LEARN FROM INSTRUCTORS WHO PRACTICE WHAT THEY TEACH

Elastomers
Electrical
Mechanical
Plastics
Six Sigma
Water
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## School of Continuing Education
(SCE) is the largest provider of noncredit continuing education in Southeastern Wisconsin, with nearly 20,000 participants, 1,500 programs and 600 practitioner instructors. Our state-of-the-art classrooms and conference services are located in downtown Milwaukee – the heart of the city’s business and commercial district. SCE is one of 14 schools and colleges at the University of Wisconsin–Milwaukee.

## YOUR ENGINEERING CONNECTION

- **Murali Vedula**  
  Program Director  
  mvedula@uwm.edu  
  414-227-3121

- **Marcia Gabriel**  
  Program Manager  
  gabrielm@uwm.edu  
  414-227-3378
THE VALUE OF PROFESSIONAL CERTIFICATES

Professional certificates are an affordable and convenient way to increase your value in the workplace. Over the past several decades, certificates have been the fastest-growing postsecondary credential awarded. Frequently attained as a supplement or a stepping stone to a degree, certificates are earned through noncredit, hands-on professional development in a specific career discipline. Courses are taught by industry experts, and the skills acquired are relevant and immediately applicable on the job.

WHO SHOULD PURSUE A PROFESSIONAL CERTIFICATE?

- **Working Professionals** – update current skills, gain new ones, advance your career and increase your earning potential
- **Recent College Grads** – bridge the gap between your education and new job requirements
- **Career Changers** – jumpstart your employment in a new field, quickly and economically

WHY CHOOSE SCE?

A professional certificate from the School of Continuing Education comes with the distinction and quality that the University of Wisconsin-Milwaukee has to offer. UWM is Wisconsin’s premier public, urban university with a strong international reputation for excellence in education.

- Local and national industry experts with real-world knowledge and advice
- Opportunity to network with like-minded professionals
- Convenient downtown location
- Amenities, including course materials, meals and discounted parking

ENGINEERING CERTIFICATE PROGRAMS

All seven programs are made up of courses that qualify for continuing education professional development hours (PDHs). All courses are taught by instructors that keep your attention, keep pace with the changing industry and keep you competitive.

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SEE 40+ CERTIFICATE PROGRAMS AT [SCE-CERTIFICATES.UWM.EDU](#).
Elastomer Technology Certificate

Make an impact on your elastomeric applications with new knowledge, cost-saving strategies, stronger designs and impressed clients. View full certificate and course details online at sce-rubber.uwm.edu. Individual courses may be taken without pursuit of the certificate.

Earn the certificate by completing nine or more days of related courses in as little as 18 months (not to exceed three years).

Elastomer Technology
sce-rubber.uwm.edu

Molding of Rubber and Design of Rubber Molds

Learn the fundamentals of molding rubber mechanical goods and designing their rubber molds, with no reference to the molding of tires. Review applicable molding methods with emphasis on compression, transfer and injection processes. Bring drawings or troublesome parts to address real-world issues during class.

Learning Outcomes
• Gain an integrated perspective on rubber molding and design of rubber molds
• Understand current principles and techniques in the design of molds and molded part design
• Explore useful design information – valuable for beginners and seasoned practitioners

Wed.-Fri., Apr. 23-25
8am-5pm Days 1 & 2, 8am-2pm Day 3
Instructors: Terry Chapin, Van Walworth
Fee: $1190
Early Bird: $1090 (register by Feb. 23)
CEUs: 1.8/PDHs: 18
Program No. 4830-6312

Rubber Extrusion Technology

NEW!

Learn applicable basic information on all aspects of the rubber extrusion process. Build a knowledge base that encompasses products ranging from intricate profile extrusions to tires, using compositions ranging from a single thermoplastic elastomer to multiple dense and cellular compounds coextruded with carriers and reinforcements.

Learning Outcomes
• Understand compound ingredients, characterization and processing
• Become familiar with equipment for pumping, shaping, curing and monitoring
• Learn various methods related to process variation and control

Wed.-Fri., Feb. 26-28, 8am-4:30pm
Instructors: John Dick, James Stevenson
Fee: $1390
CEUs: 2.0/PDHs: 20
Program No. 4830-6572

Essentials of Silicone Elastomers

Get a detailed description of silicone elastomers, emphasizing their chemistry, physical and rheological properties, curing process, and associated test methods, both physical and analytical.

Learning Outcomes
• Understand silicone elastomer technology – applications, features, benefits and all aspects of the manufacturing process
• Be familiar with dynamic and static properties, curing process and chemical structure
• Examine various analytical testing methods with specifications, property matrix and experimental design considerations

Mon.-Tue., May 19-20, 8am-4:30pm
Instructors: Mary Krenceski, Mel Toub
Fee: $890
CEUs: 1.4/PDHs: 14
Program No. 4830-6762

Rubber Compounding and Mixing for Performance

Start with the basics of formulating, the key processability characteristics and the most common factory problems and causes, then go further in-depth in this three-day, intensive overview of rubber compounding and mixing.

Learning Outcomes
• Know the five categories of rubber processability tests
• Understand the differences between general purpose and specialty elastomers, and how they affect compounding and mixing
• Review methodologies for solving factory problems

Wed.-Fri., Sept. 24-26, 8am-4:30pm
Instructors: John Dick, Peter Surette, Sr.
Fee: $1290
Early Bird: $1090 (register by June 17)
CEUs: 1.8/PDHs: 18
Program No. 4830-6694
Silicone Elastomers Technology and Fabrication

Receive a comprehensive overview of silicone elastomers, including basic silicone chemistry, types of silicone elastomers, manufacturing processes, fabrication techniques, problem-solving and application areas. With an emphasis on liquid injection molding, learn from a panel of experts in the silicones field, and discuss specific projects of interest.

Learning Outcomes
- Visit M.R. Mold & Engineering Corp. to experience the production of an actual liquid silicone rubber part
- Observe pump design and operation, machine setup and operation, flow analysis, and more
- Understand material selection, dispensing methods, injection molding process, tool design and bonding alternatives

Tue.-Fri., Feb. 4-7, 8am-4:30pm
Location: Hilton Suites Orange, CA
Instructors: Rick Finnie, Juergen Giesow, Torsten Kruse, Bob Pelletier, John Timmerman, Mel Toub
Fee: $1290
CEUs: 2.4/PDHs: 24
Program No. 4830-6566

Electrical Engineering Certificate
The demand for engineering professionals versed in power components, structural and electrical design considerations, quality and safety is on the rise. Maximize your productivity, efficiency and innovation. View full certificate and course details online at sce-electrical.uwm.edu. Individual courses may be taken without pursuit of the certificate.

Earn the certificate by completing nine or more days of related courses in as little as 18 months (not to exceed three years).

Discussion of Widespread Power System Blackouts
Get introduced to transmission system design considerations through case studies of real-world events. You may find yourself in a position that requires you to be aware of the potential for trouble — understand the conditions and factors that lead to blackouts and develop recommendations on how to prevent them.

Learning Outcomes
- Understand how to recognize pre-blackout conditions
- Identify major problem areas
- Forecast the most likely sequence of events that can lead to the next major, widespread blackout

Fri., Apr. 11, 8am-Noon
Instructor: Anthony Sleva, P.E.
Fee: $195
CEUs: 0.4/PDHs: 4.0
Program No. 4830-6047

Electrical Substation Design Fundamentals
Study substation design subjects at a level appropriate for those relatively new to the field. Get an introduction to technical requirements, configuration philosophies, design practices, information sources and work processes. Learn the fundamentals of electrical, civil and structural design issues of electric power substations.

Learning Outcomes
- Understand substation project chronology, and how to develop the scope and identify constraints for the overall project
- Be familiar with costs and schedules
- Explore site grading design, foundations, insulation and insulation protection, and structures
- Understand design issues of electric power substations
- Get an introduction to technical requirements, configuration philosophies, design practices, information sources and work processes

Mon.-Wed., May 5-7, 8am-4:30pm
Instructor: Dan Chaply
Fee: $1295
Early Bird: $1195 (register by Mar. 5)
CEUs: 2.1/PDHs: 21
Program No. 4830-6236

Electrical Substation Equipment Aging
Get acquainted with aging mechanisms and the aging considerations for components found in substations. As craftsmen, engineers, supervisors and managers who are responsible for performing, supervising and scheduling maintenance activities, being proactive is vital.

Learning Outcomes
- Identify recognized failure modes and aging indicators
- Gain insight into periodic and in-service testing
- Save money by being prepared and avoiding repair and replacement costs

Tue.-Thu., May 20-22, 8am-5pm
Instructors: Jenifer Marchesi, Ph.D., Richard Martin, Anthony Sleva, P.E.
Fee: $1295
Early Bird: $1195 (register by Mar. 6)
CEUs: 2.0/PDHs: 20
Program No. 4830-6050

Save $390 - Electrical Equipment Aging Combo Package
Register by Mar. 5 for Electrical Substation Equipment Aging, Introduction to Materials Used in Electrical Equipment and Presentation of Forensic Case Studies combination package.
Or save $290 when registering after Mar. 5.
Visit sce-electrical.uwm.edu for details.

sce-electrical.uwm.edu | 414-227-3200 | 800-222-3623
Introduction to Materials Used in Electrical Equipment

Compare and contrast the purposes for a variety of materials used in electrical equipment design and construction. As a professional who did not focus on material science during your undergraduate studies, it’s important to understand the limitations of various materials you might encounter on the job.

Learning Outcomes
- Analyze ferrous materials, aluminum, plastics, polymers, ceramics and coatings
- Discuss various properties and molecular structures of materials
- Understand the advantages, disadvantages and limitations of different materials in electrical applications

Mon., May 19, 1-5pm
Instructor: Anthony Sleva, P.E.
Fee: $195
CEUs: 0.4/PDHs: 4.0
Program No. 4830-6046

Introduction to Power System Load Models

Understand the way customer loads interact with electric power transmission and distribution systems during the performance of your routine job duties. Get an introduction to the way motors, light bulbs, power supplies, heaters, etc. are modeled when various calculations are developed.

Learning Outcomes
- Discuss normal operating conditions, peak load conditions, energization, cold load pickup and FIDVR
- Analyze incandescent, mercury vapor and LED lights
- Cover induction motors, air conditioners, power supplies and lumped loads

Mon., Apr. 7, 1-5pm
Instructor: Anthony Sleva, P.E.
Fee: $195
CEUs: 0.4/PDHs: 4.0
Program No. 4830-6035

Introduction to the Cost of Power at Customer Meter Bases

Learn what to consider when deriving the price of power at your customers’ meters. Discuss the many variables you’ll need to keep in mind as a designer, technician, project manager, engineer, analyst or other professional calculating these costs.

Learning Outcomes
- Discuss customer types: residential, commercial and industrial
- Identify load and operational considerations
- Get financing insights to ensure a greater return on investment

Fri., May 2, 8am-Noon
Instructor: Anthony Sleva, P.E.
Fee: $195
CEUs: 0.4/PDHs: 4.0
Program No. 4830-6052

Presentation of Forensic Investigation Case Studies

Review the forensic investigations that were completed subsequent to the failure of components found in substations, power generating plants and industrial facilities. Case studies and discussion will help you prepare yourself for potential equipment failures at work.

Learning Outcomes
- Understand why problems occur, such as why fusible elements might open or cable insulation might degrade
- Uncover failure modes and explanations of delayed rest
- Study heat migration and impacts

Fri., May 23, 8am-Noon
Instructor: Anthony Sleva, P.E.
Fee: $195
CEUs: 0.4/PDHs: 4.0
Program No. 4830-6048
Protective Relaying Principles & Applications
Learn the fundamental concepts of protective relaying – beginning with the basics, advancing to important setting considerations, and eventually ending with a discussion of fault and disturbance analysis. Gain confidence in your ability to recognize key protective relaying considerations for distribution lines, transmission lines, substations, transformers, buses and circuit breakers.

Learning Outcomes
• Know criteria used to select protective relay settings
• Understand key design considerations and operations
• Examine case studies that include examples of correct and incorrect operation of protective relaying schemes

Tue.-Thu., Apr. 8-10, 8am-4:30pm
Instructor: Anthony Sleva, P.E.
Fee: $1295
Early Bird: $1195 (register by Feb. 8)
CEUs: 2.0/PDHs: 20
Program No. 4830-6034

Transmission Line Design
Cover a wide variety of design subjects at a level appropriate for those relatively new to the area of transmission line design. Explore the fundamentals in safety, standards, coordination and more by examining industry practices, procedures and philosophies. Apply your knowledge to the electrical, civil and structural design components of transmission lines.

Learning Outcomes
• Examine industry practices, technical requirements, configuration philosophies, design practices, information resources and work procedures
• Fully comprehend mechanical loads on structures and foundation design
• Build your repertoire with an understanding of conductor types, sag and tension calculations, insulation and hardware, structure loading, codes and standards, clearances, foundations, ice and wind loading, and environmental coordination

Wed.-Fri., Apr. 9-11, 8am-5pm
Instructor: Doug Proctor
Fee: $1195
Early Bird: $1095 (register by Feb. 9)
CEUs: 2.0/PDHs: 20
Program No. 4830-6235

Save $390 - Protective Relaying Combo Package
Or save $290 when registering after Feb. 7.
Visit sce-electrical.uwm.edu for details.

Understanding Power System Design & Operation
Learn to communicate effectively with electrical engineers and system designers. This user-friendly course is geared toward managers, project coordinators, engineers, designers, technicians and other individuals who have little or no formal training in electrical power system design and operation.

Learning Outcomes
• Understand key electrical parameters and fundamental operation of power systems
• Foresee localized interruptions, widespread outages and regional blackouts
• Examine case studies that include a list of modifications designed to minimize outages

Tue.-Thu., Apr. 29-May 1, 8am-4:30pm
Instructor: Anthony Sleva, P.E.
Fee: $1295
Early Bird: $1195 (register by Feb. 28)
CEUs: 2.0/PDHs: 20
Program No. 4830-6051

Save $390 - Power Systems Combo Package
Or save $290 when registering after Feb. 28.
Visit sce-electrical.uwm.edu for details.
Engineering Ethics

Gain an understanding of the Model Rules of Professional Conduct for engineers, including your obligations to society, your employer and clients, and other licensees in this online, interactive course. Instructor-led content meets the minimum requirement in the area of professional conduct and ethics and satisfies your biennial registration period requirement per Chapter A-E 13.

Learning Outcomes
- Know the ethical priorities and the obligations that engineers have according to NCEES
- Understand the six ethical types, and why ethical lapses occur
- Identify five common ethical dilemmas that occur in engineering

Sessions begin the first Monday of every month
Instructor: Barbara Bartlein
Fee: $79
CEUs: 0.2/PDHs: 2.0

Practices in Leadership and Strategy

Develop strategies to successfully carry out major initiatives by influencing the decisions and attitudes of others. Examine the concepts of leadership and strategy through a theoretical lens as well as real-life experience and examples of effective approaches.

Learning Outcomes
- Align your organization’s mission with resources to maximize effectiveness
- Understand how innovation can affect strategic positioning
- Implement effective strategies that integrate people, places, processes and technology

Learning Outcomes

• Develop strategies to successfully carry out major initiatives by influencing the decisions and attitudes of others. Examine the concepts of leadership and strategy through a theoretical lens as well as real-life experience and examples of effective approaches.

• Know the ethical priorities and the obligations that engineers have according to NCEES

• Understand the six ethical types, and why ethical lapses occur

• Identify five common ethical dilemmas that occur in engineering

Sessions begin the first Monday of every month
Instructor: Barbara Bartlein
Fee: $79
CEUs: 0.2/PDHs: 2.0

Dimensioning and Tolerancing Certificate

Ensure consistency and quality throughout the entire production process by learning this universal engineering language. View full certificate and course details online at sce-eng.uwm.edu. Individual courses may be taken without pursuit of the certificate.

Earn the certificate by completing three courses in as little as 18 months (not to exceed three years).

Geometric Dimensioning & Tolerancing

Detail critical information on the basics of GD&T. From there, dive into the more difficult principles through lectures, realistic examples, discussions and application problems.

Learn and apply these techniques in datum selection and tolerancing optimization. This approach preserves functional product requirements, while taking into consideration manufacturing difficulties, introducing more producible tolerances, practical datum structures and pre-planning measurement methods.

Learning Outcomes
- Interpret and apply the latest standards – ASME Y14.5-2009
- Reduce drawing changes and interpretation errors while designing for maximum profitability
- Bid contracts with confidence

Learning Outcomes

• Know the ethical priorities and the obligations that engineers have according to NCEES

• Understand the six ethical types, and why ethical lapses occur

• Identify five common ethical dilemmas that occur in engineering

Sessions begin the first Monday of every month
Instructor: Barbara Bartlein
Fee: $79
CEUs: 0.2/PDHs: 2.0

Tolerance Stack-Up Analysis

Apply tolerance stack-up analysis techniques to a variety of assemblies. Explore loop analysis, number charting, virtual condition, resultant condition, inner and outer boundaries, minimum airspace, maximum wall thickness, maximum interference, minimum and maximum overall thickness, and fixed and floating fastener assembly conditions.

Learning Outcomes
- Calculate minimum and maximum wall thicknesses, airspaces and interferences for assemblies
- Examine gaps for assemblies that use a variety of datum structures
- Learn a system of logic and mathematics to analyze tolerances

Wed.-Fri., Apr. 23-25, 8am-4:30pm
(Ends at Noon on Day 3)
Instructor: James Meadows
Fee: $1095
Early Bird: $995 (register by Feb. 23)
CEUs: 1.7/PDHs: 17
Program No. 4830-5983

Gear Technology Certificate Holder
Brendan Bijonowski and Instructor Ray Drago
Gear Technology Certificate
Although some level of complexity is involved with any manufacturing, the fickle and intricate nature of gear technology makes quality training all the more vital. View full certificate and course details on the web at sce-eng.uwm.edu. Individual courses may be taken without pursuit of the certificate. Earn the certificate by attending all three courses within three years.

Advanced Gear Design
Explore manufacturing methods and considerations, inspection and quality control, materials and heat treatment, drawing data requirements, specifications, basics of load capacity rating and lubrication types and methods. With a strong emphasis on the proper selection, design application and use, rather than fabrication, designers, users and beginning gear technologists can all benefit from the curriculum.

Learning Outcomes
• Further your understanding of the manufacturing processes that may be used to bring design concepts to reality
• Create drawings that convey full, complete and unambiguous definitions of gears
• Learn the basic methods of analysis for each of the major design factors (wear, scoring, strength and durability)

Tue.-Thu., Jun. 3-5, 2014, 8am-4:30pm
(Ends at Noon on Day 3)
Instructor: Raymond J. Drago, P.E.
Fee: $1095
CEUs: 1.7/PDHs: 17
Program No. 4830-6523

Fundamentals of Gear Design
Develop your understanding of the history, basic gear tooth nomenclature, types of gears, gear arrangements, theory of gear tooth action, and failure modes and prevention. This course was recently updated and expanded to comprehensively cover important topics relating to gear system design consideration.

Learning Outcomes
• Build your knowledge of modern gear system design and analysis
• Be able to distinguish between types of gears and gear arrangements
• Discuss theory of gear tooth action, and derive parameters as they’re presented

Tue.-Thu., Mar. 25-27, 2014, 8am-4:30pm
(Ends at Noon on Day 3)
Instructor: Raymond J. Drago, P.E.
Fee: $1095
CEUs: 1.7/PDHs: 17
Program No. 4830-6522

PC Application in Parallel Axis Gear System Design and Analysis
Gain an understanding of parallel axis gear design, and learn to use the software tool, PowerGear, to analyze the main parameters involved. (A student version of the software is included in the price of the course.) Cover the basics of gear load capacity evaluation from a theoretical viewpoint, and use the PC as a tool to apply these theoretical concepts.

Learning Outcomes
• Understand durability (surface fatigue & wear), strength (tooth fracture) and scoring
• Discuss typical sets of problematic design parameters from your current work assignments
• Experience hands-on design perspective through group projects

Tue.-Thu., Jul. 22-24, 2014, 8am-4:30pm
(Ends at Noon on Day 3)
Instructor: Raymond J. Drago, P.E.
Fee: $1195
CEUs: 1.7/PDHs: 17
Program No. 4830-6524

WiSE
The Women in Science & Engineering (WiSE) breakfast series serves a nutritious helping of insight, networking and value the first Thursday of every month. Each session examines unique challenges and opportunities for women in these traditionally male-dominated fields. Membership includes unlimited access to the events all year long.

Membership Fee: $60  Student Membership Fee: $20
Non-Member Fee: $20 per session

For more information visit sce-WISE.uwm.edu or contact Marcia Gabriel at 414-227-3378 or gabrielm@uwm.edu.
Plastics Technology Certificate

As in most disciplines, cost savings play an important role in plastics engineering – position yourself to be a valuable and economical asset to your organization. View full certificate and course details online at sce-plastics.uwm.edu. Individual courses may be taken without pursuit of the certificate.

Earn the certificate by completing nine or more days of related courses in as little as 18 months (not to exceed three years).

Designing Plastic Parts for the Injection Molding Process

Prerequisites: Some knowledge of plastic materials, injection molding and engineering principles is useful, although the basics are introduced.

Get a fundamental overview of plastic part design for the process of injection molding – ideal for engineers and designers who are accustomed to working with metals, but faced with metal to plastic concerns. Examine plastic materials, behavior and selection, engineering design, manufacturing considerations and assembly methods.

Learning Outcomes
- Learn how to select an appropriate plastic material formulation
- Discover how to work within the manufacturing limitations associated with the injection molding process
- Understand how to approach plastic product development and establish end use requirements

Mon.-Tue., May 12-13, 8am-4:30pm
Instructor: Nick Schott
Fee: $990
Early Bird: $890 (register by Mar. 12)
CEUs: 1.4/PDHs: 14
Program No. 4830-6068

Plastic Injection Mold Design Basics

Get a practical and comprehensive look at injection mold design and learn to contribute to the overall success of projects. Receive a unique blend of very detailed mold design concepts set forth in the context of the whole design process, and on the final day, participate in that process.

Learning Outcomes
- Understand mold design concepts
- Avoid costly mistakes
- Specify and evaluate your purchases of molds

Mon.-Wed., Apr. 28-30, 8am-4:30pm
Instructor: John Vosmeier
Fee: $1090
Early Bird: $990 (register by Feb. 28)
CEUs: 2.0/PDHs: 20
Program No. 4830-6061

Plastic Injection Mold Design Advanced

Prerequisites: Completion of Plastic Injection Mold Design Basics or a solid knowledge of the subject matter.

Take your understanding of the inner workings of injection molds to the next level. With a focus on cost savings throughout, work on “mini-projects” at each important juncture in order to master advanced concepts.

Learning Outcomes
- Understand advanced parting line, shut-off development, advanced slide and lifter design
- Learn to do advanced cavity and core inserting
- Analyze your current issues regarding the subject matter

Thu.-Fri., May 1-2, 8am-4:30pm
Instructor: John Vosmeier
Fee: $890
Early Bird: $790 (register by Mar. 1)
CEUs: 1.4/PDHs: 14
Program No. 4830-6058

Simply Snap-Fits: Developing World-Class Snap-Fit Attachments

Develop a deep understanding of snap-fit attachments and gain the knowledge to develop snap-fit applications optimized for reliability, manufacturing, assembly and customer usage. With real-life observations, sample parts and a copy of the instructor’s book – The First Snap-Fit Handbook – you’ll have the tools to master the snap-fit technology fundamentals.

Learning Outcomes
- Understand how a snap-fit attachment functions as a complex system of features
- Recognize and avoid many common snap-fit mistakes
- Know the minimum design requirements for a successful snap-fit attachment

Mon.-Tue., Mar. 24-25, 8am-4:30pm
Instructor: Paul Bonenberger
Fee: $890
CEUs: 1.4 / PDHs: 14
Program No. 4830-6712

Other Course:
Silicone Elastomers Technology and Fabrication, see pg. 5

Instructor Nick Schott
Six Sigma Black Belt Training Certificate

Obtain proven six sigma skills and practical experience to transform your organization beyond world-class performance. View full certificate and course details online at sce-eng.uwm.edu.

Earn the certificate by completing all four modules in sequence (i.e. all modules in Spring 2014) and a capstone project. If you are already a Six Sigma Green Belt, you may be able to enroll in Modules III and IV of our Black Belt Series and receive a Black Belt upon completion of a capstone project.

Learning Outcomes

• Understand the DMAIC (Define, Measure, Analyze, Improve and Control) methodology
• Apply the appropriate strategy and statistical techniques to help eliminate mistakes, reduce processing times and decrease operating costs
• Implement advanced control charting methods, hypothesis testing and correlation analysis

Water Technology Certificate

The global water industry is growing rapidly, and according to a recent article in Forbes Magazine, Milwaukee is transforming itself into a water technology mecca. Spread local innovation and leadership throughout your community.

View full certificate and course details online at sce-WaterTechnology.uwm.edu. Individual courses may be taken without pursuit of the certificate.

Earn the certificate by completing nine or more days of related courses in as little as 18 months (not to exceed two years).

Introduction to Wastewater Treatment

Develop a fundamental background in municipal and industrial wastewater treatment, from theory to practical applications with real-world case studies. Build your knowledge base with an overview that includes relevant legislation, sampling and analytical procedures, and wastewater treatment processes.

Learning Outcomes

• Gain an understanding of the Clean Water Act
• Identify physical, chemical and biological treatment processes
• Know the basics in municipal and industrial treatment options

Thu., Feb. 27, 8am-4:30pm
Instructor: Dick Osantowski, P.E.
Fee: $290
CEUs: 0.7/PDHs: 7.0
Program No. 4830-5920
Phosphorus Compliance Innovations to Improve Water Quality

Because of new phosphorus control regulations, watershed-focused compliance options for point sources are “ready for primetime.” Implementing the watershed adaptive management option and water quality trading require point sources and agricultural producers to understand each other’s needs. Develop your understanding of the financial, technical and time constraints that participants face as well as the key issues that need to be addressed to create an agreement that can be approved by regulators and implemented by the parties.

Learning Outcomes
- Delve into this novel approach to improving water quality, with leaders who are actively involved
- Explore two ongoing examples of point sources, including the evaluation and planning phases of watershed adaptive management
- Understand how leaders with a variety of perspectives on the issue view moving forward with adaptive management and water quality trading projects

Thu., Mar. 6, 8am-4:30pm
Instructors: Chris Clayton and South-eastern Wisconsin Watersheds Trust, Inc. (Sweet Water)
Fee: $195
CEUs: 0.7/PDHs: 7.0
Program No: 4830-6785

Sustainable Water-Centric Communities

Discover a major shift in the way new cities will be built and older ones retrofitted to achieve sustainable development. Learn how the future sustainable city will power itself with renewable sources of energy, conserve and reuse water, create the smallest possible ecological footprint, recover resources from used water and organic solids, and produce the lowest quantity of pollution possible.

Learning Outcomes
- Apply a new paradigm to the cities of the future
- Restore and develop a functioning landscape community, resilient to increased flooding
- Understand sustainability planning and implementation for a large water/stormwater utility

Course Accessible: Apr. 7-May 30
Instructor: Vladimir Novotny
Fee: $695
CEUs: 1.8/PDHs: 18/ACIP CM: 18
Program No. 4830-6783

Water Harvesting Systems and Application

Get an overview of water harvesting system intent, usage, design and installation. Learn about the components and operation of residential and commercial systems. This includes detailed information on tank sizing, filtration and water quality, controls, and operational requirements.

Learning Outcomes
- Learn water harvesting principles and technologies
- Participate in a design exercise for practical application
- Review case studies and concepts

Fri., Apr. 11, 8am-4:30pm
Instructor: Mike Warren
Fee: $145
CEUs: 0.7/PDHs: 7.0/GBCI: 7.0
Program No. 4830-6023

Wisconsin Sedimentation & Erosion Control Inspector (WISECI)™ Best Management Practices

Learn techniques to establish stormwater Best Management Practices (BMPs) for your construction site, and eliminate problems before they cause higher costs and slowdowns for your project. Save time and money by avoiding erosion and sediment releases. Learn about proper installation and maintenance of typical BMPs as well as proper documentation to help keep your project in compliance with local and state regulations.

Learning Outcomes
- Develop expertise in site inspection and reporting
- Assess erosion and sedimentation releases
- Earn the designation WISECI when you pass the exam at the end of this course

Thu.-Fri., Mar. 13-14, 8am-4:30pm
Instructors: Kellen Black, Scott Bordeau, Minalah Hamd, Bryan Harstook, Ginny Plumeau, Peter Shedivy
Fee: $395
CEUs: 1.4/PDHs: 14
Program No. 4830-5976
ONSITE TRAINING

Capitalize on our Capabilities

Any of our engineering programs can be customized to meet your organization’s unique and specific employee development needs. Onsite training helps you:

- **Contain Costs** by eliminating or reducing travel, food and lodging expenses.
- **Maximize Convenience** by choosing your optimal dates, times and location.
- **Save Time** with staff spending fewer hours away from work.
- **Build Teamwork** through group brainstorming and shared learning experiences.
- **Custom Tailor Content** to your needs to accomplish specific organizational objectives. Or, use the curriculum as-is.

FOR MORE INFORMATION

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SCE-CUSTOMIZED.UWM.EDU

“The onsite training classes provided opportunities for me to learn about the Industry, especially in areas where I have no experience. The Engineering Series equipped me with additional knowledge I now use to bid and work on different types of projects.”

James Buckner, Project Manager, Kenny Construction
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Enrolling for School of Continuing Education courses is quick and easy! Select the option most convenient for you. Please include the message code and keycode, located to the left of your name on the back cover of this catalog, with your registration.

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Milwaukee, WI 53293-0491

CUSTOMIZED
Rachelle Perotto,
Program Director
414-227-3243
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DON’T FORGET TO USE MESSAGE CODE
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ATTENTION
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