

REGISTRATION

- Registration is limited and on a first-come, first-served basis.
- Pre-registration is required and includes instruction with handout materials, refreshments, and lunch. Classes with a sponsor will include a complimentary network dinner. **Registrants are responsible for all other meals and lodging.**
- The registration fee may be paid by check, MasterCard, Visa, Discover, purchase order, or authorization to invoice your company.
- **Register online** at pct.edu/pirc or call 570.321.5533.

ADDITIONAL INFORMATION

LOCATION/FACILITIES

All workshop activities are held on the main campus of Pennsylvania College of Technology, an affiliate of The Pennsylvania State University, in Williamsport, PA. The College is located in central Pennsylvania with easy access off Interstate 180.

APPROPRIATE DRESS

Casual business/jeans attire is recommended, appropriate for plastics processing and testing lab. Safety glasses are provided.

HOTELS

Registrants will receive a confirmation email with discounted rates at participating hotels. **Participants are responsible for making their own lodging arrangements.**

AIRPORTS

The **Williamsport Regional Airport (IPT)*** is presently closed to public flights. It may possibly open in June. If it reopens, free shuttle service will be provided to and from the Williamsport Regional Airport and College from our preferred hotels, so a car rental is not necessary (before 11 p.m.). Other airport options, with approximate driving times (rental car needed):

- University Park (SCE) – 1 hour
- Wilkes-Barre/Scranton International (AVP) – 1.5 hours
- Elmira/Corning (NY) Regional (ELM) – 1.5 hours
- Harrisburg International (MDT) – 2 hours
- Philadelphia International (PHL) – 3 hours

Please wait for enrollment confirmation before booking your flight.

CANCELLATION POLICY

Cancellations will be accepted and full refunds issued when notified at least two weeks prior to the class start date. Within two weeks of the class start date, the company is responsible for the full cost. Company may substitute alternate personnel for paid seats at any time.

The PIRC may cancel or postpone any course because of insufficient enrollment or other unforeseen circumstances. If a program is canceled or postponed, PIRC will refund registration fees, but cannot be held responsible for any other related costs, charges, or expenses (including cancellation/change fees assessed by airlines or travel agencies).

*Present airline operation may vary



PLASTICS INNOVATION & RESOURCE CENTER (PIRC)

The PIRC is one of the top plastics technology centers in the nation for research, development, and education related to injection molding, extrusion, blow molding, rotational molding, and thermoforming.

Partnering with the PIRC gives plastic manufacturers the opportunity to increase productivity while decreasing capital expenditures, operating costs, and development costs.

Services offered to plastics manufacturers include:

- New product development
- Material selection
- Testing and analysis
- Custom compounding
- Process technology
- Education and training

PIRC clients have access to:

- Industrial-scale process equipment and extensive material testing laboratories
- World-class training programs (including customized, on-site training programs, workshops, online courses, and national seminars)
- Expert consulting staff, including Penn College faculty
- Student interns and graduates that bring education and experience to the workplace

Penn College is one of only six colleges in the nation offering plastics degree programs accredited by the Engineering Technology Accreditation Commission of ABET.

B.S. – Plastics & Polymer Engineering Technology
A.A.S. – Plastics & Polymer Technology

Penn College graduates are in high demand for positions in manufacturing operations, process technology, supervision, research and development, product and machine design, and more. Companies that employ our graduates include: Becton Dickinson, Berry Global, Currier Plastics, First Quality, General Cable, Google, Greiner Packaging, Honda, Johnson & Johnson, Mitsubishi Chemical Advanced Materials, SEKISUI KYDEX, Toyota, West Pharmaceutical Services, and many more.

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Penn College encourages qualified persons with disabilities to participate in its programs and activities. If you anticipate needing any type of accommodation or have questions about the physical access provided, please contact Disability Services at 570.320.5225, TTY: 570.321.5528, or fax 570.327.4501 in advance of your participation or visit.

Penn College® is registered in the U.S. Patent and Trademark Office.

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Pennsylvania
College of Technology
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One College Avenue | Williamsport, PA 17701-5799



2023 NATIONAL
PLASTICS
WORKSHOPS



P E N N S Y L V A N I A
C O L L E G E O F
T E C H N O L O G Y

- Color Science & Weathering
- Extrusion Die Design Workshop
- Extrusion Seminar & Hands-On Workshop
- Injection Molding Processing Series
- Plastic Materials & Processing Fundamentals
- Rotational Molding & Advanced Materials Workshop
- Thermoforming Workshop



PLASTICS INNOVATION & RESOURCE CENTER

2023 WORKSHOP SCHEDULE

Extrusion Die Design Workshop

Instructor: Adam Barilla
Location: Advanced Technology & Health Sciences Center, Room E264

May 16 & 17
9:30 a.m.-4:30 p.m.
\$1,095 / \$100 Early Bird Discount if registered by May 1*

This two-day workshop introduces die design principles for all major extrusion processes (sheet, pipe, tubing, blown film, profiles, and coextrusion). Learn how to apply polymer behavior to die design dies for various extrusion processes, when calibration is necessary and how to design it, and common design issues to avoid. This course is for dies designers, extruded part designers, process engineers, and tool shop supervisors.

“For any engineer who ever guessed at how to design tooling or someone who is just starting to design, this course will give you formula to reduce the number of times spent tuning.”

Michael Luckenbill, RID Technician Trainer,
Cardinal Systems Inc
Schuylkill Haven, PA

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GRAHAM ENGINEERING



Color Science & Weathering

Instructor: Bruce Mulholland
Location: Advanced Technology & Health Services Center, Room E127

May 16–18
8:30 a.m.-4:30 p.m.
Day 3 ends at noon
\$1,195 / \$100 Early Bird Discount if registered by May 1*

Color Science includes the introduction to color, appearance assessment, objects interaction with light, illuminants, the human observer, color order systems, spectrometers, samples, tristimulus systems, color difference equations, metamerism, statistics, and industrial color control.

The Coloring of Plastics reviews the critical parameters and considerations for coloring plastic materials.

Weathering of Plastics is designed to teach the fundamentals of weathering, weathering technology, and evaluation methodologies for plastic materials.

“Bruce Mulholland has the ability to take a complex subject and simplify it to make it very understandable. One of the best courses I have ever attended in 40+ years.”

Michael Kumbalek, VP Customer Solutions,
Bolder Industries
Punta Gorda, FL

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SEKISUI | KYDEX

Plastic Materials & Processing Fundamentals

Instructor: Joshua Rice
Location: Advanced Technology & Health Sciences Center, Room E140 & Plastic Labs

May 23-25
8:30 a.m.-4:30 p.m.
\$1,295 / \$100 Early Bird Discount if registered by May 1*

This workshop provides fundamental knowledge of plastics (polymers), how they are processed, tested, and characterized. Gain skills in how plastic material testing can improve plastic product design and processing considerations. Fundamentals of polymer structure and its effect on polymer properties is covered. Hands-on sessions show how certain data sheet properties, such as melt index, tensile strength, and impact resistance are determined. Included are introductions to polymer processing techniques such as injection molding, extrusion, rotational molding, vacuum forming, and extrusion blow molding.

“Being new to the plastics industry, this specific course gave me a well-rounded understanding of key concepts to perform my job duties. The hands-on labs provided great application of topics discussed during the lectures. The faculty and staff are subject matter experts and a pleasure to work with. I HIGHLY recommend this program!”

Nathan Sierra, Quality Assurance Manager,
Americhem
Grand Rapids, MI

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MITSUBISHI
CHEMICAL
GROUP

Extrusion Seminar & Hands-On Workshop

Instructors: Dr. Chris Rauwendaal & Dr. Kirk Cantor
Location: Advanced Technology & Health Sciences Center, Room E140 & Plastic Labs

June 6–8
8:30 a.m.–4:30 p.m.
Day 3 ends at 3 p.m.
\$1,395 / \$100 Early Bird Discount if registered by May 1*

Dr. Rauwendaal presents course topics in a multimedia format supplemented by printed materials. Dr. Cantor leads hands-on training (approximately 50% of the course) including use of extrusion industry equipment: single-screw extruder, twin-screw extruder, blown film line, injection molder, melt indexer, and tensile tester.

“The instructors are very approachable and so happy to share their knowledge. They provide a great deal of time during the labs for questions specific to your plant needs and conditions.”

Steve Penny, Extrusion Manager,
Plastic Ingenuity
Tooele, UT

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By your side
for a healthier world™



Injection Molding Processing Series

Instructor: Tim Weston
Location: Advanced Technology & Health Sciences Center, Room E140 & Plastic Labs

June 19-23
8 a.m.-5 p.m.
\$2,290 / \$100 Early Bird Discount if registered by May 1*

This five-day course provides a comprehensive look at injection molding technology and covers scientific or systematic molding method setups, operation, and process control. All molders master the principles of decoupled molding to produce consistent product in the most efficient way. This workshop covers decoupled molding set-up, operation, and teaches the injection molding process using scientific or systematic molding methods. Participants will be able to set-up a cycle for various injection molding machines with identical results. Mastery of the decoupled molding process assures all molders, regardless of experience and physical location, will achieve the same process results. In addition, the science of injection molding is covered and ideal for the advanced individual looking for solutions to the toughest molding problems. Participants will learn how the machine, the mold, and the plastic material all play a role in the molding of plastic parts. Controlling part dimensions and part defects are covered. Real world examples will be used during hands-on troubleshooting sessions.

“Excellent seminar! Covered great material! Exactly what I was looking for! Extremely knowledgeable instructor!!!”

Richard Fillis, Mechanic, B. Braun Medical
Allentown, PA

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ENGEL



Hands-On Thermoforming Workshop

Instructors: Mark Strachan & Chris Gagliano
Location: Advanced Technology & Health Sciences Center, Room E140 & Plastic Labs

June 27–29
8:30 a.m.-4:30 p.m.
\$1,395 / \$100 Early Bird Discount if registered by May 1*

This three-day workshop will cover the essential elements of thermoforming from materials to finished product, as it applies to both thin-gauge (roll-fed) and heavy-gauge (cut-sheet) applications. It is designed to provide an in-depth understanding of the process, design, materials, tooling, and troubleshooting to efficiently produce high-quality products. Mark Strachan, a nationally recognized industry expert, leads this course on the fundamentals of thermoforming and focused topic areas related to thin-gauge processing. Chris Gagliano, PIRC Project Manager, will co-lecture, focused on heavy-gauge thermoforming processing. Hands-on sessions include process techniques and troubleshooting, materials testing, and sheet extrusion basics.

“This was very well laid out course covering the major topics needed to achieve success in the industry - everything from materiel selection, basics of thermal dynamics, to equipment options.”

Tim Collette, Senior Packaging Engineer,
Unified2 Global Packaging Group
Sutton, MA

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PRIMEX
A subsidiary of IGC Corporation Inc.

Rotational Molding & Advanced Materials Workshop

Instructor: R. Dru Laws
Location: Advanced Technology & Health Sciences Center, Room E140 & Plastic Labs

August 2 & 3
8:30 a.m.-4:30 p.m.
\$1,195 / \$100 Early Bird Discount if registered by May 1*

This workshop features Shell Polymers Rotational Molding Center of Excellence to give participants hands-on experience in combination with the classroom training led by Dru Laws on higher-level technology in rotational molding. This two-day workshop will focus on developing the connection between materials preparation, molding, final part quality, and review the latest advances in materials available in the industry. Target audience: supervisory, lead operators, technicians, and engineers. It allows participants to network and share experiences with other staff facing similar day-to-day issues.

“Outside the exceptional content of the lab and seminar/in-class training, the true value of this course lies within the interaction and discussion with other roto industry teachers/leaders/operators/suppliers!”

Evan Pheneger, Design Engineer,
Gemstar Manufacturing
Cannon Falls, MN

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MHolland



***Receive a \$100 Early Bird Discount on all workshops if you register by May 1, 2023 and use Code PMC-EBD2023.**

WHY PENN COLLEGE?

BENEFITS OF INDUSTRIAL TRAINING

- Learn how the right choice of plastics materials can make a difference in your product's performance
- Learn key factors that make plastics processes profitable and reduce quality errors
- Learn successful fabrication techniques in molding, extrusion, forming, etc. addressing your problems on the plant floor
- Produce more informed, efficient, and motivated employees
- Train hands-on with a large array of equipment
- Receive individualized instruction
- Network with other attendees
- Discuss real-world challenges