

Installer Certification Training

July 22-24 in Oak Brook, IL

Take an intensive two and a half day course from Charles Remund who is writing the new IGSHPA geothermal installer training manual titled "Design and Installation of Residential and Light Commercial GSHP Systems." Cover it all and more and get more than just the installer certificate – learn how to do it right for your customer.

Duration: ●●● three days

Early Bird Cost: \$1,299

Regular Cost: \$1,399

Topics Covered:

- Heat pump selection
- Closed loop design
- Loop installation
- Thermal conductivity
- Start-up and checkout
- Pipe joining (fusion)
- Marketing and sales
- Certification exam (open book)

Value:

- Your accredited company listed on IGSHPA
- 7 books on Installation and Design Standards
- Taught by leading US geothermal experts

Instructor Spotlight

Dr. Charles Remund

Certified IGSHPA Instructor, Certified Geothermal Designer

Dr. Remund has over 20 years of experience installing and designing geothermal systems. He has been a certified instructor for IGSHPA since 1994. He has been on the Mechanical Engineering faculty at South Dakota State University since 1988, where he teaches thermodynamics, heat transfer, fluid dynamics, design of thermal systems and applied laboratory courses. Dr. Remund has been principle investigator on many research projects associated with ground source heat pumps, specifically addressing heat transfer characteristics of grouting materials, soil and rock. He worked with regional electric utilities and the Geothermal Heat Pump Consortium through the Northern Geothermal Support Center at SDSU, through which hundreds have been trained in various aspects of ground source heat pump design and installation. Training and outreach activities continue in a limited capacity at SDSU, while Dr. Remund has become involved in private efforts to promote ground source heat pumps through design assistance, soil and rock formation thermal conductivity testing, and technical support for thermally-enhanced grouting materials.

www.heatspring.com



SAVE \$50
Register online for any class
before July 12 with discount
2039

HeatSpring Energy is hosting five all-day seminars on geothermal heat pump system design and installation. Select the day that interests you most. Take more than one day, and get a discount. Seminar descriptions inside.

Oak Book, IL

July 21-22: 2-Day OVERVIEW SERIES:

- Day 1 - Intro 101: Fundamentals of the Heat Pump
- Day 2 - Design 101: Design Basics

July 23-24: 2-Day DESIGN SERIES

- Day 1 - Design 201: Large Scale Closed Loop Design
- Day 2 - Design 202: Commercial Open Loop Design

July 22-24: 3-DAY INSTALLER CERTIFICATION

- Installation 101: Installer Certification

Overview Series

July 21-22 in Oak Brook, IL

Intro 101: Fundamentals of the Heat Pump

Hear from an impressive PE, PhD, consulting engineer on the fundamentals of geothermal system technology: how heat pumps work; ground as a heat source and sink; system types; case studies design issues; expected performance; and the economics of a system.

Design 101: Design Basics

Engage in a lively day with John Manning, a PE who shares his 25 years of unique professional experiences in mechanical engineering and geothermal system installation to cover: the issues related to designing systems; the significance of various elements that impact system performance; the trade-offs associated the different types of solutions; walk through a full residential project from start to finish.

Duration: ●● two days
Early Bird Cost: \$745 (\$445 per day)
Regular Cost: \$795 (\$495 per day)

AIA Approved - 8 HSW LU Hours per day

*Classes taken individually or together as a series

Instructor Spotlight

John Manning, PE, LEED AP

John D. Manning, PE is founder and President of Earth Sensitive Solutions, LLC (ESS), an engineering and consulting firm committed to reducing our collective environmental footprint. He has over 25 years of experience in mechanical engineering and geothermal system installation and design.

With six patents in heat pump design as well as three years as an installing contractor, Mr. Manning brings a unique perspective to system design. This perspective combined with a compassionate sensitivity to environmental impact has provided hundreds of opportunities to contribute to the overall success of geothermal projects from Port Augusta, Australia to Auburn, NY. These projects include hospitals, office buildings, academic facilities, dormitories, military housing, and low-income housing projects, as well as the first LEED 2.0 Gold rated facility, the Cambria PA DEP Office in Ebensburg, PA.

Design Series

July 23-24 in Oak Brook, IL

Design 201: Large Scale Closed Loop Design

Let an expert walk you through a day on the design of geothermal HVAC systems for commercial and institutional buildings from an engineering perspective. Dr. Steve Kavanaugh gives an in depth technical design review on ground thermal properties; software design examples; equipment selection and sizing; design economics and quality.

Design 202: Commercial Open Loop System Design.

Get the nuts and bolts of Open Loop System design from the perspective of a mechanical engineer who is a recognized leading expert in the U.S. geothermal industry. Go through Open Loop design strategy; standards, specification and regulations; water disposal; and cost issues with Kevin Rafferty, PE.

Duration: ●● two days
Early Bird Cost: \$745 (\$445 per day)
Regular Cost: \$795 (\$495 per day)

AIA Approved - 8 HSW LU Hours per day

*Classes taken individually or together as a series

Instructor Spotlight

Dr. Steve Kavanaugh

Dr. Kavanaugh has been involved with ground source heat pump research and development for 20 years. He is the author of two books on the subject and has published several articles in the American Society of Heating, Ventilating, and Air-Conditioning Engineers (ASHRAE) Transactions and Journal. He is a co-author of the ASHRAE book, "Ground Source Heat Pumps: Design of Geothermal Systems for Commercial and Institutional Buildings". He is the former chair of ASHRAE Technical Committee 6.8 on Geothermal Energy, has served as a consultant to many electric utilities, and has conducted over one hundred GSHP design seminars for design professionals. Dr. Kavanaugh has been a Professor of Mechanical Engineering at the University of Alabama since 1985. He teaches courses in HVAC, Energy Conservation, Heat Transfer, Instrumentation, Senior Design I and II, and Capstone Design. His publications include 34 refereed journal articles, 15 refereed conference articles, 17 conference articles, 25 research reports, and numerous design notes. He also developed GCHPCalc, a software package for large GSHP system design.