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Deliverable Abstract

This report presents the templates to be used in developing the teaching materials for the TeachHy course, as well as CPD and MOOC activities. It explains the format in which the modules will be presented and in which design and layout the respective material has to be delivered.

1 Formats covered by this guideline

The Deliverables D1.1 to D1.5 and D3.2 should be consulted for correct use of terminology and the foreseen structure of the TeachHy MSc course.

This report will give guidance as to the format and layout expected to be used for

- slides,
- lectures, and
- modules.

1.1 Slide layout

The standard slide layout is shown in Fig. 1 for the title slide and the regular content slide format.

Essential points to be followed:

- the footer has to contain the copyright disclaimer (centre);
- the slide number has to be shown, together with the total number of slides to help both in lecture delivery (face-to-face) and recording (giving the lecturer indication of progress), as well as offering the student guidance in how long the remainder of a lecture can be expected to be (right bottom corner);
- lecture title; in case a slide is detached from the lecture (e.g. by screen capture) the context can still be recognised.

Care has to be taken when editing the PPT slide masters so that all changes to foot lines fields will also be mirrored in the slides. Mistakes can easily be made here.

1.1.1 Potential modifications

A number of deviations to the standard can be adopted in order to make delivery more lively and introduce some diversity and individuality to the programme.

Fig. 2 shows some variations on the theme for the title slide. Lecturers/universities could add logos, further contributors, or pictures in order to make the slide sets more appealing to viewers.

In the PPT slide master the headline might be modified to include a Content Developer university logo.

1.1.2 External content

When including web page links or external material such as videos in the slides, care should be taken that these links will still work when placed in the Learning Management System (LMS) context. Thought has to be given how the links will be activated. During a recorded lecture the lecturer would be able to do this – allowing to switch between sources (i.e. switch to a totally new window showing a video) or even edit and splice post-recording, thus appending several sources/recordings into a single track.

Including such links etc. into slide sets the students will be free to click through might give different results and has to be carefully planned and tested.



Title

Module

the European MSc course in FCH Technologies



Title

- Text
 - Text

Lecture title

all material © the author(s), no re-use without written permission

2 / N

Figure 1: Title and content slide layout templates.



Alternative title slide layout





LePMI
Grenoble - Chambéry

Grenoble INP
phelma

cnrs

UNIVERSITÉ
Grenoble
Alpes

H

Title

Module

the European MSc course in FCH Technologies

Alternative title slide layout





Title

Module



the European MSc course in FCH Technologies

Figure 2: Possible title page variations.



This is the end of the lecture.
Thank you for your attention!

Acknowledgments go to
Xx Yxxx (slide author[s])
Zzzz Yxxx (contributors)

the European MSc course in FCH Technologies



Copyright:

The utilisation and release of the material displayed in this lecture is not allowed without written consent from the TeachHy consortium. Images and diagrams from third sources used within the lecture are communicated to a limited audience of enrolled students and may not be further disseminated, neither in electronic nor in printed form. They may only be used for self-study and the achievement of the course goals.

Disclaimer and Acknowledgment:

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Figure 3: Closing slides templates.

1.1.3 Copyright

In educational material that will not be printed and distributed freely and that is only available to the registered students on a course, the use of copyright protected images is allowed.

Nevertheless, absolute care should be taken to display the source of images, for instance by following the standards Wikimedia Commons uses. Credit needs to be given to all origins of material used.

1.1.4 Acknowledgments

If slide material of other authors is used (e.g. when assembling a lecture from a variety of source material), these should be made aware of this fact and be mentioned, for example on the last slide of a lecture slide set. Ideally, permission should be sought from the co-authors and the co-ownership flagged with the Course Secretariat.

The last slide of every lecture must be built along the format shown in Fig. 3. It gives the lecture a closing point and gives credit to all those involved in the content development. There is also scope to include images or logos on this page, similar to what is shown in Fig. 2.

Students could also be offered a contact point (e.g. e-mail address) to direct questions to, but since this will depend on the context of the university the lecture is being given at, contact details should be displayed in a different way, see below.

2 Lecture layout

A lecture obviously consists of a number of slides that ‘tell the story’ of the lecture. The usual criteria for slide sets apply, e.g.

- sufficiently large fonts (not quite so important for on-screen delivery);
- de-cluttering, i.e. a single slide should focus on a single item that is explained;
- combination of text with relevant images and diagrams;
- use of animations to explain processes;
- use of intersection slides to structure the content (Headlines);
- acknowledgment of all external sources and co-authors;

etc.

As a first approach, TeachHy will be orienting itself along structures that are well known from traditional lecture (face-to-face) delivery:

- lectures should be segmented into portions of nominally 60 minutes length (1 lesson); in practice this is equivalent to 45 to 50 minutes running time of a recording (or face-to-face lecture);
- a lecture will typically have one or two such sections – allowing the students to follow lectures in the traditional sense, but also the freedom to interrupt and resume recordings any time;
- a typical number of slides for a lesson is 35 to 40, for a double lesson 60 to 80.

Lectures are to be supplied as a ‘video’ track. Preferably by being recorded via the Panopto software used by University of Birmingham (UoB). Instructions how to do this have been placed on the TeachHy UoB CANVAS pages.

Alternatively, any other recording context, such as multi-media laboratories and recording studios at consortium member universities can also be used. PowerPoint also offers an option to record slide shows with audio track.

The outcome should always be a slide set presentation with an audio track of the lecturer explanations.

The lectures of a module are arranged in sequence (see below). It should be kept in mind that students might choose not to follow this sequence. Therefore a slide at the beginning of the lecture stating any prerequisites to understanding the content might be helpful. An overview slide of the lecture content and learning outcomes can also be used.

The lecture file will be embedded in an overview page as shown in Fig. 4 (for a lecture with two lessons). The authors should provide the additional information such as reading lists, any supplementary information, quizzes to test learning outcomes etc. to be linked or included on the page.

The slide set itself (as pdf file) will for instance be offered for download under ‘Resources’.

The overview page should be adapted to the delivering university's specifics, also including the local contact (e-mail address other other way of contact).

The screenshot shows a Canvas LMS page for a course titled "C2 - 2 Basic Introduction to Electrochemistry and Thermodynamics". The page layout includes a left-hand navigation menu with options like Assignments, Discussions, People, Pages, Files, Syllabus, Outcomes, Quizzes, Modules, Conferences, Collaborations, Attendance, Chat, SCORM, Panopto, and Settings. The main content area features a blue header with the course title, followed by a "Learning outcomes" section listing a recap of the previous module and application to fuel cells and electrolysis. Below this is a "Lecture 2: A Basic Introduction to Electrochemistry and Thermodynamics" section. It includes instructions to use full screen and watch a video lesson. Two video thumbnails are shown: "A basic introduction to Electrochemistry and Thermodynamics Part 1" featuring Dr. Shangfeng Du from the University of Birmingham, and "A basic introduction to Electrochemistry and Thermodynamics Part 2" which includes a graph of Max Efficiency vs. temperature. The graph shows efficiency curves for FC (LHV), FC (HHV), and Carnot efficiency, with a temperature range from 0 to 1000 K. The page concludes with a "Summary" section, a "Resources" list containing a presentation link, and "References" and navigation buttons.

Figure 4: Example page of a lecture embedded on a CANVAS format web page.

3 Module layout

The lectures are arranged according to the content developers' concept of delivery as shown in Fig. 5. As discussed previously, students might not choose to follow this sequence and care should be taken to accommodate for this (see discussion in Sect. 2).

It might be useful to give a brief introduction into the module content as shown in Fig. 5 as the first entry.

A module will be released for publication (student access) according to the overall course timetable. In general, one module will be run across two to three weeks. This gives the students sufficient time to watch the lectures, 'digest' the content, prepare the coursework or study reports, and do additional reading or self-study to consolidate learning outcomes.

It will always be possible to move backwards, but not forwards in the course.

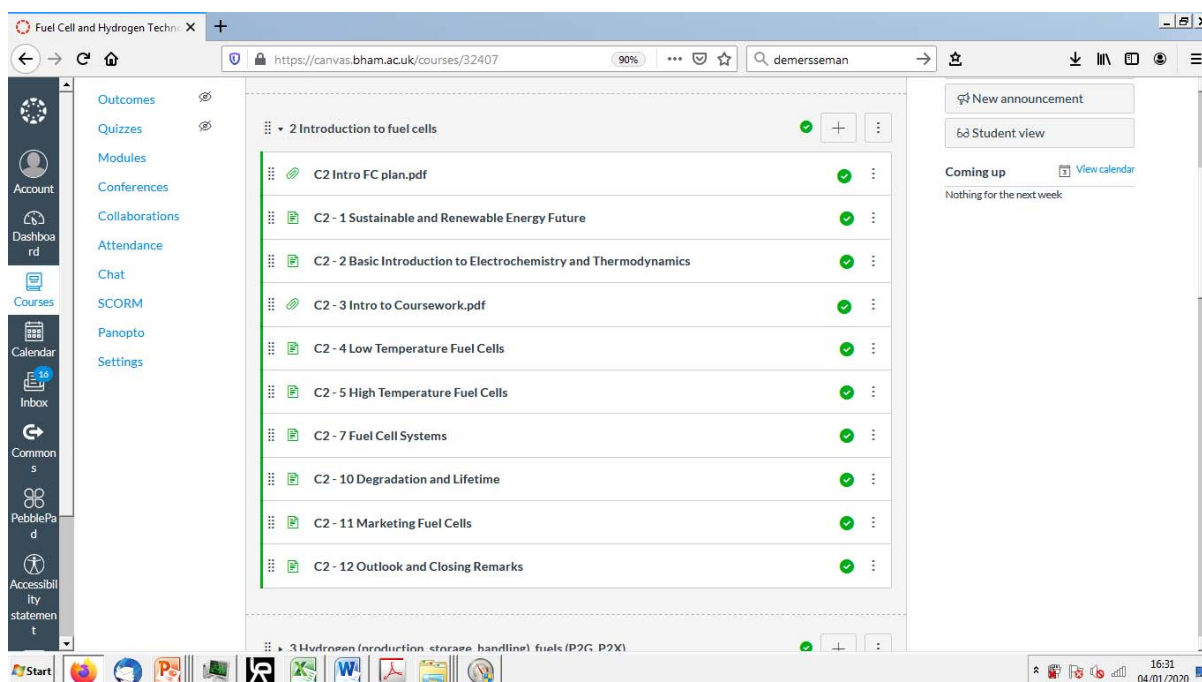


Figure 5: Module lecture overview

4 Course layout

The whole course is displayed and accessible as shown in Fig. 6. As explained in Sect. 3, modules will be accessible according to a timetable.

In addition to the course modules additional material should be offered, such as the introductory/induction lecture shown at the top of the list, or auxiliary information or lectures, introducing the use and functionalities of CANVAS, explaining the background of TeachHy etc. This will allow students to understand more about background, give them additional options for self-study and orientation, and offer additional reading or other resources (web links, additional information etc.).

Depending on the infrastructure available at the delivering university, Blogs, Contact Hours, Chats, or other Communication Platforms for student – lecturer interaction can be accommodated for. The individual university will have to conceive a structure in which the students are supervised and monitored, albeit the major part of lectures is delivered online. Since this will depend on individual university specifics, no further details can be given here, apart from emphasising that channels for interaction of students with lecturers and for feedback in both directions need to be established and maintained. Nothing is sadder than an empty blog or chat room.

The screenshot shows the Canvas LMS interface for a course titled "Fuel Cell and Hydrogen Technology". The browser address bar shows the URL <https://canvas.bham.ac.uk/courses/32407>. The course is currently published.

The course content is organized into modules, each with a green status indicator and a plus sign for adding content:

- Introduction / Inception
- Mandatory Modules
- 1 Thermodynamics, electrochemistry, chemistry
- 2 Introduction to fuel cells
- 3 Hydrogen (production, storage, handling), fuels (P2G, P2X)
- 4 Fuel cell modelling tools and control
- 5 Characterisation methods
- 6 Labs
- 7 Hydrogen and fuel cell safety
- Optional Modules
- O1 Environmental analysis, life cycle analysis
- O2 Low temperature fuel cells
- O3 Low temperature fuel cell and electrolysis systems
- O4 High temperature fuel cells
- O5 High temperature fuel cell and electrolysis systems
- O6 High temperature chemistry for SOFCs/SOEs

The right-hand sidebar shows the "Course status" section, which includes options to "Unpublish" or "Publish" the course, and buttons for "Import from Commons", "Choose home page", "View Course Stream", "Course setup checklist", "New announcement", and "Student view". The "Coming up" section indicates "Nothing for the next week".

Figure 6: Course overview page on CANVAS.