

Integrating Online Resources into Taught Courses - WORKSHOP

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Overview

The DoITPoMS (Dissemination of Information Technology for the Promotion of Materials Science) project has, over the last 7 years, developed a suite of web-based teaching and learning resources focusing on aspects of Materials Science commonly encountered within engineering-related courses (www.doitpoms.ac.uk).¹

There are now around 50 “Teaching and Learning Packages”, a collection of nearly 1000 micrographs and over 100 short video clips available. Through support of UKCME (national HE Subject Centre for Materials), the suite of resources continues to grow and improve. Ways are being explored to ensure that the resources produced can easily be integrated within structured courses, such that they become an integral part of the teaching and learning process.

As part of the teaching and learning of Materials Science within the University of Cambridge, a range of methods of introducing these resources into our courses have developed, and we are now keen to take this further. This interactive workshop will aim to explore the mechanisms through which DoITPoMS resources can be introduced to students as an integral part of their courses of study. UKCME have also encouraged uptake of these resources through evaluating on a national scale their use and applicability in different contexts.

This workshop will seek to explore further mechanisms that promote the use of the resources, and that generate new ideas to engage students with the electronic packages. The workshop will also highlight how the national project can best develop future resources in order to facilitate this process.

Session Outcomes

1. Participants will be familiarized with the full range of resources available in DoITPoMS.
2. Other electronic resources which can be used in the teaching of Materials Science & Engineering will be identified.
3. Methods of integration of such electronic resources into the structure of undergraduate courses will be determined and their effectiveness will be discussed.
4. We will seek to identify the most desirable ways in which electronic resources should be developed in order to maximize their utility in taught courses.

Structure

1. **Introduction** : Aims and Objectives of the workshop.
2. Full overview of the DoITPoMS resources.
3. **Sub-group activity 1**: General methods of integrating electronic resources.
4. Discussion of electronic resources useful for teaching Materials Engineering.
5. **Sub-group activity 2**: Design of a specified course element using DoITPoMS.
6. Conclusions.

Activities

1. The Aims and Objectives of the workshop will be described, in terms of the session outcomes indicated above. We will then seek to identify the potential benefits of integrating online resources into taught courses as well as highlighting any difficulties in doing so. This introduction will take the form of the workshop leader describing the aims and objectives before seeking contributions from participants. *(5 minutes)*
2. A full overview of DoITPoMS will be given by the workshop leader, using a live link to the site. The 3 key areas (TLP library, Micrograph library and Video library) will be described. The utility of the DoITPoMS website will at this stage be described in terms of a set of resources used “in isolation”. Participants will be invited to indicate how familiar they are already with this specific resource. Any questions from participants regarding the content of the site can be addressed at this stage. *(10 minutes)*
3. The first small-group activity will involve participants developing ideas of how different aspects of the DoITPoMS resources might be used to enhance the effectiveness of a structured course. The group will then join together to discuss the suggestions and attempt to identify which proposals are the most effective in terms of a) enhancing students’ understanding and b) increasing students’ motivation. At this stage, the workshop leader may add to the suggestions the wide range of ways in which the resources are presently used in Cambridge and allow the group to comment on the effectiveness of these. *(30 minutes)*
4. There will be a short (5-minute) “break” at this point, but participants will be asked, whilst stretching their legs, to ponder and discuss other online resources which can be used in areas of Engineering related to Materials. We will then compile a list of all the resources of which we are aware. This list will later be disseminated amongst workshop participants. *(10 minutes)*
5. Breaking into small sub-groups again, the participants will be asked to “design” in some detail a new undergraduate course element which is centred around the use of DoITPoMS resources. After 15-20 minutes, each group will present their proposal to the workshop. *(30 minutes)*
6. The workshop will conclude by reviewing the benefits and difficulties of integrating electronic resources in the context of the ideas proposed. In particular the following question will be posed: “How can the existing electronic resources best develop in order to make them most useful and easy to use as part of a taught course” *(5 minutes)*

References

Barber, Z. H., Leake, J. A. and Clyne, T. W. 2006, ' The DoITPoMS Project – a Web-based Initiative for Teaching and Learning Materials Science', Journal of Materials Education, vol. 29, no. 1-2, pp. 7-16.