

MIDWEST RENEWABLE ENERGY ASSOCIATION

STUDENT HANDBOOK

Program and Course Information

Updated September 2020



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1.0 MREA Mission and Vision

The MREA is a non-profit, 501(c)3 tax-exempt organization.

1.1 Mission Statement

The Midwest Renewable Energy Association promotes renewable energy, energy efficiency, and sustainable living through education and demonstration.

1.2 Vision Statement

The MREA will provide the highest quality renewable energy education and training experiences available. Our programs and services will respond to evolving energy issues, empower people to make wise lifestyle choices, and be accessible to the broadest possible audience. We will share our success with other like-minded organizations, recognizing that we are stronger when we all work together for our common goals.

1.3 Non-Discrimination Policy

The MREA does not discriminate on the basis of age, ancestry, color, creed, disability, gender identity, marital status, national origin, political affiliation, race, religion, sex, sexual orientation, or any other class protected by law. The MREA does not discriminate on the basis of these characteristics in providing educational services or in hiring qualified staff and instructors.

1.4 Commitment to Safety and Safe Practices

The MREA is committed to safety and safe practices in training and in the workplace. It is the responsibility of all MREA instructors and staff to ensure that the workplace remains safe and that all training is completed in a safe and professional environment. If an MREA instructor identifies any unsafe conditions or unsafe work practices, he or she shall immediately report the situation to the MREA Site Manager or other available MREA staff member, who shall take immediate steps to remedy the unsafe environment or practice. All MREA courses shall comply with industry standard safety practices for the technology being taught, including appropriate OSHA standards.

1.5 Commitment to Quality and Continuous Improvement

Course standards and prerequisites are reviewed periodically at the MREA All-Instructor Meeting, using relevant evaluation data collected from course participants, as well as input from MREA instructors. The MREA Training Director and staff organize modifications to course standards, and subsequently to course materials, with participation from instructors, training partners, and renewable energy professionals. The MREA is committed to providing education and training that is up-to-date, relevant, flexible, accessible, industry relevant, and meets the needs and expectations of course participants.

2.0 MREA Staff and Board of Directors

2.1 MREA Staff

The MREA is comprised of a Leadership Team that includes the Board of Directors and three MREA staff members.

Leadership Team:

- Nick Hylla, Executive Director nickh@midwestrenew.org
- Gina Miresse, Development Director ginam@midwestrenew.org
- Amiee Wetmore, Operations Director amieew@midwestrenew.org

MREA Staff:

- Madison Andropolis, MCHS AmeriCorps Member madisona@midwestrenew.org
- Taylor Ball, Events Coordinator taylorb@midwestrenew.org
- Ellen Barlas, Solar Workforce Manager ellenb@midwestrenew.org
- Julie Brazeau, Training Contract Manager julieb@midwestrenew.org
- Leon Dulak, Site Manager leond@midwestrenew.org
- Kyle Galloway, Development Assistant kyleg@midwestrenew.org
- Jenny Heinzen, Training Director jennyh@midwestrenew.org
- Kaitlyn Kohl, Communications Manager kaitlynk@midwestrenew.org
- Greta Ladenthin, Training Manager gretal@midwestrenew.org
- Kay Martin, Bookkeeper kaym@midwestrenew.org
- Nick Matthes, Solar Project Manager matthes@midwestrenew.org
- Marta Monti, Solar Program Manager marta@midwestrenew.org
- Peter Murphy, Solar Program Director peterm@midwestrenew.org
- Jordan Pupols, Events Manager jordanp@midwestrenew.org
- Amanda Schienebeck, Solar Project Coordinator amandas@midwestrenew.org
- Mark Stultz, IT Administrator marks@midwestrenew.org

2.2 Board of Directors

Board meetings are open to MREA members and the general public. All MREA members in good standing can vote for the Board of Directors. Each membership (either individual or family) receives one ballot. Board members are elected to two-year staggered terms. Individuals interested in running for the Board of Directors must also be MREA members in good standing.

Executive Committee:

PRESIDENT: Jack O'Donohue – Grange, IL
VICE PRESIDENT: Stanley Minnick – La Farge, WI
FINANCIAL OFFICER: Carol Fisher – Madison, WI
SECRETARY: Lisa Pawlisch – St. Paul, MN

MREA Board Members:

- Denise Abdul-Rahman – Indianapolis, IN
- Gary Dreier – Stevens Point, WI
- Nick Hylla – Custer, WI
- Alex Jarvis – Bloomington, IN

- Mark Klein – Amherst, WI
- Jack Kluempke – Saint Cloud, MN
- Pam Ritger – Milwaukee, WI
- Becky Soglin – Iowa City, IA
- Boryana Straubel – California
- Eric Udelhofen – Madison, WI

2.3 Board of Directors Conflict of Interest Policy

The MREA does not endorse or promote board members, their companies, or their products or services. Board members will not use their association with the organization to imply any endorsement. MREA does not grant preferential treatment toward board members or their companies when selecting instructors or contracting for work to be done on MREA projects or facilities.

Concerns regarding conflict of interest, or requests for our full policy, should be directed to any member of the MREA's Executive Committee.

3.0 MREA Facilities

The MREA has two offices in Wisconsin, one in Minnesota, and travels to provide training throughout the Midwest. MREA headquarters are located at the Renew the Earth Institute in Custer, Wisconsin.

3.1 Renew the Earth Institute (REI) – Custer, WI

The Renew the Earth Institute (REI) is a 4,200 square foot building on 20 rolling acres where people of all ages can learn about renewable energy, energy efficiency, sustainable living and other environmental issues. The REI has a number of working renewable energy systems (PV, solar thermal, and small wind), hands-on educational displays, demonstration gardens, a resource library, classroom, and conference room. The building incorporates energy efficient features, including passive solar design, standing-seam metal roof, day lighting, energy efficient light fixtures, solar tubes, a masonry stove, and in-floor radiant heat. The North Building has additional classroom and lab facilities, as well as more functioning renewable energy systems. Visitors can take guided and self-guided tours of the facilities and renewable energy systems.

7558 Deer Road
Custer, WI 54423
715-592-6595
715-592-6596 (fax)

3.2 Electric Vehicle Charging at the REI

The Renew the Earth Institute (REI) in Custer, WI has eight electric vehicle charging stations available for public use, located underneath the PV carport.

- ABB Fast Charger
- Tesla Charging Station
- Clipper Creek Charging Stations (6)

The ABB Terra 53 DC Fast Charger is equipped with a CHAdeMO connector as well as a CCS connector. The charger can provide up to 50 kW of power but generally runs around 35 kW.

Payments are accepted through GreenLots registration. Tesla owners must provide a conversion (adapter) from CHAdeMO or CCS to connect to the ABB Fast Charger.

The Tesla Level II High Power Connector (19.2 kW) can provide up to 80 amps at 240 volts. Cost to charge is free, but donations to the MREA are appreciated.

The six Clipper Creek Level II, HCS40R, 7.7 kW charging stations provide up to 30 amps at 240 volts. Cost to charge is free, but donations to the MREA are appreciated.

3.3 Milwaukee Office

In 2008, the MREA opened an office in Milwaukee. The goal of the Milwaukee office is to increase training and educational opportunities in southeast Wisconsin and beyond. The Milwaukee Office allows the MREA to easily collaborate with other organizations like Milwaukee Shines, the City of Milwaukee's Solar America City program, the Urban Ecology Center, Milwaukee Habitat for Humanity, and Milwaukee Community Service Corps. In September of 2015, the Milwaukee office moved from its former location on Farwell Avenue to Escuela Verde, a public charter school designed to support students interested in sustainability, student-led learning, and restorative justice.

Peter Murphy (Solar Program Director) and Marta Monti (Solar Program Manager) are based in the Milwaukee office.

3628 West Pierce Street
Milwaukee, WI 53215
414-988-7963

3.4 Offsite Training

The MREA offers courses at the Renew the Earth Institute (REI) in Custer, WI, as well as online and throughout the Midwest at various schools, training facilities, and events. Training can be delivered at technical and community colleges, universities, community centers, offices, shops, labs, production/manufacturing facilities, or any other space that meets the requirements listed in Section 6.1. Customized training is available for groups or events upon request.

4.0 Accreditation and Curricula

The MREA strives to meet the "General Requirements for the Accreditation of Clean Energy Technology Training" as defined in the Interstate Renewable Energy Council (IREC) Standard 01023:2013. MREA course objectives are intentionally aligned with the Job Task Analyses (JTAs) and Learning Objectives outlined by the North American Board of Certified Energy Practitioners (NABCEP) for their Associate Programs and Solar Professional Board Certifications.

4.1 Curricula and Syllabi

MREA training programs are based on defined curricula and syllabi, which together with course prerequisites cover the content of relevant job task analyses. Course expectations and learning objectives are clearly stated in the syllabus for each course. Course evaluations and quizzes are used to assess learning outcomes. Instructors and industry professionals work with MREA staff to keep course curricula and materials up-to-date and accurate.

4.2 Curricula Management

MREA training materials are developed through a participatory process between MREA staff and instructors, and form the basis for course presentations, resources, activities, worksheets, and assessments. Course materials are reviewed by MREA staff and contracted instructors on an ongoing basis and through periodic instructor meetings. Modifications to MREA course materials are the result of peer review by contracted instructors and industry experts. Any changes made are reported annually to IREC. (See Section 4.4)

4.3 Student Learning Assessment

Assignments and quizzes are used to assess student learning for stated learning objectives in each course. In addition, course evaluations are used to collect information from participants regarding the quality and efficacy of instructors, course content and materials, as well as the MREA registration process and facilities. These evaluations provide the MREA with feedback to improve our training programs. Course evaluations are anonymous. Compiled and summarized results of course evaluations are shared with instructors during their annual review, or upon request. (See Section 8.2)

4.4 Accreditation

The MREA meets the accreditation requirements defined in IREC Standard 01023:2013: “General Requirements for the Accreditation of Clean Energy Technology Training.” IREC Training Provider Accreditation includes the following MREA courses:

- Basic Photovoltaics (PV 101)
- PV Site Assessment (PV 201)
- PV System Design (PV 202)
- PV Exam Prep (PV 220)
- PV Labs and Design Scenarios (PV 304)
- PV Sales and Finance (PV 435)
- Navigating the NEC (G 110)

5.0 Course Delivery

The MREA delivers courses both online, as well as in a traditional classroom or lab setting. Some courses may contain a combination of classroom, lab, and online activities.

Online courses are delivered in one of three formats:

- Online Tutorials (See Section 5.2)
- Self-Paced, Instructor-Led (See Section 5.3)
- Independent Study (See Section 5.4)

5.1 Classroom and Lab Courses

The MREA conducts training throughout the Midwest, either at the Renew the Earth Institute (REI) in Custer, Wisconsin (MREA headquarters) or in other adequate facilities including but not limited to: community and technical colleges, universities, conference rooms, community and convention centers, and office spaces.

Training sites must meet the following requirements:

- Accessibility must conform to the Americans with Disabilities Act (ADA) and be available to all course participants.

- The site must meet all safety and occupancy codes of the jurisdiction where it is located.
- There should be a minimum of 25 square feet of floor space per course participant.
- Acoustics and lighting should be adequate for hearing clearly and reading/writing/working.
- Ventilation and temperature control should be adequate for the health and comfort of course participants and instructors.

Letters of Completion are distributed at the end of the course. The MREA permanently retains electronic copies and records for requested duplicates and transcripts. (See Section 11.5)

The following courses are available only in a classroom or lab setting, and are not available online:

- Roof-Mount PV System Design and Installation Lab (PV 302)
- PV Labs and Design Scenarios (PV 304)
- Inspecting PV Systems (PV 602-603-604)

5.2 Online Tutorials

Online Tutorials are available year-round, and without any instructor interaction. They are free for MREA members. The presentations and resource materials are accessed via the MREA online course website (mreacourses.org) and the courses contain no assignments or quizzes. There is no start or end date, and participants do not receive a Letter of Completion or continuing education credits.

The MREA currently offers the following Online Tutorials for MREA members:

- Introduction to Renewable Energy (G 101)
- Solar Electricity (PV 050)
- Solar Hot Water Systems (ST 101)
- Understanding Stray Voltage on Dairy Farms (G 075)
- Wind Electricity (W 050)
- Working with Electricity (G 070)

5.3 Self-Paced, Instructor-Led, Online Courses

Self-paced, instructor-led, online courses are typically two to eight weeks in length and include weekly live review sessions or office hours with the course instructor. Presentations, resources, assignments, and quizzes can be accessed at any time via the MREA online course website (mreacourses.org) as of the start date(s).

If the course includes weekly review sessions, they are recorded and posted on the course page for later listening. Participants are encouraged to stay with the pace of the course and take advantage of the live sessions as a chance to interact with the instructor and classmates, but participation is not required.

If the course includes instructor office hours for questions and guidance with assignments and quizzes, those meetings are not recorded or posted. Participation is not required.

Letters of Completion are emailed to those who successfully complete a course. The MREA permanently retains electronic copies and records for requested duplicates and transcripts. (See Section 11.5)

The following courses are available online, in a self-paced format with weekly instructor review sessions that are recorded and posted for later listening:

- Battery-Based PV System Design (PV 420)
- PV System Operations & Maintenance (PV 425)
- Introduction to System Advisor Model [SAM] (PV 430)

- PV Sales and Finance (PV 435)

The following courses are available online, in a self-paced format with weekly instructor office hours, but do not contain scheduled/recorded/posted review sessions:

- Basic Photovoltaics (PV 101)
- PV Site Assessment (PV 201)
- PV System Design (PV 202)

Basic Photovoltaics (PV 101), PV Site Assessment (PV 201) and PV System Design (PV 202) are open for registration at any time. A new offering starts each month. For those who do not begin the course on the first of the month, ample time will be allotted to finish the course activities.

- PV 101: Four weeks
- PV 201: Four weeks
- PV 202: Eight weeks

See section 11.3 for more information about cancellation, refund, transfer, and extension policies.

5.4 Independent Study (Online) Courses

Seven of MREA's online courses are offered in an independent-study format. There are no start or end dates, no review sessions, registration is open year-round, and participants can work at their own pace. The following courses are available online in an Independent Study format:

- Navigating the National Electrical Code (G 110)
- Working with Electricity (PV 104)
- PV Exam Prep (PV 220)
- Fire Code Regulations for PV Systems (PV 620)
- Introduction to Wind Energy (W 101)
- Small Wind Site Assessment (W 201)

6.0 Course Levels and Numbering System

MREA courses are numbered to designate levels of participant knowledge and experience. The three-digit course number indicates the "level" of training. Numbers after the three-digit course number indicate a session/offering number for that year. (PV 101.01, e.g.)

6.1 Introductory Courses (100-Level)

100-level courses are introductory in nature, have no prerequisites, and can be held either online or in a classroom setting. They contain lecture or presentation materials, resources, activities, and quizzes. 100-level courses are often the prerequisite for 200-level courses (and higher) of the same technology.

6.2 Entry-Level Courses (200-Level)

200-level courses are technology-specific and typically require an introductory course (prerequisite) or experience in the related field to enroll. 200-level courses are offered online or in a classroom setting.

6.3 Hands-On Training (300-Level)

300-level courses are hands-on (workshop) or installation-based, where physical attendance and participation is required. They contain one or more prerequisites, NABCEP Associate status, or field experience to enroll.

6.4 Advanced Courses (400-Level)

400-level courses contain advanced subject material in a specific technology. They are designed for those with previous experience, NABCEP Associate status, or NABCEP Certification. These courses often include continuing education credits (CECs) for NABCEP Certification renewal, and can be offered either online or in the traditional classroom setting.

6.5 Customized Training (600-Level)

600-level courses are primarily intended for code officials, electricians, inspectors, and other Authorities Having Jurisdiction (AHJs) but may also be suitable for advanced design and installation audiences. These courses can be held online or in a traditional classroom setting. Prerequisites may include an introductory-level course, field experience, and/or a license or certification in a related field.

6.6 Instructor Institutes (700-Level)

700-level courses are “train-the-trainer” courses designed for instructors who are active in a renewable energy training program at a partnering school or institution. These can be hybrid courses that contain both online and hands-on components, or they can be taken online as an Independent Study course.

7.0 Courses, Programs, and Prices

For information regarding current course offerings and prices, visit midwestrenew.org/course-offerings, call the MREA at 715-592-6595 or refer to the annual Training Catalog. MREA Members receive a \$20 discount on courses, and Business Memberships include a \$20 discount on courses for two employees.

More information on MREA membership levels, benefits, and prices can be found at midwestrenew.org/membership.

7.1 Photovoltaic (PV) Courses

The MREA offers the following PV courses:

	<u>MREA Members</u>
• Basic Photovoltaics (PV 101)	\$115
• Working with Electricity (PV 104)	\$55
• PV Site Assessment (PV 201)	\$175
• PV System Design (PV 202)	\$295 + textbook
• PV Exam Prep (PV 220)	\$75
• Roof-Mount PV System Design and Installation Lab (PV 302)	\$325
• PV Labs and Design Scenarios (PV 304)	\$250
• Battery-Based PV System Design (PV 420)	\$125
• PV System Operations & Maintenance (PV 425)	\$125
• Introduction to System Advisor Model [SAM] (PV 430)	\$135
• PV Sales and Finance (PV 435)	\$155
• Inspecting PV Systems (PV 602-603-604)	Varies
• Fire Code Regulations for PV Systems (PV 620)	\$55

7.2 Small Wind (W) Courses

The MREA offers the following small wind courses:

- Introduction to Wind Systems (W 101) \$95
- Small Wind Site Assessment (W 201) \$95

7.3 General Renewable Energy (G) Courses

The MREA offers the following general renewable energy course:

- Navigating the NEC (G 110) \$95

7.4 Solar Training Academy

In an effort to bring the MREA's most popular courses to locations where training is needed, market potential is high, and career opportunities exist, the MREA offers Solar Training Academies in Wisconsin, Minnesota, Illinois, and Iowa.*

Participants in the Solar Training Academy generally meet one weekend per month, and work through the MREA's PV course progression: PV 101, 201, 202, 204, and 220. Graduates qualify to sit for the NABCEP PV Associate exam, offered on the last day of the Academy.

Fees for the Solar Training Academy include:

- 48 hours of instructor-led training
- Textbook
- Binder and thumb drive with course materials
- Access to online resources and course materials
- NABCEP PV Associate Exam

*Please note this Handbook was updated in September 2020 to reflect scheduling changes made due to the COVID-19 virus and the MREA's effort to provide a safe training environment. All in-person training ceased in March, and dates for future trainings are under consideration.

7.5 NABCEP PV Associate Exam

The North American Board of Certified Energy Practitioners (NABCEP) offers an Associate program as well as Certifications in PV and Solar Heating. The MREA is an approved PV Associate exam provider. MREA course participants who successfully complete PV 101, 201, and 202 are eligible to sit for the NABCEP PV Associate exam. The MREA strives to align its curriculum with the learning objectives set forth by NABCEP in their Job Task Analyses (JTAs). Registration links for the paper and the online exams are located on the MREA website at midwestrenew.org/nabcep-credentials.

7.6 MREA PV Site Assessment Endorsement

On October 31, 2018, the MREA officially retired the Site Assessment Certificate Program, as well as the Recognized Training Provider (RTP) Program, and replaced it with the PV Site Assessment Endorsement. To achieve the PV Site Assessment Endorsement, students must:

- Have (previously) earned the PV Site Assessment Certificate, or
- Have completed Basic Photovoltaics (PV 101) and PV Site Assessment (PV 201), passed the PV Site Assessment Endorsement exam, and have a minimum of 100 hours of related work experience verified by an employer.

The Employer Verification Letter and more information about the PV Site Assessment Endorsement can be found at midwestrenew.org/endorsements.

A minimum score of 84% is required to pass the Site Assessment Endorsement exam, which can be taken online at www.mreacourses.org. A retake exam is available after a two week waiting period. The exams are comprised of 50 multiple-choice questions that have undergone peer review and an interrater reliability process to determine cut and passing scores.

8.0 Academic Progress, Assessment, and Continuing Education

8.1 Course Completion Requirements

Courses are graded as either PASS or DROP in the MREA electronic database. Students who diligently complete all required coursework (assignments, labs, quizzes, e.g.) pass the course and receive a Letter of Completion. The MREA does not employ percentage or letter grading for its courses. Participants receive a Letter of Completion as long as they meet the coursework and attendance requirements for a given course.

Participants must be present for the full duration of and actively participate in the course to receive a Letter of Completion. (See Sections 5.3 and 11.5)

8.2 Assessment Procedures

Students will be assessed on their ability to perform the tasks outlined in the Learning Objectives (contained within the syllabus) for the course. Classroom and lab courses contain worksheets, online activities, job task lists, and/or quizzes. Online courses contain assignments and quizzes that assess a student's performance and comprehension.

8.3 Continuing Education Credits

Many of the MREA's courses are approved for continuing education with the North American Board of Certified Energy Practitioners (NABCEP) and state licensing agencies for licensed professionals in Iowa, Minnesota, and Wisconsin.

The following MREA courses are registered for NABCEP advanced training and continuing education:

- Navigating the NEC (G 110)
 - PV Installation Professional, PV Design Specialist, PV Commissioning & Maintenance Specialist, and PV Technical Sales Professional Exams (6 JTA & NEC)
 - PV Installation Specialist Exam (6 JTA)
 - Solar Heating Installer Exam (6 NEC)
 - PVIP, PVDS, PVIS & PVCMS Recertification (6 NEC, JTA & RE Elective)
 - PVTs Recertification (6 JTA & RE Elective)
 - SHI Recertification (6 NEC & RE Elective)
 - PV Associate, Solar Heating Associate & Small Wind Associate Renewal (6)
- Roof-Mount PV System Design and Installation Lab (PV 302)
 - PV Installation Professional, PV Design Specialist & PV Installation Specialist Exams (14 JTA)

- PV Installation Professional, PV Design Specialist, PV Installation Specialist, PV Commissioning & Maintenance Specialist, PV Technical Sales Professional, and Solar Heating Installer Exams (4 NEC)
- PV Commissioning & Maintenance Specialist and PV Technical Sales Professional Exams (10 JTA)
- PVIP, PVDS, PVIS, PVCMS & SHI Recertification (4 NEC)
- PVIP Recertification (14 JTA)
- PVIP, PVDS, PVIS, PVCMS, PVTS & SHI Recertification (12 RE Elective)
- PVDS, PVIS, PVCMS & PVTS Recertification (10 JTA)
- PV Associate, Solar Heating Associate & Small Wind Associate Renewal (12)
- PV Labs and Design Scenarios (PV 304)
 - PV Installation Professional & PV Design Specialist Exams (8 JTA)
 - PVIP, PVDS & PVIS Recertification (8 JTA & RE Elective)
 - PVCMS, PVTS & SHI Recertification (8 RE Elective)
 - PVTS Recertification (4 JTA)
 - PV Associate Renewal (8)
- Battery-Based PV System Design (PV 420)
 - PV Installation Professional & PV Design Specialist Exams (4 JTA)
 - PV Installation Professional, PV Design Specialist, PV Installation Specialist, PV Commissioning & Maintenance Specialist, PV Technical Sales Professional, and Solar Heating Installer Exams (0.5 NEC)
 - PV Technical Sales Professional Exam (2 JTA)
 - PVIP, PVDS, PVIS, PVCMS & SHI Recertification (0.5 NEC & Building or Fire Code)
 - PVIP & PVDS Recertification (4 JTA & RE Elective)
 - PVIS, PVCMS, PVTS & SHI Recertification (4 RE Elective)
 - PV Associate Renewal (4)
- PV System Operations and Maintenance (PV 425)
 - PV Installation Professional, PV Installation Specialist, and PV Commissioning & Maintenance Specialist Exams (4 JTA & NEC)
 - PV Design Specialist, PV Technical Sales Professional & Solar Heating Installer Exams (4 NEC)
 - PVIP, PVDS & SHI Recertification (4 NEC & RE Elective)
 - PVIS & PVCMS Recertification (4 NEC, JTA & RE Elective)
 - PVTS Recertification (4 RE Elective)
 - PV Associate Renewal (4)
- Introduction to System Advisor Model [SAM] (PV 430)
 - PV Installation Professional, PV Commissioning & Maintenance Specialist, and PV Technical Sales Professional Exams (4 JTA)
 - PVIP, PVCMS & PVTS Recertification (4 JTA & RE Elective)
 - PVDS, PVIS & SHI Recertification (4 RE Elective)
 - PV Associate Renewal (4)
- PV Sales and Finance (PV 435)
 - PV Installation Professional Exam (4 JTA)
 - PV Technical Sales Professional Exam (7 JTA)
 - PVIP Recertification (5 JTA)
 - PVIP, PVDS, PVIS, PVCMS, PVTS & SHI Recertification (6 RE Elective)
 - PVTS Recertification (7 JTA)
 - PV Associate, Solar Heating Associate & Small Wind Associate Renewal (7)

- Inspecting PV Systems (PV 604)
 - PV Installation Professional and PV Commissioning & Maintenance Specialist Exams (4 JTA)
 - PVIP, PVIS, PVCMS & PVTS Recertification (4 JTA)
 - PVIP, PVDS, PVIS, PVCMS, PVTS & SHI Recertification (4 RE Elective)
 - PV Associate Renewal (4)
- Fire Code Regulations for PV Systems (PV 620)
 - PV Installation Professional Exam (1 JTA)
 - PVIP, PVDS, PVIS, PVCMS & SHI Recertification (0.5 NEC, 1 JTA, 1 Building/Fire Code, 1 RE Elective)
 - PVTS Recertification (1 JTA & 1 RE Elective)
 - PV Design, Installation, and Commissioning & Maintenance Specialist Exams (0.5 NEC)
 - PV, Solar Heating & Small Wind Associate Renewal (1)
 - PV System Inspector Recertification (0.5)

The following MREA courses have been approved for continuing education by the Iowa Department of Public Safety for Master, Journeyman & Residential Electricians, when taught by an approved instructor:

- Basic Photovoltaics (PV 101) – 7.5 Non-Code hours
- PV Site Assessment (PV 201) – 7.5 Non-Code hours
- PV System Design (PV 202) – 4 Code & 12 Non-Code hours
- PV Exam Prep (PV 220) – 5.5 Non-Code hours
- PV Labs and Design Scenarios (PV 304) – 7.5 Non-Code hours

The following MREA courses have been approved for continuing education by the Minnesota Department of Labor and Industry, when taught by an approved instructor:

- Basic Photovoltaics (PV 101) – 4 Other hours (Electrical)
- PV System Design (PV 202) – 6 Code/Energy & 10 Other hours (Electrical)
- PV Labs and Design Scenarios (PV 304) – 8 Other hours (Electrical & Elevator)
- Battery-Based PV System Design (PV 420) – 4 Other hours (Electrical & Building Officials)
- PV System Operations and Maintenance (PV 425) – 4 Other hours (Electrical & Building Officials)
- Inspecting PV Systems (PV 602/603/604) – 2 Code/Energy hours (Electrical)

The following MREA courses have been approved for continuing education by the Wisconsin Department of Safety and Professional Services (DSPS):

- Navigating the NEC (G 110) – 6 hours (classroom or online)
 - Commercial & UDC-Electrical Inspectors
 - Dwelling Contractor Qualifiers
 - Industrial Journeyman Electricians
 - Journeyman & Master Electricians
 - Registered Electricians
 - Residential Journeyman & Master Electricians
- Basic Photovoltaics (PV 101) – 7.5 hours (classroom or online)
 - Commercial & UDC-Electrical Inspectors
 - Dwelling Contractor Qualifiers

- Industrial Journeyman Electricians
 - Journeyman & Master Electricians
 - Registered Electricians
 - Residential Journeyman & Master Electricians
- PV Site Assessment (PV 201) (classroom or online)
 - Commercial & UDC-Electrical Inspectors – 8 hours
 - Dwelling Contractor Qualifiers – 7.5 hours
 - Industrial Journeyman Electricians – 8 hours
 - Journeyman & Master Electricians – 8 hours
 - Registered Electricians – 8 hours
 - Residential Journeyman & Master Electricians – 8 hours
- PV System Design (PV 202) (classroom or online)
 - Commercial & UDC-Electrical Inspectors – 16 hours
 - Dwelling Contractor Qualifiers – 12 hours
 - Industrial Journeyman Electricians – 16 hours
 - Journeyman & Master Electricians – 16 hours
 - Registered Electricians – 16 hours
 - Residential Journeyman & Master Electricians – 16 hours
- PV Exam Prep (PV 220) – 6 hours (classroom or online)
 - Commercial & UDC-Electrical Inspectors
 - Dwelling Contractor Qualifiers
 - Industrial Journeyman Electricians
 - Journeyman & Master Electricians
 - Registered Electricians
 - Residential Journeyman & Master Electricians
- Roof-Mount PV System Design & Installation Lab (PV 302) (classroom only)
 - Commercial & UDC-Electrical Inspectors – 14 hours
 - Dwelling Contractor Qualifiers – 12 hours
 - Industrial Journeyman Electricians – 14 hours
 - Journeyman & Master Electricians – 14 hours
 - Registered Electricians – 4 hours
 - Residential Journeyman & Master Electricians – 4 hours
- PV Labs and Design Scenarios (PV 304) – 8 hours (classroom only)
 - Commercial & UDC-Electrical Inspectors
 - Dwelling Contractor Qualifiers
 - Industrial Journeyman Electricians
 - Journeyman & Master Electricians
 - Registered Electricians
 - Residential Journeyman & Master Electricians
- Battery-Based PV System Design (PV 420) – 4 hours (classroom only)
 - Commercial & UDC-Electrical Inspectors
 - Dwelling Contractor Qualifiers
 - Industrial Journeyman Electricians
 - Journeyman & Master Electricians
 - Registered Electricians
 - Residential Journeyman & Master Electricians
- PV System Operations and Maintenance (PV 425) (4 hours classroom; 3.5 hours online)

- Commercial & UDC-Electrical Inspectors
- Dwelling Contractor Qualifiers
- Industrial Journeyman Electricians
- Journeyman & Master Electricians
- Registered Electricians
- Residential Journeyman & Master Electricians
- Inspecting Solar Electric Systems (PV 602/603/604) – 3 hours (classroom only)
 - Commercial & UDC-Electrical Inspectors
 - Dwelling Contractor Qualifiers
 - Industrial Journeyman Electricians
 - Journeyman & Master Electricians
 - Registered Electricians
 - Residential Journeyman & Master Electricians
- Fire Code Regulations for PV Systems (PV 620) – 1 hour (classroom or online)
 - Commercial Building & Commercial Electrical Inspectors
 - Dwelling Contractor Qualifiers
 - Journeyman & Master Electricians (Including Industrial & Residential Electricians)
 - Registered Electricians
 - UDC-Construction & UDC-Electrical Inspectors
- Introduction to Wind Systems (W 101) – 8 hours (classroom or online)
 - Commercial & UDC-Electrical Inspectors
 - Dwelling Contractor Qualifiers
 - Industrial Journeyman Electricians
 - Journeyman & Master Electricians
 - Registered Electricians
 - Residential Journeyman & Master Electricians

9.0 Prerequisites and Credit for Prior Learning

9.1 Course Prerequisites

Course prerequisites are based on the scope and sequence of individual MREA courses. MREA staff will contact anyone who attempts to enroll in a course without having the proper prerequisite(s) on file.

The following courses have prerequisites:

- PV Site Assessment (PV 201) – PV 101
- PV System Design (PV 202) – PV 101 & PV 201
- PV Exam Prep (PV 220) – PV 101, PV 201 & PV 202
- Roof Mount PV System Design and Installation Lab (PV 302) – PV 101, PV 201 & PV 202 or NABCEP credential
- PV Labs and Design Scenarios (PV 304) – PV 101, PV 201 & PV 202 or NABCEP credential
- Introduction to System Advisor Model (PV 430) – PV 101 or NABCEP credential
- Battery-Based PV System Design (PV 420) – PV 101, PV 201 & PV 202 or NABCEP credential
- PV System Operations and Maintenance (PV 425) – PV 101, PV 201 & PV 202 or NABCEP credential
- PV Sales and Finance (PV 435) – PV 101 or NABCEP credential
- Small Wind Site Assessment (W 201) – W 101

9.2 Credit for Prior Education and Training

Credit can be granted for those with prior education and training and will be addressed on a case-by-case basis. The registrant will be asked to provide documentation/proof of prior learning in the form of a completion certificate or transcript and may be asked to submit a course syllabus so the learning objectives can be compared to those in the approved and accredited MREA course. If the learning objectives are similar, and MREA staff has determined that the course is satisfactorily equivalent, credit will be granted and the registrant will be granted permission to enroll.

Permanent records are kept in student files to denote any credit that has been granted due to prior education or training. (See Section 11.5)

Credit cannot be granted for those who want to take the NABCEP PV Associate Exam using the MREA as their Education Provider.

For those not seeking the NABCEP credential but want to enroll in a course that has PV 101 as a prerequisite of Basic Photovoltaics (PV 101), “test out” option is available for \$25. A minimum score of 80% is required to pass the PV 101 test.

10.0 Instructor and Student Conduct

10.1 MREA Instructors

Instructors for MREA courses are either staff members or independent contractors. All instructors must sign the MREA Instructor Code of Ethics that requires, at a minimum, instructors shall:

- Avoid all conflicts of interest, both in fact and in appearance.
- Refrain from selling products or services to participants.
- Maintain all confidential and proprietary information in the strictest confidence.
- Commit to bringing professionalism, accountability, and integrity to this work.
- Practice and maintain professional competencies according to the educational standards established and maintained by the MREA.
- Immediately report any and all incompetent, unethical, and/or unprofessional conduct by associates or clients to the attention of the MREA.
- Not make any statement or take any action that could bring the client, the certifying body, the process, the industry, the credential, or ourselves into dispute.

10.2 Grievances Against MREA Instructors

All grievances or complaints of any nature in regards to an MREA instructor will be forwarded immediately to the MREA Operations Director (OD). The OD will request a written statement from the individual making the grievance or complaint. Upon receipt of the written grievance or complaint, the OD will follow the steps listed below and have a resolution within 30 business days.

1. Determine whether the grievance or complaint is of a minor or serious nature.
2. If the grievance or complaint is of a minor nature, the OD will take appropriate action.
3. If the grievance or complaint is of a serious nature, the OD shall notify the instructor, the MREA Executive Director, and the Training Committee.
4. The OD shall send a copy of the written grievance or complaint to the instructor, the Executive

Director, and the Training Committee.

5. The instructor shall be given 10 business days to respond, in writing, to the grievance or complaint.
6. The OD shall set a Training Committee meeting within the time frame specified above.
7. The Committee will review the grievance or complaint, and a response regarding appropriate action will be made. Decisions of the Training Committee shall be based upon the specifics of the allegations made.
8. The OD will prepare a written report of the resolution and mail it to the instructor within 30 business days of receiving the written allegation.
9. The instructor can submit a written appeal within 10 days of receiving the decision.
10. Upon receipt of an appeal, the OD will forward the appeal to the Executive Director and the Training Committee.
11. The Training Committee will review the appeal and respond with a decision within 20 business days of receipt of the appeal.
12. Decisions of the Training Committee are final.

10.3 Student Conduct and Expectations

The MREA expects professionalism and diligence from its instructors as well as its course participants and Certificate holders in the classroom, in the lab, online, and in the field. Any course or program participant who is showing disrespect to the instructor or other participants will be dropped from the program or course, with no refund, at the instructor's discretion.

The MREA is committed to safety and safe practices in training and in the workplace. Any participant who does not adhere to the safety rules (including OSHA standards) set forth by the instructor will be dropped from the course or program with no refund.

Participants may file a grievance against an MREA instructor if they wish to return to a course or program. (See Section 10.2)

10.4 MREA Logo Guidelines

MREA logo guidelines are designed to give direction on the authorized use and depiction of MREA logos.

- Only artwork MREA files provided may be used.
- The logos may not be altered in any way, including proportion, color, element, type, etc.
- Logos may not be animated, morphed, or distorted in any way.
- The logos, including associated words, may not have additional text wrapped around them.
- Any unauthorized use of MREA logos may result in legal action.

11.0 Registration and Recordkeeping Policies

11.1 Enrollment Policy

MREA courses are open to the public on a first-come, first-served basis. Class size is limited to provide the highest quality educational experience for all participants.

Registration can be done over the phone by calling the MREA at 715-592-6595, or online at midwestrenew.org/course-offerings.

11.2 Payment Policy

The full course fee is due upon registration.

11.3 Cancellation Policy

Anyone who wishes to cancel a course registration should email courses@midwestrenew.org or call the MREA at 715-592-6595. The following fees may apply:

In-Person Training (Classroom, Lab, and Installation/Workshop courses)

- **Cancellation two weeks or more prior to start date:** If a registrant cancels two weeks or more prior to the course start date, the registrant forfeits a \$25 processing fee, and the remaining course fee will be refunded.
- **Cancellation less than two weeks prior to start date:** If a registrant cancels less than two weeks prior to the course start date, the registrant forfeits 50% of the course fee, and the remaining tuition will be refunded.
- **Failure to attend or complete a course:** If a registrant fails to attend or doesn't complete a course, the registrant forfeits the entire course fee.

Solar Training Academies

- **Cancellation two weeks or more prior to start date:** If a registrant cancels two weeks or more prior to the Academy start date, the registrant forfeits \$250 and receives the rest in refund. The forfeited \$250 will be credited to the registrant's account and can be used for future MREA courses within the same calendar year.
- **Cancellation less than two weeks prior to start date:** If a registrant cancels less than two weeks prior to the Academy start date, the registrant forfeits \$500 and receives the rest in refund. The forfeited \$500 will be credited to the registrant's account and can be used for future MREA courses within the same calendar year.
- **Failure to attend or complete a course:** If a registrant fails to attend or complete a course, the registrant forfeits the entire course fee.

Courses may be cancelled due to low enrollment, up to three days prior to the start date. Course fees will be refunded, but the MREA is not responsible for costs associated with travel or lodging arrangements. Travel insurance is recommended.

Online Courses

- **Cancellation two weeks or more prior to start date:** If a registrant cancels two weeks or more prior to the course start date, the registrant forfeits a \$25 processing fee, and the remaining course fee will be refunded.
- **Failure to participate in or complete a course:** If a registrant fails to complete an online course by its scheduled end date or time allotted, the registrant forfeits the entire course fee.
- **Transferring to another course offering:** If a registrant fails to complete an online course by its end date, but requests to transfer to another offering of the same course at a later date, the registrant will be charged a \$25 processing fee.
- **Extensions:** If a registrant does not complete an online course by its scheduled end date, but requests more time, one-week (seven-day) extensions may be purchased for a \$25 fee.

11.4 Recordkeeping Policy

Per the MREA Board of Directors bylaws adopted in 2009, the destruction of business records and documents must be carefully monitored to eliminate accidental or innocent destruction and assure compliance with all applicable laws and regulations. Electronic records will be retained as if they were paper documents.

The MREA permanently retains customer records – including workshop and course attendance, certifications, and membership.

11.5 Document Control and Information Release

MREA follows a storage and release of confidential records procedures. MREA staff are the only people who have access to student data. Information collected during registration and throughout the training is not shared with people outside MREA staff/instructors unless proper permission has been obtained.

2020 Academic Calendar (September-December)

To view the most up-to-date schedule of course offerings, visit midwestrenew.org/course-offerings. Dates may change, and more offerings may be added after the publication date of this Handbook.*

*Please note this Handbook was updated in September 2020 to reflect scheduling changes made due to the COVID-19 virus and the MREA's effort to provide a safe training environment.

Independent Study Online Courses, Available Year-Round:

Navigating the National Electrical Code [NEC] (G 110.02)
Working with Electricity (PV 104.02)
PV Exam Prep (PV 220.14)
Fire Code Regulations for PV Systems (PV 620.02)
Introduction to Wind Systems (W 101.02)
Small Wind Site Assessment (W 201.02)

September

Basic Photovoltaics (PV 101.21) Online	Sep. 1-30
PV Site Assessment (PV 201.20) Online	Sep. 1-30
PV System Design (PV 202.19) Online	Sep. 1-30
<i>MREA OFFICES CLOSED</i>	<i>Sep. 7</i>
Battery-Based PV System Design (PV 420.05) Online	Sep. 14 – Oct. 4
PV Systems Operations and Maintenance (PV 425.04) Online	Sep. 21 – Oct. 11
PV Sales and Finance (PV 435.05) Online	Sep. 28 – Oct. 25

October

Basic Photovoltaics (PV 101.22) Online	Oct. 1-31
PV Site Assessment (PV 201.22) Online	Oct. 1-31
PV System Design (PV 202.20) Online	Oct. 1 – Nov. 30
PV Labs and Design Scenarios (PV 304.11) – Custer, WI*	Oct. 3*
Introduction to System Advisor Model [SAM] (PV 430.02) Online	Oct. 19 – Nov. 8

November

Basic Photovoltaics (PV 101.23) Online	Nov. 1-30
PV Site Assessment (PV 201.23) Online	Nov. 1-30
PV System Design (PV 202.21) Online	Nov. 1 - Dec. 31
Battery-Based PV System Design (PV 420.06) Online	Nov. 2-22
PV Sales and Finance (PV 435.06) Online	Nov. 16 – Dec. 20
<i>MREA OFFICES CLOSED</i>	<i>Nov. 26-27</i>
PV Systems Operations and Maintenance (PV 425.05) Online	Nov. 30 – Dec. 20

December

Basic Photovoltaics (PV 101.24) Online	Dec. 1-31
PV Site Assessment (PV 201.24) Online	Dec. 1-31
PV System Design (PV 202.22) Online	Dec. 1 – Jan. 31
<i>MREA OFFICES CLOSED</i>	<i>Dec. 24-25</i>