Intelligent Renewable Energy Systems Integrating (AI) and Optimization Algorithms

22 - 26 Dec 2025
Kuala Lumpur

AGILE LEADERS
Training Center

Intelligent Renewable Energy Systems Integrating (AI) and Optimization Algorithms

Ref.: 36247_41734 **Date:** 22 - 26 Dec 2025 **Location:** Kuala Lumpur **Fees:** 5200 **Euro**

Course Overview:

The course is designed to equip professionals with the latest skills and knowledge in the rapidly evolving field of renewable energy. This comprehensive training covers a broad spectrum of topics, including Renewable Energy Integration, Optimization Algorithms for Renewable Energy, Chaotic PSO PV System Modelling, and AI in Smart Grid Island Detection. Participants will gain hands-on experience in Intelligent Control for EMI Reduction, Energy Management for Hybrid Renewable Systems, and the integration of RES with MPPT by SVPWM. The course also delves into the complexities of Distributed Network Planning with Renewable Energy and User Interactive PV System Design GUI. With a focus on practical applications, attendees will learn about Micro-Grid Situational Awareness, AI, and ML for Smart Grids, and Short Term Load Forecasting Using ANN. By the end of this course, participants will be proficient in implementing cutting-edge techniques such as Real-Time EVCS Scheduling with GA and leveraging AI for Enhanced Energy Management.

Target Audience:

- Renewable Energy Engineers
- Electrical and Electronics Engineers
- Energy Managers
- Project Managers in Renewable Energy Projects
- Smart Grid Specialists
- Sustainability Coordinators
- Researchers in AI and Renewable Energy

Targeted Organizational Departments:

- Research and Development
- Operations and Maintenance
- Project Management
- Energy Management
- IT and Data Analytics
- Smart Grid Implementation Teams

Targeted Industries:

- Renewable Energy
- Utilities and Power Distribution
- Smart Grid Technology
- Electrical Engineering
- Energy Consultancy
- Sustainability and Environmental Services

Course Offerings:

By the end of this course, participants will be able to:

- Implement Optimization Algorithms for Renewable Energy Integration
- Utilize Chaotic PSO for PV System Modelling
- Apply AI and Machine Learning Techniques in Smart Grid Island Detection
- Develop Intelligent Control Techniques for EMI Reduction in DG Environments
- Manage Energy in Hybrid Renewable Energy Systems
- Integrate RES with MPPT using SVPWM Schemes
- Plan Distributed Networks incorporating Renewable Energy Sources
- Design User-Interactive PV Systems with advanced GUIs
- Enhance Situational Awareness in Micro-Grids using advanced algorithms
- Forecast Short Term Load Using ANN
- Schedule Real-Time EVCS using GA

Training Methodology:

This course employs a blend of interactive training methodologies to ensure a comprehensive understanding of the material. Participants will engage in case studies, group work, and hands-on sessions to apply Optimization Algorithms for Renewable Energy and Chaotic PSO PV System Modelling. Interactive lectures will cover AI in Smart Grid Island Detection and Intelligent Control for EMI Reduction. Practical workshops will focus on Energy Management of Hybrid Renewable Systems and the integration of RES with MPPT by SVPWM. Real-world scenarios will be used to demonstrate Distributed Network Planning with Renewable Energy, and participants will use advanced tools for User Interactive PV System Design. Each day will conclude with a reflection and review session to consolidate learning outcomes.

Course Toolbox:

- Detailed Course Workbook
- Case Study Compendium
- Interactive Learning Modules
- Templates and Checklists for Energy Management
- Online Resource Library

Course Agenda:

Day 1: Introduction to Renewable Energy Systems

- **Topic 1**: Overview of Renewable Energy Integration and Optimization Algorithms
- **Topic 2**: Fundamentals of Chaotic PSO PV System Modelling
- **Topic 3**: AI in Smart Grid Island Detection
- **Topic 4**: Intelligent Control Techniques for EMI Reduction
- **Topic 5**: Energy Management for Hybrid Renewable Systems
- **Reflection & Review**: Review of key topics covered, addressing questions and insights gained.

Day 2: Advanced Integration Techniques

- **Topic 1**: RES Integration with MPPT using SVPWM
- **Topic 2**: Managing Standalone Hybrid Wind-PV Systems
- **Topic 3**: Distributed Network Planning with Renewable Energy
- **Topic 4**: Designing User Interactive PV System GUIs
- **Topic 5**: Micro-Grid Situational Awareness
- **Reflection & Review**: Discussion of the day's topics and practical applications.

Day 3: AI and Machine Learning Applications

- **Topic 1**: Micro-PMU and Learning Vector Quantization Algorithms
- **Topic 2**: AI and ML Techniques for Smart Grids
- **Topic 3**: Energy Loss Allocation in Distribution Systems
- **Topic 4**: Enhancing Transient Response of Statcom and HVDC
- **Topic 5**: Short Term Load Forecasting Using ANN
- **Reflection & Review**: Consolidation of AI and ML applications discussed during the day.

Day 4: Practical Implementations and Optimization

- **Topic 1**: Real-Time EVCS Scheduling with GA
- **Topic 2**: Leveraging Artificial Intelligence in Renewable Energy
- **Topic 3**: Machine Learning Techniques in Energy Systems
- **Topic 4**: Optimization Techniques for Energy Management
- **Topic 5**: Advanced Energy Management with AI and ML
- **Reflection & Review**: Practical insights and reflections on the implementation techniques.

Day 5: Integration and Future Trends

- **Topic 1**: Smart Grid Technology Integration
- **Topic 2**: Distributed Generation Energy Management
- **Topic 3**: Control Algorithms for Hybrid Renewable Energy
- **Topic 4**: Future Trends in Renewable Energy Systems with AI Integration
- **Topic 5**: Case Studies and Real-World Applications
- **Reflection & Review**: Final reflections on course learnings, future applications, and Q&A.

How This Course is Different from Other AI Empowered Maintenance Courses:

This course stands out due to its unique combination of theoretical knowledge and practical applications, specifically tailored to the needs of the renewable energy sector. Unlike other courses, it provides a hands-on approach to learning with real-world case studies and interactive sessions. Participants will not only learn about Optimization Algorithms for Renewable Energy and AI applications but will also gain practical skills in Chaotic PSO PV System Modelling and Intelligent Control for EMI Reduction. The inclusion of advanced topics such as Micro-Grid Situational Awareness and Real-Time EVCS Scheduling with GA further distinguishes this course, ensuring that attendees are well-equipped to tackle the challenges of modern energy systems.

Training Course Categories

Finance and Accounting Training Courses

Agile PM and Project Management Training Courses

Certified Courses By International Bodies

Communication and Public Relations Training Courses

Data Analytics Training and Data Science Courses

Environment & Sustainability Training Courses

Governance, Risk and Compliance Training Courses

Human Resources Training and Development Courses

IT Security Training & IT Training Courses

Leadership and Management Training Courses

Legal Training, Procurement and Contracting Courses

Maintenance Training and Engineering Training Courses

Training Course Categories

Marketing, Customer Relations, and Sales Courses

Occupational Health, Safety and Security Training Courses

Oil & Gas Training and Other Technical Courses

Personal & Self-Development Training Courses

Quality and Operations Management Training Courses

Secretarial and Administration Training Courses

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Langkawi - Malaysia

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Madrid - Spain

Manama - Bahrain

Milan - Italy

Montreux - Switzerland

Munich - Germany

Muscat - Oman

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Phuket - Thailand

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San Diego - USA

Sharm El-Sheikh - Egypt

Tbilisi - Georgia

Tokyo - Japan

Trabzon - Turkey

Vienna - Austria

Zanzibar - Tanzania

Zoom - Online Training

WHO WE ARE

Agile Leaders is a renowned training center with a team of experienced experts in vocational training and development. With 20 years of industry experience, we are committed to helping executives and managers replace traditional practices with more effective and agile approaches.

OUR VISION

We aspire to be the top choice training provider for organizations seeking to embrace agile business practices. As we progress towards our vision, our focus becomes increasingly customer-centric and agile.

OUR MISSION

We are dedicated to developing value-adding, customer-centric agile training courses that deliver a clear return on investment. Guided by our core agile values, we ensure our training is actionable and impactful.

WHAT DO WE OFFER

At Agile Leaders, we offer agile, bite-sized training courses that provide a real-life return on investment. Our courses focus on enhancing knowledge, improving skills, and changing attitudes. We achieve this through engaging and interactive training techniques, including Q&As, live discussions, games, and puzzles.

AGILE LEADERS
Training Center

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