

Development of TLPs (Teaching & Learning Packages) for Materials Science

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**What has been achieved, or is happening,
at our institution?**

**How to apply our project in other
institutions (and to a wider audience)?**

What has been achieved, or is happening, at our institution?

- ❖ How has your project progressed in your institution – and what has been achieved?
- ❖ What impact is it having in your institution?
- ❖ What is its future in your institution?

Developed from DoITPoMS

- ❖ [Homepage](#)
- ❖ [Partners](#)
- ❖ [TLPs](#)
- ❖ [Development](#) TLPs
- ❖ [Anisotropy](#)
- ❖ [Anisotropy Aims](#)

The Final Report to HEFCE is available from the website

Summer 2004 Procedure

- ❖ Teaching Development Project grant (£5000) contributed ~55% of 46 student-weeks
- ❖ Recruited / selected students
- ❖ Scheduled student and staff availability through summer
- ❖ Held weekly meetings

Summer 2004 Achievements

❖ Worked on these TLPs:

- Introduction to Anisotropy*
- Crystallinity in Polymers*

- Elasticity in Biological Materials⁺
- Avoidance of Crystallisation in Biological Systems ⁺

* Published + To be made public later this month

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Impact in our Institution

- ❖ Students helping to in create resources provide ideas, rapid feedback and frank evaluation

- ❖ Greater awareness of web-based teaching resources
- ❖ Use by staff in:
 - lectures
 - supervisions (tutorials)
- ❖ Use by students in connection with
 - preparation for/revision of practicals
 - source of information for use with Question Sheets

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Future in our institution

- ❖ Continued use along the lines described

BUT

- ❖ Teaching resources, especially computer-based resources, soon grow tired; maintenance is essential; skilful staff input will continue to be required to provide TLC

Statistics

❖ Usage within the UK and more widely is monitored

➤ [General usage](#)

How to apply our project in other institutions (and to a wider audience)?

- ❖ What has been successful in your project?
- ❖ Why did you progress with the development of your project in that way?
- ❖ What barriers have there been in the development of your project?
- ❖ How have these barriers been overcome?
- ❖ How easily could your project outcomes be promoted / transferred to other courses and institutions (relevant to other students)?
- ❖ For other Materials academics to apply / take-up your project, (i) what would they need to know, (ii) what would they need to do, and (iii) what resource implications would there be related to the project?

Examples of Usage elsewhere

- ❖ Oxford Brookes
- ❖ Coventry
- ❖ Limerick
- ❖ IoP and RSC courses for physical-science schoolteachers
- ❖ UKCME and Engineering Subject Centre interactions

How to apply our project in other institutions (and to a wider audience)?

❖ What has been successful in your project?

- Involvement of students and several staff
- Employment of Project Officer with substantial teaching experience

❖ Why did you progress with the development of your project in that way?

- Students initially tried as an experiment to help busy staff
- Project Officer - serendipity!

How to apply our project in other institutions (and to a wider audience)?

- ❖ What barriers (??) have there been in the development of your project?
 - Recruitment and retention of skilled project staff
 - Browser/platform variations
 - Restricted software availability on some institutional networks

- ❖ How have these barriers been overcome?
 - Not all have! Over some we have no control

How to apply our project in other institutions (and to a wider audience)?

❖ How easily could your project outcomes be promoted / transferred to other courses and institutions (relevant to other students)?

- Resources must be easy to incorporate - bite-size is better
- Illustrate and augment, rather than sweep away
- Give opportunities for hands-on experience - another workshop??
- Involve colleagues from other institutions

How to apply our project in other institutions (and to a wider audience)?

For computer-based use

❖ For other Materials academics to apply / take-up your project:

- (i) what would they need to **know**;
 - o what is available - locate via UKCME, Google, Psigate, EEVL, ...
 - o what they wish to achieve
- (ii) what would they need to **do**;
 - o devise suitable material to encourage students to work through the TLP on-line, e.g. a question sheet
- (iii) what resource implications would there be related to the project?
 - o nothing beyond normal provision

How to apply our project in other institutions (and to a wider audience)?

For setting-up practicals

- ❖ For other Materials academics to apply / take-up your project:
 - (i) what would they need to **know**;
 - o what is available and what they wish to achieve
 - (ii) what would they need to **do**;
 - o study the TLP on-line and copy the equipment
 - (iii) what resource implications would there be related to the project?
 - o whatever(generally simple) kit is involved

On-going Work

- ❖ CMI (Cambridge-MIT Institute) project developing "Instructor Resource Modules"
- ❖ Further TLPs (funding permitting), e.g.:
 - Fuel Cells
 - Electromigration
 - Deformation Processing
 - Recycling