



# أنظمة الطاقة المتجددة الذكية القائمة على الذكاء الاصطناعي وخوارزميات التحسين



**AGILE LEADERS**  
Training Center

25 - 29 Aug 2026  
برشلونة



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المرجع: 36247\_72440 التاريخ: 25 - 29 Aug 2026 الموقع: برشلونة الرسوم: Euro 6500

### 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

- : Overview of Renewable Energy Integration and Optimization AlgorithmsTopic 1 •
- : Fundamentals of Chaotic PSO PV System ModellingTopic 2 •
- : AI in Smart Grid Island DetectionTopic 3 •
- : Intelligent Control Techniques for EMI ReductionTopic 4 •
- : Energy Management for Hybrid Renewable SystemsTopic 5 •
- : Review of key topics covered, addressing questions and insights gained.Reflection & Review •

## Day 2: Advanced Integration Techniques

- : RES Integration with MPPT using SVPWMTopic 1 •
- : Managing Standalone Hybrid Wind-PV SystemsTopic 2 •
- : Distributed Network Planning with Renewable EnergyTopic 3 •
- : Designing User Interactive PV System GUIsTopic 4 •
- : Micro-Grid Situational AwarenessTopic 5 •
- : Discussion of the day's topics and practical applications.Reflection & Review •

## Day 3: AI and Machine Learning Applications

- : Micro-PMU and Learning Vector Quantization AlgorithmsTopic 1 •
- : AI and ML Techniques for Smart GridsTopic 2 •
- : Energy Loss Allocation in Distribution SystemsTopic 3 •
- : Enhancing Transient Response of Statcom and HVDCTopic 4 •
- : Short Term Load Forecasting Using ANNTopic 5 •
- : Consolidation of AI and ML applications discussed during the day.Reflection & Review •

## Day 4: Practical Implementations and Optimization

- : Real-Time EVCS Scheduling with GATopic 1 •
- : Leveraging Artificial Intelligence in Renewable EnergyTopic 2 •
- : Machine Learning Techniques in Energy SystemsTopic 3 •
- : Optimization Techniques for Energy ManagementTopic 4 •
- : Advanced Energy Management with AI and MLTopic 5 •
- : Practical insights and reflections on the implementation techniques.Reflection & Review •

## Day 5: Integration and Future Trends

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

## 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.



## فئات الدورات التدريبية



HR TRAINING & DEVELOPMENT

دورات إدارة و تطوير الموارد البشرية



دورات إدارة و تحليل البيانات ودورات علم البيانات



دورات إدارة الجودة وتطوير العمليات



الدورات التدريبية في مجال البيئة والاستدامة



دورات التسويق وإدارة علاقات العملاء وإدارة المبيعات



دورات التدريب القانوني والمشتريات والتعاقدات



دورات الاتصال الجماهيري و السياسات والعلاقات العامة



دورات النظم السبراني ودورات تقنية المعلومات



دورات الصيانة ودورات المجالات الهندسية المتنوعة



دورات الصحة والسلامة والأمن المهني



دورات السكرتارية و إدارة المكاتب



دورات الحوكمة وإدارة المخاطر والامتثال



## فئات الدورات التدريبية



دورات معتمدة بشهادة CPD



دورات في مجالات القيادة والإدارة



دورات المهارات الشخصية وتطوير الذات



دورات المحاسبة و التمويل و دورات الإدارة  
الهائية



دورات مكتب إدارة المشاريع وإدارة المشاريع  
الرشيقية



دورات معتمدة من قبل هيئات دولية

## مدن التدريب



اسطنبول - تركيا



أمستردام - هولندا



أنقرة - تركيا



أثينا - اليونان



الرياض - المملكة العربية السعودية



الدوحة - قطر



الدار البيضاء - المغرب



الجبيل - المملكة العربية السعودية



باريس - فرنسا



المنامة - مملكة البحرين



الكويت - الكويت



القاهرة - مصر



براغ - جمهورية التشيك



بانكوك - تايلاند



بالي - جمهورية إندونيسيا



باكو - أذربيجان

## مدن التدريب



جاكرتا - جمهورية اندونيسيا



تبليسي - جورجيا



بوكيت - تايلاند



برشلونة - اسبانيا



روما - ايطاليا



دبي - الامارات العربية المتحدة



جوهانسبرغ - جنوب افريقيا



جنيف - سويسرا



شهر الشيخ - هصر



سيول - كوريا الجنوبية



سان دييغو - الولايات المتحدة  
الامريكية



زنجبار - تنزانيا



طوكيو - اليابان



طشقند - اوزبكستان



طرابزون - تركيا



شيكاغو - الولايات المتحدة  
الامريكية

## مدن التدريب



كوالالمبور - ماليزيا



فيينا - النمسا



عن بعد - منصة زووم



عمان - المملكة الأردنية الهاشمية



ماربيا - اسبانيا



لندن - المملكة المتحدة



لانكاوي - ماليزيا



كيب تاون - جنوب إفريقيا



ميلان - إيطاليا



مونترال - سويسرا



مسقط - سلطنة عمان



مدريد - إسبانيا



نيس - فرنسا



نيروبي - كينيا



ميونخ - ألمانيا

# 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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