Euro-limpacs

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Short Course Compendium

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PU	Public	x
PP	Restricted to other programme participants (including the Commission Services)	
RE	Restricted to a group specified by the consortium (including the Commission Services)	
CO	Confidential, only for members of the consortium (including the Commission Services)	

Compendium of short courses covering Euro-limpacs research activities

The objective of this document is to provide information on the availability of short courses (of up to a month's duration) which cover the range of Euro-limpacs research activities. Initially, short courses for postgraduate and post doctoral researchers were investigated, but searches on the internet revealed that courses are available for other interested end-users (e.g. from government, industry or business) and so these have also been included.

Project Partners were asked to provide information on short courses that they run, but it soon became apparent that the provision of short courses on a timescale of 4 weeks or less is a very specialised activity. Whereas Masters and PhD courses are widely available at Partner institutes, short courses are provided by only two Partners (see Table 1).

The task was then widened to determine whether short courses covering Euro-limpacs research themes are available at other European institutes. This involved a search of the internet using a combination of different keywords. Again, the provision of short courses covering environmental and climate change topics appears to be very limited in Europe, although the internet search did identify more courses held further afield, for example in the USA and Australia. Table 2 gives a description of the types of short courses available to end users in Europe. All are available in 2006.

This exercise has highlighted the lack of well-publicised short courses available to either postgraduate/post doctoral students or more generally to other end users who have responsibilities for understanding and acting on the impact of climate change.

TABLE 1 SHORT COURSES RUN BY EURO-LIMPACS PARTNERS

Host Institute:	University College London, UK (Partner 1, UCL)
Course Title:	Quantitative Environmental Palaeoecology
Teaching Staff:	Dr Anson Mackay, Dr Viv Jones, Dr Helen Bennion
Course Duration:	2 weeks
Course Fee:	£700.00
Description:	The course provides an introduction to the use of lake sediment records in reconstructing past environments. It covers the Holocene but has an emphasis on environmental change over the last 200 years. Lectures are supported by a 3-day fieldclass to Norfolk and computer practicals at UCL. The course covers a range of palaeoecological concepts and techniques including: coring, sediment stratigraphy, dating recent sediments, light microscopy, biological proxy analysis, data analysis and environmental reconstruction. Lectures also introduce the application of these techniques to environmental issues such as climate change, eutrophication and lake acidification.

Host Institute:	University College London, UK (Partner 1, UCL)
Course Title:	Numerical Analyses Of Biological and Environmental Data
Teaching Staff:	Dr John Birks (Department of Biology, University of Bergen), Dr Gavin Simpson (University College London)
Course Duration:	2 weeks
Course Fee:	£750.00
Description:	Biological and environmental data are usually complex, consisting of many observations and many variables. This course provides an overview of the main techniques of multivariate data analysis that are relevant and useful in ecology and in the study of environmental change, particularly using "proxy" biostratigraphical data. Emphasis is on statistically robust and ecologically realistic numerical techniques for both descriptive and hypothesis-testing purposes. Lecture topics include exploratory data analysis, classification techniques, regression analysis, indirect (ordination) and direct (constrained ordination) gradient analyses, discriminant analysis, calibration and transfer functions, analysis of temporal and spatial data, and hypothesis testing by permutation tests, bootstrapping etc. Practical classes are led by Dr Simpson and provide "hands-on" training in the use of statistical and graphical software packages such as CANOCO, C2, and R.
Host Institute:	University College London, UK (Partner 1, UCL)
Course Title:	Chironomids: Water Quality And Climate Change
Teaching Staff:	Steve Brooks (Natural History Museum), Dr Les Ruse (Environment Agency)
Course Duration:	5 days
Course Fee:	£360.00
Description:	Chironomid (non-biting) midges are sensitive indicators of environmental change. They are responsive to a wide range of environmental perturbations including eutrophication, acidification, heavy metal pollution and climate change. Chironomid pupal exuviae can be used to monitor the water quality of lakes and rivers and chironomid larvae, preserved in lake sediments, can be used to make quantitative reconstructions of palaeoenvironmental change.
Host Institute:	University College London, UK (Partner 1, UCL)
Course Title:	Introduction To Diatom Analysis (for ecologists, palaeoecologists and archaeologists)
Teaching Staff:	Dr Viv Jones, Professor Rick Battarbee
Course Duration:	5 days
Course Fee:	£360.00
Description:	This intensive one week course is designed for ecologists, palaeoecologists and archaeologists and focuses on non-marine diatoms. It provides a thorough grounding in diatom analysis and its applications, and assumes no prior knowledge of diatoms. The course consists of lectures and practical classes covering diatom morphology and systematics, evolution, habitats and ecology, taphonomy and preservation, training-sets and transfer functions, climate change, saline lake sediments, eutrophication, lowland lake sediments, acidification, upland lake sediments. Practical classes focus on slide preparation techniques, counting, taxonomy, computing, and the analysis of material from estuarine, eutrophic and acid lake sediments. Participants are welcome

	to bring along their own material too e.g. sediment samples, slides etc for personal tuition sessions.
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Host Institute:	Swedish University of Agricultural Sciences, Sweden (Partner 11, SLU)
Course Title:	Multivariate methods for ecologists
Teaching Staff:	Dr Ulf Grandin, Prof Richard K. Johnson, and Dr Lars Sonesten
Course Duration:	3 weeks
Course Fee:	
Description:	The course aims to illustrate a number of factors which should be considered in the design and analysis of ecological data. The course will concentrate more on the selection of analysis methodology (e.g. application of multivariate methods), than on the mathematical details of the various statistical procedures. Lectures will focus on sampling design strategies and their importance for the selection of evaluation methods. The importance of scale concepts on spatial and temporal aspects will be discussed. A number of ordination and classification procedures will be demonstrated, such as table arrangement, cluster analysis, canonical correspondence and redundancy analyses (CANOCO), principle components analysis (PCA), and partial least square-analysis (PLS). Demonstration and interpretation of these methods and their application using chemical and biological environmental monitoring data from freshwater and terrestrial habitats. The course is given in two parts: The first part involves lectures and supervised computer exercises, and the second involves supervised individual work with own data. Participants may register for either the first or both parts.
Host Institute:	Swedish University of Agricultural Sciences, Sweden (Partner 11, SLU)
Course Title:	Ecological change – detecting impact and recovery
Teaching Staff:	Prof Richard K. Johnson, Dr Ulf Grandin, Dr Willem Goedkoop
Course Duration:	1 week, preliminary date is 2-6 October 2006
Course Fee:	
Description:	The objectives of this graduate course will be to give a basic understanding of how

	ecosystems function and of possible linkages within and among ecosystems. Building on these concepts and principles, a number of approaches that are commonly used in detecting ecological change will be evaluated, such as ecosystem degradation and recovery. The course will include presentations by guest lecturers, discussions by participants and software demonstrations.

TABLE 2 SHORT COURSES AVAILABLE IN EUROPE COVERING CLIMATE CHANGE ISSUES

Host Institute:	TechAWI – The Joint Hydrography Training and Competence Centre of the German Hydrographic Consultancy Pool w.V. (GHyCoP) and the Alfred Wegener Institute for Polar and Marine Research (AWI) in Bremerhaven (Associate of Partner 10, HYDROMOD)
Course Title:	Refresher and practical application course in applied hydrography and bathymetry measurements
Course Duration:	1 week
Course Fee:	On request
Description:	The course addresses scientists, engineers, hydrographers, surveyors and technicians of scientific institutes, marine and inland water management administrations, port and water-borne transport authorities as well as staff members of private companies who are involved in bathymetry measurements and data processing for coastal waters, rivers, lakes, ports and waterways. It is designed as a refresher course with special dedication to practical applications and provision of operation experiences in the field. Training units present new and state-of-the-art instrumentation, technologies in bathymetry data acquisition and processing with special emphasis on practical applications. Lecture topics include multi-beam sounding techniques, equipment operation, survey procedures, data pre- and post-processing, bathymetry mapping and data management. Most of the course is given onboard of a hydrographic survey vessel for a maximum 8 trainees per course. This course can be also flexibly adjusted to specific themes and topics as wished by a dedicated group of trainees.
Host Institute:	Cranfield University, UK
Course Title:	Flood Risk Management
Course Duration:	2 weeks
Course Fee:	£830
Description:	The course looks at the increase in flood events in the UK and Europe. The syllabus covers flood probability, impact in urban and rural areas, land management and runoff control, and climate change and flood risk.This course is a module within the Water Management MSc Programme. (Cranfiled University offers arrange of water- and environmental- based short courses, a number of which are modules within the MSc programme, including Ecological Restoration, Environmental Data Analysis, Environmental Management of Rivers).
Host Institute:	Imperial College London (UK)
Course Title:	Climate Change Science, Impacts and Responses

Course Duration:	1 week
Course Fee:	Variable (e.g. non-corporate £660, government £1000 etc)
Description:	This course is aimed at professionals, particularly in government and industry, to provide an in-depth understanding of the issues surrounding climate change. Numerous guest speakers from academia, government regulatory and research bodies covered topics such as climate science, impacts and adaptation and mitigation technologies.
Host Institute:	University of Oxford (UK)
Course Title:	Unravelling Climate Change Models
Course Duration:	1 day
Course Fee:	£350
Description:	This is an intensive course aimed at a wide range of professional non-specialists in business, industry, government and charitable institutions. It is taught by leading international climate modelling experts and will give participants insight and understanding of how models are designed and used to predict both climate change and its economical impact.
Host Institute:	Department for Technology and Sustainable Development (TSD), University of Twente, The Netherlands
Course Title:	Formulating Successful Project Proposals for Energy, Environment and Climate Change
Course Duration:	1 month
Course Fee:	€5000
Description:	After completion of the workshop participants will have gained knowledge and experience about: causes and effects of climate change; current international policy concerning climate change; possible solutions to combat climate change; general aspects of proposal writing. The participants will be trained in environmental impact analysis, gender/social impact analysis, using a logical framework and financial analysis.
Host Institute:	UNESCO Institute for Water Education, Delft, The Netherlands
Course Title:	Water Quality Assessment
Course Duration:	3 weeks
Course Fee:	€2040
Description:	The objective of this course is to acquaint participants with the principles, techniques and management issues used in water quality description, monitoring and assessment. It includes data analysis, aquatic ecotoxicology, environmental characteristics of pollutants, water quality modeling and fieldwork. This course is aimed at professionals involved in water quality monitoring and assessment of surface waters, e.g. stationed at river agencies and at governmental and district water management authorities. (This Institute provides a number of other short courses related to environmental issues including: Environmental Monitoring and Modelling, Environmental Planning; Ecology of lakes – functional processes and implications for conservation and management; Aquatic Ecosystems – processes and applications).