Creating Effective Professional Development Activities

2019 HI-TEC Conference
Greg Kepner, Indian Hills Community College, Ottumwa, IA
Frank Reed, Indian Hills Community College, Ottumwa, IA
Dr. Chrys Panayiotou, Indian River State College, Ft. Pierce, FL
Dr. Anca Sala, Baker College, Flint, MI

July 25, 2019

Why Professional Development?

- Improving Job Performance
- Knowledge Enhancement
- Skill Based Training
- Continuing Education
Professional Development Key Questions

What is the purpose of the activity?
What are the objectives of the activity?
What do participants need to know?
Who is your audience?
How do you inform and recruit participants?
How do you engage participants?
How do you know if the activity was effective?
What are the finishing touches to professional development?

What is Professional Development?

Teaching/Learning Strategies
   Pedagogy, Activities
Technical/Vocational Skill Enhancement
   Computer, Mechanical, Welding, Culinary, etc.
Certifications/Authorizations
   AWS, MSSC, NIMS, ETA, LIA, Coaching, Officiating, ServSafe, etc.
Licensure/Re-Licensure
   Electrical, Health, Insurance, Plumbing, HVAC, Human Resources, etc.
Types of Professional Development

- Workshops
- Courses
- Conferences
- Webinars
- Seminars
- Institutes
- Symposiums
- Summits
- Meetings
- Presentations

Advertising Professional Development

- Newsletters
- E-mail Contacts
- Websites
- Social Media
- Flyers/Posters
- Exhibits at Events
- Mainstream Media
- Catalogs/Tabloids
- Word of Mouth
LASER MATERIAL PROCESSING WORKSHOP
June 10-14, 2019 • 8am-4pm • ADVANCED TECHNOLOGY CENTER

- Laser Material Processing
  A. Background
  B. Concepts
- Industry Presentations
  A. Industry Representatives
- Laser & Optics Technology
  A. Establishing a Course
- Hands-On Training
  A. Laser Welding
  B. Laser Marking
  C. Laser Cutting
- Tours
  A. Local Companies
  B. 840MPEC Laboratory
  C. Demonstrations

Photonics is the science and technology of light generation, control, and detection. Some say the 21st century will depend on photonics as much as the 20th century depended on electronics.

This Laser Material Processing workshop will include an introduction to light, lasers, laser safety, and laser applications. In addition, there will be ample time to do several hands-on laser material processing labs.

Attendees will have the opportunity to learn about the utilization of lasers in their everyday operation from several industry representatives. There will be provided to consider establishing a Laser & Optics Technology course along with options for developing and conducting labs.

Tours of local companies will be the highlighted.

Register at www.midwestphotronics.org or contact GPAEA for recertification.

WORKSHOP AGENDA
- Photonics Overview
- Laser Safety & Applications
- Laboratory Activities
- Registration is FREE and travel expenses will be reimbursed

INDIAN HILLS COMMUNITY COLLEGE
24th Avenue
525 Grandview Ave • Ottumwa, IA 641-633-5712

LASER MATERIAL PROCESSING HYBRID ONLINE COURSE
Online course materials are available now and laboratory activities will be held at Indian Hills Community College on July 8-12, 2019.
LAB JULY 8-12, 2019 • 8AM-4PM • ADVANCED TECHNOLOGY CENTER

- Laser Material Processing
  A. Background
  B. Concepts
- Hands-On Training
  A. Laser Welding
  B. Laser Marking
  C. Laser Cutting
  D. Laser Framing
  E. Laser Engraving
  F. Laser Cleaning
- Tours
  A. Local Companies
  B. 840MPEC Laboratory
  C. Live Demonstrations

Photonics is the science and technology of light generation, control, and detection. Some say the 21st century will depend on photonics as much as the 20th century depended on electronics.

This Laser Material Processing course VOC 3300 will include an introduction to light, lasers, laser safety and the study of a variety of laser applications. In addition, there will be a week of hands-on laser material processing labs with industrial grade equipment.

Attendees will have the opportunity to learn about and see demonstrations of the utilization of lasers in their everyday operation from several industry representatives.

Tours of local companies will be the highlighted.

Register at www.midwestphotronics.org or contact GPAEA for recertification.

LAB AGENDA
- Overview
- Laser Applications
- Laboratory Activities
- Registration is FREE and travel expenses will be reimbursed

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Laser Material Processing Course Schedule

Monday - Laser Material Processing review – Laser welding
Tuesday – Laser welding and forming
Wednesday – 3 Company Tours
  Dejong Manufacturing – small company
  Co-Line Manufacturing – mid-sized company
  Vermeer Manufacturing – large company
Thursday – Laser etching and cutting
Friday – Laser paint and rust removal
Preconference Workshop

Fiber Optics Technologies for Beginners
This workshop is intended for instructors who want to learn more about the practical aspects of fiber optics so they can create and/or enhance courses with the latest technologies impacting the termination, connecting, and testing of fiber optic networks. In addition to learning about the theory of fiber operation, participants will terminate a single-mode fiber with the Corning Unicam system, create and test fusion splices, and use an OTDR for signal tracing and troubleshooting. Fiber to the home, passive optical networks, and distributed antenna systems (DAS) will also be covered.

Chrys Panayiotou, LASER-TEC, Fort Pierce, FL

Lasers in Manufacturing Symposium 2017
Lasers in Manufacturing Symposium Agenda

Technical Symposium Agenda
9:00 AM  Registration & Tabletop Exhibits
9:30 AM  Welcome
Dr. Marlene Sprouse, President & Chief Academic Officer, IHCC
9:45 AM  Laser Sources and Their Industrial Applications
Michael Shay, Laser Instructor, IHCC
10:15 AM  CO2 Lasers are Still Relevant
Bernie Koch, President, Minnesota Section of the Optical Society of America
And Manufacturing Technology Specialist, 3M
10:45 AM  Assimilation of Laser Welding: Resistance is Futile
David Howell, Manager – Product & Project Management, TRUMPF Inc.
11:15 AM  Networking, Tabletops & Student Ask the Expert
12:00 PM  Lunch
Compliments of the Midwest Photonics Education Center and the National Science Foundation
12:45 PM  Advanced Laser Applications in the Job Shop
Thom Shallow, Founder, Superior Joining Technologies
1:15 PM  Unexpected Synergy: 3D Metal Printing & Conventional Manufacturing
Franziska Maschowsk, Task Lead – Additive Manufacturing, TRUMPF Inc.
1:45 PM  Break
2:15 PM  Troubleshooting Laser Systems in Medical Device Manufacturing
Joseph Hendrickson, Sr. Manufacturing Engineer, Medtronic
2:45 PM  Prevalent & Emerging Ultrafast Applications
Bill Holtkamp, Sales Manager – Semi-Construction/Consumer Electronics, TRUMPF Inc.
3:30 PM  Tour of IHCC Lab & Live Demo
4:00 PM  Adjourn

Lasers in Manufacturing Symposium Feature

Featuring:
Prevalent & Emerging Ultrafast Applications
by Bill Holtkamp,
IHCC Alumni and Sales Manager for TRUMPF, Inc.
Evaluating Professional Development

### Perception Forms
- Presenter Knowledge
- Presentation Skills
- Venue

### Value
- Knowledge
- Skills
- New Contacts

### Outcomes
- Testing
- Certification
- License
- Network Building

Professional Development Keys to Success

- Start on time
- End on time
- Provide value to participants
- Serve food (if possible)
Professional Development Finishing Touches

Certificate of Completion  Participant Pictures

Good Food  Grad Credit or CEUs

CERTIFICATE OF COMPLETION

This certificate is awarded to

[Name]

In recognition of successfully completing the 50 Contact Hour course Co-Sponsored by Indian Hills Community College and OP-TEC National Center for Optics and Photonics Education

“LASER SYSTEMS AND APPLICATIONS II”
The above student is awarded 5.0 CEUs

Section/Class # 17/YR/VOC 1289-501  On December 8, 2016

[Signature - Instructor]  [Signature - College Official]

[Signature - Student]  [Signature - College Official]

[Date]  [Date]
Laser Material Processing Workshop Participants Visiting a Company

Laser Material Processing Workshop 2018
Questions?

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• Disclaimer: Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.