



WindFarmer

SOFTWARE TRAINING COURSES

Full training in the use of WindFarmer is available and can be tailored to meet the needs of your staff. This document describes options for single-client courses. Open courses are also available and are described elsewhere.

Languages

The training can be provided in Arabic, Chinese, English, French, German, Greek, Italian, Japanese, Polish, Portuguese, Spanish or Turkish.

Content

Courses comprise a mixture of presentations, demonstrations and hands-on sessions. The content offered is divided by topics and levels into four programmes of one day each, as attached. We recommend that all courses start with the Basic Training Day. Other days can be selected as required to suit the requirements and experience of the participants. For the most comprehensive course, all four days will be needed.

Arrangements

The training course can be held at one of the GL Garrad Hassan offices or at your own premises. For courses not held at GL Garrad Hassan premises, normally the client is asked to arrange the venue and supply facilities such as a PC projector. In every case, participants are asked to provide their own PCs or laptops. Practical arrangements would be agreed with the client beforehand.

Price

The price for the training is based on a daily rate of €1500 per day per trainer. Given the high hands-on content of the courses, it is suggested that there are no more than three participants per trainer. If the trainer needs to travel, their travel and subsistence expenses will be charged at cost and their travel time will be charged in addition at the daily rate. The price includes the provision of notes for each participant. Certificates of participation are provided on completion.

Dates and ordering

Dates for a course can be reserved provisionally but can only be confirmed after a firm order has been received. Firm orders for training courses need to be placed at least four weeks before the proposed dates of the course. Please send your request for a training course using the attached form. We will then contact you to discuss your requirements in more detail and offer dates.

Terms and Conditions

All prices quoted are exclusive of VAT and orders are subject to our terms and conditions on Page 5 of this document. The extent and availability of the above offers may be subject to change without notice. Payment is required prior to the course.

GL Garrad Hassan will treat any information provided within this work as confidential. However, any confidentiality agreement shall not cover any data or information which is: already in the possession of GL Garrad Hassan; publicly available; subsequently legitimately supplied to GL Garrad Hassan by other parties; or subsequently procured by GL Garrad Hassan using legitimate means. Liability for breaches of confidentiality shall cease three years after completion of the work.

December 2010



COURSE OPTIONS

All programmes comprise a mixture of presentations, demonstrations and hands-on sessions.

Please select the combination of programmes to suit your requirements and experience. We recommend that all courses start with the Basic Training day.

- To cover all the Modules at a standard level, you should select:
Basic Training + Energy Analysis + Environmental & Design Aspects.
- To concentrate on energy analysis to a deeper level, you should select:
Basic Training + Energy Analysis + Advanced Energy Analysis.
- For the most comprehensive course, all four days will be needed.

Basic Training

Time	Topic	Module
Morning	Introduction / overview	
	General wind flow principles	
	Wind speed monitoring	
	Analysis and interpretation of wind data	
Lunch		
Afternoon	Wind flow modelling and use of WAsP	
	Getting started in WindFarmer: building a Workbook	B
	Introduction to energy calculation	B
	Optimisation of wind farm layout	B
	Handling of mapping data	B

B = Base Module

Energy Analysis

Time	Topic	Module
Morning	Loading of mast data	M
	Long term correlation analysis	M
	Loading and map management	B
	Import and export files	B
	Turbine Studio, Project Properties, Control Panel	B
	Wake models	B
Lunch		
Afternoon	Calculation of energy prediction, uncertainty analysis	B
	Turbulence intensity	B, T
	Optimisation constraints	B
	Multiple projects	B
	Reporting	
	Discussion	

M = MCP+ Module; T = Turbulence Module

continued



COURSE OPTIONS CONTINUED

Environmental and Design Aspects

Time	Topic	Module
Morning	Noise analysis	B
	ZVI: Zone of Visual Influence options	V
	Visualisations: wireframes, simulated views	V
	Photomontages	V
	Flythroughs and other animations	V
	Creating views in Google Earth	B, V
Lunch		
Afternoon	Shadow flicker module	S
	Environmental impact with multiple projects	B, V
	Radar options	V
	Electrical module	E
	Financial module	F
	Discussion	

V = Visualisation Module; S = Shadow Flicker Module; E = Electrical Module; F = Financial Module

Advanced Energy Analysis

Time	Topic	Module
Morning	Challenges of complex terrain and wind conditions	
	Further data analysis with MCP+ Module	M, T
	Handling multiple masts and multiple wind resource grids	B
	Use of discrete turbine wind resources	B
	Sector management, turbine control hysteresis	B
Lunch		
Afternoon	Manual adjustment of directional speedups	B
	Wake modification for very close spaced turbines	B
	Power and performance matrix outputs	T
	Site conditions analysis	T
	Turbulence intensity outputs for fatigue calculations	T
	Offshore wind farms and very large wind farms	B, T
	Discussion	

NB: Timings are approximate and content can be flexible.



REQUEST FOR WINDFARMER SOFTWARE TRAINING

Content

- 2-day: Basic Training + Energy Analysis
- 3-day: Basic Training + Energy Analysis + Environmental and Design Aspects
- 3-day: Basic Training + Energy Analysis + Advanced Energy Analysis
- 4-day: Comprehensive course Other (Please specify) _____

Language

- Arabic Chinese English French German Greek Italian
- Japanese Polish Portuguese Spanish Turkish
- Other (with translator) Please specify language _____

Preferred location of the training course

- GL Garrad Hassan office (please specify which) _____
- Other location (please specify) _____

Preferred dates _____

Contact details

Name _____ Position _____

Organisation _____

Address _____

Telephone _____ Fax _____

E-mail _____

VAT number _____

We accept the prices and conditions, as of December 2010, given in this document:

Signature _____ Date _____

Please send this form by email scan to windfarmer@gl-garradhassan.com or by fax to +44 (0)117 972 9901. We will then contact you to discuss your requirements in more detail and offer dates.



COURSE TERMS AND CONDITIONS

1. We will endeavour not to vary or cancel a course, but if this is necessary we will accept no liability to you except to make a full refund to you if a course is cancelled by us. You may cancel your booking and receive a full refund by giving us written notice of cancellation at least 14 days prior to the date of the course. If you cancel within such 14 day period we will credit the amount paid towards any future course you may book within the next 12 months.
2. These Course Terms and Conditions come into effect at the date of your booking between you and us, Garrad Hassan & Partners Limited ("GH"), registered in England & Wales with company number 1878456. Whilst we take all reasonable efforts to update the content of course material we make no representations, warranties or undertakings about any of the information, content or materials which may be provided to you (including, without limitation, any as to quality, accuracy, completeness or reliability) and course material is provided without responsibility on the part of GH or any of its affiliates (being any entity controlled by or under the same control, direct or indirect, as GH, together with GH being individually or collectively, the "GH Group") or their officers, employees and agents. GH Group and its officers, employees and agents neither assume nor accept any responsibility or liability (including for negligence) in relation to course materials, and no action should be taken or omitted to be taken in reliance upon such information. In particular but without limiting the foregoing, neither the GH Group or their officers, employees and agents shall be liable for any special, incidental, indirect, or consequential damage whatsoever (including, without limitation, damages for loss of business profits, business interruption, loss of business information, any other pecuniary loss, legal fees or court costs) howsoever arising (including without limitation negligence); in any event and to the extent permitted by law, the maximum combined liability of the GH Group in relation to all claims shall in no case exceed the course fee received from you for all losses in aggregate howsoever caused, however, none of the foregoing shall be taken to exclude liability for fraud or for negligence causing death or personal injury.
3. Nothing within any course constitutes or forms a part of any offer, or any invitation to offer to buy, sell or license any other materials or provide any other services, nor should it or any part of it form the basis of, or be relied upon in any connection with any other contract or commitment whatsoever.
4. You are responsible for obeying all applicable copyright laws. GH permits you to use and make copies of course material as necessarily incidental for your own individual study or for use during research in the course of the business of your employer provided that you acknowledge Garrad Hassan & Partners Ltd as the source of the material and you do not do so for profit. However, you must not hold out as a Garrad Hassan document any item taken from course materials and subsequently amended by you. You are not permitted to provide copies, disseminate, distribute, sell, re-sell, or reproduce course material or its contents (or any part of it) for any commercial purpose. Course material includes oral material and responses to questions during a course. You may not make or use any sound or video recording of a course.
5. All the contents of course material, including the design, text, graphics, their selection and arrangement, are Copyright © Garrad Hassan & Partners Ltd or its licensors. ALL RIGHTS RESERVED, and all moral rights are asserted and reserved.
6. Your use of course material and the operation of these terms and conditions shall be governed in accordance with the laws of England & Wales and you hereby submit to the non-exclusive jurisdiction of the English Courts.