolulope Omotoso, Vivien Lai, Gerald Krockover, Purdue University

A Game-Based Multiplayer System for Cyber Security Training and Awareness

Te-Shun Chou, East Carolina University

Just-In-Time Workforce Development and Training for Engineering

Samira Anvaryazdi, Louisiana Tech University, and Arefeh Mohammadi, Clark State Community College

2:00 PM

Engineering Technology Outreach to K-12 (ETD-345)

Moderator: Alok Verma, Old Dominion University

Engineering technology programs are often confused with the better-known engineering programs. This lack of awareness about ET programs has resulted in loss of enrollment. In the above context, outreach by ET programs to K-12 constituents including students, teachers and even parents is extremely important. The outreach activity can take many forms. It may be as simple as a visit to classroom either by ET faculty and students to a K-12 classroom or inviting high school and middle school students and teachers to engineering open houses and campus visits. In addition to these traditional methods, new and innovative methods of outreach can use social media tools to reach out to students and parents. Another novel method for increasing awareness about ET programs is via career day events. This session discusses various methods for outreach including some case studies of tried and tested methods.

Increase Student Capacity with Effective K-12 Outreach

Ann Laird, Mohawk Community College

A Week-Long Immersive Summer Program in Energy Science and Engineering for Teacher-Student Co-Learners

Pankaj Sharma, Eric Deemer, Denny Putra, Tolulope Omotoso, Vivien Lai, and Gerald Krockover, Purdue University

Pre-College Engineering Technology Summer Program in Collaboration with Regional Industries

Jesus Gonzalez and Immanuel Edinbarough, University of Texas Rio Grande Valley

Engineering Technology Programs Outreach to K-12

Alok Verma, Old Dominion University

Industrial Advisory Board 2.0

David Goodman, IUPUI

4:00 PM

Engineering Technology Program Administration (ETD-355)

Moderator: Scott Dunning, University of Maine

Engineering Technology (ET) program administration encompasses many parts including leadership, program management, and constituents' management. Successful program administration strategies not only make the program more effective and efficient but also create significant value to the students, faculty and staff and the community it serves. Presenters in this session will focus on ET program administration issues ranging from creating new program, Just-In-Time workforce development and training, effect of adjunct faculty, space utilization, summer program in collaboration of local industries to IAB assessment.

Effect of Using Adjunct Instructors in an Electronics Engineering Technology Program

Graham Thomas, Shahryar Darayan and Marcia Robin-Stoute, Texas Southern University

Embedded Industry Approved Certifications to Address the Skip Gap in Advanced Manufacturing Industries with the Redesigned Engineering Technology Curriculum

Immanuel Edinbarough, University of Texas Rio Grande Valley

Challenges and Opportunities for Engineering Technology Programs – A Case Story

Young Chang, Oklahoma State University

Innovative and Interdisciplinary Approach for offering the Master of Science Degree in Mechatronics

Aleksandr Sergeev, John Irwin and Adrienne Minerick, Michigan Technological University

Professional Development Program for Secondary School Teachers to Improve Knowledge and Self Efficacy in Energy Science

Pankaj Sharma, Eric Deemer, Denny Putra, Tolulope Omotoso, Vivien Lai and Gerald Krockover, Purdue University

Strategic Space Utilization to Meet Present and Future Needs

Mohammad Uddin and Keith Johnson, East Tennessee State University

4:00 PM

ETD Board Meeting (ETD-365)

Thursday, January 30

7:30 AM

ETD Breakfast Meeting (ETD-415)

9:00 AM

Mini Plenary Session – BS Programs in Engineering Technology and Engineering: Supplying Engineers Critical to Industry (CIEC-431)

Moderator: Martin Gordon, Rochester Institute of Technology

Panelists: Cindy Hendrickson, GE Corporate

Danielle Perhogan, Magna International

Ken Burbank, Purdue University

Doreen Edwards, Rochester Institute of Technology

Ashley Huderson, American Society of Mechanical Engineers

Michael Aitkin, National Society of Professional Engineers

This session will help attendees better understand ET, its students and educational methods. Comparison to traditional engineering programs will be used to contrast and compare the two pathways available to become an engineer. The session will help guide industry in determining what program might supply the best hire for a company. Panelists will be from industry, professional organizations and academia.

11:00 AM

Data: What's the Fuss? Industry Applications and Education in Engineering and Technology (ETD-425)

Moderators: Jason Wu and Enrique Barbieri, University of Houston

Data science is responsible for revealing insights and drawing intelligent conclusions on behaviors, preferences, trends, and forecasts by mining the data captured through massive digital transactions. This session offers opportunities for industry and academia to review the current landscape of classes and programs, identify industry priorities, and propose innovative activities to enable a sustainable ecosystem for a multidisciplinary education program.

Infusing Industry Interests into an Applied Data Science Program

Enrique Barbieri and Xuqing Wu, University of Houston

A CNN-based Framework to Classify Anticlines Structures on Seismic Data

Pablo Guillen Rondon, University of Houston

Data Science and Traditional and Technology Programs – How to Improve Operational Excellence

Vassilios Tzounanas, University of Houston

Big Seismic Data Visualization on Cloud: A Case Study Collaborating with Industry

Hao Zheng, Lei Huang, Bidur Bohara and Mike Heck, Prairie View A&M University

A Robotic Scout UAV for Mapping Dynamic Environments at Bechtel Corporation

Ahmed Olumide, Abel Olumide, Adeoluwa Akinwa and Mohamed Chouikha, Prairie View A&M University

11:00 AM

Engineering Technology Laboratory Experiences (ETD-435)

Moderator: Nestor Escobales, Old Dominion University

Engineering technology programs emphasizes hands-on application and implementation. Thus, ET laboratory experiences are an important part of learning experiences for the ET students. An up to date laboratory facility is critical for meeting students learning outcomes. This session focuses on innovative laboratory instruction, laboratory development, and safety issues in laboratories and equipment acquisition and installation.

Cost-Effective Upgrade to Instrumentation and Controls Laboratory

Joel Koblich, LeTourneau University

Pedagogical Methods and Advances for Synchronous/Asynchronous Instruction of Laboratories in Engineering Technology Programs

Nestor Escobales and Alok Verma, Old Dominion University

Challenges of Virtual Machine Performance in Information and Computer Technology Virtual Lab Environments

Nicholas Hempenius, Te-Shun Chou and Lee Toderick, East Carolina University

A Secure Environment to Measure and Manage Cybersecurity Lab Activities

Lee Toderick, Biwu Yang, Te-Shun Chou, and Nicholas Hempenius, East Carolina University

2:00 PM

Practical Ethics (ETD-445)

Moderator: Marilyn Dyrud, Oregon Institute of Technology

Have you done something in your classes with ethics that you feel was successful? If so (or even if it wasn't!), please consider sending me a short abstract for a CIEC session on practical ethics. This session will focus on short classroom exercises that deal with some aspect of ethics. Examples could include brief cases or issues associated with engineering ethics. I plan to discuss an exercise designed to address the issue of professionalism and how ethics is a defining characteristic of a professional.

Ethics: Rules or Standards?
Ray Floyd, Northwest College

Practical Ethics for Engineering & Engineering Technology Students
Susan Scachitti, Purdue University Northwest

What is a Professional?
Marilyn Dyrud, Oregon Institute of Technology

2:00 PM

Industry/Education Symbiosis – A Mutually Beneficial Relationship (ETD-455)

Moderator: Walter Buchanan, Texas A&M University

Engineering and engineering technology institutions of higher learning and industrial entities have been partners for a long time. The reason is simple. Engineering and engineering technology institutions want to place most of their graduates with good jobs in industrial companies and these same companies want to hire graduates that have a good technical education and have learned how to apply their technical knowledge and be able to “hit the ground running” as we like to say especially in engineering technology. This session will give presentations that give examples of how programs from around the country have done just that.

Collaboration between Industry and Higher Education
Joseph J. Cecere, Penn State Harrisburg

Effect of an Augmented Reality Tool in Early Student Motivation and Engagement
Ulan Dakeev, Reg Pecen, Faruk Yildiz and Edefe Clint, Sam Houston State University

Academic and Industry Collaboration – A Literature Review
Anne Lucietto, Diane Peters, Meher Taleyarkhan and Shelly Tan, Purdue University and Kettering University

Engaging Students with Industry through a Student SME Chapter
James Obermeyer and Joseph Untener, University of Dayton

Understanding Calculus: Tying Loose Ends Together
Andrew Grossfield, Vaughn College of Aeronautics and Technology

4:00 PM

Engineering Technology National Forum (ETD-465)

Moderator: Ron Land, Penn State (Retired)

The ET National Forum is a subcommittee of the Engineering Technology Council, and its charge is to examine actions and events that influence ET education for the purpose of pursuing actions that will provide broad-based benefit to ET education and programs. In recent sessions held at ASEE’s Annual Conferences, the CIEC conference, and the Engineering Technology Leaders Institute, three actions were judged to offer significant benefit to ET recognition and advancement. This session will review the activities and progress made by these teams and will moderate a wide-ranging discussion of the work done and where future activities should be focused.

4:00 PM

Curriculum Innovation Informed by Industry Input (ETD-475)

Moderator: Angie Hill Price, Texas A&M University

The strength of Engineering Technology programs lies in their applied nature and industry applications. Papers in this session would detail examples, input, experiences and innovation from industry being incorporated into individual courses and overall curriculum. These could be specific industry examples, case studies, or changes in the field that lead to course or overall curriculum improvement or redesign.

Industry-University Partnerships – What’s in It for Me?

Ann Peterson, Pittsburg State University

Incorporating Additive Manufacturing into Engineering Technology Curricula to Meet Industry Needs

Mathew Kuttolamado and Angie Hill Price, Texas A&M University

The Evolution of a Long-Term Mutual Beneficial Industry Partnership from Concept to Implementation

Ali Alavizadeh, Shoji Nakayama, and Mohammad Zahraee, Purdue University Northwest

Integrating 21st Century Skills into College Curriculum

Mohan Devgun, State University of New York Buffalo

6:00 PM

ETD Hospitality (ETD-485)

Friday, January 31

7:30 AM

ETD Breakfast and Planning Meeting for CIEC 2021 (ETD-505)

9:00 AM

Engineering Technology Capstone Projects (ETD-525)

Moderator: Walter Buchanan, Texas A&M University

Most four-year institutions that have an engineering technology program end it with a capstone sequence. This usually includes a course in each of the last two semesters that first cover the fundamentals of technical project management with planning and approval activities necessary to prepare a technical proposal including the scope of technical design project that will be done during the final semester. A team approach is usually used to analyze and design a basic industrial level project using standard components and proven design techniques. This session will give presentations with examples of how programs from around the country have done this.

Mini Capstone Final Project Implementation and Assessment

Joseph Sanson and Robert Korenic, Youngstown State University

Evolving Engineering Technology Capstone Projects to Bring Students Closer to Industry

Susan Scachitti and James B. Higley, Purdue University Northwest

Experimental Vehicles Program Creates Lasting Partnerships with National and International Industries

Saeed Foroudastan, Middle Tennessee University

Complex Modeling for Feed Forward Control Systems for Furnace Temperature Optimization

Thomas Price, Sawyer Poel and Aleksandr Sergeev, Michigan Technological University

Experimental Investigation of Condenser Shading Effects on Residential Air-conditioning Unit Performance

Maher Shehadi, Purdue University

9:00 AM

JET Board Meeting (ETD-515)

10:45 AM

Planning for ETD 2021 Sessions (ETD-535)