

**Project Title:** Modernising Undergraduate Renewable Energy Education: EU Experience for Jordan

**Acronym:** MUREE

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<b>Deliverable Title</b>	<i>Adaptation of Courses Content into VLE</i>		
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<b>Organisation Name(s)</b>	Hashemite University and PSUT		
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<b>WP Leader</b>	Hashemite University		
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<b>Dissemination Level</b>	Institution Level		
<b>Total Number of Pages</b>	4		

The content of the two courses were developed entirely by HU. Assessment and evaluation strategy was also developed to adapt the materials to the VLE platform. Initially, two teams from the Faculties of Engineering and Faculty of Prince Al-Hussein Bin Abdullah II for Information Technology at the Hashemite University worked closely in this deliverable. Several meetings between the two teams were conducted to discuss the roadmap of the VLE and agree on the general structure of the courses. The HU teams with MUREE partners particularly UNED, PSUT and UoJ agreed on using the following IT tools in this project:

- Moodle: Virtual Learning Environment,
- Power Point: for material organization,
- Natural Reader: for sound recording,
- Adobe Photoshop: for image editing,
- Adobe Flash: for creating animations,
- Lectora Publisher: eLearning content authoring tool.

On Moodle VLE, the courses were organized into topics format with a maximum upload size of 80 MB with the intention to publish each chapter into SCORM package format and assign each chapter to the proper topic. For each chapter the following tasks were performed:

- Material was prepared by the engineering team.

- Chapter's outlines and objectives have been set.
- General design and layout of each chapter were developed by the IT team.
- Several brainstorming sessions were conducted between both teams to build the storyboard of the chapter.
- Several images were edited.
- Several animations were created to clarify concepts and enhance interactivity.
- Narrative sound files were recorded for all pages and animations to improve interactivity and help people with disabilities.
- All images, sounds, flashes, files beside textual and other components were imported into e-learning content Lectora project.

The chapters were organized into sections as shown next:

- **Photovoltaic:** seven sections were developed; Sun, Silicon, Solar Cell, Grid-Connected PV systems, stand-alone PV systems, Design standalone PV systems, Economic of standalone PV systems

- **Hydropower Energy:** Ten sections were developed; Introduction, Statistical Context overview, Key Components of Hydropower Plants, System Types, Turbine Selection and Designs, Technical Issues, Economics Overview, Environmental Assessment, Hydropower Potential in Jordan, Pros and Cons Overview.

- Quizzes were embedded in the chapter.
- Test was attached to the end of the chapter.
- The chapter was published into SCORM 1.2 conformant package format.
- Then the SCORM package was uploaded into MUREE-VLE under Topic 2 title for the Photovoltaic chapter and under Topic 3 for the Hydropower Energy chapter.

Figures [1-4] show snapshots from the MUREE-VLE after uploading the material, and Figure [5] shows a snapshot of the Lectora project before uploading it into Moodle.

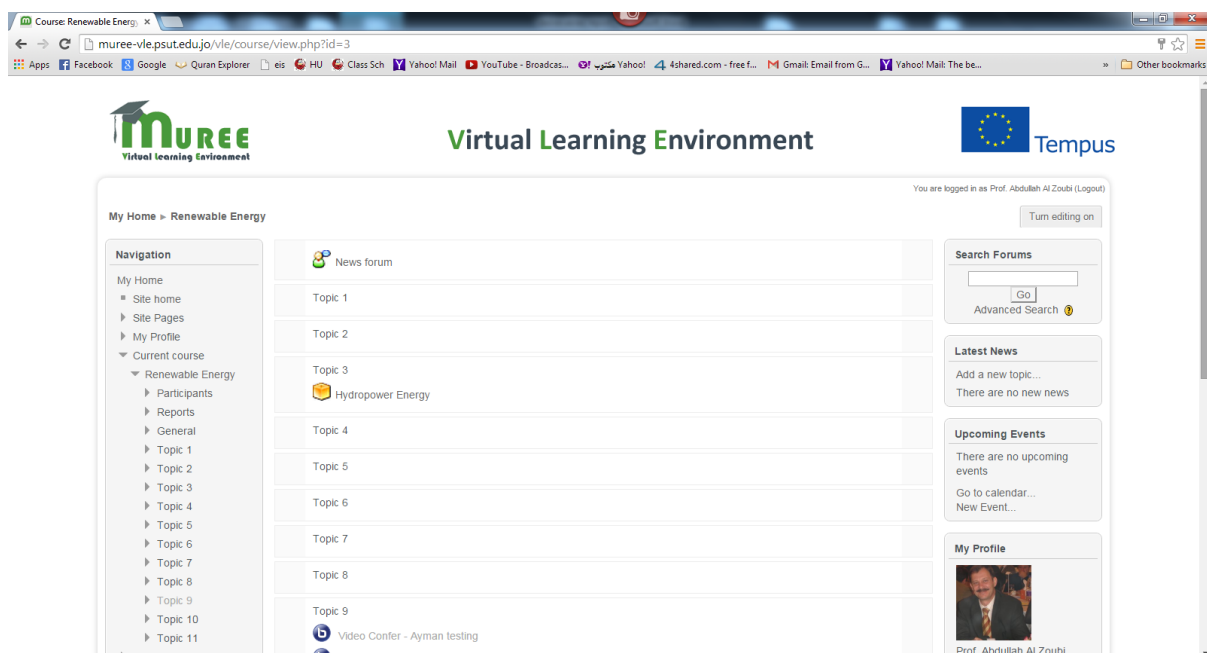


Figure (1): Snapshot from the MUREE-VLE after uploading the material: main topics.

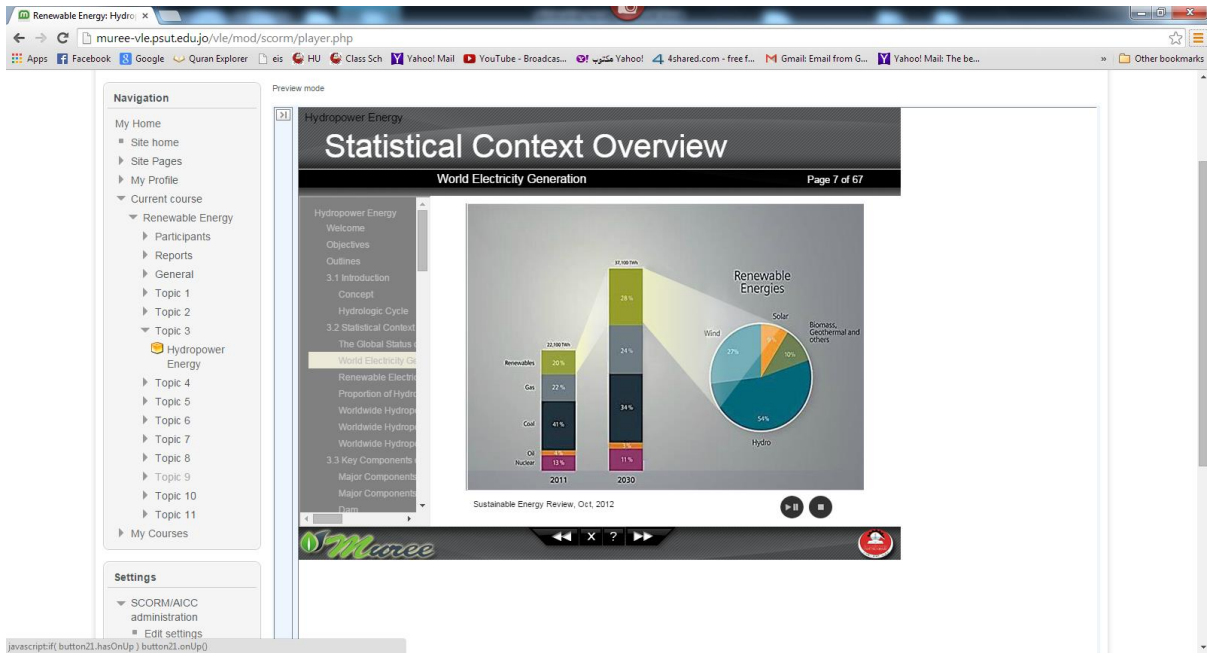


Figure (2): Snapshot from the MUREE-VLE after uploading the material: sample of a course.

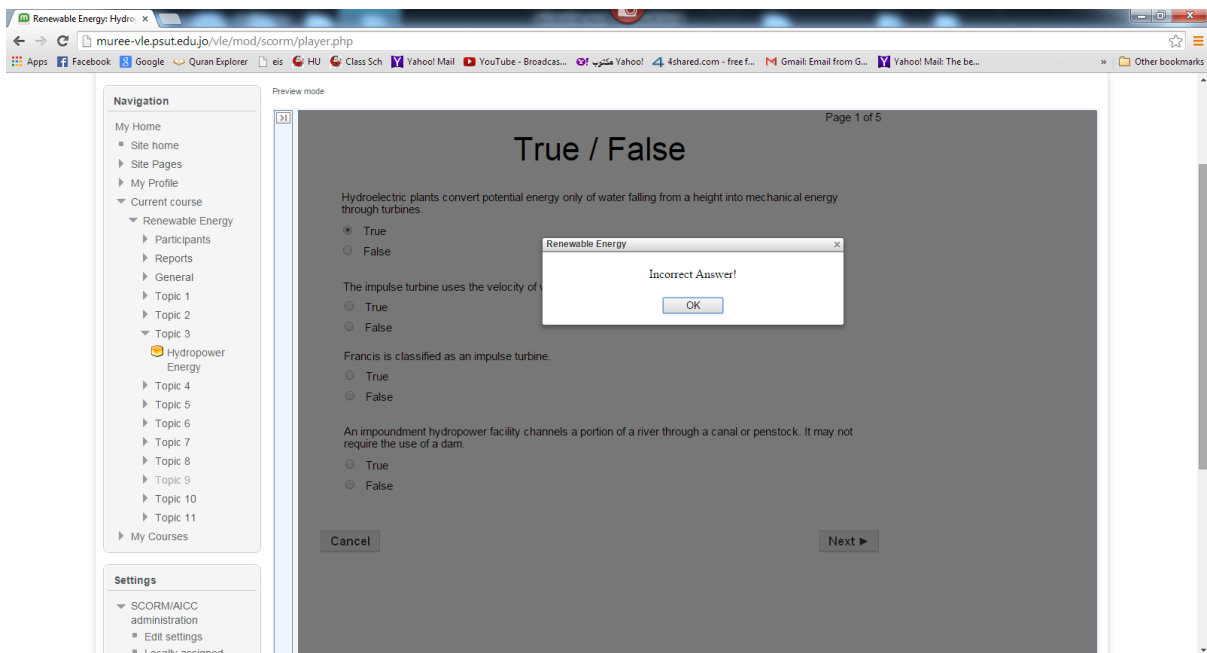


Figure (3): Snapshot from the MUREE-VLE after uploading the material: quiz sample.

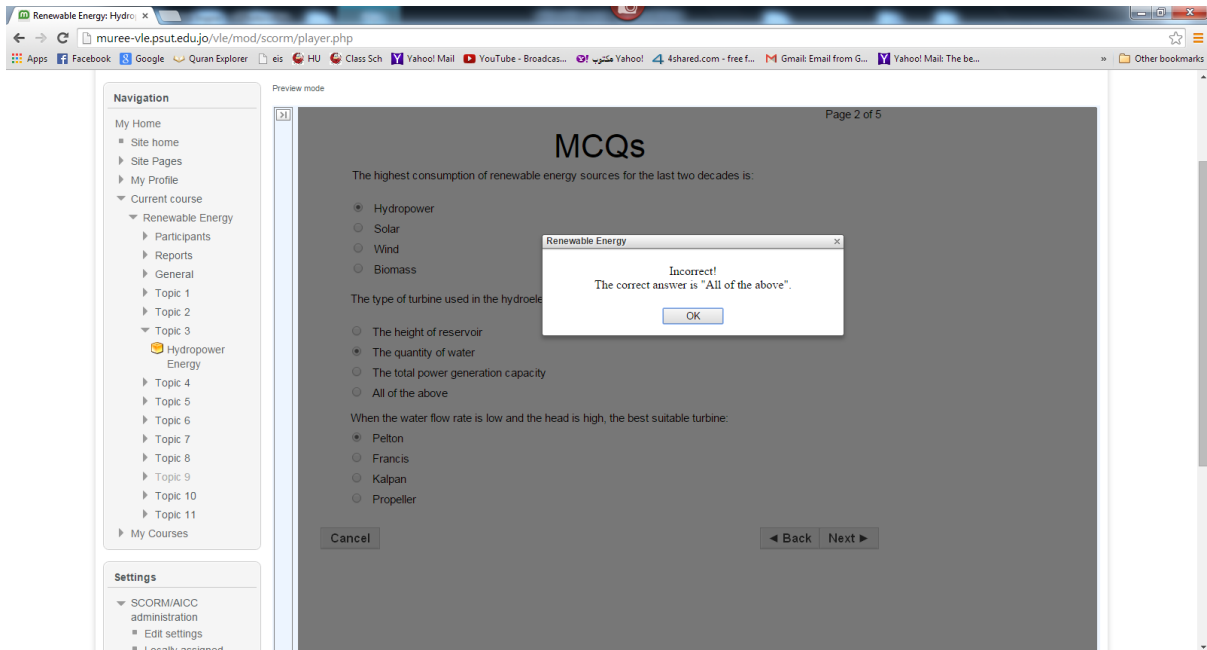


Figure (4): Snapshot from the MUREE-VLE after uploading the material: MCQ sample.

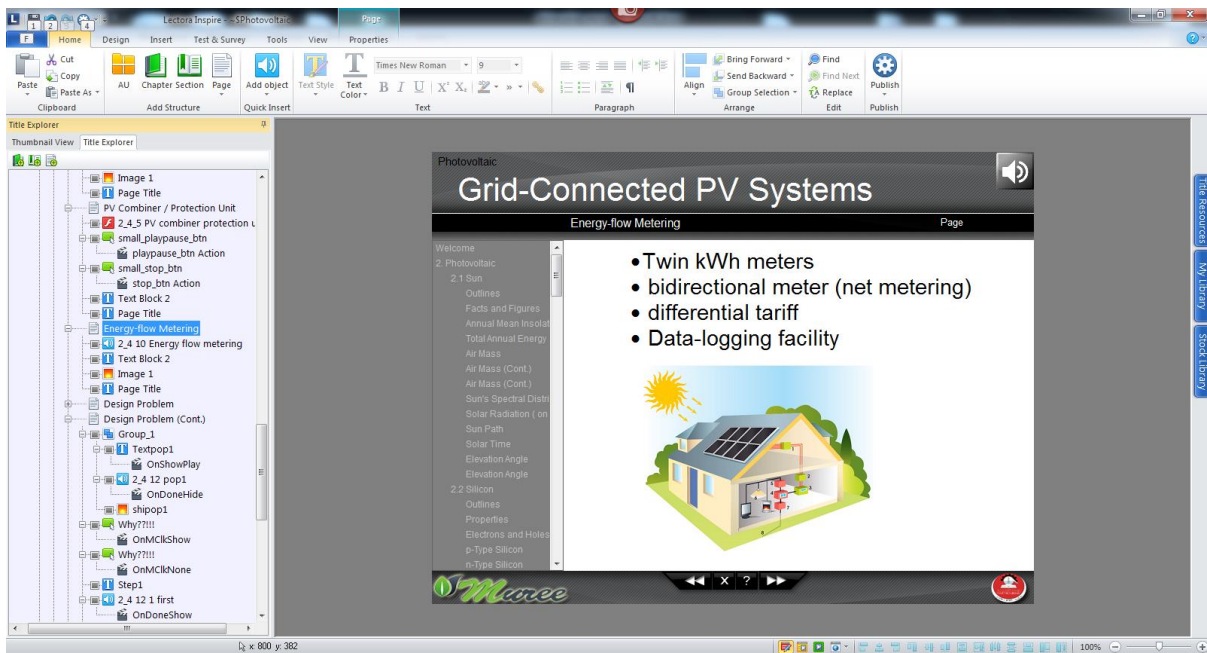


Figure (5): snapshot of the Lectora project before uploading it into Moodle.

## Attachments

- Full report of the visit of the Jordanian team to UNED.