# UCL Engineering Sciences E-Learning Report 2013

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Executive Summary

This report provides a snapshot of the use of e-learning technologies in the UCL Faculty of Engineering Sciences departments in 2012-13. The information was gathered through a series of meetings by the UCL E-Learning Advisory team with departmental representatives from late 2012 to early 2013 and has been augmented by usage data from the 2012-13 academic year, where this is available.

Results of data analysed from Moodle, IT Student Surveys, Google Analytics and Lecturecast found:

- Most Engineering Sciences Moodle courses are around the baseline level, although some don’t yet meet UCL Minimum Standards (baseline).
- Some students are asking for their lectures to be captured for later review, increased use of videos and animations and more use of electronic voting systems.
- Some Engineering Sciences Moodle courses are using enhanced features to:
  - more efficiently manage assignment submissions.
  - provide students with online grades and feedback.
  - communicate with students online; and allow them to communicate with each other.
  - provide searchable databases and interactive learning objects.
  - manage administrative tasks online - such as student / tutor meeting bookings.
- Mobile access of learning materials is growing (it’s currently around 10%).

From discussions with departments a number of initiatives are suggested to improve the provision of e-learning in the faculty. Recommendations include:

- Audit courses and develop those Engineering Sciences courses that are not yet meeting the UCL baseline.
- Produce a standard Moodle template for each department to ensure consistency.
- Develop a bank of diagnostic and formative quiz questions for re-use.
- Implement a consistent electronic assignment submission, feedback and grading process.
- Encourage wider and richer use of Lecturecast, including ‘flipped’ lectures.
- Investigate ways to capture board work for students to review later.
- Develop case studies and support materials to demonstrate possible use of e-learning.
- Promote the use of electronic module and programme feedback processes.
- Improve the support and processes for distance learning courses.
- Enable Engineering Sciences staff to borrow and try out e-learning equipment.
- Provide a central space staff (and potentially students) can use to record and edit videos.
- Promote effective use of discussion forums & wikis to allow remote students to collaborate.
- Invest in the development of e-learning materials by funding a Learning Technologist post.
- Provide e-learning grants to enable staff to investigate and develop their e-learning concepts.

Some of the limitations and assumptions of the report include:

- There is no data for E-Learning activities that occur outside of Moodle and Lecturecast.
- There is no data for how many Engineering Sciences staff have borrowed Electronic Voting Systems handsets.
- The Moodle data is for both undergraduate and postgraduate modules.
Introduction
The report provides an overview of current e-learning activity in Engineering Sciences including the use of Moodle, Lecturecast, electronic voting and e-assessments, other e-learning project activity and issues and ideas arising from the departmental meetings. The report concludes with a list of possible actions and strategies.

Context
Clive Young and Jessica Gramp, E-Learning Environments, met with a range of Heads of Departments, E-Learning Champions and other representatives from the Engineering Sciences departments in a series of meetings from late 2012 to early 2013. This initiative was as part of the UCL's Strategy for e-learning at UCL 2012-2015 [http://www.ucl.ac.uk/teaching-learning/strategic_priorities/e-learning-strategy] which includes actions to:

- Benchmark current provision, providing each department with data representing the nature and level of use of e-learning across their programmes against which to analyse and measure future development and enhancement.
- Measure and review departmental e-learning provision periodically, feeding back into departmental and central quality frameworks.
- Develop departmental e-learning statements articulating departments’ expectations for the level and nature of use of e-learning across programmes and highlighting support needs.

The meetings coincided with the initiation and launch in February of the UCL E-Learning Champions network, another strand of the Strategy for e-learning. The role of the Champions is to work with ELE and CALT to develop departmental e-learning statements highlighting support needs (by December 2013), measure and review departmental e-learning provision periodically, feeding back into departmental and central quality frameworks and identify and help disseminate good local, UCL and sector-wide practice, and support local events and networks.

E-learning activity at UCL
The use of UCL Moodle is regarded here as one indicator of e-learning activity, although it is appreciated that there will be other e-learning activities run outside of Moodle that we don’t have data for. Moodle is however considered a useful benchmark as in June 2009 Academic Committee agreed that taught modules at UCL should aim to have a Moodle presence by September 2011. A set of minimum (baseline) components were defined as a means providing a consistent set of information and resources to support face-to-face teaching as follows. Courses are expected to include; staff contact details, module outline, module handbook, reading lists - ideally using the Library Block to link to the online reading list service and a discussion/news forum to aid communication. Courses should include; timetable/course calendar, lecture notes, presentation slides, hand-outs, glossary of key terms, links to external resources and additional texts and resources. The 2013 IT Student Survey revealed that students are relatively happy with Moodle and there is a general move to mobile learning. See Appendix 5: 2013 IT Student Survey Results.

Mobile access of UCL Moodle (while growing) still only accounts for 10% of access. The Windows operating system still dominates, probably due to this being the platform widely available on UCL computers, but there are many staff and students also using personal Apple Macintosh computers. A broad range of web browsers are being used across Apple and Windows desktops, and mobile devices.
This means we need to be aware that our students will be accessing websites, online tools and software on a variety of devices and platforms. See Appendix 6: UCL Moodle usage overview.

E-Learning activity within Engineering Sciences

Moodle

Moodle usage statistics in this report have been collated and supplemented by visually checking a selection of courses from each department that were highlighted by the statistics. Both undergraduate and postgraduate courses have been analysed in this report.

Overview

- There are roughly 650 active Engineering Sciences Moodle courses - 849 in total, including 206 hidden courses. It is not possible to say if this represents all Engineering Sciences modules. It is appreciated some Moodle courses will be used for purposes other than teaching (e.g. Internal Quality Reviews (IQRs); departmental templates; or staff information sharing areas), some Moodle courses will represent an entire degree programme, which encompass the taught modules within.
- The majority of Moodle courses at UCL (including Engineering Sciences courses) are utilising Moodle as a system to deliver files and links to additional resources.
- There are pockets of enhanced Moodle use within Engineering Sciences, but there is often little consistency within departments and little sharing of practice.
- The most active courses in the majority of departments are receiving at least 1 hit a day per enrolled student during term time. This suggests that in at least some courses Moodle is now a mainstream part of the students' learning activities.
- While the majority of Engineering Sciences courses appear to meet the Baseline standard above there are still some courses that do not contain basic requirements, such as staff contact details or links to the module handbook.

Resources

- Together Engineering Sciences courses contain nearly 19,000 links to files, over 600 folders containing further files and around 2,700 links to websites. Over 700 pages are being used to display content. In other words Moodle represents a substantial investment of staff time. However very few courses are using books for displaying multiple pages of content, or glossaries for defining key terms.
- All Engineering Sciences departments, except the School of Energy & Resources, have modules that are using electronic reading lists to allow their students to access core readings electronically (where available). Library reading lists can be easily integrated in to Moodle by adding the Library Resources block. As well as providing an (automatic) link to the module reading list, it also provides links to past exam papers and the UCL library’s federated search tool (UCL Explore).

Communications

- Generally the communications features of Moodle (especially Forums) are underused across UCL, though as regular student use of Moodle increases this provides an efficient method of maintaining contact with students. Most Engineering Sciences courses however use Moodle News Forums and some are using them extensively to inform students of assessments, room changes etc.
Some courses are also making use of the learning forums to allow students to ask coursework related questions and a few also use the Moodle chat feature to set up scheduled times for students to discuss project work. In Computer Science and Security & Crime Science there is extensive use of learning forums, with roughly half of courses providing this feature. However, overall there is a low use of discussion forums for learning and many that do exist aren’t actively used by students. This is consistent with experiences in other departments and may be caused by numerous factors, such as students using external systems (such as Facebook and instant chat clients) to communicate with one another. There are methods that can be used to encourage discussion forum participation – since by using external systems students are missing an opportunity to communicate with their tutors.

Schedulers (in 16 courses) are being used to enable students to book times to speak to their lecturers and personal tutors.

Moodle Questionnaires are being used in around a third of active Engineering Sciences courses (205). They are primarily being used to obtain student feedback on lectures, modules and programmes. Electronic and Electrical Engineering, Management Science and Innovation, Mechanical Engineering and Security & Crime Science all use a template to gather consistent feedback across modules. One reason for some departments not using Moodle Questionnaires is that Opinio questionnaires may be used instead, or staff may be using paper feedback forms to encourage a larger response rate. One way to encourage responses that is being trailed in some UCL departments is to ask for feedback at regular periods throughout the teaching period, so students have a chance to provide feedback while there is still time to affect changes while they are still undertaking the course. Some departments are also considering hiding particular resources until student feedback is completed.

Mechanical Engineering and Biochemical Engineering have developed virtual offices in Moodle to enable students to locate materials common across modules.

Assessment and feedback

Around half of all Engineering Sciences courses are using Moodle for assignment submissions. They contain over 1300 assignment drop-boxes, including both Moodle Assignments and Turnitin Assignments. While departments are primarily using Moodle to ease the assignment submission process, some courses in nearly every department are also using Moodle to provide grades and/or feedback. Some are using Turnitin GradeMark to provide feedback by taking advantage of its comment bank features and also to provide substantial general comments and grades. Some staff are using Moodle Assignments instead, to provide text comments and grades. There is widespread use of Moodle Assignments to provide feedback and grades in Computer Science and Chemical Engineering, while many Management Science and Innovation courses are providing feedback via Turnitin. While generally across UCL Turnitin is more widely used than Moodle Assignments due to its online grading facilities and plagiarism prevention tools, in Engineering Sciences there are more Moodle Assignments (745) than Turnitin Assignments (616). This is likely because Moodle Assignments accept any file type while Turnitin only accepts Word, PDF and text files. It may also be the result of issues surrounding how Turnitin deals with some types of mathematical equations and that Turnitin doesn’t allow staff to annotate assignments in the same way that Word and PDF documents can be annotated when using Moodle Assignments.

Every Engineering department is making use of Moodle quizzes in at least one course. These are predominately formative, but some are being used to run mock exams and for low stakes
summative assessment. Several courses in Management Science & Innovation and Chemical Engineering are making extensive use of formative and summative quizzes. Currently 87 courses are using quizzes and there is considerable interest in providing further diagnostic and formative quizzes to students across Engineering departments.

Activities
- Moodle has a number of tools to facilitate forms of interactive learning for students. There is some presence of these tools in Engineering Sciences courses: Wikis (in 38 courses), Chats (in 20 courses), Glossaries (in 12 courses), Databases (in 11 courses), Books (in 18 courses), Lessons (in 14 courses), Choices (in 46 courses), though actual student usage may be quite low.

Lecturecast
Lecturecast recording has grown rapidly across UCL, driven partly through student demand. Three Engineering Sciences departments (Management Science and Innovation, Electronic and Electrical Engineering and Chemical Engineering) rank in the top ten UCL departments in terms of Lecturecast viewings. All other Engineering Sciences departments, except for Security & Crime Science (SCS), who do not teach in lecturecast enabled rooms, are also using the system to some extent. Now that video can be uploaded to the system using the media import feature, academics that have previously provided videos to students directly (such as those in SCS) can now also use the system. The use of the Lecturecast personal capture tool also means staff can record videos directly from their own computer. Several departments are interested in using Lecturecast more widely in future, which will also be aided by more UCL lecture theatres being lecturecast enabled. The 2013 Student IT Survey indicates there is strong student demand for lectures to be made available via Lecturecast this from a variety of Engineering Science disciplines. See Appendix 5: 2013 IT Student Survey Results.

Electronic Voting
Electronic Voting Handsets are available for loan from the Audio Visual Centre, along with other equipment such as data projectors, laptops, camcorders and DVD players. Further information about borrowing AV equipment is here: http://www.ucl.ac.uk/isd/staff/classrooms/av-centre/loans

There is no data on record to show which departments have been using these services, so the only information we have been able to gather about this is from the Student IT Survey from January 2013. See Appendix 5: 2013 IT Student Survey Results.

Students studying Chemical Engineering and Electronic and Electrical Engineering commented that using Electronic Voting Handsets in their lectures helped to support their learning.

45% of the 141 Engineering Sciences students who completed the survey reported not using electronic voting with ‘clickers’ at all in their classes. Those who used them reported the following levels of effectiveness:
Digital Learning Objects - preparing for & reflecting on labs and field trips

Students’ experiences of lab work can be greatly improved by preparation using visually-rich materials delivered via Moodle (pre-labs). Such materials can also support students during the lab itself and facilitate follow-up reflection and consolidation of learning (post-labs). ELE is currently outlining a proposal to develop a range of sharable short video clips, animations and interactive objects i.e. ‘learning objects’ that can be easily embedded in Moodle pages, quizzes, lessons and books.

UCL E-Learning Development and Teaching Innovation Grants

UCL E-Learning Development Grants (ELDG) and UCL Engineering Summer Studentships

Engineering Sciences staff have bid for a number of ELDG grants since 2007, many of which have been successful. Several staff have also received funding under the Engineering Teaching and Learning Studentship scheme in order to develop e-learning materials. Several successful bids were for developing diagnostic and formative quizzes for incoming students, which is something several Engineering Sciences departments are keen to develop further in 2013. Other successful bids include the development of e-labs to enable students to learn how to use lab equipment virtually, before arriving in the physical laboratory; online tutorials; collaborative learning systems for group coursework; digital treasure-hunts; and student videos for peer learning.

Unsuccessful bids have covered the following themes: object-oriented scenarios; online tutorial development; continuing professional development (CPD).

E-Learning Champions

The E-Learning Champions initiative has arisen as part of UCL's E-Learning Strategy, which was published last year. The strategy identified departmental engagement and the establishment of local e-learning champions as being key to improving the quality of technology-enhanced learning. Over December and January each department was asked to nominate two or more colleagues - at least one academic and one person working in a support role (e.g. technical or administrative) who will champion the use of e-learning.

[Source: http://www.ucl.ac.uk/teaching-learning/news/e-learning-champions-network-launched]
Recommendations
Based on the discussions with E-Learning Champions and the data gathered for each Engineering Sciences department the E-Learning Advisory team make the following recommendations for improving e-learning provision across the faculty.

Sharing Best Practice
- Video Case Studies - each department could contribute at least one case study using personal capture or similar to show in 2 - 3 minutes how and why an e-learning activity has been established and used by students.

E-Learning Development and Grants
Given the amount of development work required consideration should be given to the following:

- Create a Learning Technologist post for Engineering Sciences – this role has been established and will enable work to support staff and develop quiz question banks; implement Moodle templates; support media development; and report on usage.
- Provide Engineering Sciences E-Learning Innovations Grants to enable staff to investigate and develop their e-learning concepts. UCL Engineering already runs summer studentships and other schools are funding similar initiatives:
  - UCL Engineering Summer Studentships - students are paid £220 per week for up to 8 weeks to develop e-learning content or activities.
  - SLMS Education Innovation Fund – promotes advancements in undergraduate and postgraduate teaching and learning by providing up to £15k in funding per project.

Moodle consistency
- Produce a standard Moodle template for each department - based on current good practices in Engineering Sciences, for baseline and enhanced use of Moodle. This will help to provide consistency across the department and faculty.
- Develop Questionnaire templates for each department – to capture consistent student feedback across modules.
- Audit courses against the UCL Moodle baseline - develop any that do not yet meet it.
- Work with staff to use Moodle more consistently for communication – run workshops with departments to provide guidance on how to engage students in active online discussions. See Appendix 1: Benefits to using Moodle for communication.
- Focus on improving larger, entry-level courses to orient students. See Appendix 2: Reasons for focusing on large, first year Moodle courses
- Collate 'good practice' in Moodle (and beyond) in an exemplar course to share practice across the faculty.

Moodle development
- Work with staff to enhance Moodle. For example:
  - Investigate ways to work with electronic equations
  - Install additional features and plugins - e.g. Moodle Quiz import plugins
  - Promote newly released features - e.g. Moodle rubrics
Assessment and feedback

- **Develop a bank of diagnostic and formative quiz questions for re-use.** This would be supported through the development of a simplified quiz creation process, workshops, demonstrations and possibly innovations grants.
- **Implement a consistent electronic assignment submission, feedback and grading process** (where appropriate) in each department. While not all assessments are suitable for electronic submissions (e.g. those that include hand-written equations and sketches) managing the assignment collection and feedback process via Moodle can have several benefits for those assessments that are already available in electronic form. See Appendix 3: Benefits to using Moodle for assignment submissions & feedback.

Media and resource development

- **Encourage wider and richer use of Lecturecast where appropriate** – Engineering Sciences students are asking for more lectures be made available on lecturecast. See Appendix 5: 2013 IT Student Survey Results.
- **Investigate new Lecturecast features:** live streaming and asynchronous discussions
- **Provide support for video capture and editing:**
- **Develop pre-labs and post-labs to make better use of students’ time in the lab / field** This has proven successful and popular with Chemistry students in the Maths & Physical Sciences Faculty and could be used for preparing for field trips, allowing students to reflect afterwards.
- **Provide a media capture area within the faculty and each department** (with computer, microphone, webcam and personal capture software in a quiet space for recording videos).
- **Trial the use of technology to capture board work** (c.f. Medical Physics & Bioengineering) and make it available through the Lecturecast system – e.g. tablets, digital pens, whiteboards, board tracking or board mounted cameras.
- **Trial the use of classroom technology:**
  - Software to use e-voting systems via mobile devices (phones & laptops)
  - Untethered mobile devices for screen projection
- **Investigate the development of resources for use on multiple devices** (c.f. Electronic & Electrical Engineering) that are easy to update and are user friendly (such as eBooks)
- **Provide technology to allow Engineering Sciences staff to experiment with e-learning** – this will enable staff to become more proficient and confident with using technology. Consider:
  - Laptops with Screen Capturing software.
  - Tablets and other mobile devices for e-marking and content development.
  - Paper Show - allows them to write equations and save them as a video on their computer.
  - Classroom set of clickers for use over a full term / lecture installed clickers.
  - Software to use e-voting systems via mobile devices (phones & laptops).
  - Untethered mobile devices for screen projection.
Biochemical Engineering

E-Learning Champions

- Dr Martina Micheletti (Academic)
- Mr Nicholas Cameron (Administrator)

Highlighted practice for discussion with other departments

- 1 module (BENG1004) provides an electronic reading list so students can easily access core readings.
- The majority of courses are using electronic assignment submissions. There is some use of electronic feedback.
- Some courses are using learning forums to enable students to give feedback, undertake group work and ask questions.
- Some courses are using Moodle questionnaires to gather module feedback from students.
- A virtual office Moodle course provides students with module and programme information, forums, and links to student welfare, careers, contacts and alumni information.
- The department uses a Moodle template to provide a consistent experience for students.

E-Learning Development Grants

- 1 unsuccessful bid was submitted in 2010 for ‘Development of an object orientated scenario and supporting dynamic online tutorial’.

Engineering Teaching and Learning Studentships

- In 2013 Dr Martina Micheletti and Nicholas Graham (Year 2 UG student) submitted a successful bid for creating a Moodle site with activities on unit operations to facilitate learning (primarily using quizzes as formative assessment and media tools).

Issues

- Not enough resources to develop e-learning activities, especially for distance learning courses.

Ideas from E-Learning Champions meetings

- Develop a Moodle Questionnaire template for use in the department.
- Require students to pass a Health & Safety quiz before entering the lab.
- Develop scenarios with pre-reading and assessment.
- Additional staff investment with e-learning expertise would be helpful to support a coherent departmental strategy.

Distance Learning

- In 2007 the Scottish development agency created four small e-learning modules for the department, which are still being run, although not in Moodle.
- There is interest from staff to develop these further, but there are limited resources available.
**Moodle usage**

There are 139 Moodle courses, including 90 hidden courses – meaning only 49 courses are available to students. It appears that few courses meet the baseline standard, as many are missing staff contact details and module outlines. The most active course is **BENG1001: Introduction to Biochemical Engineering (161 students)** and is getting around 139 hits a day during term time.

**Communications:** 86 courses are using Moodle News Forums to inform students of events, deadlines, homework, changes to lectures, and the availability of lecture notes, grades and feedback. Overall, there is low use of discussion forums for learning. 11 courses are making use of forums to enable students to give module and programme feedback, undertake group work and ask questions about the course work and assessment. While most of these are active, some are not being utilised by students. 3 courses are using Moodle Questionnaires to enable students to provide module feedback. 1 course is using the chat feature to allow students to discuss course work related ideas; however, it appears that students logged in at different times, so were unable to start a real-time discussion with others.

**Resources:** Together the courses contain over 1133 links to files, 42 folders contain further files and there are 86 links to websites. 1 course is using a page to display content, which can help these course home pages to appear less cluttered with information. 1 course is using books for displaying multiple pages of content. No courses are using IMS Content Packages to deliver course materials.

**Assessment:** Most of the active courses (50 in total) are utilising electronic assignment submissions in some form. Some of these are also providing feedback and grades electronically. 7 courses are using Moodle Assignments for coursework submissions, and some are also providing grades and feedback by providing response files using tracked changes in Microsoft Word. 43 courses are using Turnitin Assignments for submissions and some are using this tool to provide grades and feedback, in the form of re-usable comments. No one appears to be using Turnitin to provide general written feedback. 6 courses are using Moodle quizzes, predominately for formative assessments, but also to provide mock exams and low-stakes assessed quizzes. No courses are using Certificates for students to show they have achieved a certain level on a course.

**Activities:** No courses are using lessons to provide tutorials with guided pathways through pages containing videos, interactive animations, images and text materials. No courses are using glossaries for providing (and asking students to contribute) terms and definitions. No courses are providing wikis for students to share information. No courses are using workshops for managing peer assessment. No courses are using databases for sharing materials. No courses are using hot questions for asking students to contribute core questions before face to face teaching sessions. No courses are using SCORM Packages to deliver interactive activities.

**Lecturecast**

The following module has used Lecturecast:

- BENG004
Chemical Engineering

E-Learning Champions

- Dr Eva Sorensen (Academic)
- Mrs Pat Markey (Administrator - Postgraduate)
- Miss Agata Blaszczyk (Administrator - Undergraduate)

Highlighted practice for discussion with other departments

- Many courses are using Moodle assignments to provide marks and feedback for electronically submitted coursework, as well as offline assessment tasks.
- In 2013 students developed e-learning materials for five 1st year modules.

E-Learning Development Grants

- 1 unsuccessful bid was submitted in 2008 for ‘Introducing e-learning in Chemical Engineering’.

Engineering Teaching and Learning Studentships

- In 2012 Valentina Dore submitted a successful bid for an E-Lab for Chemical Engineering Experimentation.
- In 2012 Eva Sorensen submitted a successful bid for Process Control.
- In 2012 Haroun Mahgerefteh submitted a successful bid for Thermodynamics.
- In 2013 Eva Sorensen submitted five successful bids for Year 1 modules.

Issues

- It can take a long time to develop e-assessments, including quizzes.
- Lack of human resource to develop e-learning activities.

Ideas from E-Learning Champions meetings

- Raise the department’s NSS score by providing feedback via formative quizzes.
- Develop formative exam revision quizzes for all (~15) undergraduate modules with exams (not lab, design or research modules). These would contain ~25 questions from core module materials, plus links and textbook references to further readings.
- Develop diagnostic quizzes for Masters students deciding which modules to take.
- Develop a template and process for importing Moodle quiz questions.
- Use Moodle questionnaires or Opinio to obtain feedback for every module.

Distance Learning

- There are no current plans to implement distance learning in the department.
Moodle usage

There are 34 Moodle courses, including 5 hidden courses. It appears that most courses are close to meeting the baseline standard, as a department template is being used on many courses to outline teaching staff names, office hours, coursework mark breakdowns and deadlines; however, in most cases no contact details (or links to contact details) are provided. The most active course is CENG1002: Thermodynamics (146 students) and is getting around 309 hits a day during term time.

Communications: 34 courses are using Moodle News Forums to inform students of events, lecture changes, deadlines, required preparation for lectures and the availability of lecture notes and grades. Some are also using the news forum to communicate with discreet groups of students. Overall there is very low use of discussion forums for learning. 1 course is making use of forums to provide group feedback. 1 course is using Moodle Questionnaires to enable students to provide module feedback. No courses are using the chat feature to allow students to ask each other general questions about their homework and ask the lecturer course-related questions.

Resources: Together the courses contain over 559 links to files, 0 folders contain further files and there are 117 links to websites. 3 courses are using pages (5 pages in total) to display content, which can help these course home pages to appear less cluttered with information. No courses are using books for displaying multiple pages of content. No courses are using IMS Content Packages to deliver course materials.

Assessment: 20 courses are utilising electronic assignment submissions in some form and some are also using offline assignments to provide grades and feedback for in-class tests. 12 courses are using Moodle Assignments for coursework submissions, and many of these are also providing grades and feedback via this tool. 8 courses are using Turnitin Assignments for submissions and some are using this tool to provide grades. It doesn’t look like anyone is currently using Turnitin GradeMark to provide feedback in the form of re-usable comments, or general written comments. 4 courses are making extensive use of Moodle quizzes for both formative and summative assessment. Formative quizzes are being used to provide problem sheets, safety inductions and revision; however, few of these make use of the immediate feedback capabilities that are available to help students learn from their mistakes. No courses are using Certificates for students to show they have achieved a certain level on a course.

Activities: 1 course is using lessons to provide tutorials with guided pathways through pages containing graphs and text. In most of these lessons, students must answer questions correctly before proceeding and in some cases feedback is provided to help them proceed. 1 course is using a group wiki for students to discuss their progress on group work with their group members and tutors prior to meeting face-to-face; however, it appears that this wiki has not been used at this stage. No courses are using the following interactive activities in their courses: glossaries for providing (and asking students to contribute) terms and definitions; workshops for managing peer assessment; databases for sharing materials; hot questions for asking students to contribute core questions before face to face seminars; or SCORM Packages to deliver interactive activities.

Lecturecast

Chemical Engineering ranks as having the 9th most viewed lecturecast modules at UCL. The following 7 modules have used Lecturecast:

- CENG1001
- CENG2001
- CENG2002
- CENG2007
- CENG3001
- CENG3006
- CENG3007
Civil, Environmental and Geomatic Engineering

E-Learning Champions

- Liz Jones (Academic)
- Dr Tristan Robinson (Academic)

Highlighted practice for discussion with other departments

- 12 modules provide electronic reading lists so students can easily access core readings. See: http://readinglists.ucl.ac.uk/index.html?browse
- Some courses are making use of learning forums to allow students to ask course-work related questions in Moodle.
- One course (CEGE1009) has set up a chat activity to occur at regular weekly intervals, so students are more likely to have someone to chat to when they log in to Moodle.
- Dr Tristan Robinson has developed a maths quiz converter tool that generates maths questions using Matlab and creates XML that can be imported into Moodle quizzes.
- Some quizzes, containing short-answer matching questions with images, are being used for e-examinations.
- Roughly 50% of Moodle courses in the department use electronic assignment submissions, including Turnitin for plagiarism detection.

E-Learning Development Grants

- In 2013 Tristan Robinson submitted a successful bid for ‘Generation of mathematical quizzes II’.
- In 2012 Tristan Robinson (from CEGE), Cyril Renaud, and Ian Eames (from MechEng) submitted a successful bid to develop a bank of mathematical questions
- In 2012 Tristan Robinson submitted a successful bid for ‘Automatic generation of mathematical quizzes’.
- In 2009 Claire Ellul submitted a successful bid for ‘Maps and databases - putting the two together’.
- 2 unsuccessful bids were submitted in 2009 for ‘CPD through a Virtual Learning Platform’ and ‘Geotechnical Earthquake Engineering – E-Learning Resources’.

Engineering Teaching and Learning Studentships

- In 2012 Liz Jones submitted a successful bid for an Open Source GIS project.
- In 2012 Tristan Robinson, Cyril Renaud (from Electrical Engineering), and Ian Eames (from Mechanical Engineering) submitted a successful bid to develop a bank of mathematical questions.
**Issues**

- Quizzes are time consuming to create.
- Guidance for using video doesn’t exist.
- Using video and media can be problematic.
- There have been problems running GIS software on UCL computers.

**Ideas from E-Learning Champions meetings**

- Develop 10 minute video reports from the field for students.
- Have lectures recorded using Lecturecast.
- Place videos on YouTube & UCL’s iTunesU channel.
- Develop some face-to-face, 1-day CEGE workshops to run online.
- Run a Moodle Makeover staff training to show some new & unused features.
- Run video workshops with staff to show how to develop and edit videos for students.
- Develop video guidance for staff.
- Simplify the quiz creation process.

**Distance Learning**

- The department is interested in developing distance learning courses in future.

**Moodle usage**

There are 129 Moodle courses, including 13 hidden courses. It appears that few courses meet the baseline standard. Many are missing syllabus information, as well as staff contact details. The most active course is CEGEG010/CEGE3010: Financial Aspects of Project Engineering and Contracting (790 students) and is getting around 173 hits a day during term time. The high number of students may be due to the course not having been reset – there are some students still enrolled from 2009.

**Communications:** 124 courses are using Moodle News Forums to inform students of group work tasks, events, course work deadlines, pre-lecture readings and the availability of lecture notes. Overall there is some good use of discussion forums for learning in some courses. 42 courses are making use of discussion forums to enable students to ask questions about the course work, communicate to others in their class, introduce themselves to their peers, share documents and share ideas for peer feedback. While many of these discussion forums are active, others are not being utilised by students. In some cases student questions have gone unanswered, which may have contributed to some discussion forums not being used by students. In some cases the tutor has encouraged students to use the learning forums in Moodle by posting answers to questions received either face to face or by email. 32 courses are using Moodle Questionnaires to enable students to provide anonymous module feedback; provide feedback on workshops; and feedback on e-learning materials. 4 courses are using the chat feature to allow students to share expertise and help each other with course work and trouble shooting. It is not possible to see past chat sessions from all the chats, so it is unclear if the chat feature is being used by students or not. One course has designated a weekly day and time for students to use the chat, so it is more likely students will have someone to chat to when they log in.

**Resources:** Together the courses contain over 3569 links to files, 136 folders contain further files and there are 493 links to websites. 118 pages are being used to display content, which can help these 27 course home pages to appear less cluttered with information. 3 courses are using books for displaying multiple pages of content. No courses are using IMS Content Packages to deliver course materials. 1 course is using Slideshows to display images to students.

**Assessment:** 67 courses are utilising electronic assignment submissions in some form. Few of these are providing feedback and grades to students via Moodle Assignments or Turnitin GradeMark. 26 courses are using Moodle Assignments for coursework submissions, and some of these are also providing grades and feedback via this tool. Interestingly, some grades are being returned to students via the comments
area, rather than the scale grading feature, whereas some are using scale and number grades and no comments. 41 courses are using Turnitin Assignments for submissions, and few appear to be using this tool to provide grades and feedback, in the form of re-usable comments and general written feedback. 15 courses are using Moodle quizzes, predominately for formative tests and some summative assessments. Several practice tests are also provided via Moodle quizzes. No courses are using Certificates for students to show they have achieved a certain level on a course.

**Activities:** 1 course is using a glossary to provide students with terms and definitions. 4 courses are providing wikis for students to contribute to module information, write comments and provide links; submit daily work logs from their survey practicals; and answer questions. One course uses a wiki to allow groups to collaborate on particular tasks and the teaching team then generated Wordles to display the answers visually. Some of these wikis are being actively used by students, however, some have not been utilised by students. 3 courses are using databases for: sharing photographs from around London; listing paper’s allocated to particular students; and sharing answers to mathematical exercises. No courses are using the following interactive activities in their courses: hot questions for asking students to contribute core questions before face to face teaching sessions.

**Lecturecast**

3 modules have used Lecturecast:

- CEGE1009
- CEGEG082
- CEGEG098
Computer Science

E-Learning Champions

- Dr John Dowell (Academic)
- Mrs Nicola Alexander (Administrator)

Highlighted practice for discussion with other departments

- 11 modules provide electronic reading lists so students can easily access core readings. See: [http://readinglists.ucl.ac.uk/index.html?browse](http://readinglists.ucl.ac.uk/index.html?browse)
- Roughly half of all courses (74) provide learning forums to enable students to ask course-work related questions.
- COMPGZ02/COMPM033: Network Performance uses a clear structure on the Moodle course homepage to inform students about the module & also provides contact details.
- Several courses are making use of wikis to allow students to share information.
- There is extensive use of Moodle Assignments for coursework submissions, and many also provide grades and/or feedback.

E-Learning Development Grants

- In 2007 Ian Brown submitted a successful bid for ‘Adapting Open Source content for an Information Systems VLE module’.
- In 2009 Rae Harbird submitted a successful bid for ‘Collaborative Learning in Undergraduate Group Coursework’.

Engineering Teaching and Learning Studentships

- In 2012 Graham Roberts submitted a successful bid for Software Engineering.

Issues

- Students on some modules are using Piazza discussion boards instead of Moodle.
- Staff don’t understand how students use external resources.
- There is a general lack of understanding about video production amongst staff.
- Staff have difficulties developing Moodle activities, especially quizzes.
- Staff require support to use Turnitin comments and rubrics.
- There is some scepticism about the use of learning technologies, both in relation to the efforts involved on the part of staff and the benefits to students.

Ideas from E-Learning Champions meetings

- Promote the use of assessment and feedback tools.
- Demo Moodle quizzes at teaching committee.
- Investigate calculated question types in Moodle for automatically generating quiz questions in bulk.
- Capture more lectures using Lecturecast and experiment with lecture flipping.
- Promote how easy it can be to develop videos for students.
Distance Learning

- The department would like to convert at least one course to a fully online offering.

Moodle usage

There are 146 Moodle courses, including 18 hidden courses. It appears that few courses meet the baseline standard, as most are missing contact details. However, many courses have other baseline requirements, such as timetables, links to syllabus, lecture notes and additional readings. Other courses go far beyond the baseline with the use of video. The most active course is COMPGS01: Systems Requirements Engineering (70 students) and is getting around 176 hits a day during term time.

Communications: 134 courses are using Moodle News Forums to welcome students to the course, inform students of lecture changes, deadlines, homework and the availability of lecture notes. Overall there is medium use of discussion forums for learning. 74 courses are making use of forums to enable students to submit weekly reports, promote group discussion, share resources and ask questions about the course work. While many of these are active, some of these are being used sparingly by students. 13 courses are using Moodle Questionnaires to enable students to provide regular feedback on topics and end of project or module feedback; assist with engagement monitoring; test prior knowledge; and allow students to elect modules. 3 courses are using the chat feature to allow students to ask each other general questions. It appears that all but one of these have not been used by students. The one that was accessed was done so by one student, when no other students were logged in. Setting chats to occur at discreet times can help overcome the problem of students logging in at different times and therefore being unable to chat to one another. 3 courses are using schedulers to manage online office hours with students via Skype, and book face to face personal tutorials and facilitation workshops.

Resources: Together the courses contain over 2914 links to files, 121 folders contain further files and there are 649 links to websites. 191 pages are being used to display content, which can help these 45 course home pages to appear less cluttered with information. 2 courses are using books for displaying multiple pages of content. No courses are using IMS Content Packages to deliver course materials.

Assessment: Many courses (107) are utilising electronic assignment submissions in some form. 81 courses are using Moodle Assignments for coursework submissions, and many are also providing grades and/or written feedback via this tool. A few courses provide feedback in the form of numbers with a link to a document containing numbered comments, so students can look up the feedback that relates to their work. Some courses provide feedback by attaching a rubric (in PDF form), highlighting how well the students met each criteria. 26 courses are using Turnitin Assignments for dissertation and course work submissions, and some are using this tool to provide grades and feedback, in the form of re-usable comment and/or general written feedback. COMPGS99: MSc SSE/FSE Project provides a summary of the assessment tasks and their weightings on the Moodle course homepage. 16 courses are using Moodle quizzes for formative assessments and capture research study data. No courses are using Certificates for students to show they have achieved a certain level on a course.

Activities: 6 courses are using lessons to provide memory quizzes that were then used for a research study; tutorials with images that ask students to report back on their work at the end; and guided pathways through pages containing images and text materials to explain and confirm students comfort using research techniques in particular programs. 3 courses are using glossaries for providing (and asking students to contribute) terms and definitions. 9 courses are providing wikis for students to share answers to problems; collaborate on group work; publicise group lists; provide formative course work that is editable by students; and share useful information with the class, including links to YouTube videos. Many of these wikis are being actively used by students; although some have not been used at all. 2 courses are using workshops for managing peer assessment. 1 course is using a database for manage students waiting to be enrolled on an oversubscribed module. No courses are using hot questions for asking students to contribute core questions before seminars. No courses are using SCORM Packages to deliver interactive activities.
**Lecturecast**

The following 18 modules have used Lecturecast:

- COMPGS10/COMPM028
- COMP0000
- COMP1007
- COMP1008
- COMP1009
- COMP2007
- COMP2008
- COMP2009
- COMP2014
- COMP3013
- COMPGC01
- COMPGC05
- COMPGC06
- COMPGC20
- COMPGC22
- COMPGS04/COMPM024
- COMPGV02
- COMPGZ01
Electronic and Electrical Engineering

E-Learning Champions

- Mr Paul McKenna (Administrator)
- Dr Benn Thomsen (Academic)

Highlighted practice for discussion with other departments

- 15 modules provide electronic reading lists so students can easily access core readings. See: http://readinglists.ucl.ac.uk/index.html?browse
- ‘ELEC1003 Digital Circuits’ lays out each topic in its own section with expected learning outcomes and related documents.
- Nearly half the modules are using Lecturecast.
- ‘ELEC1009 Communications Systems I’ asks students to complete feedback on their use of e-learning materials for the module.

E-Learning Development Grants

- 1 unsuccessful bid was submitted in 2010 for the development of an object orientated scenario and supporting dynamic online tutorial.

Engineering Teaching and Learning Studentships

- In 2012 Andreas Demosthenous submitted a successful bid for an Analogue CMOC IC Design.

Issues

- When lecturecast was launched in the department there were some booking issues.
- Some staff have experienced problems with Lecturecast Personal capture on a Mac.
- Moodle student download lists don’t match the required Moodle Gradebook upload fields.
- Moodle Books and Lessons are not as attractive as other options available on the Internet, such as iBooks, produced by iBookAuthor.
- Word/PDFs are difficult to update. It would be nice if content could be edited online in order to facilitate Just in Time Teaching (JiTT).
- Staff don’t know how to turn the different Lecturecast microphones on.

Ideas from E-Learning Champions meetings

- Promote the Lecturecast media ingest feature.
- Develop Wiki pages on "What’s possible" with e-learning tools (starting with video).
- Consider how to indicate that Lecturecast is recording, so lecturers know it’s working.
- Ensure microphone instructions are in every Lecturecast enabled lecture theatre.
- Some staff would like to move away from delivering content in lectures and instead run more workshop style lectures - perhaps using video to flip the lecture.

Distance Learning

- There are no known current or future plans for distance learning in the department.
Moodle usage

There are 88 Moodle courses, including 6 hidden courses. It appears that few courses meet the baseline standard. Many are missing staff contact details. The most active course is [ELEC1010 Lab and Design Course: Electronic Engineering Design Principles (124 students)](https://example.com) and is getting around 429 hits a day during term time.

Communications: 87 courses are using Moodle News Forums to inform students of events; deadlines; assessment information; homework; the availability of lecture notes and revision materials; and highlight exam results. Overall there is medium use of discussion forums for learning. 59 courses are making use of forums to enable students to ask questions about the course work and exams. In one case though, over 15 student queries went unanswered by the tutors. While many of these are active, some are not being utilised by students. 37 courses are using Moodle Questionnaires to enable students to provide anonymous feedback on the module, scenarios and specific lecturers. Many of these are using templates to provide consistent module and lecturer feedback. 1 course is using the chat feature to allow groups of students to discuss their ideas about the problems. It does not look like this chat was utilised by students.

Resources: Together the courses contain over 1547 links to files, 22 folders contain further files and there are 175 links to websites. 135 pages are being used to display content, which can help these 35 course home pages to appear less cluttered with information. 2 courses are using books for displaying multiple pages of content. No courses are using IMS Content Packages to deliver course materials.

Assessment: 41 courses are utilising electronic assignment submissions in some form. Some of these are also providing feedback and grades to students via Moodle Assignments and Turnitin GradeMark. 11 courses are using Moodle Assignments for coursework submissions, and one of these is also providing grades and written feedback via this tool. 30 courses are using Turnitin Assignments for submissions and several are using this tool to provide grades and feedback in the form of re-usable comments and/or to provide general written feedback. 7 courses are using Moodle quizzes for mandatory pre-lab exercises, formative and summative assessment. No courses are using Certificates for students to show they have achieved a certain level on a course.

Activities: 3 courses are using lessons to explain how to use lab equipment; and embed Google forms to find out what devices students use to access Moodle. They can also be used to provide tutorials with guided pathways through pages containing videos, interactive animations, images and text materials. 3 courses are using glossaries for providing (and asking students to contribute) terms and definitions. 6 courses are providing wikis for displaying timetables; allowing students to share information in groups, as an entire course and for projects. A few of these wikis are being used; however, the majority of wikis have not been edited by staff or students. 1 course is using workshops for managing peer assessment; although it’s unclear if this has been used with students or not. 2 courses are using databases for sharing materials. 0 courses are using hot questions for asking students to contribute core questions before seminars. 1 course is using SCORM Packages to deliver interactive activities.
**Lecturecast**

Electronic and Electrical Engineering rank 8th of all UCL departments in terms of the most viewed lecturecast recordings.

The following 42 modules have used Lecturecast:

- ELECGT24
- ELEC1001
- ELEC1003
- ELEC1005
- ELEC1006
- ELEC1009
- ELEC1010
- ELEC2002
- ELEC2003
- ELEC2005
- ELEC2006
- ELEC2008
- ELEC2009
- ELEC2010
- ELEC2011
- ELEC3003
- ELEC3027
- ELEC3030
- ELEC3915
- ELEC13
- ELECGB11
- ELECGB12
- ELECGB13
- ELECGB14
- ELECGB01
- ELECGB08
- ELECGB13
- ELECGB16
- ELECGB99
- ELEC01
- ELEC02
- ELEC04
- ELEC08
- ELEC09
- ELEC10
- ELEC15
- ELEC16
- ELEC19
- ELEC23
- ELEC25
- ELEC26
- ELECTGT24
Management Science and Innovation

**E-Learning Champions**

- Lysnie Chew - E-Learning Champion (Academic)
- Michelle Tinsley - E-Learning (Administrator)

**Highlighted practice for discussion with other departments**

- 20 modules provide electronic reading lists so students can easily access core readings. See: [http://readinglists.ucl.ac.uk/departments/mansc_eng.html](http://readinglists.ucl.ac.uk/departments/mansc_eng.html)
- MSIN1004: Accounting for Business (Term 2) is using a Hot Question for students to vote for revision topics during optional revision lectures.
- MSING010 had 43 questionnaire responses from 58 students, as they were asked to complete this in class.
- MSIN1001: Foundations of Management uses embedded YouTube videos on the Moodle course homepage.
- MSIN3001/MSING001: Project Management is using a coversheet in Turnitin with QuickMark comments representing ticks to provide rubric style feedback (also known as grading criteria) alongside general written comments.
- MSIN1003: Information World asks students to write an essay on preventing plagiarism and provides feedback in the form of general comments and QuickMarks.

**E-Learning Development Grants**

- In 2013-14 Lysnie Chew submitted a successful bid for ‘Enhanced use of Moodle quizzes for assessment in undergraduate and postgraduate Accounting’.
- 1 unsuccessful bid was submitted in 2010-11 for key skills development. It should be noted there were higher than usual applications in this year, so the project would likely have been funded had there been fewer applications or more funding available.

**Engineering Teaching and Learning Studentships**

- In 2012 Huang Tingliang submitted a successful bid for Business Analytics.

**Issues**

- Around half the students don’t bring their laptops to campus, which limits what e-learning can be done in teaching spaces without computers.
- Many students want traditional text books, so they can write in them and highlight key sections.
- Question banks provided by publishers (like McGraw Hill) may not be exactly what is required for a module, so Moodle quizzes need to be developed to provide students with background information and more in depth questions that are relevant to specific disciplines (like 2nd year Engineering students).
- Now that students are paying high fees they will expect further value from their university education.
Ideas from E-Learning Champions meetings

- Develop Moodle quizzes to supplement quiz questions available from publishers.
- Build on external resources like videos from the Kahn Academy and questions from publishers to make them more relevant - e.g. Engineering students in 2nd term of first year have different background and needs to MS&I students.
- Take 5 students/colleagues & check whether McGraw Hill LearnSmart quizzes integrate with Moodle and also consider its overall usability.
- Consider developing a MOOC for the Masters in Accounting & Finance and charging for the assessment and subsequent certification.

Distance Learning

- APMP Project Management is currently being offered to external customers within UCL Extend: https://extendstore.ucl.ac.uk/product?catalog=UCLXAPMP03. This course is being run by Jane Britton and Morag Meyer.

Moodle usage

There are 87 Moodle courses, including 9 hidden courses. It appears that while many courses meet the baseline standard, many others are missing core information such as staff contact details. The most active course is MSIN3001/MSING001: Project Management (479 students) and is getting around 1121 hits a day during term time.

Communications: 80 courses are using Moodle News Forums to inform students of events, deadlines, assessments, Twitter feeds, Blikbook forums, the need to form groups and the availability of lecture notes, marks and exam revision materials. Overall there is high use of discussion forums for learning in around half the courses. 37 courses are making use of forums to enable students to ask questions about the course work and assessment; discuss projects with group members and complete activities. While some of these are active, many of these are not being utilised by students. 53 courses are using Moodle Questionnaires to enable students to provide end of module feedback; and in some cases feedback on the contributions of fellow group members and whether they should receive more or less marks than other group members. End of module student feedback questionnaires are based on a departmental template. 5 courses are using the chat feature to allow students to speak to group members about their dissertations and projects and ask the lecturer course-related questions. While some students did use this chat for short conversations may conversations never started because people logged in at different times.

Resources: Together the courses contain over 3256 links to files, 158 folders contain further files and there are 734 links to websites. 146 pages are being used to display content, which can help these 29 course home pages to appear less cluttered with information. 5 courses are using books for displaying multiple pages of content. 2 courses are using IMS Content Packages to deliver course materials.

Assessment: 80 courses are utilising electronic assignment submissions in some form. Many of these are also providing feedback and grades to students via Moodle Assignments and Turnitin GradeMark. 33 courses are using Moodle Assignments for coursework submissions and some of these are also providing grades and/or feedback via this tool in the form of general comments or marked-up PDF response files. 47 courses are using Turnitin Assignments for submissions and many are using this tool to provide grades and feedback, in the form of re-usable comments and/or general written feedback. 9 courses are making extensive use of Moodle quizzes for formative and summative assessments. Many students on these courses have made use of the formative assessments,
including mock exams. No courses are using Certificates for students to show they have achieved a certain level on a course.

**Activities:** No courses are using lessons to provide tutorials with guided pathways through pages containing videos, interactive animations, images and text materials. 3 courses are using glossaries for providing terms and definitions to students and to allow staff and students to summarise key information; although only staff have contributed to this. 8 courses are providing wikis for students to select unique assessment topics; share their dissertation titles; share information in groups. Some of these wikis are being actively used by students, however, the majority of wikis have not been used at this stage. No courses are using workshops for managing peer assessment. 3 courses are using databases for sharing materials. 1 course is using hot question for asking students to contribute core topics to cover in optional seminars. Nearly a quarter of students appear to have contributed topics or voted on another’s topic. No courses are using SCORM Packages to deliver interactive activities.

**Lecturecast**

Management Science and Innovation rank 6th of all UCL departments in terms of the most viewed lecturecast recordings.

The following 30 modules have used Lecturecast:

- MSIN-APMP
- MSIN1001
- MSIN1004
- MSIN2003
- MSIN3001
- MSIN3002
- MSIN3003
- MSIN3004
- MSIN3006
- MSIN3017
- MSIN6001
- MSIN6001B
- MSIN6004
- MSIN7001
- MSIN7002
- MSIN7007
- MSIN7008
- MSIN7009
- MSIN7016
- MSIN9001
- MSINAPMP
- MSING002
- MSING007
- MSING010
- MSING012
- MSING018
- MSING019
- MSING023
- MSINGS11
- MSINGT99
Mechanical Engineering

E-Learning Champions

- Rebecca Shipley (Academic)
- Gill Scoot (Administrator)

Highlighted practice for discussion with other departments

- 3 modules provide electronic reading lists so students can easily access core readings. See: http://readinglists.ucl.ac.uk/index.html?browse
- The MECH3005 Moodle course was revamped by ELE and used as a live example for a staff workshop in February 2013.
- Virtual office Moodle courses provide students with module and programme information, a student noticeboard, and links to careers, department contacts and important documents.

E-Learning Development Grants

- In 2013 Ema Muk-Pavic & Rebecca Shipley submitted a successful bid for ‘MSc Math Booster Self-Learning Online Course’.
- In 2012 Ema Muk-Pavic submitted a successful bid for ‘E-Lab: Virtual Fluid Laboratory Exercise’.
- In 2012 Ian Eames submitted a successful bid for ‘Open source tutorial to complement open source teaching of fluid mechanics and CFD across UCL and beyond’.
- In 2007 Ben Hanson submitted a successful bid for ‘Visualisation of Frequency Response of Dynamic Systems’.
- 1 unsuccessful bid was submitted in 2008 for ‘Rolling out mathematics for engineers and physical scientists’.

Engineering Teaching and Learning Studentships

- In 2012 Tristan Robinson (from CEGE), Cyril Renaud (from Electrical Engineering) and Ian Eames submitted a successful bid to develop a bank of mathematical questions.

Issues

- Students would like more information on Moodle (course work, syllabus, timetables) – this has been requested from them in face-to-face meetings with staff.
- Some academics are reluctant to use Lecturecast, as they are worried the videos will end up on YouTube – Note: by default only UCL staff & students can view the videos and they are streamed, rather than downloaded.

Ideas from E-Learning Champions meetings

- Review current Moodle provision across the department.
- Investigate using forums (and Hot Questions?) to get feedback and questions after lectures.
- Run catered lunchtime e-learning workshops on quizzes, forums and other activities.
- Work on putting course work, syllabus, timetables in to Moodle, as students have requested.
- Diagnostic quizzes will be developed for advanced maths topics initially and then further aptitude tests will be created in future.
- Trial Lecturecast in the department.
Distance Learning

- A Maths Booster course enables students to revise their Maths skills and meet prerequisites before they start their undergraduate degree (from late August). There are no other known plans to run distance learning courses in the department.

Moodle usage

There are 84 Moodle courses, including 23 hidden courses. It appears that the majority of courses meet the baseline standard; although some don’t provide staff contact details at all and in other cases they are available, but difficult to find. The most active course is MECH1002: Engineering Thermodynamics (151 students) and is getting around 243 hits a day during term time.

Communications: 80 courses are using Moodle News Forums to inform students of events, timetables, office hours, results, general feedback, deadlines, lecture cancellations and the availability of lecture notes and revision sessions]. In some cases they are also used to set tasks; provide links to readings; and ask students to complete end of module evaluation surveys. Overall there is medium use of discussion forums for learning. 18 courses are making use of forums to enable students to ask questions about the course work and arrange groups and discuss group work; for staff to promote career opportunities and advertise changes to office hours, including additional sessions. While some of these are active, others are not being utilised by students. 43 courses are using Moodle Questionnaires to enable students to provide weekly feedback on lectures run by visiting lecturers; provide end of module feedback; and poll students. A template is being used to collect consistent student feedback in end of module evaluations. 3 courses are using the chat feature as a backup communication tool to allow students to contact each other in case Etherpad is not working. One of these chats was used by several students, the other two not at all.

Resources: Together the courses contain over 1964 links to files, 31 folders contain further files and there are 98 links to websites. 59 pages are being used to display content, which can help these 15 course home pages to appear less cluttered with information. No courses are using books for displaying multiple pages of content. No courses are using IMS Content Packages to deliver course materials.

Assessment: 64 courses are utilising electronic assignment submissions in some form, although most are not using these to provide grades and feedback. 44 courses are using Moodle Assignments for coursework submissions, and some of these are also providing grades via this tool. A few also provide general feedback. 20 courses are using Turnitin Assignments for submissions, and a few are using this tool to provide grades and/or feedback, in the form of re-usable comments. No one is using Turnitin to provide general written feedback. 11 courses are using Moodle quizzes for regular formative and summative assessments. Some questions contain diagrams and LaTeX equations to help students check their understanding of coursework; and others are being used to ask students to submit written coursework. Some are also used to provide exam practice. No courses are using Certificates for students to show they have achieved a certain level on a course.

Activities: No courses are using lessons to provide tutorials with guided pathways through pages containing videos, interactive animations, images and text materials. No courses are using glossaries for providing (and asking students to contribute) terms and definitions. 1 course is providing wikis for students to share information. It appears that only one student contributed to it, as it was an optional task. No courses are using workshops for managing peer assessment. No courses are using databases for sharing materials. 0 courses are using hot questions for asking students to contribute core questions before seminars. No courses are using SCORM Packages to deliver interactive activities.

Lecturecast

The following 3 modules have used Lecturecast:

- MECH1008
- MECHGM04
- MECHM008
Medical Physics and Bioengineering

E-Learning Champions

- Dr Adrien Desjardins - E-Learning Champion (Academic)
- Dr Jamie Harle - E-Learning Champion (Academic)
- Mohini Nair - E-Learning Champion (Administrator)

Highlighted practice for discussion with other departments

- 1 module (MPHYGB17) provides an electronic reading list so students can easily access core readings. See: http://readinglists.ucl.ac.uk/index.html?browse
- The departments E-Learning initiatives are communicated on their e-learning webpage: https://www.ucl.ac.uk/medphys/teaching/elearning
- The department has, through a UCL Quick Wins grant, built a ‘digital lecture theatre’ equipped with teleconferencing, lecturecast and interactive clicker technology to support ‘off-campus’ and ‘flipped’ teaching practices in Medical Physics and Bioengineering.
- Departmental seminars are now routinely held in Lecturecast venues and are being stored for future, undecided use (CPD, doctoral training?)

E-Learning Development Grants

- In 2011, 2012 and 2013 Dr Adrien Desjardins submitted successful bids for developing an e-learning framework for video creation to enable students to learn through teaching.
- 1 unsuccessful bid was submitted in 2010 for developing e-learning tools for distance learning.

Engineering Teaching and Learning Studentships

- In 2013 Jamie Harle submitted a successful bid to develop four resource packs for Engineering Students to help them with their digital literacy, basic maths, viva preparation and self-directed study. These need further work to develop into a more extensive teaching package for delivery in 2014 (starting with viva preparation).
- In 2012 Adam Gibson and Dean Barratt submitted a successful bid to work on Computer Programming for Medical Physics and Engineering.

Issues

- Lecturecast isn’t available in all classrooms. It is also poorly maintained, with many central bookable spaces subject to camera or microphone technical failure. A more transparent process is needed for reporting errors and for checking that facilities work in advance. Students are disappointed when told later on that a recording has failed.
- Capturing work that is written on a whiteboard during a lecture for later review is problematic – Lecturecast is not sufficient. Perhaps this could be overcome by re-recording these elements later or by producing recordings using electronic pens.
- How can you communicate synchronously with students in different time zones? This probably requires a repeat of the session, so students can choose the time that best suits them.
- A later closing date is required for distance learning students (at the moment it is the end of July so it can be processed by end of August), however most distance learners like to enrol late and therefore students miss the current pre-enrolment deadlines. The new enrolment system for the 2013/14 academic year, UCLSelect, should result in expedited enrolments and it is hoped this will help to address this issue.
Some Lecture theatres have poor lighting or conversely blinds that do not block bright sunlight, which means that filming in these areas leads to poor quality resources.

**Distance Learning**

- Jaime Harle is running a Distance Learning ‘MSc in Physics and Engineering in Medicine’ using online resources and a Skype tutorial system to create a social model of learning to better engage students.

**Ideas from E-Learning Champions meetings**

- Produce or source electronic textbooks that take advantage of hyperlinking to allow students to delve in to more information where necessary, or skip over information they already understand.
- Use tools like Camtasia or Lecturecast personal capture to record materials for students to view before face-to-face teaching. That way energy can be spent improving existing materials year on year, rather than having to physically present the same content over again.
- Run online-marking workshops with department staff.

**Moodle usage**

There are 56 Moodle courses, including 17 hidden courses. It appears that [[no/few/the majority of/all]] courses meet the baseline standard. The most active course is MPH3890/MPHYM890/MPHYGB11: Imaging with ionising radiation (92 students) and is getting around 86 hits a day during term time.

**Communications:** 54 courses are using Moodle News Forums to inform students of relevant news articles, events, room changes, corrections to course work, deadline reminders, coursework solutions and the availability of lecture notes. Overall there is low use of discussion forums for learning. 21 courses are making use of forums to enable students to submit group work, ask questions about the course work, ask questions to be answered during revision lectures. While some of these are active, many of these are not being utilised by students. 1 course is using Moodle Questionnaires to enable students to provide module feedback. No courses are using the chat feature to allow students to ask each other general questions about their homework and ask the lecturer course-related questions, however these tend to be under-utilised anyway.

**Resources:** Together the courses contain over 1970 links to files, 25 folders contain further files and there are 110 links to websites. 30 pages are being used to display syllabus information, coursework content (including images) and link to files. Using pages helps these 9 course home pages to appear less cluttered with information. 3 courses are using books for displaying multiple pages of content. No courses are using IMS Content Packages to deliver course materials.

**Assessment:** 10 courses are utilising electronic assignment submissions in some form. None of these appear to provide feedback and grades to students electronically. 9 courses are using Moodle Assignments for coursework submissions in the form of video files, Word documents, zip files and in one course to provide electronic confirmation by students that their reports have been submitted in hard copy. 1 course is using Turnitin Assignments for submissions – the low number is probably due to Turnitin only accepting text-based (Word and PDF) documents. 8 courses are using Moodle quizzes for formative assessments. No courses are using Certificates for students to show they have achieved a certain level on a course.

**Activities:** No courses are using lessons to provide tutorials with guided pathways through pages containing videos, interactive animations, images and text materials. No courses are using glossaries for providing (and asking students to contribute) terms and definitions. No courses are providing wikis for students to share information and collaborate. No courses are using workshops for managing peer assessment. No courses are using databases for sharing materials. No courses are using hot questions to
allow students to contribute core questions to be addressed in face to face teaching sessions. No courses are using SCORM Packages to deliver interactive activities. No courses are using the following interactive activities in their courses:

Lecturecast

The following 7 modules have used Lecturecast:

- MPH3886
- MPHGB10
- MPHGB11D
- MPHGB14
- MPHGB17
- MPHGB24
- MPHGB30
School of Energy and Resources (Australia)

E-Learning Champions

- Dr Ady James - E-Learning Champion (Academic)
- Pixie Yeap - E-Learning Champion (Administrator)

Highlighted practice for discussion with other departments

- No modules provide electronic reading lists so students can easily access core readings. See: [http://readinglists.ucl.ac.uk/index.html?browse](http://readinglists.ucl.ac.uk/index.html?browse)
- Some courses are providing grades and feedback using Turnitin in the form of QuickMarks or general written feedback.
- Some courses containing Learning Forums that allow students to ask questions while studying at a distance, offer useful guidance about the purpose of the forum and some guidelines for naming new discussion posts in the forum summary.
- Courses are making use of News Forums to inform students of important news and to answer student queries.

E-Learning Development Grants

- No one from this department has applied for any E-Learning Development Grants (ELDGs).

Engineering Teaching and Learning Studentships

- No one submitted a bid for an Engineering Teaching and Learning Studentship.

Issues

- Most students don't complete the pre-readings before they start their intensive first week of face-to-face teaching.
- UCL Australia is very small, so evidence that technology works is required, as initiatives can't afford to fail with such small numbers of students.
- With small staff numbers and with more students enrolling than previously there is limited time for marking. Meanwhile, there is a need to maintain quality and integrity of assessment.
- Students are becoming more aware of assessment and will question new assessment methods.
- New assessment methods need to abide by UCL policy.
- There are licensing issues with some software that is only available in the UK.

Ideas from E-Learning Champions meetings

- 50 TurningPoint Electronic Voting Handsets (clickers) were purchased from money provided by the Teaching Equipment Fund and there are plans to use these in the near future.
  - Would like to trial using clickers to obtain anonymous student feedback in face to face lectures.
- Investigate obtaining mandatory online feedback for each module via Moodle Questionnaires.
- Would like to find out what methods can be used to encourage student use of discussion forums.

Distance Learning

- All modules are run in the format of a 1 week intensive face-to-face lecture, followed by 3 weeks of distance learning.
Moodle usage

There are 35 Moodle courses, including 16 hidden courses. It appears that the majority of courses meet the baseline standard. Modules are not using the UCL Australia Moodle theme, which displays the UCL Australia logo, but is otherwise identical to the default UCL Moodle theme. The most active course is 2013 SERAG001 Energy Technologies (27 students) and is getting around 23 hits a day during term time.

Communications: 35 courses are using Moodle News Forums to inform students of events, deadlines, examination requirements; provide contact information; answer student queries; provide extra resources; and notify students about the availability of lecture notes. Overall there is low use of discussion forums for learning. 8 courses are making use of forums to enable students to ask questions about the course work and assessment. Even though these have been given useful summaries that inform students of their purpose and give tips on naming the threads and tuning off subscriptions, students have barely made use of them. No courses are using Moodle Questionnaires to enable students to provide weekly or end of module feedback. No courses are using the chat feature to allow students to ask each other general questions about their homework and ask the lecturer course-related questions. It is not possible to see past chat sessions from all the chats, so it is unclear if the chat feature is being used by students or not.

Resources: Together the courses contain over 313 links to files, 12 folders contain further files and there are 41 links to websites. No courses are using pages to display content, which can help these course home pages to appear less cluttered with information. No courses are using books for displaying multiple pages of content. No courses are using IMS Content Packages to deliver course materials.

Assessment: 18 courses are utilising electronic assignment submissions in some form. A few of these are also providing feedback and/or grades to students via Turnitin GradeMark. No courses are using Moodle Assignments for coursework submissions. 18 courses are using Turnitin Assignments for submissions and some are using this tool to provide grades and/or feedback, in the form of re-usable comments or general written feedback. 1 course has a Moodle quiz to receive module feedback, although it is hidden and doesn’t appear to have been used by students. No courses are using Certificates for students to show they have achieved a certain level on a course.

Activities: No courses are using lessons to provide tutorials with guided pathways through pages containing videos, interactive animations, images and text materials. No courses are using glossaries for providing (and asking students to contribute) terms and definitions. 1 course has a wiki for students to write comments/meta-data on a collaborative social media research project, although it is hidden and doesn’t appear to have been used with students. No courses are using workshops for managing peer assessment. No courses are using databases for sharing materials. No courses are using hot questions for asking students to contribute core questions or topics before seminars or lectures. No courses are using SCORM Packages to deliver interactive activities.

Panopto lecture capture (similar to Lecturecast)

- All lectures delivered during the first week of intensive teaching are recorded to enable students to watch them again later and revise for exams.
Security and Crime Science

E-Learning Champions

- Prof Richard Wortley (Academic & HoD)
- Prof Shane Johnson (Academic)
- Dr Kevin Chetty (Academic)
- Dr Noemie Bouhana (Academic)
- Dr Herve Borrion (Academic)

Highlighted practice for discussion with other departments

- 2 modules (PUBLGC02, PUBLGC32) provide electronic reading lists so students can easily access core readings. See: [http://readinglists.ucl.ac.uk/index.html?browse](http://readinglists.ucl.ac.uk/index.html?browse)
- Many courses provide clearly laid out module information in the first topic area of their Moodle course homepage based on a departmental template.
- Several courses contain learning forums that have been well utilised by students.
- One course (TMSCRISOCR01) contains several forums with clearly defined purposes that help to keep the discussions in each forum focussed and easy to read and find.
- One course (TMSCRISOCR01) uses a glossary to allow students to share and search for other students’ contact details and areas of academic and professional knowledge and experience.
- One distance learning course (PUBLGC32DL) uses an introductions forum to help students get to know one another at the beginning of their studies.
- Two courses (PUBLGC32DL & TMSCRISOCR01) provide instant chat activities for students to work on group projects together and these were well utilised by students.
- One distance learning course (UBLGC25DL) is using a lesson to present students with a reading and then asks them to answer questions to check they have read and understood the material.
- Many courses use the Security and Crime Science Module Evaluation form to gather end of module feedback from students.
- Interpretation of Forensic Evidence is using Turnitin QuickMark comments to provide in-text feedback on student essays.
- Two courses (PUBLGC32DL & Quantitative Methods) are using the Moodle database activity to share literature reviews and the latter also uses a database to share survey results amongst students.

E-Learning Development Grants

- In 2013-14 Kevin Chetty submitted a successful bid for ‘Enhancing Computer and Visualisation-Based Courses with e-Learning Tools’.
- In 2012-13 Herve Borrion submitted a successful bid for ‘Unlocking the door to e-assessment’.
- 1 unsuccessful bid was submitted in 2010 for developing an e-booster course to provide online support for numerical skills.

Engineering Teaching and Learning Studentships

- No one in the department has bid for an Engineering Teaching and Learning Studentship.

Issues

- UCL has limited centralised support for distance learning.
- Some staff consider the use of electronic readings to be spoon-feeding students.
Ideas from E-Learning Champions meetings

- Improve blended-learning for face-to-face teaching, while considering how online elements can be used for distance learning.
- Run distance learning modules (starting with the 4-6 that will comprise the postgraduate certificate currently in development).
- Run a general introduction to e-learning demonstration for all academic staff.
- Run distance learning workshops with selected staff on modules considered for online delivery.
- Use discussion forums and wikis to allow students to collaborate on group work (PUBLGC49).

Distance Learning

- 6 distance learning modules are being developed for launch of a postgraduate certificate in September 2014 in collaboration with the E-Learning Advisory team.

Moodle usage

There are 51 Moodle courses, including 12 hidden courses. Nearly all courses meet the baseline standard. The most active course is PUBLGC96: Research Project (MRes) (50 students) and is getting around 4 hits a day during term time.

Communications: 43 courses are using Moodle News Forums to inform students of events, deadlines, module registration processes and the availability of lecture notes and other materials. Overall there is high use of discussion forums for learning in several courses. 25 courses are making use of forums to enable students to introduce themselves to their peers; ask questions about the course work and exams; share completed tasks and research with their peers; give peer feedback; share their dissertation topics; post the outcomes of online tests; and plan and discuss group work; While many of these are active, some are not being utilised by students. 22 courses are using Moodle Questionnaires to enable students to provide end of module feedback, using a common Crime Science Module Evaluation form. 3 courses are using the chat feature to allow students to discuss group work and look back on the group chats (whether they were present or not). Although some of these have been used heavily by students, others were not used at all; and in some that were used students commented that the Skype chat feature was much faster.

Resources: Together the courses contain over 1400 links to files, 57 folders contain further files and there are 197 links to websites. 54 pages are being used to display content, which can help these 20 course home pages to appear less cluttered with information. 1 course is using books for displaying multiple pages of content. No courses are using IMS Content Packages to deliver course materials.

Assessment: 27 courses are utilising electronic assignment submission. Only one course is using Moodle to provide feedback. No courses are using Moodle Assignments for coursework submissions. 27 courses are using Turnitin Assignments for submissions and 1 course is using Turnitin to provide grades and feedback in the form of re-usable comments, called QuickMarks. 10 courses are using Moodle quizzes for formative and summative assessments. The quizzes are used to test understanding of weekly topics. No courses are using Certificates for students to show they have achieved a certain level on a course.

Activities: 1 course is using lessons that presents students with a reading and then asks them to answer questions to check they have read and understood the material. It is unclear if this was used with students or not. 1 course is using a glossary to allow students to share and search for other students’ contact details and areas of academic and professional knowledge and experience. 9 courses are providing wikis to provide information about UCL policies and provide staff-student committee minutes. The same template has been used across the 9 courses. 2 courses are using databases for sharing survey results amongst students and to share literature reviews. 1 course is courses are using hot questions for asking students to contribute core questions before face-to-face teaching sessions. No courses are using SCORM Packages to deliver interactive activities.

Lecturecast

No modules have used Lecturecast.
Appendices

Appendix 1: Benefits to using Moodle for communication
- Students can view communication about coursework that would otherwise only occur between staff and individual students, either in person or over email.
- It is likely to reduce the time it takes for staff to clarify common misconceptions.
- Common questions can be used to encourage discussion in seminars, as is already being done in some classes at UCL (c.f. Science & Technology Studies).
- General feedback on assessments can be provided to all students in a timely manner.
- Communications can be more easily analysed (if it occurs in one place) to determine where students require further work to understand course materials.

Appendix 2: Reasons for focusing on large, first year Moodle courses
- Engage students in good study practice from the offset.
- Set students’ expectations around digital communication and feedback - the latter of which students don’t always recognise as such.
- Provide diagnostic assessments so students can recognise what they need to know to reach the baseline level to succeed in their subject and degree
- Provide students with additional materials (potentially before they officially begin their studies) so they can learn the content they are expected to know.
- Provide supplementary resources for those who want or need it.
- Save staff time - due to the typical large sizes of many first year Engineering Sciences courses efficiencies in administrative, communication and assessment processes add up.

Appendix 3: Benefits to using Moodle for assignment submissions & feedback
- Save administrative overheads of sorting, collecting and distributing papers.
- Save time marking by re-using comments (with Turnitin GradeMark or alternative methods)
- Students receive can receive an email alert when feedback is ready
- Typed comments are legible to students
- Feedback can be returned quicker (and students don’t need to travel to pick it up)
- Documents can be marked from anywhere, without the need to transport physical papers (Offline marking is possible using Moodle Assignments, or the Turnitin GradeMark iPad app)

Appendix 4: Most Viewed UCL Lecturecast recordings

<table>
<thead>
<tr>
<th>Department</th>
<th>Views</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medical School</td>
<td>176,695</td>
</tr>
<tr>
<td>Division of Biosciences</td>
<td>99,592</td>
</tr>
<tr>
<td>ECONS_SHS</td>
<td>79,599</td>
</tr>
<tr>
<td>Chemistry</td>
<td>36,644</td>
</tr>
<tr>
<td>The Institute of Orthopaedics and Musculoskeletal Science</td>
<td>23,340</td>
</tr>
<tr>
<td>Department of Management Science and Innovation</td>
<td>12,563</td>
</tr>
<tr>
<td>Physics and Astronomy</td>
<td>10,410</td>
</tr>
<tr>
<td>Electronic and Electrical Engineering</td>
<td>10,366</td>
</tr>
<tr>
<td>Chemical Engineering</td>
<td>9,382</td>
</tr>
</tbody>
</table>

[Source: https://lecturecast-admin.ucl.ac.uk displayed data from 03-06-2013]
Appendix 5: 2013 IT Student Survey Results

141 Engineering Sciences students out of a total of around 3800 Engineering Sciences students at UCL (nearly 4%) responded to the UCL Student IT survey in January 2013. There were 1016 completed responses across UCL.

Engineering Sciences students reported that:

- 99% own a mobile phone
- 90% own a smart phone
- 98% own a laptop computer and nearly 42% regularly bring it to university
- 29% own a tablet device and 16% own an e-reader totalling 45%
  - 48% regularly bring these devices in to UCL
- 58% used Moodle from their mobile phone or tablet device
- ~50% of students felt that IT training should be provided in class and online
- 77% felt it was important to access UCL Services (Library and Moodle) via a smartphone app
- 77% are satisfied or very satisfied with Moodle
- 45% are satisfied or very satisfied with Lecturecast (25% don’t know)
- 61% are satisfied or very satisfied with Turnitin confidentially checking work for plagiarism (24% don’t know)
- 69% find the minimalistic Mobile Moodle theme very useful or very useful (17% haven’t used it)

Technology use to support learning at UCL

This graph shows how UCL students feel technology is being used to support their learning across their degree. Note that they could only choose one of the options to cover all their modules, even though some modules may have used more e-learning than others. A high number of UCL students answered that technology was integrated in to the teaching activities and there was an expectation for them to use activities like discussion forums and quizzes. If you add to this the number of students who are using these types of integrated online activities of their own volition it shows that the majority of students who answered the survey feel they are being provided with enhanced e-learning. Having said this, there are still a high number of students who feel that technology is only being used to deliver administrative information and to supplement teaching. The low number of fully online responses reflects that UCL does not currently offer many distance learning courses, although there is a move towards providing more distance-learning postgraduate courses across the college.

Within your programme of study overall, how would you best describe the use of technology to support your learning?
In free text comments 46 Engineering Sciences students mentioned Moodle. Several students find it useful for lecture notes and slides to be made available online and in advance of lectures. Ten students mentioned either that they find videos and/or animations useful or that they would like this to be available to explain concepts. One student would like less cluttered Moodle pages. Another student would like access to reading lists via Moodle, so they can start preparing before university officially starts. This is now possible for first year students, as those who pre-register have access to Moodle from late August. The following were also mentioned / requested:

- “Definitely Moodle access to courses. It’s really unacceptable that we do not have required reading lists well in advance. Yes, many people won’t read but those who wish to should not have to wait until the first week of term to start reading.” – Engineering student
- “At London Business School (elective I took) they used podcasts, electronic voting devices and simulation games to illustrate all the learning points. I haven’t experienced the same in UCL..” – Engineering student
- “During my time in UCL the technology support for studies has not been very good. For example: Old information in Moodle, no support forums or lectures on video/audio.” – Engineering student

The following quotes demonstrate how some students are making use of Moodle:

- “Online quizzes on Moodle. Makes it necessary to review work in order to do well on the quiz, hence continually learning.” - Chemical Engineering student
- “We took a Moodle quiz as part of one course, which I found effective for learning specific technical information. I’m not sure it would be useful for all aspects but in this case it was used effectively.” – Computer Science student
- “Basic sharing of notes and work on moodle, is much convenient than obtaining hardcopies.” – Mechanical Engineering student
- “Uploading tutorials for lectures onto Moodle [...] means if I miss a lecture I can still have access to these materials.” – Mechanical Engineering student
- “Lecture notes are made available on Moodle. This helps to revise the course materials.” – Mechanical Engineering student
- “Moodle/Turnitin Feedback [provided by lecturers to support my learning]” – Mechanical Engineering student
- “Uploading tutorials for lectures onto Moodle which means if I miss a lecture I can still have access to these materials.” – Mechanical Engineering student
- “Almost every lecture includes powerpoint slides. Also youtube videos and lecturecasts!!.” – Chemical Engineering student
- “LectureCast together with discussion forums afterwards. Promotes understanding via discussion and further question could be asked” - Electronic and Electrical Engineering student
- “The use of video to display the behaviours of non-Newtonian fluids” – Chemical Engineering student
- “Playing short videos in class helped attract student’s attention significantly” - Civil Engineering student
- “Animations and videos [...] are very helpful” - Medical Physics student
- “CENG1001 youtube flow videos [help] visualization of an abstract concept.” – Chemical Engineering student
**Tools for collaboration and reflection**

45% of students would like more course work to be done via wikis and collaborative documents and 25% are happy with the current provision. 43% of students would like to use more blogs, journals or electronic diaries and 28% are happy with the current provision. 32% of students would like to create or share more work using MyPortfolio, 26% are happy with the current provision.

**Lecturecast**

In free text comments 7 Engineering Sciences students mentioned that they found Lecturecast useful and 6 students asked for Lecturecast to be available more widely. One Chemical Engineering student feels that lecturecast is a waste of time and money and an Information Management for Business student doesn’t like the system’s user interface. Some of the students comments are below.

“[What I like least is a] lack of lecturecast across the board” – Biochemical Engineering student

“Lecturecast is a must for all courses.” - Mechanical Engineering student

“Using lecturecast to record the lecture as well as any diagrams or written solutions. This is useful because I can look over it again later.”
– Chemical Engineering student

“lecturecast for all lectures” - Civil Engineering student

“To me, LectureCast seems to be a big waste of time and resources. The quality of the recordings and of the online interface is appalling, to put it mildly. UCL should focus on producing a handful of quality courses for Coursera.” - Information Management for Business student

“Yes. In the Engineering department we need recorded lectures!!!!!!!! At the moment we have NO support for lecturecast.” – Mechanical Engineering student

“lecturecasts, to watch lectures again more attentively.” – Engineering student

“[What I like least is] LectureCast - because of it’s terrible user experience.” – Information Management for Business student

“More Lecturecasts [would improve the support provided by Lecturers]” – Chemistry student

“Lecturecast, although only being used for one of my modules, is very useful for revising material.” - Biochemical Engineering student

**Classroom Technologies**

In free-text responses, 4 students mentioned the Electronics Voting System (EVS) handsets, also known as “clickers”. The following quotes show how students who get to use “clickers” in their lectures find it a useful tool:

“Quizzes held in class with clickers [were] interactive [and helped to support my learning]”– Chemical Engineering student

“Clickers in management modules [helped to support my learning]”– Electronic and Electrical Engineering

**Distance Learning**

42% of students would like to complete modules entirely online and 19% weren’t sure. 40% would like to attend virtual classes or webinars and 28% were not sure.
Appendix 6: UCL Moodle usage overview
The following data is taken from Google Analytics data from between 20/2/2012-20/02/13.

Types of devices being used to access UCL Moodle
UCL Moodle is predominately being accessed from laptops and desktop computers, with only 10% of access from mobile devices, such as smartphones and tablets.

Mobile v Desktop & Laptop usage of UCL Moodle

[Source: Google Analytics displaying data from 20/2/2012-20/02/13]

Operating Systems
Slightly more than half of students and staff are using Windows computers to access UCL Moodle. Apple mac computers make up the next highest proportion of access with 36%, followed by iPad and iPhone access at 8%, Android smartphones at 2%, Linux operating systems at 1% and other smartphone devices (like Blackberry and Windows phone) at 0.53%.

Operating Systems used to access UCL Moodle

[Source: Google Analytics displaying data from 20/2/2012-20/02/13]

Remembering that only 10% of UCL Moodle access is being done by a mobile device, those student and staff who are, are predominately accessing Moodle from Apple iOS devices (iPhones and iPads), with Android and other mobile usage (Blackberries, Windows etc.) trailing far behind.
Specific Mobile Devices being used to access UCL Moodle

[Source: Google Analytics displaying data from 20/2/2012-20/02/13]

**Web Browsers**

We can assume from this data that most Mac laptop owners are using the default browser Safari, along with iPhone and iPad (iOS) users. The data suggests Windows computer owners use a variety of browsers like Chrome, Internet Explorer, Firefox and Opera. Most Android smartphone owners use the default Android browser. A small number of mobile device and Macintosh laptop owners are choosing to install and use Opera, Chrome or Firefox web browsers.

**Web Browsers used to access UCL Moodle**

[Source: Google Analytics displaying data from 20/2/2012-20/02/13]
Glossary of Terms

Activities (Moodle) Activities in Moodle are educational things to do. They include, for example: discussing a topic in a forum, writing a journal entry, submitting an assignment, or completing a quiz.

Baseline Moodle standards In June 2009 UCL Academic Committee agreed that taught modules should aim to have a Moodle presence by September 2011. See: http://bit.ly/dX8C96

Blackboard Collaborate Blackboard Collaborate (currently being trialled at UCL) enables staff to run web-based sessions with remote students using audio, virtual whiteboards, text chat and video.

BlikBook An online discussion forum tool that allows students to ask and answer questions and receive academic support. See: http://www.blikbook.com

Block (Moodle) A section that appears either to the left or right of the main content in a Moodle course. Blocks usually contain additional information like contact details, navigation aids, or display information from external sources (using RSS feeds) or Moodle activities (like the random glossary entry block or the News forum block).

Book (Moodle) A Moodle Resource in which you can display multiple pages of content.

Certificate (Moodle) The Certificate module creates PDF certificates for students on a Moodle course and is completely customisable. You can add borders, watermarks, seals and show grade information.

Chat (Moodle) The chat activity module allows participants to have a real-time synchronous discussion in a Moodle course. This can either be at a scheduled time, or left open for use at any time.

Choice (Moodle) A choice activity allows the tutor to ask a question and specify a choice of multiple responses. It can be useful as a way for students to sign up to classes; a quick poll to stimulate thinking about a topic; to allow the class to vote on a direction for the course; or to gather research consent. Choice results can be exported to excel and there are various options including whether to allow students to view other responses or not.

Cloud based system A web-based system accessed via a web browser or mobile application, with data stored on servers in one or more remote locations. Using cloud-based systems can raise data protection issues, since data may be stored outside of the EU.

Computer based exams Exams that are undertaken on a computer. At UCL this usually means the use of Moodle quizzes to deliver multiple-choice, short answer and numeric answer questions - long answer essay style exams are not supported.

Continuing Professional Development Maintaining one's knowledge and skills relating to one's profession.

Course (Moodle) See Moodle course.

CPD See Continuing Professional Development.

Database (Moodle) The database activity module allows the teacher and/or students to build, display and search a bank of record entries about a topic. The format and structure of these entries is customisable. The data can include images, files,
Digital Learning Objects
A re-usable multimedia resource developed to teach a single learning outcome. This could be in the form of one or more of the following: video, quiz, interactive animation, text, images, audio clip, simulation.

e-Examinations
See Computer based exams.

ELE
UCL E-Learning Environment’s team includes the E-Learning Advisory team who authored this report.

Electronic assignment submissions
At UCL students on some modules submit electronic files to Moodle that can then be accessed by academic and administrative staff. Assignments may then be printed, bulk downloaded, graded and electronic feedback provided.

Electronic Reading Lists
See Library Reading Lists.

Electronic voting handset
A handset containing numbered buttons that allow students to vote on questions posed in a lecture. The response data can then be displayed in a bar chart within PowerPoint.

E-Portfolio
A collection of electronic evidence (such as text, electronic files, images, multimedia, blog entries and hyperlinks) that is assembled and managed online. At UCL we use a system called Mahara (myportfolio.ucl.ac.uk).

Etherpad
An online editor that allows collaborative editing of documents in real time, with a chat alongside the editor for synchronous discussions.

File (Moodle)
An electronic resource uploaded to Moodle with a link from the Moodle course home page that allows students to download it for viewing. Files may be restricted to being available only after certain conditions have been met - such as after a specific date and time has passed.

Flipping the lecture
See Lecture Flipping.

Folder (Moodle)
A hierarchical list of files that can be downloaded by students by clicking on the folder name from the Moodle course homepage. Folders may also contain sub-folders. Folders can help to de-clutter a Moodle course homepage - which may otherwise contain long lists of individual documents.

Formative Quizzes
Non-credit-bearing quizzes that help a student to understand what they do and don't know; allow them to consolidate their learning during the term; and practice before an examination.

Glossary (Moodle)
Allows tutors and students to create and maintain a list of definitions, like a dictionary. These can be automatically linked from text appearing within Moodle pages, books etc.

GradeMark (Turnitin)
See Turnitin GradeMark.

Hot Question (Moodle)
A tool for students to pose questions about a topic that can be voted on by other students, resulting in a list of prioritised questions for the tutor.

IMS content package (Moodle)
The IMS Content Packaging specification makes it possible to store chunks of material in a standard format which can be re-used in different systems, without having to convert the material into new formats. The IMS content package in Moodle enables such content packages to be uploaded and included in Moodle courses.
LaTeX
A type-setting language commonly used to display mathematical equations electronically (including natively in Moodle pages, books, lessons & quizzes).

Learning Forums (Moodle)
An asynchronous discussion forum where students can ask coursework related questions.

Learning Objects
See Digital Learning Objects.

Lecture flipping
The idea of providing the content usually presented in a lecture (usually via short 20 minute videos) beforehand, to allow students to reflect on the materials and pose questions. The lecture time is then used to interact with students - commonly answering the questions they encountered when reviewing the content.

Lecturecast
An automated system for recording lectures and subsequently making them available via Moodle and webpages. It uses the Echo360 system.

LectureScribe
A system to produce animated whiteboard lectures from a tablet PC or electronic whiteboard: http://people.cs.clemson.edu/~bcdean/lscribe

Lesson (Moodle)
The lesson module presents a series of pages (containing text, images, video etc.) to the student who is usually asked to make some sort of choice underneath the content area. The choice will send them to a specific page in the Lesson. In a Lesson page's simplest form, the student can select a continue button at the bottom of the page, which will send them to the next page in the Lesson.

Library Reading Lists
A central access point for electronic copies of UCL reading lists. The online reading lists are linked to the Library catalogue and provides links to electronic versions of journal articles where UCL has a subscription to that journal and links to other web-based resources.

Link (Moodle)
A hyperlink available from the Moodle course homepage that takes a student to web page when they click on it. Note: Hyperlinks can also be added anywhere the Moodle text editor appears - i.e. within Moodle pages, books, quizzes, lessons, blocks etc.

Livescribe 3
A digital pen that records audio while you write notes on special dot paper and can communicate with an iPhone or iPad to display the text as it is written on the screen. This can then be recorded or projected.

MCQ
See Multiple Choice Question.

Moodle
UCL's centrally supported virtual learning environment (VLE). Moodle is a free, open-source system used to create online learning sites across the world.

Moodle course
An area of the Moodle VLE that is commonly used to contain e-learning activities and resources for taught programmes or modules.

MOOC
A Massive Open Online Course allows large groups of participants to complete studies (usually for free) via an e-learning platform. Some MOOCs are free to participate, but charge for assessment and certification.

Multiple Choice Question
A quiz question type where students choose from a list of potential answers.

News forum (Moodle)
An asynchronous discussion forum where staff can post announcements to students. Students cannot post or reply within news forums - only staff can.
<table>
<thead>
<tr>
<th>Offline electronic marking</th>
<th>Marking assessments on a computer without having to be connected to the Internet. E.g. using Word or PDF annotation tools, then returning these via Moodle Assignments.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Online electronic marking</td>
<td>Marking assessments via an online grading tool, such as Turnitin GradeMark. An Internet connection is required unless the offline iPad app is used.</td>
</tr>
<tr>
<td>Opinio</td>
<td>UCL's centrally supported web-based survey system that allows question branching and people external to UCL to respond.</td>
</tr>
<tr>
<td>Page (Moodle)</td>
<td>A single web page within a Moodle course that is linked from the Moodle course homepage. Pages are commonly used to display short text, images, video etc. Using pages can help to de-clutter a Moodle course homepage.</td>
</tr>
<tr>
<td>Piazza</td>
<td>A Q&amp;A forum with real-time updates, wiki-style editing, endorsed posts, student-to-student learning and instructor feedback. See: <a href="https://piazza.com">https://piazza.com</a></td>
</tr>
<tr>
<td>Questionnaire (Moodle)</td>
<td>A Moodle Activity that allows students to answer questions either anonymously or not. Commonly used for programme and module evaluations.</td>
</tr>
<tr>
<td>Quiz (Moodle)</td>
<td>The Quiz activity module allows the teacher to design and build quizzes consisting of a large variety of question types, including multiple choice, true-false, and short answer questions. These questions are kept in the Question bank and can be re-used in different quizzes. At UCL quizzes are used for formative (non-credit bearing) as well as credit-bearing assessment, including high-stakes, invigilated exams. Quizzes are automatically marked (unless essay-style questions are being used); can show different feedback depending on a student's answer; and provide staff with a statistics report to analyse student performance and improve (or remove) poorly written questions.</td>
</tr>
<tr>
<td>Resources (Moodle)</td>
<td>Links from a Moodle course homepage to files, folders, pages, books (multiple pages with a menu), links and SCORM (learning) objects.</td>
</tr>
<tr>
<td>Scheduler (Moodle)</td>
<td>The Scheduler module helps you to schedule one-on-one appointments with all your students. You specify the periods during which you are available to see the students and the length of each appointment. The students then book themselves into one of the available timeslots. The module also lets you record the attendance and grade the appointment.</td>
</tr>
<tr>
<td>SCORM packages (Moodle)</td>
<td>SCORM (Sharable Content Object Reference Model) is a collection of specifications that enable interoperability, accessibility and reusability of web-based learning content. Moodle SCORM packages can be used to display and collect feedback from interactive learning objects (include quizzes) created outside of Moodle using SCORM compliant software such as Xerte.</td>
</tr>
<tr>
<td>Skype</td>
<td>Skype is free software that can be installed on computers and mobile devices to enable people to chat via text, audio and video.</td>
</tr>
<tr>
<td>Slideshow (Moodle)</td>
<td>The Slideshow module allows a tutor to easily display a folder of images, without having to worry about or understand the best way of resizing files for screen size or download file size. The module generates thumbnails and will resize images that exceed size limits to within the maximum dimensions set globally within UCL Moodle.</td>
</tr>
<tr>
<td>STACK</td>
<td>STACK is an open-source system for computer-aided assessment in Mathematics and related disciplines, with emphasis on formative assessment. See: <a href="http://stack.bham.ac.uk">http://stack.bham.ac.uk</a></td>
</tr>
<tr>
<td><strong>Summative quizzes</strong></td>
<td>Credit-bearing (UCL Moodle) quizzes, undertaken either unsupervised for low-stake tests; or in invigilated computer rooms for high stakes examinations.</td>
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<tr>
<td><strong>Survey (Moodle)</strong></td>
<td>The Survey module is a course activity that provides a number of verified survey instruments, which have been found useful in assessing and stimulating learning in online environments. Teachers can use these to gather data from their students that will help them learn about their class and reflect on their own teaching. The survey questions cannot be modified. To create a survey with your own questions you will need to use a Moodle Questionnaire instead.</td>
</tr>
<tr>
<td><strong>Tablet</strong></td>
<td>A general-purpose computer contained in a single panel. Its distinguishing characteristic is the use of a touch screen as the input device. See: <a href="http://bit.ly/exCb0C">http://bit.ly/exCb0C</a></td>
</tr>
<tr>
<td><strong>Turnitin assignment</strong></td>
<td>A web-based plagiarism prevention system available to staff and students via Moodle that shows matches to text in journals, other student submissions and on the Internet. It also provides the amount of matching text in the document as a % score. Staff can use Turnitin to collect written (Word and PDF) assignments electronically. Turnitin also contains an online grading system called GradeMark.</td>
</tr>
<tr>
<td><strong>Turnitin GradeMark</strong></td>
<td>A web-based grading and marking system that is available via UCL Moodle in Turnitin that allows staff to enter students' grades, save comments for re-use, provide general written feedback, record audio feedback and use rubrics (marking criteria).</td>
</tr>
<tr>
<td><strong>Virtual Learning Environment</strong></td>
<td>A web-based system providing the means for staff to easily create e-learning activities and resources for students to access online.</td>
</tr>
<tr>
<td><strong>VLE</strong></td>
<td>See Virtual Learning Environment.</td>
</tr>
<tr>
<td><strong>Web conferencing</strong></td>
<td>The technology that enables web-based sessions with remote students using audio, virtual whiteboards, text chat and video. AT UCL we are currently trialing Blackboard Collaborate.</td>
</tr>
<tr>
<td><strong>Wiki (Moodle)</strong></td>
<td>A tool that allows staff and students to collaborate on a document. Changes are saved in the 'history' so that the document can be rolled back to a previous version, if necessary.</td>
</tr>
<tr>
<td><strong>Wordle</strong></td>
<td>An online tool that creates a word cloud from text. Words that occur more often appear larger than others that are less frequent. Wordles can be used to understand key themes in documents or to present ideas visually and simply. See: <a href="http://www.wordle.net">http://www.wordle.net</a></td>
</tr>
<tr>
<td><strong>Workshop (Moodle)</strong></td>
<td>Workshop is a peer assessment activity that manages student submissions and the allocation of peer-markers. Students can mark their own work, as well as peer assess other students' work. While design flaws in the Moodle 1.9 version prevented its use, this tool has been significantly improved in Moodle 2.0 and is now being used successfully by some staff at UCL.</td>
</tr>
<tr>
<td><strong>Xerte</strong></td>
<td>Xerte allows e-learning materials to be quickly authored using browser-based tools, with no programming required. Xerte Online Toolkits (which UCL is currently trialling) is aimed at content authors, who will assemble content using simple wizards. See: <a href="http://www.nottingham.ac.uk/xerte">http://www.nottingham.ac.uk/xerte</a></td>
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</tbody>
</table>