Trainer's Handbook

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WhLMSC Trainer's Handbook

1. Introduction

The Whole Life Management for Sustainable Construction project is undertaken within the context of the European Commission co-funded Leonardo da Vinci - Transfer of Innovation programme. Its aim is to promote awareness and knowledge regarding the implementation of sustainability in the construction industry, primarily through transfer of knowledge via training sessions.

This handbook provides an overview of the training sessions, presenting the content, feedback forms, supplementary material and online learning platforms that can be used for the purposes of training, as well as “to-do” checklists concerning organisation and facilitation of training events.

This handbook can be of use to anyone involved in an event either by delivering the training or in an organisational/administrative role. It’s helpful to use in preparation of training, as it contains a rundown of all the major steps that have to be taken in order to prepare the training session, from registrations and venue and catering booking to provision of educational material, and all the way to collection of feedback and establishment of post-course support and contact.

Also included are basic instructions to create courses and enrol users with the Moodle online learning platform, to use either as a supplement to or a substitute of traditional face-to-face training sessions.

2. Modules

To better facilitate training and ensure completion of its goals, the project’s curriculum has been organized in three thematically consistent modules, each of which has been further broken down into a number of units dependent on the Training’s needs.

It should be noted that both the organisational structure and the exact content of the courses should not be considered set in stone and thus become restrictive and unwieldy; in fact Trainers are encouraged to tailor the materials forms and content to the perceived specific needs of their audience/trainees to the extent that this is possible, always of course in conjunction with WLC Ltd to ensure that the core of the project’s curriculum remains intact and can thus be accurately transferred to the trainees.

An overview of the specific modules’ content and learning objectives follows:

a. Module 1: Sustainable Development and Construction

Module Summary:

Developing sustainability is one of the most important issues facing the world at present. This module explores the history of sustainable development, sustainable construction, context and principles, and the management of sustainable construction projects. This module helps participants develop an understanding of how sustainable construction can be organised and managed to realise the benefits.

Key topics:

- Introduction to sustainable development and its principles
- The construction industry issues and its challenges for sustainable development
- Sustainable construction drivers, initiatives and policies
- Sustainable construction impacts
- Environmental, social and economic benefits from sustainable construction
- The role of construction industry to help meeting the EU Sustainable Development targets

Learning outcomes by unit:

Unit 1: Sustainable development fundamentals (0.5 day)

- Understand the principles and themes of sustainable development
- Understand the challenges of meeting sustainable development and the issues facing the world at present

Unit 2: Sustainable construction fundamentals (1 day)

- Understand the whole life thinking
- Understanding the language of sustainable construction
- Understand the drivers of sustainable construction
- Understand the principles, issues and the challenges of sustainable construction
- Understand sustainable construction impact
- Learn how the impact of the construction on sustainability can be reduced
- Learn the importance of integrating design and construction
- Learn how sustainable construction is achieved in practice

Unit 3: Management of sustainable construction (0.5 day)

- Understand the relation between project management and sustainability
- Understand the importance of team integration and stakeholder engagement to achieve a high level of sustainability
- Understand how to take into account sustainability requirements throughout the life cycle of a construction project

Unit 4: EU directives and policies (0.25 day) & Sustainability of construction works CEN/TC 350 fundamentals (0.25 day)

- Understand an overview of the EU directives and policies and their impact on the construction industry
- Understand the CEN/TC 350 standards, its work packages

b. Module 2: Integrated Sustainability Assessment

Module Summary:

The built environment has special importance within the broader context of sustainable development. The built environment directly and indirectly is responsible for the consumption of large amounts of natural resources, energy and the production of significant quantities of pollution. Huge direct and indirect social, economic and environmental consequences are thus associated with the way we design, build, operate, maintain and ultimately dispose of buildings and their support systems. Sustainability assessment as “a tool that can help decision-makers and policy-makers decide what actions they should take and should not take in an attempt to make society more sustainable”. Many tools have been developed to support the implementation of sustainable construction. Each kind of tool is designed to assess one or more sustainability dimensions (environment, social and economic). This module explores the concept of sustainability assessment, development of sustainable construction indicators, context and principles of key sustainability assessment tools, and integrated sustainability assessment toolkits. This module helps participants develop an understanding of how holistically can manage and assess sustainability of construction projects.

Key topics:

- Sustainability assessment management protocol throughout the life cycle
- Sustainable construction indicators
- Development of sustainable construction index
- Principles of sustainability assessment methods and tools
- Introduction to sustainability methods and tools (including LCA, EIA, WLC, BREEAM, etc)
- Stakeholder values and engagements
- Integrated sustainability assessment toolkit

Learning outcomes by unit:

Unit 1: Sustainability assessment fundamentals (0.25 day)

- Understand the concept, purpose and principals of sustainability assessment
- Understand sustainability assessment protocol through the whole life cycle
- The drivers surrounding the selection of sustainability assessment issues
- Understand the barriers affecting sustainability assessment
- The difficulties of assessment
- The need for integration

Unit 2: Sustainable construction indicators (0.25 day)

- Meaning of indicators
- Characteristics of effective indicators
- Steps of developing indicators
- Frameworks for sustainability indicators development
- The challenge of coming up with good indicators
- The process of developing a composite indices
- Managing a sustainable construction site

Unit 3: Sustainability assessment tools (0.5 day)

- What are sustainability assessment tools

- What are sustainability impacts
- An overview of impact-led tools
- Building rating systems

Unit 4: Integrated sustainability assessment toolkit (0.25day)

- Understand the role of stakeholders in the assessment
- Understand how to engage with stakeholders
- Understand the concept and structure of an integrated sustainability assessment toolkit (ISAT)

c. Module 3: Sustainable Procurement

<u>Module Summary:</u>

"Sustainable Procurement is a process whereby organisations meet their needs for goods, services, works and utilities in a way that achieves value for money on a whole life basis in terms of generating benefits to society and the economy, whilst minimising damage to the environment". Understanding this process can lead to achieving value-for-money, which is defined as the optimal combination of whole life cost and quality (fitness for purpose) to meet the user's requirement. The aim of this module is to equip the attendees with the knowledge to deliver sustainable procurement and understand the procurement procurements rules. The focus of the module is to consider environmental, social and economic issues in procurement, within the context of achieving value for money. The attendees will also understand the whole life costs implications of procurement decisions.

<u>Key topics:</u>

- Introduction to procurement process
- The role of procurement in sustainable construction outcome
- Embedding sustainability performance into the procurement process
- Achieving value for money through sustainable procurement
- Impact of sustainable procurement on construction supply chain
- EU initiatives of sustainable procurement

<u>Learning outcomes by unit:</u>

Unit 1: Sustainable procurement fundamentals (0.25 day)

- Introduction to procurement process
- The role of procurement in sustainable construction
- Embedding sustainability performance into the procurement process
- Achieving value for money through sustainable procurement
- Impact of sustainable procurement on construction supply chain
- EU initiatives of sustainable procurement

Unit 2: Sustainable procurement: value for money and whole life costing (0.25 day)

- The principles whole life value

- The principles and process of WLC/LCC
- The factors affecting WLC/LCC analysis
- The new ISO-15686-5 standard and the SMLCC
- Risk and uncertainty associated with LCC

3. Training Material

The Training Material can be divided into two distinct categories:

a. Core Training Material: Presentations covering the curriculum

These are the original presentations utilised in the face-to-face Train-the-Trainer sessions, translated and/or adequately modified to meet the needs of disparate audiences, such as the project has already reached out to and hopes to further reach out in the future.

Translation is carried out by each partner, to better suit the needs of both the target audience of each session, and correctly address the particularities of local legislation, conditions, construction industry, climate and a number of other factors that can have an effect on how the project's "lesson's" can best be used in the respective countries' environment.

To the same effect, the material included in the presentations can also be changed to some extent, when such change is beneficial to the audience's education and the achievement of the project's goals. Examples would include substituting statistics or climatic data in the original presentations, with data pertinent to the countries where the target audience conducts business and work.

An important point to note in this context is that, while tailoring of the material is indeed encouraged, it should be done in a way that does not "dilute" the knowledge during its transfer. To this end, Trainers are required to closely work with WLC when implementing changes to the curriculum of the project, in order to ensure an adequate degree of fidelity to the original core material, which is a main deliverable of the project. Any changes should be brought to WLC's attention and sufficient clarification for the reasoning behind the changes provided.

b. Supplementary Training Material: All other material pertinent to the modules and units utilised by the Trainer(s) to support the core material

This material can be of manifold nature:

i. Practice guides,
ii. Action plans,
iii. Official methodologies,

iv. Papers,
v. Reports etc.

The source of this material can be equally disparate: official governmental authorities, professional bodies, scientific journals, independent commissions etc.

The only unifying factor is their pertinence to the material of each module and their ability to shed light on the background, current tendencies, and future projections on the state of the industry and where sustainability fits into the different aspects of construction.

They can also be legislation documents that clarify individual states' outlook on sustainability, currently and in the future.

Inclusion of these documents in the material provided in each training session/series of sessions is left to the judgement of the Trainers, and doesn't necessarily require any "approval" from WLC Ltd. For the purposes of record-keeping and maintaining a general overview of the complete picture, Trainers are kindly asked to keep WLC and the rest of the partners appraised on the use of such material, which could be useful to and appropriate for other partners from different countries when it comes to supporting their own sessions.

4. Forms

A number of forms associated with feedback from the training sessions have been created. The goals aided by the completion and submission of those forms are as follows:

- Facilitate meticulous record-keeping,
- Maintain overview of the effectiveness of the delivery of the training,
- Gain an understanding of which modules are easier and which harder to communicate, and thus adjust accordingly,
- Provide evidence that the "Transfer of Knowledge" lying at the core of the project's ambitions and aims is achieved.

With these goals in mind, the forms were initially created and are continuously reviewed and updated, to ensure they serve the goals that were set at the beginning, and do not in fact become a hindrance over the course of the project.

While the completion of such a multitude of forms during training events where resources are usually needed elsewhere as well, might seem overly bureaucratic and unnecessary, if not downright time-consuming and excessive, experience has shown that timely completion of the forms provides an excellent benchmark against which to measure the project's effectiveness in achieving its goals and thus plan the future accordingly, as well as saves a lot of time later on when data collation deadlines approach as a detailed overview of all training undertaken is readily available in an accessible and usable format.

Breakdown of forms

A list of the forms which are used for the collection of feedback from the training events follows, with a brief explanation for each entry.

Pre-Course Questionnaire (included in QM Plan):

The form details the key points/learning objectives for each module, asking the trainee to estimate their current (prior to the event) knowledge and familiarity with each of the subjects.
The digital version of the form also includes fields detailing the participant's vocational group, sector, educational level and other details required for the completion of project's report forms.

Post-Course Questionnaire (included in QM Plan):

The form again re-visits the key points /learning objectives for each module, asking the trainee to estimate their level of knowledge on the subjects after completion of the training.
Also included are questions regarding the organisational aspect of the event and the effectiveness of the trainers and training material utilised.

Sign-In Sheet:

Used to collect the following data from the individuals receiving training in every event:

- Name
- Signature
- Vocational Group
- Educational Field
- Educational Level
- Economic Sector

The digital version of the form contains drop-down menus from which the participants (or the project partner organising the data) can choose. The options correspond to those in the digital version of the Pre-Course Questionnaire.

Daily Evaluation Form (included in QM Plan):

This form is only applicable to sessions lasting for more than one day. It contains a number of free-text questions aiming to estimate which parts of the session were more enjoyable to the trainees, and which parts of the curriculum were better received/understood.

Trainer De-Brief Form (included in QM Plan):

This form is to be completed by the people delivering the training. The main aim is to capture the trainers' perception of which parts of the session functioned effectively and which didn't.

Trainer Competency Checklist (included in QM Plan):

This form is different in that it is completed by an evaluator from WLC, and aims to gauge the Trainers' performance and effectiveness concerning different aspects of the training session. As such, its completion is not mandatory, and submission is only applicable when a session organised by a partner is observed by a representative of the Co-ordinator.

Trainer Self-Assessment Questionnaire (included in QM Plan):

This form is completed by the "trainers-in-training" and therefore is only applicable to Train-the-Trainer events. The questions ask the prospective trainers to evaluate their level of preparedness to deliver training and offer suggestions as to how to improve the training they received and intend to deliver.

Training Summary:

This is essentially an Excel Spreadsheet where the feedback from the various Questionnaires is input and collated, for easier reference and automatic production of graphs and tables.

Impact Assessment Form:

This form is not exclusive to Training events; the goal is to capture which vocational groups/educational levels are mostly impacted as a result of the project, as per the requirements of the Final Report.

Dissemination Table:

This form is not exclusive to the training events; in fact these sessions are just one of the varied entries that are collected here. The aim is to capture the wider dissemination aspect of the session, apart from the strictly training aspect.

Assessment Quiz:

A questionnaire to be issued to trainees some time after the training, to determine their absorption of the presented material and most importantly how and to what extent it has been incorporated into the way they conduct their work.

Event Report:

A document in the standardised, for the scope of the project, event report format which essentially collects the most important points of the feedback into an easily accessible and presentable form, ideal for both internal circulation within the consortium and external evaluation by the NA and third parties.

5. Online Material Guide - Moodle

The Moodle open-source learning platform provides a handy and practical framework to set up online learning courses, training sessions, material libraries etc.

The projects website can be accessed at https://whlmsc.wlcuk.com/.

Trainers are urged to utilise the platform to the extent they feel confident with it, as it allows the enhancement of the training delivered at standard sessions with added activities, exercises, examples and an always accessible depository of material used at and pertinent to the training sessions.

The following is a very quick run-through of the basic functions of the platform and of how they have been utilised so far within the context of the project.

Extensive documentation can be located at http://docs.moodle.org/26/en/Main_page and a wealth of instructional and demonstrative videos at https://www.youtube.com/user/moodlehq.

a. Course creation

The first step to take is to create the desired course categories. This requires the trainer to have been set up with administrator rights.

To manage the course categories, navigate from the Home Page to Courses, from the Navigation box on the left column of the page.

From the Administration box on the left column of the page click "Turn editing on" and click "Manage Categories" on the top right of the page.

From this screen the user can organise the course categories according to their preferences. The format used in the project so far is "country-based" at the top level, then "module-based" at the next level (seeFigure 1). Then, at the last level, each Unit is set up as a course.

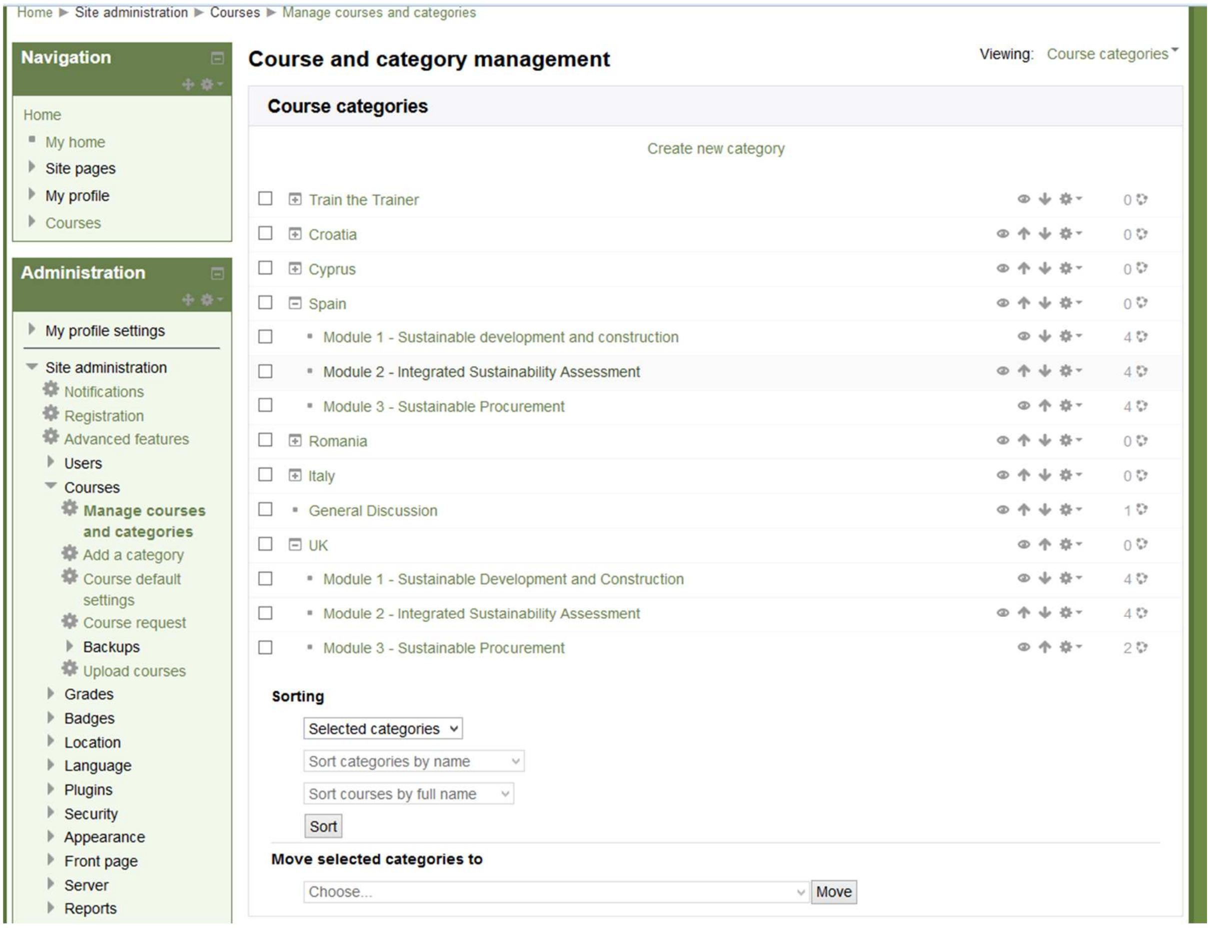

Figure 1: Course breakdown in the course management screen

Having set-up the categories, the trainer can proceed to populate them with courses.

To create a course, navigate from the Home Page to Courses, from the Navigation box on the left column of the page.

From the Administration box on the left column of the page click “Turn editing on” and go to the bottom of the page to “Add new course”.

In this screen the user can specify the details of the course; so far for the purposes of the project, the topic-based course format has been used almost exclusively. You are prompted to select the number of topics for the course, if you opt for this option, as seen in Figure 2.

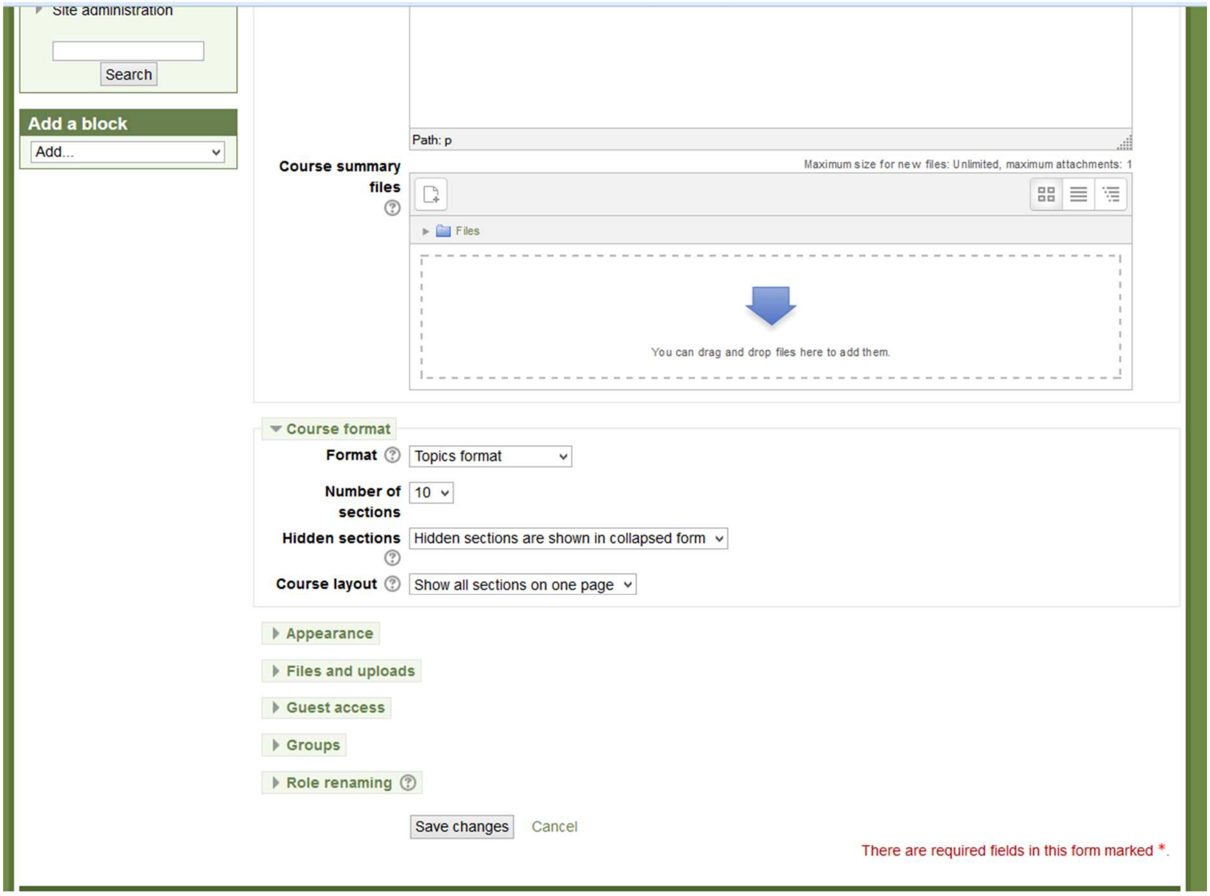

Figure 2: Creating new courses - selecting format

After setting up the course, the trainer can then proceed to upload material and/or activities. From the Courses screen, select the course you wish to embellish (note the “editing” must be turned “on” for all of these actions to be available), and click “Add an activity or resource”. You will be prompted to specify which element you’d like to add.

In Figure 3 a sample course with two topics populated with files is displayed.

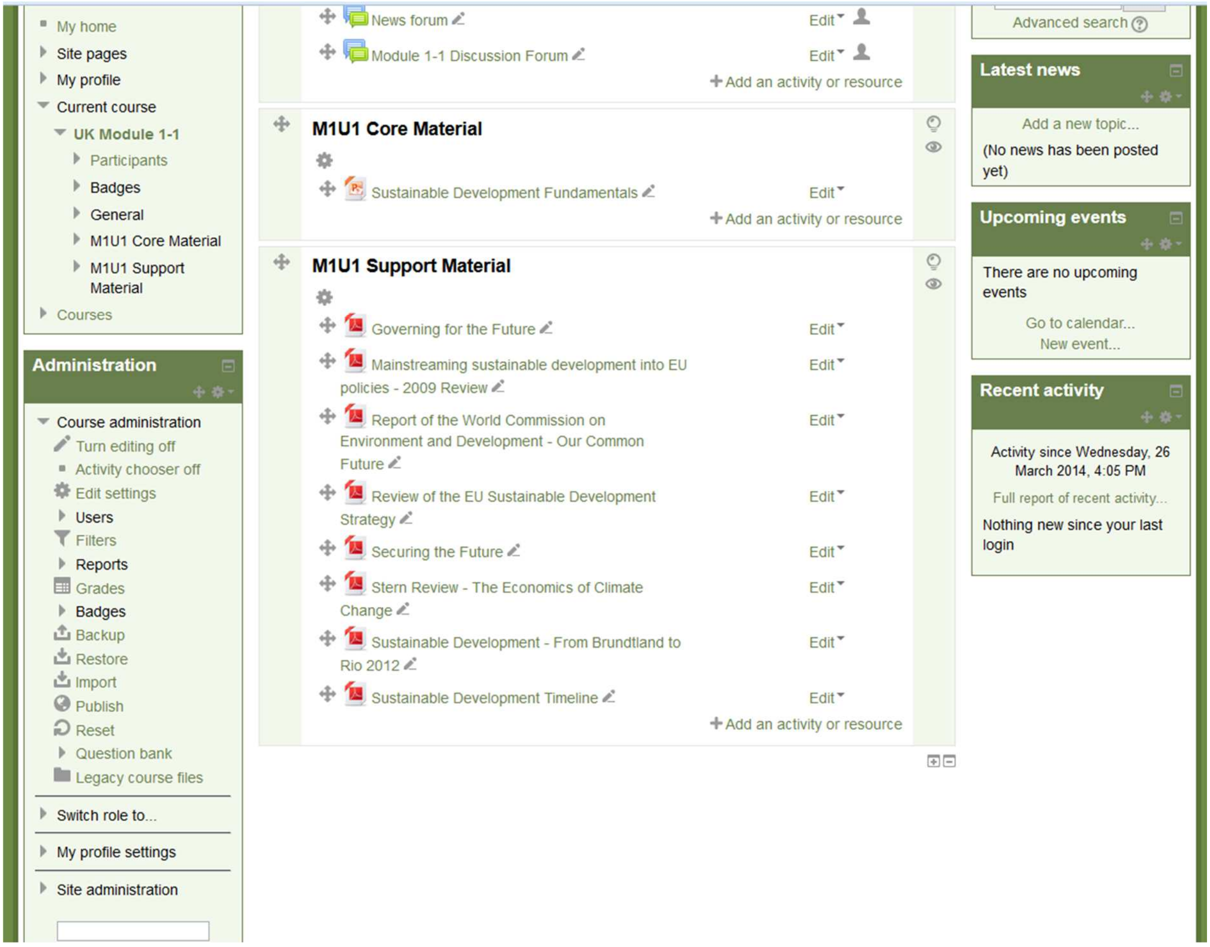

Figure 3: Sample course with downloadable material

Using these steps, you can proceed and create as many courses as deemed necessary, and populate them with a variety of material.

b. Users creation and enrolment

With the courses and the relevant material in place, the trainer can then add users and enrol them in the courses created.

With "editing on", on the left hand side from the "Administration" box select Site Administration>Users>Accounts and "Add a new user". There is a variety of ways of how a user can be authenticated after creation. "Manual" accounts can give the trainer more control over how and when the user will be notified. There are a number of customisation options in the user creation interface, most of which are optional and not required for the correct function of the account (Figure 4). Once the necessary data has been input (username, mail address, notification method), scroll to the bottom of the page and click "Create User".

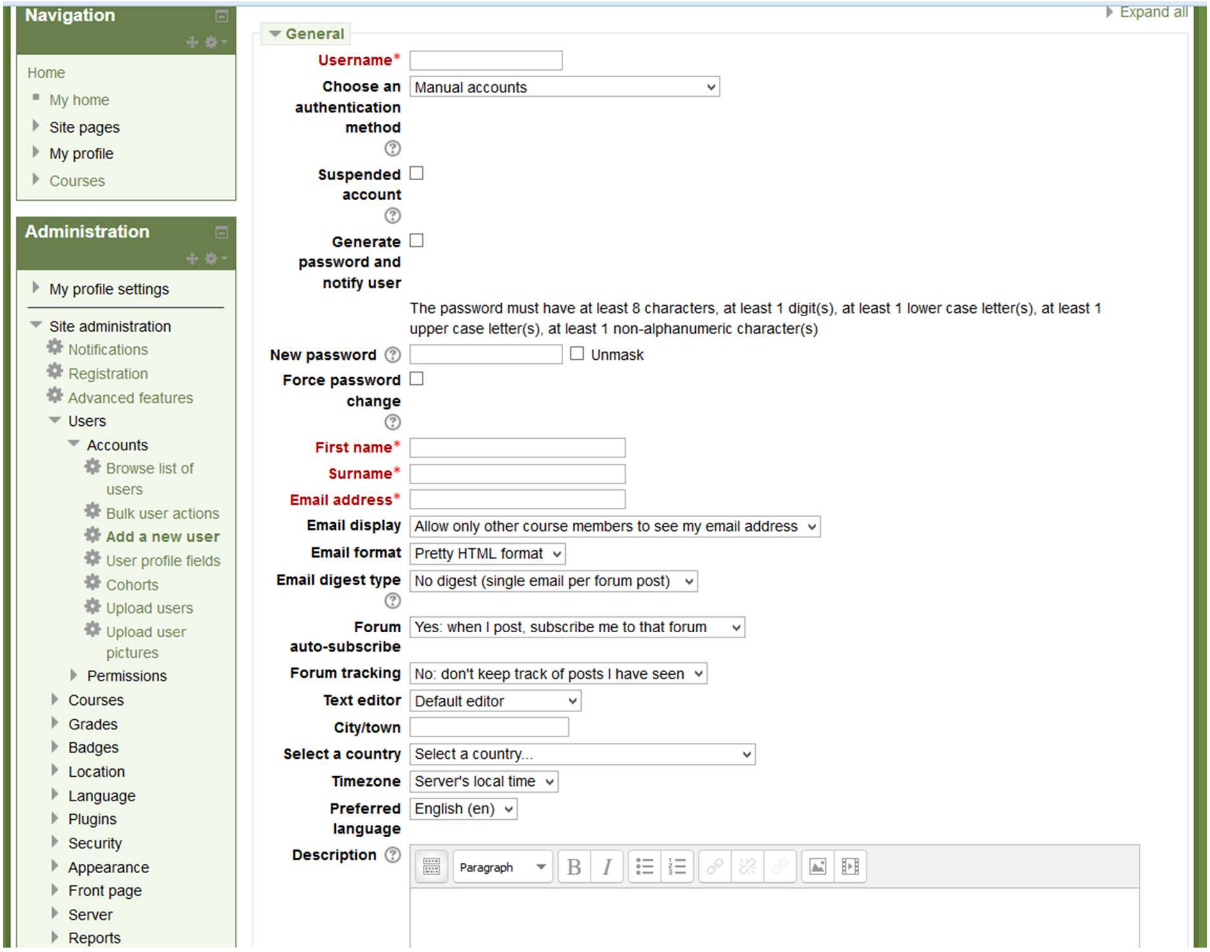

Figure 4: User creation screen

Now that the account has been created, the user can be enrolled on the desired courses. To do that navigate to the course you wish the user to be enrolled on, and from the Administration box, select Course Administration>Users>Enrolled Users. In this screen you can see the users already enrolled in the course (if any).

To enrol a new user click “Enrol Users” from the top right of the page and select the users you wish to enrol (see Figure 5). When done, click “Finish enrolling users”.

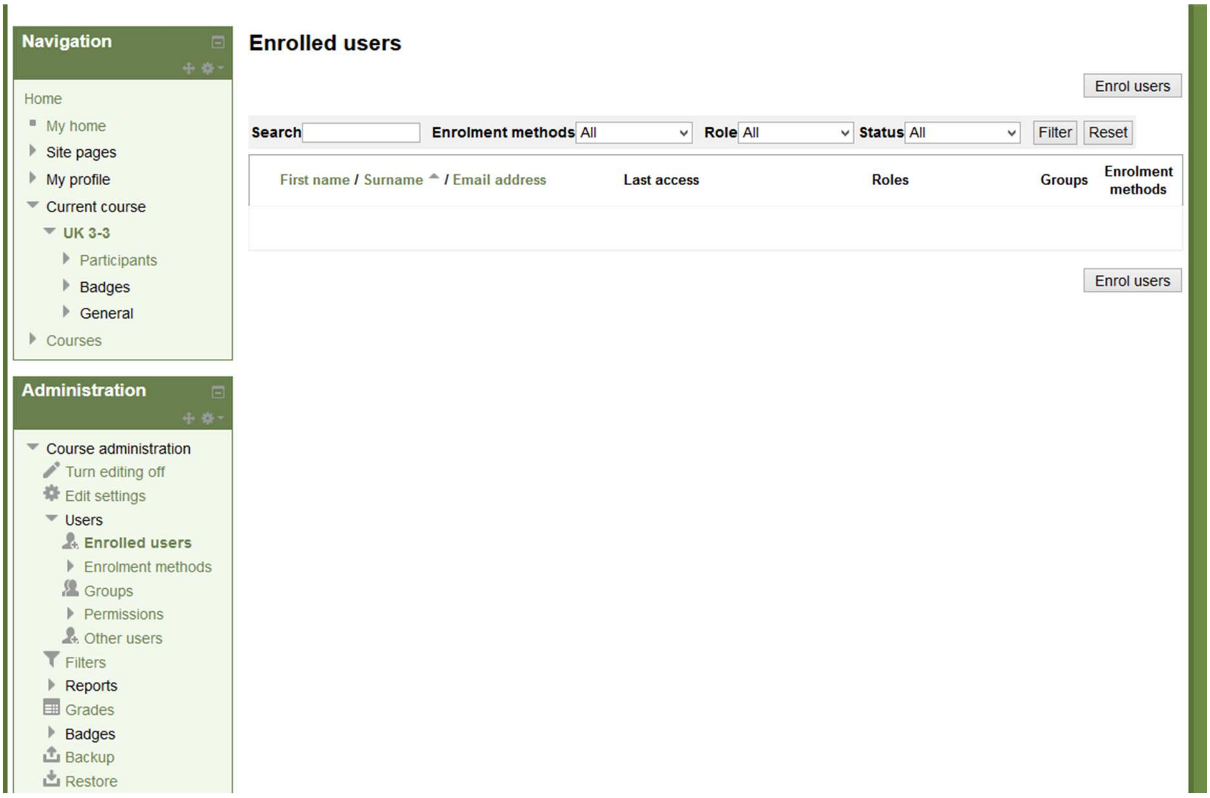

Figure 5: Enrolled users screen for new course

The selected users have now been successfully enrolled on the particular course.

Please don't forget to notify your users that they can access the courses, in case automatic notification has been disabled!

Alternatively, you can leave the courses open to self-enrolment so that the users can enrol themselves through an automated procedure.

6. Training Events Checklists

The following checklists provide a quick overview of the steps to be taken while organising training events, face-to-face and online.

a. Running face-to-face training events

<u>Prior to the training:</u>

- Develop and circulate flyer and invitations
- Take registrations
- Arrange venue and catering

- Send flyer to Christos/Andreas for inclusion on the website
- Notify WP leader for module
- If significant alterations have been made to the presentation, engage with WLC Ltd
- Set up learning objectives for the course and map these onto the pre-course assessment questionnaire
- Issue pre-course questionnaire to attendees 48 hours prior to the training
- Create and upload an agenda for the day or days of the training
- Register trainees on Moodle for relevant course
- Gather participants' vocation/sector information

<u>For the day:</u>

- Sign-in sheet (with participants' vocation/sector information)
- Daily evaluation form (if longer than one day)
- Trainer competency form
- Issue post-course questionnaire/assessment quiz (at end of training)

<u>Following the day:</u>

- Complete Trainer De-brief sheets and return to work-package leader
- Send completed sign-in sheets, daily evaluation and post-course questionnaires to WP leader
- Organise feedback into summary & tables
- Complete impact assessment form and dissemination table
- Compile Event Report
- Submit invoices from venue & catering to WLC to claim expenses
- Upload material pertinent to the event on Dropbox and inform WP leader and WLC

b. Running e-learning training events

<u>Prior to the training:</u>

- Develop and circulate flyer and invitations
- Take registrations
- Send flyer to Christos/Andreas for inclusion on the website
- Notify WP leader for module
- If significant alterations have been made to the presentation, engage with WLC Ltd
- Set up learning objectives for the course and map these onto the pre-course assessment questionnaire
- Issue pre-course questionnaire and circulate online to attendees 48 hours prior to the training
- Create online assessment questionnaire/quiz form for participants
- Register trainees on Moodle for relevant course
- Gather participants' vocation/sector information

<u>For the duration:</u>

- Sign-in/register online (with participants' vocation/sector information)
- Issue post-course questionnaire/assessment sheet (at end of training)

Following the event:

- Organise feedback into summary & tables
- Complete impact assessment form and dissemination table
- Send completed sign-in sheets/participants lists, daily evaluation and post-course questionnaires to WP leader
- Compile Event Report
- Upload material pertinent to the event on Dropbox and inform WP leader and WLC

Using Moodle:

- Moodle is now set up by country for each of the three modules. The log-in sheets handed out in March provide details of the log in and you are the teachers for your own countries. All trainers are students of Train the Trainer modules where the latest presentations can be downloaded along with any supporting information.

7. Conclusion

The material contained within this handbook provides an overview of the projects' content and can serve as a guideline for organising and delivering further training through either traditional face-to-face sessions or online via distance-learning.

It should by no means considered exhaustive and/or restrictive, especially when it comes to enriching the training's content or adapting it for different target audiences. That being said, whenever significant changes are made to the core material, WLC Ltd. should be made aware of and provide consultation on the subject, to ensure that the delivered knowledge maintains its "integrity". WLC Ltd can be contacted at enquiries@wlcuk.com.

The material and guidelines contained herein are pertinent to the WhLMSC project and so the handbook should not be used after 30 September 2014.