Application for learning technology support for development of EBL in online teaching, learning or assessment

This application should be returned electronically to ceebl@manchester.ac.uk by 29th May 2009.

1. **Project Title:**
    Online Learning component for Earth Resources

2. **Unit/programme of study/student group to which project relates**:
    Earth Resources. EART 10262

3. **Number of Students:**
    135 students

4. **Faculty/School/Department**:
    School of Earth, Atmospheric and Environmental Sciences

5. **Project team** (Put team leader's name first, with contact details):
    Professor Richard Pattrick, richard.pattrick@manchester.ac.uk, tel: 53816. Williamson G35; Richard Hartley, Professor D J Vaughan, Dr Alice Bows (SCI) and all SEAES.

6. **Summary of proposal or interest in receiving EBL consultation** (Include where possible your aims, objectives and anticipated outcomes – max. 150 words):

    To provide students with a real context for their understanding of the nature of the Earth's resources and mankind's use of them, using the excellent example of Manchester.

    A 'traditional' practical element for this course is impossible but on our doorstep is a superb opportunity to study our use of energy, materials and water. It is proposed to make use of online resources and tools , including web-based information, to direct the students to examine the consumption of abundant and scarce metals, chemical and industrial minerals, construction materials energy sources (fossil, nuclear alternative, water and land resources.

    Students will be directed to easily accessible locations in Manchester where they can observe and collect information on resource consumption. Web based resources will provide unobtainable information (on pervasive themes such as resource exploitation (mining etc), environmental damage at source, economics (commodity markets and economics) and the sustainability of the resources (reserves, demand, environmental effects).

    There is potential for the project to change the present shape of the course delivery and assessment from lectures, book based self-study and written exam to task based learning and collaborative course work assessment.

CEEBL

The objectives to achieve this would be:
1. **Create a Blackboard space which guides students to key online resources and helps to develop their critical thinking skills**
2. **Design a collaborative task based on a city centre location which requires students to work in groups to collect, display and analyse data from primary and secondary sources (At present it's envisaged that a wiki with potential to display video would be the best tool, but this is to be explored during the design phase of the project.)**

7. **Benefits** (identify the possible benefits e.g. in terms of student learning. – max. 150 words):

- **This will provide an understanding of resource sources and their exploitation; their uses and consumption; their future sustainability; basic commodity economics; and the narrow and wider environmental implications of their use.**

- **It will introduce the student, via the web sites, to major mining corporations, utilities companies, energy providers and their operations and their environmental policies.**

- **It will inform the student in a practical way about an area that is a major employer of all graduates, but earth and Environmental students particularly.**

- **It will enforce the ability of students to make observations from various data sets/sources then make informed interpretations; this a fundamental skill cherished by most employers of graduates and especially important underpinning skill for Earth Scientists.**

- **The group work will encourage collaborative learning**

- **Collaboratively analysing the city in which we live will produce an exciting learning experience**

8. **Project action plan** (Indicate stages in implementation. - max. 50 words):

1. **Provide details on project's proposed academic content (June '09)**
2. **Meet with project team and stake holders to define actions needed, responsibilities, a rigid timescale and clear deliverables. (July '09)**
3. **Define online media to be used (Aug '09)**
4. **Define detailed structure of the individual components (Aug '09)**
5. **Construct the Blackboard space and associated forums and wikis. Begin to build and manage the online content and formative assessments (Sept '09)**
6. **Define student training needs and face to face guidance required to support online learning activity. (Nov '09)**
7. **Plan evaluation systems, testing and implementation (Dec '09)**
8. **Launch (Semester 2, February 2010)**

CEEBL

9. **Evaluation** (Please provide us with a brief description of the mechanism you intend to use for evaluating the achieved outcomes – max. 150 words):

The following mechanisms will be used to gather quantitative and qualitative data and measure the effectiveness of the project:
  - **System statistics from Blackboard and the wikis**
    This will gauge student involvement and their learning
  - **Online survey**
  - **open discussion forums for continuous feedback which users can offer at any time throughout the project**

In the longer term, tracking students post project to measure their awareness of resource issues will give an indication of success

10. **Other CEEBL support requested** – additional support from CEEBL (e.g. training, financial, Student Intern support, facilitation training, preparing students for EBL, evaluation and research – max. 150 words):

  - **Support from EPS learning technologist and CEEBL with learning design, methodology and selection of appropriate elearning tools**
  - **Support from EPS learning technologist to prepare appropriate training materials and guidance for tutors and students**
  - **Support from CEEBL in preparing students for EBL**
  - **It is hoped to produce innovative components such as 3D reconstructions of resource consumption (perhaps using LIDAR technology) and interactive videos (game/driving test like).**