# University of York Requirements specification

# SCHEDULE 3 Online Learning System Specification

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# 1. Introduction and Background

## 1.1 Background about the University and online learning

The University of York was founded in 1963 with 200 students in two city-centre locations. It has now expanded to over 14,000 students, and the academic structure of the University comprises 30 departments and academic centres. The University of York has been ranked eighth in the world and number one in the UK in new *Times Higher Education* world rankings of universities less than 50 years old.

The University has in place existing strategies for learning and teaching which highlight commitments to enhance the campus-based student experience whilst supporting careful growth in distance learning. In the context of technology enhanced learning, the emphasis is on enhancing the experience of students through the development of material and activities which facilitate a student-centred approach to learning and teaching, providing greater flexibility in the accessibility of learning resources, such as through mobile devices.

## 1.2 Overview of online learning at York

The adoption of technology-enhanced learning (TEL) by teaching staff across the university has grown steadily since the establishment of the E-Learning Development Team and the introduction of a centrally-supported online learning environment in 2005.

The original objectives focused on helping teaching staff to develop and embed online learning into their programmes and modules, and efforts were directed to the development of the online environment as a core element of the supporting infrastructure for learning and teaching. The aims for online learning focused on providing support for a more diverse student body by developing more flexible modes of study, encouraging sustainable growth and coping with increased student numbers, delivering efficiencies in the management of learning and teaching and creating capacity for continuing professional development activities.

The VLE Strategic Review (2008-9), and subsequently the [Learning and Teaching Strategy](https://www.york.ac.uk/staff/teaching/strategy/) (2010-2015), confirmed that the primary vision is to offer a student-centred approach in which TEL supports the provision of high quality, student-centred and accessible learning. The majority of this learning will be campus-based, although the University also envisages modest and careful growth in distance learning provision.

The intention from the rollout of the online learning environment across the university in 2005 has been to offer online support of programmes and modules in a rich variety of ways, from natural and elegant ‘information repository’ provision (e.g. giving access to course outlines, lecture notes, assignment briefs, videos, simulations), through to powerful learning support tools that are part of a learning platform or embedded or linked through to the user interface from outwith the system.

### 1.2.1 Current online learning systems in use

Introduction  
The University’s centrally supported online learning environment is currently run on *Blackboard Learn* software (version 9.1 service pack 12), comprising the learning management system, content management system and community system with the combined systems licensed in a multi-year agreement up until the end of December 2015. The University has also negotiated a separate licence for the Blackboard Mobile Learn app running up to the summer of 2015, providing dedicated access for Apple, Android or BlackBerry devices to the learning management system. The combined licences will expire at the end of 2015 and the University now wishes to undertake a retendering process for these combined systems, with a view to reviewing its central online learning provision and reaching a decision on the systems that it will require for the period after 2015.

Summary of progress with the deployment of Blackboard software  
Since the rollout in 2005 there has been significant progress towards the adoption of the Blackboard environment by teaching departments and this is reflected in current system usage statistics. 2481 module sites were created for teaching over the autumn and spring terms of this academic year (2012-13) accounting for over three-quarters of the total number of taught modules at the University and that number will rise over the summer term, with all departments now having an online presence within the University’s centrally managed Blackboard system. The volume of students using the system also continues to rise, with an average of 9560 log-ins per day over the autumn term and 9200 over the spring term, with a peak of 14,833 logins recorded on 15th October 2012.

Blackboard’s content management system (CMS) was deployed simultaneously with the learning management system (LMS) in 2005, with the following aims:

* All content delivered through the Blackboard LMS to be stored in CMS departmental folders & linked to from the LMS;
* Make the CMS an open and searchable repository for learning and teaching materials that both staff and students have ‘read’ access to by default, regardless of department affiliation;
* Have a storage hierarchy that is humanly readable and managed by each department individually;
* The creation (over time) of a ‘high value’ catalogue of reusable learning and teaching objects;
* Have all objects in the CMS appropriately described with metadata.

Some of these objectives have been partially met: for example, some but not all learning and teaching content is stored in the Blackboard CMS –we currently manage a mixed economy of content objects stored in both the CMS and the Learning Management System’s content repository. Other objectives such as the tagging of content objects and the creation of an open and searchable repository have not been possible to realise, due to limitations with the existing software.

Our deployment of Blackboard’s community system has been more successful, supporting the creation of multiple brands of the VLE, which are distinct by their style/ appearance and domain name. This has allowed the Hull York Medical School (HYMS) to maintain a sense of individuality by having their own entry point into the VLE, which is customised in a HYMS branded colour scheme and has supported branding for institutions we are working with in collaborative provision arrangements, whereby they maintain their own branded domain within the learning management system. The E-Learning Development Team has also taken advantage of the community system to roll out brands for a staff focused support site and showcase site.

The community system has also facilitated the creation of domains, which mirror the University's organisational structure. The domains have been used to delegate some system administration privileges to departmental staff who can manage the day-to-day creation of module sites within their department. So far 14 academic departments and one support department have taken advantage of the domain administration system. It is hoped that domain administration facilities can be extended to include the delegated management of tab and portlet module content for modules/information in the future.

### 1.2.2 Extending Blackboard functionality through the open API

The Blackboard learning management system has most commonly been used by staff to provide students with access to course resources; e.g. lecture notes, video and other multimedia resources. We have extended the functionality of the platform by using Blackboard’s open application programming interface (API) to integrate commercial and home-grown building blocks, incorporating a range of assessment and communication tools which are externally hosted using third party services, such as Echo 360 lecture recording software (hosted by ULCC) and Turnitin software for text-matching. The University has also developed home-grown building blocks to extend the functionality of the system (e.g. anonymous file submission tool and batch allocation of groups) and has developed its own reading list software application (EARL).

We also provide links to cloud based (hosted) services such as Google Apps, which provide calendaring services, email and a shared drive for document sharing for all University of York staff and students. Staff also make use of Google sites for portfolio based work and Google Plus services (Communities) for collaboration and information sharing (e.g. sharing research).

### 1.2.3 Other online learning environments

Whilst Blackboard serves as the institutional online learning environment, there are other learning platforms in use across the university.

The Department of Mathematics runs its own locally managed Moodle platform and the Department of Social Policy and Social Work runs a portfolio of distance programmes in public policy and management using a hosted Moodle provider. The Department of Computer Science and Department of Electronics both manage their own intranets to host teaching materials for their modules. These systems are not currently integrated with the centrally supported Blackboard systems.

## 1.3 Information and Information Technology at York

### 1.3.1 Strategic Information Management

The University takes a strategic approach to the provision, support and development of information and information technology. The University has an Information Strategy to guide institutional priorities and to set out governance and management responsibilities. The importance of information to all activities within the institution, including research, teaching and learning and administration, is clearly recognised and there is an on-going programme of enhancement and investment to ensure that the University is able to meet its aims and objectives and to take advantage of advancements in technology, as evidenced through the recent investment in Google Apps to provide email, calendaring and collaborative tools for staff and students.

### 1.3.2 IT Support for Learning and Teaching

The University aims to support learning and teaching through the provision of a range of information technologies and services. These include:

* The majority of students living in university accommodation on campus are able to access the internet and a range of services on the campus network directly from their study bedrooms.
* PC classroom facilities are available 24-hours a day within the residential accommodation blocks.
* Classroom facilities are available at central locations and within individual departments to support teaching.
* Advantageous arrangements for the purchase of software and hardware are available to staff and students for personal computers
* Students are able to obtain support and help in the use of computers on campus from departmental staff and from the University’s IT Support Office.
* Approximately 150 items of PC software are available on the centrally managed desktop service including Microsoft Office and a range of graphics, programming and mathematical software.

Future plans include the expansion of student networking services, wireless access points, a roaming laptop service for students and continued investment in classroom IT facilities. Provision for mobile learning facilities is high on the University’s agenda, with an increasing number of students bringing their own devices to campus and expecting to be able to connect them to learning and teaching web services.

### 1.3.3 Information Technology Infrastructure

The University has a well-developed IT infrastructure which enjoys high levels of availability.

In recent years the University has moved back to a commodity (office) computing service model with a greater emphasis on central IT provision, with greater flexibility to support specialist departmental needs. However, there are some organisational units such as the Hull York Medical School which need to manage their own systems to ensure that they can work effectively with external partners.

Academic departments have flexibility to deploy IT systems locally to meet their specific teaching and research needs. Some key features of the IT infrastructure are:

* 1-10 Gigabit Ethernet campus network with high-speed wide area links to other University sites in the city of York and across the county of North Yorkshire;
* 155 Mbit/s connectivity to the Internet via a metropolitan area network and SuperJanet;
* Network access and cloud-based facilities for over 24,000 user accounts (3,938 current staff and 21,217 current students), as well as a further 82,694 applicant student accounts;
* Google Apps for Education services on the cloud include cloud-based email, calendar and all

Google's other tools;

* Centrally managed desktop PC service based on Windows 7;
* Central Solaris and Linux servers for critical infrastructure services;
* Network Appliance filers for high-performance managed filestore;
* ColdFusion web service for departmental and user systems development
* Delivery of Internet access to 2,500 study bedrooms on campus. Development of mobile services, based on wifi and other network technologies
* A single username/password environment for all users of centrally supported systems based on LDAP and Shibboleth single sign-on authentication;
* Enterprise level backup and recovery based NetApp snapshots and tape backup based on Legato Networker;
* A campus licence for Oracle database software which is used for business information systems and other academic and administrative database facilities;
* York Print Plus.

One of the characteristics of the IT infrastructure at York is the variety of desktop platforms connected to the network. Approximately 6500 devices are connected including Linux based PCs, Apple Macintoshes, Unix workstations and PCs running various versions of Windows. The centrally managed desktop PC service, which includes all public access PCs, is currently based on Windows 7. To meet requirements for increasing flexibility for access to centrally provided systems, thin-client technologies are now increasingly being used by students.

### 1.3.4 Web Systems

The University has made full use of the development of web technology and has made available a significant amount of information via its web site. The University web identity is managed and developed from the Web Office within the External Relations department, using a content management system (TERMINALFOUR). Web authoring is a highly devolved process with departments creating and maintaining their own web pages. Staff across the university also have access to an internally managed wiki service run on Confluence and all staff and students can use Google Services such as Groups, Communities, Hangouts, Sites, Docs and Gmail.

### 1.3.5 Business Systems

The University has made a significant investment in the purchase and implementation of business systems, which include the following business areas:

* Timetabling and Room Booking (Syllabus Plus)
* Human Resources Management and Payroll (Northgate ResourceLink)
* Time & Attendance (Kronos Workforce)
* Student Records (SITS Vision)
* Student Accommodation (Occam)
* Financials (Agresso Business World)
* Reporting (Business Objects)

### 1.3.6 Research and resource management and discovery services

**Library Management System**: is currently Ex Libris’ Aleph.

This is supplemented by SFX (to provide context-sensitive links between web-based resources so that the Library’s information resources are fully integrated regardless of where they are hosted).

The Library is preparing for implementation of Ex Libris’ new generation Alma system in August 2013 which will replace Aleph and SFX. Alma and Primo will be cloud-based, hosted by Ex Libris.

**Multimedia repository**: York Digital Library (run on Fedora Commons open source software) is an online repository for multimedia resources at the University of York, including images, audio and video, past exam papers and Masters theses.

**Research outputs repositories**: White Rose Research Online (WRRO) is a shared, open access repository for the Universities of Leeds, Sheffield and York containing research outputs from across the Consortium. White Rose eTheses Online (WREO) is the shared repository for research theses.

**Current Research and Information System (CRIS)**: Atira’s PURE is a database that stores and integrates information on research activity in a structured and standardised way. Submitting and storing research information on PURE ultimately makes it available and searchable for scientific personnel as well as the public. Research outputs deposited in PURE populate WRRO through an automatic connector.

**Resource discovery**: Ex Libris’ Primo acts as the discovery layer for Library resources, White Rose Research Online, White Rose eTheses Online and commercial full text resources. It will include York Digital Library and potentially archives and research data in future.

**Resource list service**: EARL is an in-house system fully integrated in the Blackboard LMS and providing resource lists with active links for students, a resource list management tool for academic staff and reports on items to purchase, digitise or move to short loan for library staff. A watching brief is being kept on commercial products, but none currently fulfil all three requirements.

**Library subject guides**: Springshare LibGuides is used to manage and deliver subject specific web guides.

**Library enquiry service**: Springshare LibAnswers is being implemented (from June 2013) to provide enquiry management services.

**Archive management**: the Borthwick Institute for Archives is currently investigating archive management systems

**Research Data Management**: this is under review by the University Research Data Management project. The systems solution is likely to comprise a variety of specialist systems integrated to provide a coherent service.

1.3.7 Cloud based services

Over the last year the University has moved all of its email and calendaring services to Google with all staff and students on the same domain. The University has taken the decision to enable all applications that are provided as part of the Apps for Education programme as well as other free ‘consumer’ services such as Google+. The University is beginning to explore what other services can be deployed on top of the Google platform and is developing processes and policy to increasingly make use of other cloud based platforms. Another significant move in this area is our Library Management System where York is part of the Ex Libris early adopter programme for ALMA.

A key element of this move is the requirement for cloud based services to offer integration with our chosen single sign on solutions and mature and stable APIs. This allows us to take advantage of these services while integrating with locally run services where cloud based systems do not exist or are not a good fit for the institution.

### 1.3.8 Interfaces

The Blackboard systems have been integrated with a series of key university information management systems which include:

* SITS for the creation and enrolment of students within programme and module areas):
* the People Database, LDAP/Shibboleth for authentication

Through the use of Blackboard’s open API the environment also integrates with a number of learning and teaching applications including the streaming server and commercial software such as Turnitin and Echo 360 lecture recording software and our locally developed EARL resource lists.

The University is also seeking to build [links between the online learning environment and the University’s Digital Library](https://dlibwiki.york.ac.uk/confluence/display/YODLING/Integration+between+Yorkshare+and+York+Digital+Library), enabling access control from module sites to specific research collections, and to integrate the platform with Google Apps through a dedicated Bboogle building block. This will enable access control data from Blackboard to be transferred to Google Apps, supporting module- specific learning and teaching activities.

Any future online learning environment will be expected to offer an equivalent or enhanced level of integration, in this way joining up a learning management system with the full range of other online learning systems and services that the University provides in support of student learning.

# 2. Project Overview

## 2.1 High Level Aims

The University is seeking to renew its central online learning provision with a view to identifying a solution which will be fully operational from October 2015.

The University seeks a solution which will enable the University to provide world-class opportunities for online learning for students, staff, collaborative partners and the external community. The solution should support the full spectrum of online learning functions, ranging from natural and elegant ‘information repository’ provision for high quality content resources, through to powerful learning support tools that may support academic collaboration and student-led learning. The solution will be ‘mobile ready’ and have the flexibility to adapt to future needs and should provide users with an intuitive and efficient interface with contemporary web-design controls. It will support seamless integrations with other business systems and learning applications, as well as providing multiple entry points for different user groups and communities, as depicted in Appendix 1.

## 2.2 Project Objectives

We are seeking to identify an online learning solution which will:

* Support the University’s [Learning and Teaching Strategy](https://www.york.ac.uk/staff/teaching/strategy/), which emphasises the enhancement agenda for student learning ‘supporting effective and independent learning and personal development’.
* Provide a licensing or use structure which enables access to be granted to non-York staff and students where the business dictates a need to do so (e.g. outreach and collaborative provision with partner institutions; access for prospective students and applicants; access for alumni).
* Enable the production and distribution of learning materials and related web-based content by and between staff and students and other providers.
* Enable online communications and collaborations which support and develop student learning and other academic activity by and between staff and students and other contributors.
* Enable the practice of appropriate modes of formative and summative online assessment, across the whole assessment cycle to the point, with scope for instructors to provide feedback to students in a video or audio format.
* Enable departments and individual staff to perform common required elements of course management, with scope to designate system administration tasks to super users for specific domains within the system.
* Enable the creation of access-controlled online spaces for learning activity, with an appropriate suite of e-learning tools available to staff and students, and an appropriate range of permissions for all users, including external users.
* Enable departments, schools and teaching centres to create and manage their own brands for their domain of the learning environment, providing a dedicated log-in address and distinct ‘look and feel’ to programme and module sites system.
* Allow integration with, and where advantageous leverage the functionality of, other relevant York systems, and sit cogently within the York IT infrastructure and information architecture.
* Support a usable interface which is intuitive, efficient and flexible with contemporary web design editing controls.
* Comply with - or enable compliance with - relevant models, regulations, processes and legislation across the academic cycle, and for information technology, data protection, copyright, intellectual property, accessibility.
* Be accessible by staff or students via internet connections on or off campus, in the UK or globally, over commonly supported browsers and on mobile devices (a ‘mobile ready’ solution).
* Be available 24/7/365 for staff and student users, scheduled and unplanned outages excepted.
* With a means for clear and complete migration from our current system (Blackboard v.9.1 SP12), fully supported by the provider.
* May be installed at York (or remotely hosted) with a minimum of internal technical development of the core system.
* With a low risk that the system (or version pathway) will become obsolete in the next five years and require an unplanned migration over that period of time. Be extensible and flexible to meet the University’s future needs.

## 2.3 Project Timescales

The solution should be fully operational to support the University’s online learning, teaching and assessment activities by October 2015. An indicative timeline for the tendering process and implementation of the solution is set out in Appendix 2.

## 2.4 Contract Period

The University is looking to award a four year contract.

## 2.5 Project Team

The VLE Service Group will take forward the procurement and implementation of the new e-learning solution. Membership is drawn from the E-Learning Development Team, IT Services and Library. A working group from University Teaching Committee is also in place to oversee the procurement and provide guidance and an academic perspective on the requirements for the online learning environment.

# 3. Detailed Specification

## 3.1 Core business and primary business requirements

The University’s requirement is for an 'online learning environment' which may be integrated with our legacy online services in support of learning and teaching. In this document we seek to describe the functionality required in a holistic manner, which may or may not be met by a monolithic solution such as a traditional virtual learning environment (VLE) / learning management system, or by a VLE with supplementary, partnered tools which are plugged into the platform.   
  
Please note that terms such as ‘environment’ or ‘system’ which are used interchangeably within the specification of requirements are simply intended as short-hand for an ‘online learning environment’, and we therefore recognise that the requirements for this environment may be met using one solution or a variety of technological solutions.

In selecting a suitable solution, the University needs to be convinced that the following high-level criteria are met. The full specification, defined below, can be considered to be detailed instances of these high-level criteria:

• *Functionality*: the extent to which the software is able to carry out the tasks required of it.

• *Quality*: how well those tasks are likely to be carried out, including user training and ease of use.

• *Flexibility*: the extent to which the product is interoperable and capable of adapting to future requirements that may be encountered during the lifetime of the product.

• *Organisational model*: the extent to which the product is compatible with the institution’s relevant organisational models for the management of learning, teaching and assessment activities and related administrative, reporting, security, information sharing functions and so forth.

• *Risk*: the extent to which the product minimises potential risks, such as those risks relating to reliability, future support, upgrades and future developments, changes in operating environments, licensing costs.

• *Implementation*: Proposed methodology, programme and resources (from both the supplier and the University) required to implement the system.

• *Support*: Proposed contract management, technical support and general customer service that we can expect to receive.

• *Whole Life Cost*: costs of software, configuration and programming, annual licences, support and upgrades, together with amount of staffing resource required for administering the system.

• *Compliance*: the extent to which the product is compliant with the proposed conditions of contract.

## 3.2 Detailed Requirements

**IMPORTANT – READ THIS CAREFULLY**

The purpose of this section is to state requirements that the supplier’s proposed solution should meet, and to request information about specific areas of the solution. Requirements are prioritised as:   
Mandatory (**M**) – reflecting essential components for the solution.

Please note that tenders that do not satisfy mandatory requirements to a good standard will be automatically disqualified.

Highly Desirable (**HD**) – reflecting features that would add significant value to the solution.   
Desirable (**D**) - representing features that would add value.

**In answering this section, suppliers must provide a response to every item.**

• When a requirement is stated, suppliers must identify clearly whether it is met by the proposed solution, and provide information about how it is met.

• Any limitations in the implementation must be detailed.

• Where a function is planned for provision in a future release, details of the present stage in the development cycle of that release, together with anticipated beta and production release dates must be provided.

• Suppliers must provide details of any third party tools/utilities/plug-ins that are required to provide specific functionality, as well as any third party services which they employ to provide implementation, migration and training provision for their solution.

• Open source solutions will be considered, as long as a suitable service package can be provided by a supplier to support the system.

• These rules also apply to requests for information, which must be answered as fully as possible.

**In very few cases, will a simple “Yes” or “No” response be considered adequate. In addition, references to a separate document would not be considered sufficient.**

Where appropriate, vendors may wish to include screen shots for illustrative purposes. However, these must only be used to enhance a response and must never replace a purely textual reply.

When replying to this section, suppliers must not change the individual reference number of the requirements. However, they should feel free to amend the layout of the table to maximise the room available for responses.

Appendix 3 (OLS Specification Response Doc) has been provided to assist tenderers with their response. The format of this spread sheet may be changed to accommodate the information you wish to submit but please ensure you provide a response to all items listed.

## 3.3 Pedagogical functionality

### Content

|  |  |  |  |
| --- | --- | --- | --- |
| **Ref. No.** | **Priority** | **Description** | **Enable the production and distribution of learning materials and related web-based content by and between staff and students and other providers**  **Guidance on response** |
|  |  |  | **Uploading Content** |
| CON1 | M | Be able to upload a wide range of file types | Upload / insertion tools must support a wide variety of industry standards including DOC, DOCX, HTML, RTF and other standard document formats. Suppliers must specify the formats supported for upload/insert/import and identify any limitations imposed by these facilities. |
| CON2 | HD | The ability to create, insert, upload and import multiple content items in a few operations. | It is Highly Desirable that upload/insertion facilities support the upload of entire directories of content in as few operations as possible and also the easy creation of items by import or copy and paste from sources such as Microsoft Word for example.  Suppliers must specify the formats supported for upload/insert/import and identify any limitations imposed by these facilities. |
| CON3 | HD | The ability to import multiple content files using WebDAV functionality | Be able to upload files through WebDAV or "Drop-Box" like functionality |
|  |  |  | **Importing or Integrating Third Party Content** |
| CON4 | HD | The ability to link to or embed materials/services external to the online learning environment. | A facility is sought to enable the inclusion of, or “deep linking" to external content stored outside the online learning environment which may have been developed using other products or by other institutions. If such a facility is provided, this should be described.  A facility to embed external content within courses sites within the online learning system is also highly desirable. Import facilities should include support for content in SCORM / IMS (LTI) learning object standards. Suppliers should specify the level of compliance achieved now and demonstrate commitment to implementing future developments of this standard as well as explain how such packages are played / integrated or unpacked into the environment.  It is Highly Desirable that import facilities also include support for de facto standards, including TeX, HTML, XML and standard document formats and access to remote resources. Tools accessing remote content should support SSO / “handshaking” protocols such as LTI. Suppliers must specify the standards supported for providing access to content stored remotely, e.g. OpenURL, Z39.50.  If the supplier creates content or acts as a broker for content created for their product, information concerning such content should be included too. |
| CON5 | HD | The ability to batch import external content | It is Highly Desirable that import facilities for third party content include support for the import of entire directories of files of content. |
| CON6 | HD | The ability to embed external content within pages | It is Highly Desirable that simple and easy to use interfaces are provided for embedding/linking to external content / web services (such as facilitated search/embedding of YouTube content for example).  Suppliers must specify the formats supported for import and identify any limitations imposed by these facilities. |
| CON7 | HD | The facility to (seamlessly) integrate or link to open-source / locally written and external application software | Many disciplines require the facility to invoke software applications through teaching materials, for example to illustrate a point, to enable the student to explore the results of various conditions, or for the student to provide input and return the results of a computation to the learning document.   1. Suppliers must describe the facilities offered for incorporating such material, indicating the availability of support for software to run on a dedicated server for the system, on an ‘external’ server or on the client system via plugin or applet, etc. 2. Suppliers should describe any limitations concerning this facility. |
| CON8 | M | The ability to embed/play multimedia content. The term multimedia is deemed to include still imagery, 3-D imagery, video and sound. | Many disciplines require the facility to illustrate content using non-textual media. In some cases, interaction with these media may be desirable. Suppliers should describe the facilities they provide for delivering multimedia content and the ease of which those materials can quickly be embedded in the environment. |
| CON9 | HD | The ability to embed/insert interactive content resources | Suppliers should outline any built in interactive tools (tools that allow the easy development of 'drag and drop' or 'roll-over reveal' activities for example) and also any scope for the integration of interactive objects (such as Java applets or Flash objects). |
| CON10 | D | The facility to pull content from external sources | A facility is desired to pull content from external sources via standard web mechanisms e.g. RSS feeds. |
| CON11 | HD | The facility to import whole courses into the online learning environment | Suppliers must explain how whole courses can be imported directly to the online learning system (i.e. from another VLE or possibly non-VLE environment), outlining what standards are supported, as well as how the imported courses are rendered. Suppliers must clarify whether the import process can be automated for batch importing of courses from another VLE (e.g. Blackboard v. 9.1 and Moodle). |
|  |  |  | **Exporting content** |
| CON12 | HD | Be able to export content out of the online learning environment. | Suppliers must explain how materials in the online learning system can be re-used within other areas of the environment or exported out of the environment for usage elsewhere.  Export tools must support a wide variety of industry and de facto standards, including TeX, HTML, QTI, XML and standard document formats and should support SSO / “handshaking” protocols such as LTI.  It is Highly Desirable that export facilities include support to export content in SCORM / IMS learning object standards. Suppliers should specify the level of compliance achieved now and demonstrate commitment to implementing future developments of this standard as well as explain how such packages may be exported to other learning environments. |
| CON13 | HD | Be able to export whole courses out of the online learning environment. | Suppliers must explain how whole courses can be exported directly from the system (i.e. for use in another VLE or possibly non-VLE environment) and what the limitations on usage outside of the online learning environment framework are. |
|  |  |  | **Creating Content** |
| CON14 | M | Content editing | User-friendly content editing tools and restructuring facilities are desired, enabling users to create their own content items from within the system using a content editor interface. A standard rich text editor is required for creation of content items and for completion of text-entry fields in all tools, including discussion boards, wikis, blogs etc.  Users creating content should not be assumed to be proficient in coding HTML or any mark-up schema.  Suppliers should describe the facilities provided, with explanation on how access to content editing tools is supported for mobile devices. |
| CON15 | HD | ‘Trusted user’ content creation tool | It is Highly Desirable that the system administrator for the online learning environment may provide select users with the ability to insert content (such as iframes) with the system’s content editor. |
| CON16 | M | English text | Content editing tools should support UK English grammar, spelling etc. |
| CON17 | HD | Multi-lingual text – support for foreign languages | This facility should include support for Latin and non-Latin character sets. The character sets supported, together with any limitations on their use within the system, must be identified. |
| CON18 | HD | Mathematical expressions | Support for the input and display of mathematical expressions is desired, including support for MathML and LaTeX. A text editor is required for creation of content items using mathematical expressions and for completion of text-entry fields using mathematical expressions in all tools, including discussion boards, wikis, blogs etc.  Mathematical expressions should be rendered in the user’s browser using Javascript and should not require an additional plug-in or Java applet.  Suppliers should outline the facilities that they support. |
| CON19 | HD | Scientific expressions | Support for the input and display of scientific expressions, including for example chemical representations, is desired. A text editor is required for creation of content items using scientific expressions and for completion of text-entry fields using scientific expressions in all tools, including discussion boards, wikis, blogs etc. Scientific expressions should be rendered in the user’s browser using Javascript and should not require an additional plug-in or Java applet.  Suppliers should outline the facilities that they support. |
| CON20 | HD | Advanced graphical support | Support for the inclusion of complex graphics in content is desired, including material defined in GML and VRML. The supported formats must be identified. |
| CON21 | HD | Support for streaming media | Support is desired for content that includes streaming media, including both audio and video. The supplier should identify any browser characteristics that are required to enable a user to view such content delivered from their operating system or device. |
|  |  |  | **Look and Feel** |
| CON22 | D | Icon display | System automatically displays appropriate icons for file types. |
| CON23 | D | Student review buttons | For students, system to display whether they have accessed a piece of content or not. |
| CON24 | D | System alerts for new content | For students, system to indicate when new or updated content is available to them. |
| CON25 | D | Content organisation tools | Organise course material easily (e.g. via drag and drop). |
| CON26 | D | Flexible presentation and navigation structures | Staff have flexibility over the presentation of course material and navigation structures which students will use within their course site. |
| CON27 | M | User-controlled flexibility over appearance and interface. | Users should be able to control colour, font options, text size, etc.  Suppliers must show that they are in step with current EU and UK Equal Access legislation and best practice in this regard and demonstrate a commitment to tracking and developing their interface in line with future requirements. (A response that merely provides a US Section 508 submission is not deemed adequate in an EU / UK context.)   1. The use of Style Sheets in this regard must be documented, including any limitations to customisation. 2. Suppliers should describe the facilities offered to enable users to tailor the appearance of frames, font, colour and content with an especial regard to the needs of users with disabilities. Facilities should comply with current and upcoming disability legislation. 3. Suppliers should list any accessibility tools, such as screen readers, that have been certified for use with their product.   Suppliers must describe how far the University can modify or replace custom graphics, such as icons, buttons, etc., with a particular reference to the support of visually impaired users. |
| CON28 | HD | Test view facility | A facility is desired to enable an instructor to see materials with either the ‘instructor view’ or the ‘student view’ at will. This must not be provided only within the process of content creation but must also be available to tutors supporting running courses / modules and for the purpose of quality assurance. It is desirable that the system enables instructors to be able to check easily how things look to students.  Where this facility is provided, the supplier should describe the tools available. |
| CON29 | HD | Mobile friendly access to content items and content editing tools | Suppliers must explain how content items stored within the online learning environment may be accessed by mobile devices such as smart phones (Apple, Android, Blackberry and Windows) and tablet devices, addressing access to content items and content generated through use of the system’s tools (e.g. communication and collaboration tools). Suppliers must explain how access to content and access to content editing tools (tools for the generation of content) are tailored for mobile devices. |
|  |  |  | **Managing Content** |
| CON30 | M | Facility to store content resources | An organisational structure is desired that will enable the gathering together of materials of various types relating to each specific course / module.  Suppliers must describe the organisational structure of their product both in how the environment manages inserted/imported materials as well as stored file based materials. |
| CON31 | M | Upload workflow | The supplier should outline the various workflows by which staff (and students) can upload files into the environment. The workflows must be intuitive, efficient and flexible.  It is highly desirable, for example, that staff can upload multiple files in one operation and, as a part of the same workflow, contextualise the files and provide the links to students. |
| CON32 | HD | Facility to manage content resources, allowing version control of content items. | It would be Highly Desirable for instructors to be presented with a content storage space for the course they are associated with, which is available within the course interface, with tools provided for content management including versioning control (e.g. signing-off / review / file-locking features) for content items.  Suppliers must explain how files under development can be managed/audited within the environment including statements on the effects of any versioning facilities where files may have been linked to students (for example, do archived courses remain linked to an older version while newer courses can be linked to a newer version of the same file). |
| CON33 | M | Access control / permissions | Staff will need to manage permissions for content items (i.e. have fine grained control over who can view, add, edit and delete content). An explanation should be given of the tools supporting the management of permissions on uploaded files and content folders and the ‘reach’ of the tools in managing permissions (i.e. to what level can access to content be controlled?).  Staff will also need to specify whether a piece of content is viewable within course areas only, within organisational units, or is publically available  The supplier should also outline further tools within this area that facilitate the better management of uploaded course materials (for example the ability to create further folders within the content system). |
| CON34 | HD | Facility to manage and re-use content from different course areas within the online learning environment. | It is Highly Desirable for there to be provision for the sharing of resources between modules, within and between course sites without duplication. This should enable:   * Content to be pushed to multiple "course" areas as well as being able to "pull" from course areas. * “Deep linking” to content from other areas of the online learning environment.   Suppliers must describe how this facility is provided, in particular, if this facility relies on the availability of a third party Content Management System (CMS), this must be stated and the access protocols required identified. |
| CON35 | D | Management of student files within the system | The supplier should describe facilities, including access control and resource allocation facilities for managing student files within the environment. |
| CON36 | D | Facility to add metadata to content resources. | The metadata standards implemented and supported for internal and external search engines must be identified (e.g. Dublin Core/IMS/Custom etc.). Any limitations in the use of any of these implementations must be described.  Tools allow for metadata such as "last modified" and copyright notices to be added to content items, which may be also be made visible to students |
| CON37 | D | Facility to inherit metadata fields | The system allows for automated (inherited) / pre-populated fields to be created and also facilitates manual metadata entry through drop-down menus (e.g. menus that show a restricted metadata taxonomy).  The system retains and displays metadata fields that have already been created in content items that are imported into the system. |
| CON38 | D | Facility to add descriptions to links to external content items. | Be able to add descriptions/contextualise content resources that are links to files or external sources (outside of more formal metadata entry). |
| CON39 | D | Facility to create / store & manage bookmarks | A facility to enable staff/students to mark content for later re-visit is desirable. Suppliers should describe how this facility differs, and improves upon, the standard browser bookmark facility, for example so that a person might have different bookmarks for different modules / courses. |
| CON40 | D | Facility to mark up content | A facility is desired enabling staff/students to mark up content (e.g. by adding tags / metadata) to enable later selective retrieval using the system’s search tools. |
| CON41 | D | Glossary | A glossary tool is required to provide definitions of course concepts, which may be controlled by staff and student users.  The glossary tool may assist a student in navigation within the system, linking automatically to the relevant point in the course content. |
| CON42 | HD | Facility to create searchable collections of content (learning and teaching objects) | It is Highly Desirable for the system to support a facility which enables staff to create collections or banks of learning materials that can be shared with colleagues.  Learning and teaching objects can be searched for within the system with various levels of access through use of catalogues / dedicated search tools (i.e. searchable in a variety of ways by content type and both within and across course areas) and are easy to discover. Suppliers should describe the tool-set available to users and any implementation issues involved and standards which are supported.  If a search facility for students is also supported within the system, it must respect access controls, such as adaptive release (CON46), that have been applied by staff to protect content items from general viewing (e.g. controls on content items denying student access to solutions for upcoming tests). |
| CON43 | D | Facility to share content across courses | Be able to share content between courses without having multiple copies |
| CON44 | D | Facility to update multiple instances of a content file | Be able to update one central content file, and for those updates to be reflected in the instances of that file as it appears in course areas. |
| CON45 | HD | Housekeeping tools | The supplier should describe features that support the end of module / term / year / course housekeeping, for example to archive student contributions as well as staff insertions/uploads.  Housekeeping tools may be used to allow students to access past / archived course content. |
| CON46 | HD | Adaptive release of content | It is Highly Desirable for there to be tools to control access to content in a variety of ways; group membership, public access, date and time, grade criteria. This should support adaptive release of content based on progress within a course, such as a score achieved in a quiz. It should also enable instructors to set release and closure dates and times for student access to content resources. The mechanisms available to instructors for the provision of this facility should be described. |
| CON47 | HD | Content versioning | It is Highly Desirable for there to be a facility to maintain one record of a file but reference different instances of it within the system. For example, a current course points at the current version of the file while an archived course points at a previous version of the same file.  The supplier should detail support for retaining different versions of files managed by the system, and should confirm whether differences between versions can be viewed, and whether feature this can be enabled or disabled. An indication of any increase in filestore or system requirements when using this feature should be provided. |
|  |  |  | **Student Generated Content** |
| CON48 | D | Add description / annotation | A facility is desired to enable students to add a personalised description to content as an aid to their learning and revision. If this facility is provided, suppliers should describe how it is delivered. |
| CON49 | D | Rating tool for resources | It is desirable that students have a facility to rate content materials and shared resources in terms of their relevance and value for study purposes. If this facility is provided, suppliers should describe how it is delivered. |
| CON50 | D | Student filestore | Allow students to have content areas out with academic (or course) control. Students may require a dropbox/space to store files. It is Desirable that this facility interoperates with the environment’s central content management features or with the University’s Google Docs application. Suppliers must describe the facilities for student file space, including:  i - access permissions  ii - facilities for resource allocation and control and  iii - whether the facility provided would enable students to share files under student control of permissions. |
| CON51 | D | Develop / share presentations | The University considers presentation skills to be an important transferable skill. A facility to incorporate presentation material is desirable. Suppliers offering such a facility should describe the tools provided, including information regarding presentation formats supported. |
| CON52 | D | Report writing support | A facility for an instructor to provide students with a range of purpose-designed pro-formas to support report writing is desired. If this facility is provided, it should be configurable such that multiple pro-formas could be associated with a course / module should the instructor so require. Suppliers should describe the facility provided and identify any limitations or restrictions involved. |
| CON53 | D | Experiment results collation | A facility is desired to enable students to collate data from class experiments. Data are likely to originate from multiple sources and to require collation into a single output. It is desirable that such a facility support individual and collaborative experimental work. If this facility is provided, suppliers should include details of security, file storage allocation, protection and limits in their response. |

### ii) Assessment

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| **Ref No.** | **Priority** | **Description** | **Enable the practice of appropriate modes of formative and summative online assessment, across the whole assessment cycle, with scope for instructors to provide feedback to students in a video or audio format**  **Guidance on response** |
|  |  |  | **Creating and deploying tests** |
| AS1 | M | Build assessments using a variety of assessment paradigms | A facility is required for staff to build assessments within the system. A variety of assessment paradigms should be supported, ranging from self-assessed quizzes, structured quizzes with randomised questions, through to multi-part assessments (where students prepare and deliver an assessed presentation and then submit a written assignment) are required. |
| AS2 | M | Build assessments using an easy to use assessment manager interface | An intuitive, efficient and flexible facility is required for staff to build assessments using a simple interface.   1. The assessment manager must support the generation of questions which are automatically marked by the assessment manager as well as free-text questions requiring the intervention of the instructor to mark the responses. 2. The solution should also support question items with the facility for rich media content to be embedded within the question stems, answers and feedback. 3. The assessment manager should enable question items to be mapped to course objectives. 4. The assessment manager should enable staff to create assessments which draw on question items from question pools, which are randomly selected or selected based on selected criteria (e.g. level of difficulty, topic etc.). 5. The assessment manager should support the delivery of feedback on student answers preferably on a ‘per answer’ basis in the case of Multiple Choice questions. 6. The assessment manager should enable staff to create self-assessment tests, which students may undertake for formative learning during, or at the end of a course to support their learning. 7. The test engine must allow for staff to easily interrogate student performance in tests both across the whole group and for individuals. It would be highly desirable that these interrogation tools allow for the filtering or ordering of student performance (for example allow for filtering of all those yet to attempt to the test plus the facility to email those students directly). |
| AS3 | HD | Build surveys using an easy to use survey manager interface | It is Highly Desirable that the system supports the creation and deployment of surveys that students can take. This would preferably be anonymous and also allow for the aggregated interrogation of results. Please outline any surveying facilities the system may support. |
| AS4 | D | Build module evaluations using an easy to use interface | A facility is desired for course owners and departmental administrators (‘super users’) to be able to build module evaluations that students can take. This would preferably be anonymous, with results aggregated to a central point and output in a CSV file format. |
| AS5 | M | Question types | A facility is required for staff to build assessments using a simple question editor interface, with support for staff to write equations and mathematical expressions (see CON18). .  The assessment manager must support the following question types:  - Free text - Multiple Choice  - Multiple Answer  - True False/Yes No/Either Or  It is Highly Desirable that the following question types are also supported:  - Ordering  - Matching (preferably by drag and drop)  - Jumbled Sentence  - Fill in blanks  - Knowledge Matrix  - Opinion Scale/Likert  The supplier should outline all question types that are supported and provide details on the question editing interface and assessment templates that are supported.. |
| AS6 | D | Import assessments | A facility is desired to permit the uploading of question files, assessment pages and question banks to the assessment manager facility within the online learning system. It should be possible to create / import test questions singly or in batches. It should be possible to import assessments in QTI format. The formats and standards supported for this activity, where it is provided, must be identified. |
| AS7 | HD | Create question pools | It is Highly Desirable that the system allows for the creation of pools of questions for the purpose of re-use of question items across multiple courses and also for the purpose of random delivery of question items to students within an assessment (where it is possible to create a pool of questions and then set up a test where you can configure a question to ask x number of questions from a pool containing more than x questions), with question selection from a pool based on criteria such as topic or level of question difficulty. |
| AS8 | HD | Question management and re-use of question items across course sites | A facility is desired for staff to manage their question items across course /.module sites. This should include the facility to re-use question items across multiple module sites. |
| AS9 | M | Flexible test deployment configuration | Test deployment for short answer / defined response questions must be flexible and must include at least the following options:  - Allow for multiple attempts, a specified number of attempts or a single attempt  - Allow for insertion of due deadline (viewable to students). It would be Highly Desirable if this could also be configured as a criterion to cut off students’ ability to attempt the test post-deadline.  - The test can manually be made available/unavailable  - Allow for date release of the test (it can appear and disappear to students based on entry of times and dates during configuration)  - Allow for the selective flagging of elements that will be reported back to the student after the test has been attempted (i.e. their answer, the correct answer, feedback, score)  It would be Highly Desirable if test deployment could also:  - Allow for different display/presentation criteria for the test (i.e. show all questions at once or show one at a time)  - Allow the questions in the test to be displayed in random order.  - Include rules determining the criteria for progression to further course activities and resources (e.g. pass mark enabling progression to next activity). |
| AS10 | HD | Summative test deployment | It is Highly Desirable for assessments to be delivered in a secure way using a locked-down browser which prevents students from accessing other websites or file directories during the performance of the test. This facility should be provided at an enterprise-level scale, supporting simultaneous testing of large cohorts without any performance problems in accessing and completing the assessment. |
|  |  |  | **Setting and Submitting Assignments** |
| AS11 | HD | Creation of file submission points | Allow staff to create assignment submission points within course sites for individual and group submissions using a simple interface.  The facility should support named file submission and anonymous file submission or submission tagged by Exam ID. |
| AS12 | HD | Flexible file submission deployment options | Assignment submission points must be deployable according to different configuration modes , including the following features:  - Allow for multiple submissions, a specified number of submissions or a single submission  - Allow for insertion of due deadline (viewable to students). It would be Highly Desirable if this could also be configured with a cut-off point, preventing students from submitting after a given deadline, or marking any submissions as late after the given deadline.  - The submission point can manually be made available/unavailable  - Allow for date release of the submission point (it can appear and disappear to students based on entry of times and dates during configuration)  - Allow submission points to be open for both individual and group submissions. |
| AS13 | HD | Student file submission tools | The system must provide an easy to use interface / tools, enabling students to submit files in response to an individual or group assessment activity.  A wide variety of file types should be supported (e.g. multimedia; mathematical notation). Suppliers should state the range of file types that their solution supports and any limitations over the file sizes that can be accepted by the system (e.g. support for large file sizes of 1Gb + ).  Such a facility must provide the student with a time-stamped receipt and provide a means for tracking the submission through the assessment process.   1. Records of submissions should be exportable to the Student Records System (SITS) 2. and it is desirable to be able to export these records to departmental systems. 3. In addition, the receipt/tracking facility should also be suitable for non-electronic media, for example for work submitted outwith the online learning system.   Suppliers should describe the facilities provided. |
| AS14 | HD | Text matching integration | It is Highly Desirable that the system supports text matching of student assignment submissions against published works on the web and against previous student submissions, both for submissions at York and those submitted by students outside the university, linking to a text matching solution such as Turnitin.  It is Desirable for the solution to generate reports automatically to instructors and administrators, for student submissions which exceed a given percentage score for their originality.  It is Desirable that the full range of the online learning system’s tools for grading and feedback should be available while using this tool.  Suppliers should outline the full supported features for their solution. |
| AS15 | HD | Integration with TurnitinUK | A facility is required for seamless integration between the online learning environment and Turnitin UK, supporting the submission and collection of assignment submissions through the system via the Turnitin UK text matching service.  The integration should be supported through single sign-on technology, providing a seamless process for the submission of assignments and the collation of submissions and text matching reports which are associated with them. |
| AS16 | M | Data protection compliance for submitted files | All files submitted to the system must be handled in such a way as to comply with UK data protection rulings (e.g. Safe Harbour etc). This applies to files submitted for text matching and data pushed out to a further service for processing (e.g. cloud-based solutions for in-line marking/feedback). |
| AS17 | HD | Integration with Google Docs | It is Highly Desirable that the system supports seamless integration between the online learning environment and Google Docs, allowing instructors to create and deploy Docs linked to from the environment that respect the user’s role and permissions in the module.  The integration should be supported through single sign-on technology, providing a seamless process for the creation of assignment tasks and allocation of permissions and editing / viewing rights. |
|  |  |  | **Marking and Feedback** |
| AS18 | M | Assessment of assignments | A facility is required for staff to mark assignments anonymously alongside the ability to not do so (e.g. for formative assessments, group work and practicals)   * Markers can annotate scripts online, by opening the file, commenting and saving the file (see in-line marking facility below for further details). There is version control built into the system, so a marked-up file will be different from the original file submitted to the system. * A feedback template may be linked to scripts within the system, with grids/grading forms/rubrics for feedback (both numerical and non-numerical) * Feedback template (sections to be completed) and script can be displayed on the same screen view within system. * Batch upload of feedback (for individuals & groups) and marks to the system is supported. * There is scope for markers to record comments for viewing by other markers only. * There is scope for a Module Coordinator to record general comments on performance of cohort in assessment, to be viewed by all students, including an outline of model answers. * A marker’s ID on scripts / feedback templates may be withheld, depending on departmental anonymity policy.   Suppliers must outline the tools that they support for online marking and the formats and files that are generated for feedback to students. |
| AS19 | HD | In-line marking facility | It is Highly Desirable that the system allows for the mark up (annotation and comments) of student work without the work first having to be downloaded from the system. Any mark-up/feedback/marks should be viewable by students, once the marker has released the assessed work for viewing. A facility for release of marked up work should be flexible (i.e. reveal to all students at the same time or to individual students – as required by the instructor). |
| AS20 | HD | Workflow management for assignment marking | A facility is required to manage the order in which assignments are available to markers, consistent with the full range of marking approaches that departments have adopted for this assessment activity.   * The system supports an automated and configurable workflow for marking. * Multiple markers (1st/2nd/3rd marker & moderator) may be associated with an individual assessment script. * The system supports staged marking between 1st /2nd and 3rd marker & moderator. The completion of this process will result in an agreed mark and feedback for each individual assessment script. * The system supports granular marking for group work (individual & group marks). |
| AS21 | D | Assessment of student activities that take place outside the system | A facility is desired to record marks and provide feedback for assessed activities which take place outside the system – e.g. assessed seminar presentations and practical work. |
| AS22 | HD | Assessment of all student-generated content within the online learning environment, with grading, feedback facilities and access controls. | A facility is required for staff to assess all student-generated content which is produced within the system, including content which is not of a traditional format (i.e. not an assignment / essay) using a simple process.  It is Highly Desirable that assessable content generated from learning journals or blogs, discussion boards, wikis and any other communication and collaboration tools may be processed by academics through the use of grading and feedback tools, with marks and feedback stored within a central grading repository.  It is Highly Desirable that associated access controls should be in place to ensure that content is in a ‘read only’ format once an assessment deadline has been reached. |
| AS23 | HD | Peer marking facility | It is Highly Desirable for a facility to be available for instructors to distribute student-generated content within a module / for an assessment within a module for peer assessment. The facility should enable students to access submitted work for peer assessment and to enter their peer review. Blind peer review and open reviews should both be supported. Suppliers offering this facility should describe the tools provided and any assessment activity logging provided. |
| AS24 | HD | Multiple feedback channels | It is Highly Desirable for the system to support multiple feedback channels for staff to use when returning comments on assessed work to students. Channels will include:   * text feedback to students * feedback to students via annotated pdfs * feedback in multi-media format such as audio and video   Suppliers should outline all supported formats and the feedback tools that are available for use. |
| AS25 | D | Reporting tools on assessed work | It is Desirable for there to be reporting tools which enable an instructor to provide feedback to students with a mark and overview of the breakdown of marks for the assessment. The reporting tools will generate statistics on individual and cohort performance for the various components of an assessed piece of work. |
| AS26 | HD | Learner / student tracking facilities | It is Highly Desirable that the system tracks, on a per-student or per-group basis, student progress for all types of content and activities. Monitoring would include time taken on / within modules, scores on self-tests, responses to tasks, etc.  Suppliers must describe the facilities provided for learner monitoring and the reporting format(s) that are produced (e.g. export of reports in CSV format) and whether they are per module or can track student activity across multiple course areas. |
|  |  |  | **Assessment Administration** |
| AS27 | HD | Assignment management tools | It is Highly Desirable that the system allows for the easy management of submitted work (e.g. assignment files), with support for the following features:  - Capture of all submitted files in one download (e.g. zip file);  - Filtering options in a screen view of student submissions; (for example being able to show only those students who have yet to submit)  - Email facility (enabling staff to target students who have not yet submitted a file through an email – applying also for summative assessments which require an anonymous submission)  - Viewing rights/access to and download of individual submissions;  - Scope to return marks and feedback (both textual or file based) back to the student through the system  - Scope to indicate when submissions have been made after the due date (including a filter for all submissions made after the due date).  - Scope to record extenuating circumstances with codes linked from SITS – e.g. reasons for late submission etc. |
| AS28 | D | Marker management tools | It is Desirable for intuitive, efficient and flexible administrative tools to be available to manage the contributions of markers, including:   * Automated email notifications, which can be sent out to markers to remind them that assignments are available to mark. Markers are reminded to log in to system where they will find the electronic files of the scripts that they have been allocated to mark, as well as marking criteria & feedback template – accessible via a zip file. * Follow-up reminder notifications can be sent out to markers, outlining deadline for completion of marking. * A tracking facility is made available to record when a marker has logged in & accessed electronic files. |
| AS29 | HD | Mark collation and export tools | * Scope for the creation of an auditable trail for mark changes including comments fields for changes * Tools supporting the conversion of marks from Exam IDs to Student IDs * Final marks can be downloaded into an exportable format (CSV file) for inputting within SITS eVision. * Scope for the easy transfer of data between the online learning environment and departmental assessment systems |
| AS30 | M | Repository for marks | A facility is required to collect and collate marks awarded for online and offline assessments. There should be support for multiple and external examiners.  Where provided, this facility should be described and any paradigm associated with it identified. |
| AS31 | HD | Reporting on student marks | Enable staff to view student marks across course areas. It should be possible for staff to widen the view to a programme and restrict it to a specific cohort.  Enable staff to produce reports and statistics on assessments/assignments.  Suppliers should outline the reporting tools that they support. |
| AS32 | HD | Student assessment archive | It is Highly Desirable for there to be a facility to store student results within the system and to export results to the Student Records System (SITS) and to departmental systems. There should be support for multiple and external examiners.  This facility should allow access to archives of assessed work. This should contain copies of exam scripts, feedback, grades and coursework. This should be presented in different 'groupings' (e.g. a lecturer might wish to view this archive by module. |
|  |  |  | **Student Progress and Reflection** |
| AS33 | HD | Student portal for student marks | It is Highly Desirable for a tool to be supported, which enables students to see all their marks (i.e. to track their performance in quizzes, tests, assignments for formative and summative work etc. across modules) in one place. |
| AS34 | HD | Staff portal for student marks | It is Highly Desirable for a tool to be supported, which enables staff to track student performance, viewing all of a student’s marks across modules in one place. |
| AS35 | D | Student feedback / feed forward channel | It is Desirable for the system to provide opportunities for students to comment on their feedback for PDP purposes. This may be supported through reflective journals which students control, with viewing rights for tutors. Students should control access to sections of these that might be released to staff either to request advice and guidance or for assessment purposes. |

### iii) Communications

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| **Ref No.** | **Priority** | **Description** | **Enable online communications and collaborations which support and develop student learning and other academic activity by and between staff and students and other contributors.**  **Guidance on response** |
|  |  |  | **Discussion tool** |
| COM1 | M | Create discussion groups | Facilities for tutor-controlled discussion groups are required and there should also be support for student-controlled discussion groups.  (i) The facilities for discussion group creation should be described for small-group and whole cohort-based activities.  (ii) Specific instances of control required include:  a. Draft & edit posts; delete posts; make anonymous posts; rate posts; comment on posts etc.  b. set different permissions for different roles (e.g. view only; view and reply to all posts: view, reply and comment on all posts; view replies only after a post has been made)  c. control of posts from users removed from a course  (iii) Suppliers should describe the management tools provided to users who create discussion groups to manage group membership (e.g. scope to automatically enrol students to discussion groups based on group data fed through SITS / data warehouse). How are access permissions and posting and viewing rights for groups created?  (iv) Suppliers must detail any differences in the management facilities for students, where provision is available for students to create discussion groups.  (v) Any limitations on tutor action, for example requiring action by a more ‘senior’ user must be described. |
| COM2 | HD | Discussion thread management | Tools to control discussion threads and posts should be described, along with the permissions mechanisms which control access to the tools.  (i) The facility is desired to create, close, archive and move discussion threads, also to manage content in the event of inappropriate postings.  (ii) Suppliers must describe moderation workflows and the range of interventions by the tutor that are supported for thread management: e.g. hide/freeze/delete/edit posts. Additional permissions and control should also be described; e.g. sticky feature enabling the tutor to bring topics and posts to the top of a discussion forum; controls to make posts appear only after a set period of time; controls to close a discussion board, preventing new posts but allowing viewings of posts. |
| COM3 | HD | Editing tools for discussion boards | It is Highly Desirable for a rich text editor to be available in all text-entry fields which supports:   * Multimedia attachments to posts * Mathematical notation including MathML and LaTeX * Scientific notation including support for chemical expressions   Suppliers should explain how access to content editing tools is supported for mobile devices. |
| COM4 | HD | Reporting tools for discussion boards | Facilities for instructors to track student activity within a discussion space are required. Suppliers should describe the range of reporting tools that are available for one discussion space or multiple spaces within a course area, and for multiple course areas.  (i) The facility is desired for instructors to be able to search for an individual student’s posts, collecting them in one view. An activity summary should be generated, capturing the total number of views and posts that a student has made within a discussion space.  (ii) The facility is desired for instructors to be able to collect and print off a record of a student’s contributions to a discussion board. The instructor should be able to export a transcript of an individual student’s posts for marking and archiving purposes, to be associated with a student record. |
| COM5 | HD | Assessment tools for discussion boards | The facility is desired for instructors to be able to assess students’ posts to a discussion space. Suppliers should describe the assessment workflow for grading students’ contributions to a discussion board and the marking interface, detailing where marks and feedback are entered and stored within the system. |
|  |  |  | **Wiki tool** |
| COM6 | HD | Create wikis | Facilities for the creation of wiki spaces for small group and whole cohort based activities are required.  (i) The facilities for creation of wikis should be described for small-group and whole cohort-based activities.  (ii) The facility for wiki spaces to be copied so that multiple spaces may be created within a course site, based on the same template design, should be described. A facility for wiki spaces to be copied across course sites is also desired.  (iii) Suppliers should describe the management tools provided to users who create wikis to manage group membership (e.g. scope to automatically enrol students to wikis based on group data fed through SITS / data warehouse). How are access permissions, editing, commenting and viewing rights for groups created?  (iv) Suppliers should describe advanced management tools for controlling access to wiki spaces; e.g. adaptively releasing wiki spaces to groups, based on group membership rules inherited from course site groups. |
| COM7 | HD | Wiki management | (i) Suppliers should describe the management tools available to instructors to control student participation within a wiki space; e.g. permissions to allow students to edit wiki pages and/or comment on wiki pages. The facility to allow students from other groups to view a wiki site and to comment, but not to edit the wiki pages is also desired. A facility to freeze a wiki site so that it is viewable to students, but editing and commenting permissions are disabled is also desired.  (ii) Controls for the creation of new wiki pages should be described; e.g. settings enabling an instructor to decide whether students are allowed to create new pages or they are required to work within a pre-selected template.  (iii) Suppliers should describe how instructors may edit and delete comments by students on a wiki page. A facility is also desired for an instructor to revert a group wiki back to previously edited pages.  (iv) An export facility is also desired, so that a wiki or series of wikis may be exported into sensibly organised html pages. |
| COM8 | HD | Editing tools for wikis | It is Highly Desirable for a rich text editor to be available in all text-entry fields which supports:   * Multimedia attachments to posts * Mathematical notation including MathML and LaTeX * Scientific notation including support for chemical expressions   Suppliers should explain how access to content editing tools is supported for mobile devices. |
| COM9 | HD | Reporting tools for wikis | Facilities for instructors to track student activity within a wiki space are required. Suppliers should describe the range of reporting tools that are available for one wiki space or multiple spaces within a course area, and for multiple course areas.  (i) The facility is desired for instructors to be able to search for an individual student’s contributions to a wiki (e.g. line changes and modifications highlighted on a wiki site). An instructor should be able to receive an activity breakdown for each student (e.g. total number of views and edits), as well as global statistics for a wiki space. A full wiki history of edits / new pages should also be made available to the instructor.  (ii) The facility is desired for instructors to be able to collect and print off a record of a student’s contributions to a wiki space. The instructor should be able to export a transcript of an individual student’s posts for marking and archiving purposes, to be associated with a student record. |
| COM10 | HD | Assessment tools for wikis | The facility is desired for instructors to be able to assess students’ contributions to a wiki space. Suppliers should describe the assessment workflow for grading students’ contributions to a wiki and the marking interface, detailing where marks and feedback are entered and stored within the system. |
|  |  |  | **Blog tool** |
| COM11 | HD | Create blogs / journals | Facilities for the creation of blogs / journals for individual, small group and whole cohort based activities are required.  (i) The facilities for creation of blogs / journals should be described for individual, small-group and whole cohort-based activities.  (ii) The facility for blogs / journals to be copied so that multiple blogs may be created within a course site, based on the same template design, should be described. A facility for blogs to be copied across course sites is also desired.  (iii) Suppliers should describe the management tools provided to users who create blogs to manage group membership (e.g. scope to automatically enrol students to blogs based on group data fed through SITS / data warehouse). How are access permissions, posting, commenting and viewing rights for groups created?  (iv) Suppliers should describe advanced management tools for controlling access to blogs; e.g. adaptively releasing blogs to groups, based on group membership rules inherited from course site groups. |
| COM12 | HD | Blog management | (i) Suppliers should describe the management tools available to instructors to control student participation within a blog; e.g. permissions to allow students to edit and delete comments or entries in a blog. The facility to allow students from other groups to view a blog and to comment on existing entries, but not to make new entries is also desired. A facility to freeze a blog site so that it is viewable to students, but posting and commenting permissions are disabled is also desired.  (ii) Suppliers should describe how instructors may edit and delete comments by students on a blog.  (iii) An export facility is also desired, so that a wiki or series of blogs may be exported into sensibly organised html pages. |
| COM13 | HD | Editing tools for blogs | It is Highly Desirable for a rich text editor to be available in all text-entry fields which supports:   * Multimedia attachments to posts * Mathematical notation including MathML and LaTeX * Scientific notation including support for chemical expressions   Suppliers should explain how access to content editing tools is supported for mobile devices. |
| COM14 | HD | Reporting tools for blogs | Facilities for instructors to track student activity within a blog site are required. Suppliers should describe the range of reporting tools that are available for one blog or multiple blogs within a course area, and for multiple course areas.  (i) The facility is desired for instructors to be able to search for an individual student’s contributions to a blog (e.g. number of views; number of entries and comments made). An instructor should be able to receive an activity breakdown for each student (e.g. total number of views, entries and comments), as well as global statistics for a blog space. A full history of contributions should also be made available to the instructor. Suppliers should describe how summaries of individual and group activity are made available.  (ii) The facility is desired for instructors to be able to collect and print off a record of a student’s contributions to a blog site. The instructor should be able to export a transcript of an individual student’s blog entries for marking and archiving purposes, to be associated with a student record. |
| COM15 | HD | Assessment tools for blogs | The facility is desired for instructors to be able to assess students’ contributions to a blog space. Suppliers should describe the assessment workflow for grading students’ contributions to a blog and the marking interface, detailing where marks and feedback are entered and stored within the system. |
|  |  |  | **Document sharing** |
| COM16 | HD | Integration with Google Docs and Google Sites | It is Highly Desirable for the system to support a seamless integration (with single sign-on) between the online learning environment and the University’s Google Docs application, allowing an instructor to create and employ Google Docs from a course site with the tools respecting each user’s role, including access and permissions. This should extend to group permission settings, enabling an instructor to create group tasks using Google Docs.  A similar facility is also required for Google Sites. |
|  |  |  | **Email** |
| COM17 | M | Email | An instructor should have the facility to send and receive email from users enrolled on a course site. If address book facilities are provided, the facilities for importing and exporting address book entries to a range of common email clients must be described.  (i) A facility is desired for instructors to email groups of students based upon:  - grouping data fed through from SITS (student records) and / or the data warehouse.  - groupings made inside an online module site within the system (e.g. small tutorial groups).  (ii) A facility is desired for instructors to email groups created within a module site, based on their course role; e.g. email to all teaching assistants enrolled on this course.  (iii) A facility is desired for instructors to devolve permission to lesser course roles, enabling users to email groups within a module site.  The supplier must detail how the system will interface to the University’s Google Mail service. |
|  |  |  | **Internal messaging (asynchronous)** |
| COM18 | HD | Internal messaging tool | It is Highly Desirable for a facility to support internal messaging between users within the system.  It is Desirable for users to opt to receive forwards of internal messages as email messages to their Google Mail accounts. |
| COM19 | HD | Instructor permissions for messaging tool | An instructor should have the facility to send an internal message (asynchronous) to individuals or groups of students. Messages are sent to a user’s profile and are captured in an activity log on a home page. |
|  |  |  | **Internal messaging (synchronous)** |
| COM20 | D | Synchronous chat tool | A facility is desired for synchronous chat for 1:1 and group chats, which may be set up by an instructor or managed by students for group-based discussion. |
| COM21 | D | Instructor permissions for synchronous chat tool | Synchronous text chat for one-to-one dialogue and for small group teaching should be available to the instructor. This tool should be able to limit access to instances of the chat tool groupings created in both SITS (e.g. full formal cohorts) and the online learning environment (e.g. small groups for tutorials).  A transcript of the chat discussion may be saved by the instructor and participants as a text file or printed off. Suppliers should describe how the transcript may be saved and exported. |
|  |  |  | **Web Conferencing** |
| COM22 | D | Synchronous conferencing | Suppliers should describe the tools that are available to support synchronous web conferencing between students and an instructor and for student-directed chat groups, detailing the standards adopted and interworking capabilities of their solution.  The following facilities are desirable:  (i) voice-based conferencing (one-to-one; one-to-many; many-to-many)  (ii) video-based conferencing (one-to-one; one-to-many; many-to-many)  (iii) screen casting with annotation facilities on a shared file  (iv) a shared whiteboard, including facilities for students and tutors to share text files, images and to interact in real-time, including a synchronous voting tool. Suppliers must identify any limitations in content that may be displayed upon the whiteboard and describe any permissions involved in whiteboard access. Suppliers should also include a description of the access control mechanisms and tools for monitoring and managing user activity.  (v) a facility for archiving a conferencing session. Suppliers should describe how a ‘live’ session may be recorded and what records may be saved and exported. |
|  |  |  | **Calendars** |
| COM23 | D | Synchronise calendars with data from Google calendar | A facility is desired to share calendars created inside the online learning environment with the University’s Google calendar facility and for data to be synchronised in both directions (i.e. enabling calendars to be updated through the synchronisation of data from Google calendar and vice versa). |
|  |  |  | **Announcements and alerts** |
| COM24 | HD | Create class announcements | (i) A facility is required for instructors to display announcements on a course homepage in a prominent position.  (ii) A facility is also required to expose announcements on the home page area of a user’s account.  (iii) Suppliers should describe how announcements are rendered; e.g. most recent first by default but controlled by viewer.  (iv) Suppliers should also describe how announcements may be created; e.g. tools to import a message as well as create one through tools via the online user interface. Suppliers should describe how mobile devices are supported in creating announcements.  (v) A facility is also desired for users to be alerted to new announcements that have been published; e.g. a facility to push out messages to students through email, or via a mobile device push notification, or through subscription to an RSS feed or other forms of alerts, which are exposed on a user’s home page or profile. |
| COM25 | D | Event triggers | The facility is desired to notify participants in the case of a change to a course or module, to notify / remind participants of impending deadlines, etc. The University operates a reasonably flexible approach to facilitate students’ changing module options: any facilities provided must be capable of responding to such changes.  There should be the means to control the delivery of such notifications to all or a subset of participants.  Suppliers should detail how this facility is managed within the online learning environment and how delivery is arranged to students (email, SMS, etc). |
|  |  |  | **Portal & Home Page tools** |
| COM26 | D | Student portal / home page | It is Desirable for a personal home page to be made available for each student user, capturing the following information:   * List of enrolments and links to modules / courses / organisations * Summary of activity across module sites – tasks completed and pending * Summary of activity for communication and collaboration tools across module sites * Alerts dashboard, alerting user to new content, news updates and issues requiring attention (e.g. course evaluations, marks and feedback, assignments due, new forum postings, new messages) * Facility to allow courses announcements to appear on home page * Holistic view of marks and grades across module sites. |
| COM27 | D | Staff portal / home page | It is Desirable for a personal home page to be made available for each staff user, capturing the following information:   * List of enrolments and links to modules / courses /organisations * Summary of activity across module sites – tasks completed and pending * Summary of activity for communication and collaboration tools across module sites * Alerts dashboard, alerting user to new content, news updates and issues requiring attention (e.g. course evaluations, marks and feedback, assignments due, new forum postings, new messages) * Facility to allow course announcements to appear on home page. |
| COM28 | D | User Profile | A facility is desired for users to create their own profile with a photograph / image which appears on their home page and can also be associated with all contributions they make through communications tools such as discussion boards (i.e. profile image or avatar attached to each discussion board posting they make). Suppliers should describe the facility that they provide, including associated permission controls for users in creating and making available their profile / image.  It is Desirable for user profiles to be indexed so that they can be searched for by other system users.  It is Desirable for users to be able to post messages on another student’s profile. |
| COM29 | D | “Who is online?” facility | A facility is desired where students can ascertain who else, registered for the programme / module / organisation that are currently accessing, is also online. |

### iv) Course Management

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| **Ref No.** | **Priority** | **Description** | **Enable departments, schools, teaching centres and individual staff to perform common required elements of course management.**  **Enable the creation of access-controlled online spaces for learning activity, with an appropriate suite of e-learning tools available to staff and students, and an appropriate range of permissions for all users, including external users.**  **Guidance on response** |
|  |  |  | **Course structuring** |
| CM1 | M | Course structuring | The response should indicate how units of learning are represented within the system. Care should be taken to define terms. Within York, “Programme” is the highest level; “modules” are generally components of programmes, but there are non-programme modules and modules shared between programmes. Non-programme modules may not be defined through the Student Records System (SITS).  Hierarchical flexibility is also required in order to support joint degrees and elective modules selected from other courses. Suppliers should describe the learning unit paradigm adopted for their product and show how this organisation will support activities that cross programme and department / discipline boundaries. |
| CM2 | M | Non-course modules | A facility is required for non-course modules to be created, which enable collaboration and communication outside of formal taught courses (e.g. for student-led learning, project teams, societies and committees, interest groups etc.).  It is Desirable for there to be a facility for these sites to be set up by users without central intervention by a system administrator or departmental administrator (super user).  Suppliers should state how non-course sites are created and managed. |
|  |  |  | **Course information** |
| CM3 | HD | Course information | It is Highly Desirable that the system provides information relating to modules, including syllabus and timetabling, as well as links to central information such as programme specifications. The timetabling facility should be able to interface to the University’s central timetable, based on Syllabus Plus.  If this facility is provided, suppliers should describe the timetabling and syllabus facilities, including details of interfacing the online learning system to Syllabus Plus. |
|  |  |  | **Course Area Access** |
| CM4 | M | To manage the list of students associated with modules. | Intuitive, efficient and flexible facilities are sought that enable integration with the Student Records System (SITS), with individual departmental records systems and from within the online learning environment to manage student lists associated with each module.  The Student Record System will define initial registration of students for courses / modules and supply updates to students’ overall option choices, course membership, course completion, etc.  Departmental systems may provide additional refinement, option choices, seminar group membership, etc., and these details may also be managed interactively by tutors or course / module administrators.  These facilities should support the transfer of lists of students associated with one module to another. Modules may be common to more than one (SITS) course or not listed within SITS (and thus defined from departmental systems or interactively using system tools).  i. Integration with SITS is essential. Suppliers must describe how they will achieve this requirement.  ii. Integration with departmental student management systems is desirable. Suppliers should describe the interface facilities provided and the scope to draw on student enrolment data from multiple sources.  iii. Suppliers should describe the built-in tools provided for managing students within the system. |
| CM5 | M | Manual enrolment of users to course sites | Facilities are sought that enable course owners to manually enrol users to their module sites within the online learning system. This facility should be supported for sites that also draw on automatic enrolment feeds from the Student Records System (SITS) and departmental systems as well. |
| CM6 | HD | Self-registration tools | It is Highly Desirable that the system supports self-registration access to course areas. Self-registration may be supported through the following ways:  i. Course owners enable self-registration for their course areas  ii Course owners enable self-registration, with an approval stage before access is granted  iii Course owners enables students to self-register on courses that also take automatic enrolment  if the course owner permits it.  This facility should be available to groups of users across whole departments or programmes. |
| CM7 | M | Range of access rights | There should be an appropriate range of access rights, related to user role, department, etc., together with effective and flexible tools for their management. |
| CM8 | HD | Access for external students on collaboratively taught courses | It is Highly Desirable for the system to support access to course sites for students from outside the institution who need access to certain course areas (e.g. for collaboratively taught courses where course sites are shared with another institution; course areas shared with schools, providing outreach materials. |
| CM9 | HD | Guest access to course sites | It is Highly Desirable for the system to support guest access / access control, that allows course owners to designate areas of the system as ‘guest accessible’ to users not automatically enrolled on the site and/or unauthenticated external/public users including applicants (pre-enrolment students) and alumni (graduates).  - ‘Guest’ or ‘preview’ access should be equivalent to ‘read-only’ access, making an entire course area (minus student data) visible to external guests without the need to log in.   * Guest access may also be enabled to external guests through public self-registration. |
| CM10 | HD | Allow different types of users | The supplier should describe the user roles and the links with authentication and control mechanisms that are supported within the system, including the means by which user roles are defined and any limitations relating to numbers and types of role.  It is Desirable for roles for external users to be supported, including external examiners and for external students following outreach courses (e.g. school pupils following widening participation courses, or external students following a MOOC delivered by the University).  The Role Management features of the online learning system must be described, detailing how individuals with multiple roles will be supported, for example how the system supports tutors who are students on other modules, and students who are also tutors. |
|  |  |  | **Devolved management of course areas** |
| CM11 | HD | Departmental administration controls | It is Highly Desirable for the system administrator of the online learning environment to be able to designate individual users as ‘super users’, but not full system administrators, for the purpose of delegating some system administration tasks, including:   * Creating a new course site within a departmental context * Managing end-of-year operations such as rolling over course areas between academic years * Viewing rights to all course sites across a department / school / teaching centre * Controlling permissions to access, edit, manage course sites across a department / school / teaching centre. |
|  |  |  | **Student groups** |
| CM12 | HD | Group Management tools | It is Highly Desirable for the system to support the creation of groups of students and to associate such groups to modules, including access control, in a flexible manner. Such groups of students may be defined with the same course identifier, different course identifiers or with no course identifier. The tools should enable the aggregation of students based upon data supplied from the Student Record System (SITS) and the timetabling system (e.g. tutorial group data stored in Syllabus Plus), editing group membership from details supplied from departmental systems and offer appropriate online facilities. In this way the creation of groups may be automated through data supplied by SITS / Syllabus Plus, if integration is supported between these systems and the online learning environment.  A facility should also be available to create groups through CSV upload of student data, or through manual action.    Suppliers must describe the facilities built in to their product and the interfacing facilities provided to access third-party records systems. |
| CM13 | D | Tutorial group sign-up facility | This facility, which must be tutor directed and controlled, is desired to permit students to express preferences on time and group composition and include an automated response that takes account of tutor preferences and student requests. The tutor must have the facility to override student/group allocation.  If this facility is provided, the description provided must include detail of the permissions involved and the roles with modification rights. |
| CM14 | D | Project sign-up facility | An automated facility is desired to allocate student projects on the basis of staff preferences / availability and expressed student preferences. Suppliers should describe the mechanisms adopted to resolve conflicts, unallocated students and the ‘staff override’ facilities provided. |
| CM15 | HD | Adaptive release of course components to groups | It is Highly Desirable for the system to support the selective release of content, communication and assessment elements within a course area to a specific group of students and for the release of these elements to be time-limited and controlled by the instructor. In this way, different views of a course and its constituent elements will be supported for different group memberships. |
| CM16 | HD | Communication to groups | It is Highly Desirable for the system to support the communication of notifications and announcements to specified groups. |
| CM17 | HD | Group tools | It is Highly Desirable for the system to support a dedicated tool-set for groups to use, including seamless access to Google Apps facilities such as Google Docs and the Google calendar tool.  Suppliers should describe the range of tools that are supported for group work and the method of integration with Google Apps, if this facility is supported. |
|  |  |  | **Branding and templates** |
| CM18 | M | Institutional facility for tailoring ‘look and feel’ of the system | It is essential to the University that there be facilities for the tailoring of the ‘look and feel’ of the online learning environment. In describing the facilities, suppliers are asked to include information concerning  i. how the user interface is delivered and configured and  ii. following localisation appropriate for a UK-based university, how ‘foreign’ languages are supported.  In giving a response, the supplier should be able to point to examples of extreme customisation as references. |
| CM19 | HD | Departmental / School branding | It is Highly Desirable for the online learning environment to support the creation of department/school/teaching centre brands and themes. This should facilitate a distinct 'look and feel' by allowing the customisation of:  • Tabs, containing portlet modules  • A theme and colour catalogue allowing system styles to be customised  • A banner or image identified with the brand  • A domain specific URL/entry point leading to a login page  • A customisable login page |
| CM20 | HD | Course templates | A facility to define course templates, to customise the look and feel of a course / programme / module is desired. The facility should enable consistent branding, navigation of selected tools across course sites.  A departmental administrator (‘super user’) should be able to:   * Create and apply templates at different levels (course / programme / module) * Apply ‘live’ templates so that changes to templates will cascade across live course areas using that template * Create templates with some areas ‘locked’ and others open to customisation by instructors * Create templates that can be updated and edited at a devolved level by users with specified permissions * Include custom icons in the template design   The supplier should describe the administration tools and structure adopted including, for example, whether the system administrator can update a template to resolve accessibility issues, etc. |
|  |  |  | **E-Portfolios** |
| CM21 | HD | Customisable e-portfolio templates | It is Desirable for the system to support the creation of e-portfolio templates, which can be customised by instructors and then locked down when made available to students, ensuring that students complete standardised text fields. |
| CM22 | D | Student generated and owned portfolios. | It is Desirable for the system to provide students with e-portfolio tools for PDP and reflective learning, enabling them to build and retain a portfolio for their duration of their studies.  It is Desirable for students to have access controls, enabling them to control the portfolio and give access to peers, staff and external viewers.  The portfolio output should be of a standard (e.g. IMS compliant) that can be exported out of the system and rendered in a humanly readable format. |
|  |  |  | **Archiving tools** |
| CM23 | M | Archiving of courses areas | A facility is required for the archiving of all course areas. This facility must support:   * Archiving of course areas on an individual basis and by a batch archiving process. * Allow student and staff access to archived courses areas in a locked down ‘read only’ mode * Enable devolved management of archived courses, e.g. by departmental administrator (super user) * Enable archived courses which were created in a previous system to be opened in the new online learning system and confirm whether this process can be automated for individual and multiple courses (batch import of archived course areas from another VLE – e.g. Blackboard v. 9.1 and Moodle). |
|  |  |  | **Navigation tools** |
| CM24 | M | Navigation bar | The system must provide users with a clear indication of where they are currently located within the online learning environment’s structure or hierarchy. The interface should provide a means for the user to readily back-track their steps (either non-linearly or linearly) without necessarily having to use their web browser's 'back' features. If the platform incorporates a ‘breadcrumbs trail’ navigation or similar feature (including course map type features) these features should be outlined by the supplier, with attention to the scope of the navigation bar in transitioning from content areas to tool areas within the system. |
| CM25 | D | Progress bar | A facility that defines the present stage of progress within the current module.  A facility that indicated, in addition, to students how much more is involved in the current module and the proximity of tests or other assessments would be particularly desirable. |

## 3.4 System functionality

### Administrator Requirements

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| **Ref No.** | **Priority** | **Description** | **These requirements detail the main operations that a user with administrator access to the system will need to undertake**  **Guidance on response** |
|  |  |  | **Application management and devolved administrative activities** |
| ADM1 | M | Controlled access to tools – i.e. certain users can only access certain areas | The supplier should detail the levels to which access controls can be applied and the way they are implemented for the range of roles supported by the system. Suppliers should include information concerning the creation of new roles and permissions.  Are there potential access rights conflicts, for example can tutors also be, students on other courses (such as staff training)? Please detail programmatic facilities, APIs or back-end tools for bulk provisioning of roles and permissions. |
| ADM2 | M | System housekeeping | The University has a policy of retaining course data to allow students ‘read only’ access to courses for five years after completion. After this time courses must be purged.  Suppliers should detail the facilities provided for managing data against this policy, including the roles involved, when the tasks must be performed and the degree of automation available. Specific tasks that must be addressed in this response include:  i. end of module archiving of student contributions;  ii. end of year archiving of student file space and  iii. end of course removal and archiving of registered student resources.  Please give details of any tools for reporting and managing storage requirements for archive data. |
| ADM3 | M | Announcement facility to all users | The system should be capable of delivering messages and alerts through multiple channels. Examples include email, social media, mobile push notifications, chat etc.  The supplier should indicate how these messages are dealt with in the application itself including how users can indicate their preferences. The reply must differentiate between system-wide announcements, for example of a planned suspension of service, and announcements specific to a department, course or module. |
| ADM4 | HD | Course quota and maximum file size upload | The system must provide controls allowing the following to be set per course   1. quota (the total size of all files contained by that course.) 2. maximum file upload limit   The system-wide default course quota and maximum file upload size should also be configurable. |
| ADM5 | M | System usage / reporting | The system should support the gathering and analysis of system activity / events which can be analysed and reported on. These metrics include activity at a course / user level. Events such as authentication errors, enrolment / user account conflicts should be easily identifiable by a system administrator. |
| ADM6 | HD | Distributed reporting | It is Highly Desirable that course / user level reports be available to course instructors and administrators. A standard set of reports should be available. Custom reports (created by a system administrator) should be made available to select course instructors via a course reporting tool, such as Business Objects or BIRT. |

### Integrations and Interoperability

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| **Ref No.** | **Priority** | **Description** | **Integrate with, and where advantageous leverage the functionality of, other relevant York systems, and sit cogently within the York IT infrastructure and information architecture**  **Guidance on response** |
|  |  |  | **Integration** |
| INT1 | M | Integration | The supplier should detail integration points and mechanisms with external systems, e.g.   1. embedded frames 2. plugins 3. LTI tools 4. APIs and web services to share data   The supplier should provide evidence of well-established integration with important services such as:   1. Google (Drive, Calendar, Groups, Sites, Blogger) 2. YouTube 3. Echo360 4. Turnitin |
| INT2 | M | Must interface with the SITS student records system | It is essential that course management details are consistent with the Student Records System. Departments will also have a requirement to interface course management information with local student management procedures in a standard and flexible way.  The online learning environment must include automated facilities for the regular updating of student and staff information.  The supplier must describe how this could be achieved and detail the standards the system adheres to in order to support this requirement. |
| INT3 | M | Facilities for managing staff registration | Suppliers should describe how their system would interface to a variety of data sources on a range of platforms (e.g. Oracle, SQL Server, Active Directory) for the maintenance of tutor and other staff information. Please provide documentation of the facilities available (including APIs, tools etc.) |
| INT4 | M | Email | Email is regarded as an essential part of an online learning environment. The supplier must detail how the system will interface to the University’s central email services (Google), as well as other clients (e.g. Thunderbird). The tools provided within the environment for managing email must be described in detail.  Facilities which provide controls at the course and system level for emails sent to enrolled students. Additionally any system functionality which can batch emails together to reduce the number being sent at once would be desirable. |
| INT5 | M | Integration with Library and archive systems | It is essential that the system inter-operates with the University's systems, as described in section 1.3.6.  i. It is essential to be able to link from within the system to Library Catalogue records;  ii. integration with the web-based My Library Record is essential so that information can be presented seamlessly to students and staff from within the system.  iii. integration with resource list management software is essential such that students can see their lists in their modules and teachers can seamlessly maintain lists from within the system.  iv. Integration with York Digital Library (based on Fedora Commons, a Linux based operating system, with REST API for accessing content) is Highly Desirable, supporting a cross-search of content from the Digital Library within the online learning environment, for example by presenting a search form to find images which can then be embedded in the system.  Suppliers must detail how this interoperability is implemented in each case.  If the supplier supports interoperability with other systems and standards described in section 1.3.6 they should include in their response here which systems are supported and how the interoperability is implemented. |
|  |  |  | **Interoperability** |
| INT6 | M | Content interoperability and standards and content migration | The supplier should detail which learning system standards are supported by the online learning environment, particularly with regard to content types. For example provide details of support for the following, including whether both export and import are supported:   1. IMS LTI 2. Common Cartridge   The supplier should detail support and strategies for importing content from an existing Blackboard Learn VLE and other VLEs. |
| INT7 | HD | Access to online information resources | It is Highly Desirable that the system proposed interoperates with the developing Higher Education remote resource services, and with other resource services.  Example services and protocols include interoperability with Z39.50 services such as Zetoc, Copac, Archives Hub, Humbul and Heirport, access to OAI PMH harvesting, RSS and Web Portal facilities, MARC, Unicode, Open URL and XML.  It is essential that suppliers commit to tracking interoperability developments and to the incorporation of appropriate interoperability when the technology is sufficiently stable. |
|  |  |  | **Authentication** |
| INT8 | M | LDAP / Active Directory | The University needs to be able to authenticate system users against its own LDAP or Active Directory server to provide single user ID and password access across all supported services. It is essential that the online learning system operates in this environment. |
| INT9 | M | Single sign-on and chained authentication | The supplier should detail what facilities exist for integration with SSO solutions. Shibboleth and LDAP authentication are essential but any details of integration with Google authentication services would also be of interest. It should be possible to configure multiple authentication mechanisms to use in a given order on a server-by-server basis.  A further requirement is for chained authentication for organisations such as the Hull York Medical School. The supplier must describe the authentication mechanisms that are supported. |

### Technical requirements

|  |  |  |  |
| --- | --- | --- | --- |
| **Ref No.** | **Priority** | **Description** | **Integrate with, and where advantageous leverage the functionality of, other relevant York systems, and sit cogently within the York IT infrastructure and information architecture**  **Guidance on response** |
|  |  |  | **System requirements** |
| TEC1 | M | High availability (99.99%) – plus easy/fast recovery in the event of failure. | The supplier should be able to provide evidence of high up-time and or long time between failures – the response should include some statement of the technical configuration used to get the availability figures.   1. The supplier should identify dependency on other parts of the University’s infrastructure. 2. Apart from IT Infrastructure outages, what activities within the online learning environment would restrict access to the whole or part of the system? 3. How much work will a student have to repeat in the event of a system restart |
| TEC2 | M | Conforms to disability / access requirements | The supplier should state to what standard and show how their solution meets EU and UK Equal Access legislation. A commitment to maintaining compliance with developing EU and UK Equal Access legislation in this area is essential. (A response that merely provides a US Section 508 submission is not deemed adequate in an EU / UK context.) |
| TEC3 | HD | Underlying database | The supplier should detail the underlying database management system used and detail any activities by administrators, tutors, students or integrators that would require direct access to this part of the system.  Please describe system requirements for running the database and provide schema documentation. Direct read and write access to the database should be supported. |
| TEC4 | HD | Open Database Schema | It is Highly Desirable for the system to support an open database schema so that data can be extracted directly from the database for integration / reuse by other business systems. |
| TEC5 | M | The Client application should run in a standards-compliant browser regardless of operating system including mobile devices. | The supplier must detail any restrictions relating to browser versions, operating system versions, etc., that are predicated by the software. |
| TEC6 | HD | Links to Content Management tools | The supplier should provide details of content management applications to which links have been built with appropriate references. Suppliers must identify any restrictions or dependencies involved with linking to a CMS. |
| TEC7 | M | Back-up regime | The University operates centralised network filer based back-ups for its filestore and databases.  The supplier should indicate the recommended approach to backup and restore, including the impact on performance and application availability |
| TEC8 | M | The application must provide for secure uploading and protection of submitted documents | The supplier should provide details of the security model used. In particular, the supplier should indicate the measures taken to ensure that submitted work is kept secure. Any reliance on infrastructure outside of the online learning environment should be clearly identified. |
| TEC9 | M | SSL | The use of SSL is mandatory system-wide for all activities to prevent session stealing. |
| TEC10 | M | Well developed and tested implementation support programme | The supplier should describe the support facilities provided for the period before, during and following installation, describing a typical implementation process, with a detailed schedule and timescale.  It is Highly Desirable for the supplier to demonstrate experience of implementing their system within the higher education sector. |
| TEC11 | M | Supplier has a regular product maintenance release cycle and product development and enhancement release cycles that are clear and adhered to. | The supplier must document the cycles for product maintenance and enhancement, together with the mechanisms for implementation at the user site.   1. The procedures for the announcement and dissemination of urgent product maintenance, e.g. security, fixes, must be explicitly described. 2. The procedures for announcing operating system dependencies and requirements for operating system upgrades must be described.   The supplier should provide an example of a release schedule for the last year including release notes. |
| TEC12 | M | Well managed product development and enhancement environment which uses modern practices and / or is accredited to industry quality standards. | The supplier must describe their product development environment and detail the standards that determine their practice. |
| TEC13 | M | A single product development pathway | The supplier should describe the product development path, identifying the primary development platform(s) and describing the procedure for porting to other supported platforms. Any delays to the release for platform ports must be detailed. |
| TEC14 | M | Supplier provides comprehensive advance information and training on new and changed features appearing in upgrades | The supplier must provide comprehensive technical documentation for all relevant aspects of the system. The mechanisms by which this information is delivered should be described. |
| TEC15 | HD | New releases and upgrades installed with minimum effect on normal operation | The upgrade procedure(s) should be described and any impact on system availability detailed. |
| TEC16 | HD | Additional supplier support available during and after upgrades | The supplier should describe the support facilities available during the installation of system upgrades. Any time limitation of this service must be detailed. |
| TEC17 | M | Automatic notification of patches and fixes | The procedures by which customers are notified of the availability of patches, fixes and workaround for problems identified in the production release should be documented. |
| TEC18 | M | Telephone, email and web help desk with expert, approachable support staff and helpful support hours for a UK-based institution. | The mechanisms by which support is provided should be described, together with details of any restrictions regarding access to support. It is essential that support is provided in English and made available during normal British working hours. |
| TEC19 | M | User experience of system errors | The supplier must describe how errors are flagged to the end user, logged and reported within the University to a system administrator, and any links to the main incident reporting system. |
| TEC20 | HD | Online problem/fault/query logging and tracking. | The supplier should describe the procedures for reporting problems and for tracking response to reported problems, including problems reported by other customers which are / appear relevant to the University |
| TEC21 | HD | Active user groups and forums for higher education and/or UK customers which influence product development and enhancement. | The supplier should identify those user groups that exist and describe their involvement with these groups. Contacts should be provided to enable the University to make independent contact with these groups during the tendering phase and afterwards. |
| TEC22 | M | System requirements | The supplier must list the platforms and operating systems supported by their product and indicate those systems which are recommended for the University. The supplier should include details about the following:   1. system resources (e.g. CPU, RAM, local disk) for application and database servers 2. support for virtualised servers 3. support for load balanced configurations 4. filestore 5. networking 6. operating system 7. required third party software   Give details of the level of support provided for each configuration (e.g. ‘certified’, ‘supported’, ‘compatible’ etc.) |
| TEC23 | M | Licensing | 1. Suppliers should describe the licensing model adopted for their product and, in broad terms, the way this is implemented. 2. Suppliers should indicate whether this licensing supports the use of an independent system for developing and testing materials and against new releases of the software. 3. Suppliers should identify any licensing implications should it be desired to run the software on alternate hardware in the event of a server failure. 4. Suppliers must itemise any third party licenses required for their product in the York environment; only those licenses directly related to the base-level operating system may be excluded from this list. |
| TEC24 | M | User data | The supplier must detail what personal information is retained by the system for users and for what purposes it is used.  Also if all or some parts of the system are externally hosted, please provide details of where this data is geo-located. Supplier should provide details on any data retention and deletion policies they implement and the ability for customers to define these. |
| TEC25 | M | Resilience and redundancy | The supplier should detail the supported load balanced configurations including any certified or partner vendors with supporting documentation. Details of how the system can be scaled for user demand should be provided focusing on:   1. virtualisation support 2. database architecture including real-time replication 3. supported filestore solutions |
| TEC26 | M | Live to test copy | The supplier should provide details of how to efficiently clone from the production system to test, including the application configuration and all content. This will provide a test platform for system upgrade testing and problems replication/troubleshooting. Details of post configuration steps on the cloned system should also be provided.  Details should also be given for any methods for reducing filestore required during this operation - e.g. leveraging existing filer snapshot backups. |
| TEC27 | M | Disaster recovery | Details of how to perform a consistent system recovery of the entire application should be provided. This should include the following:   1. application software 2. shared course content 3. database   Individual course sites should also be able to be recovered without restoring the whole system from the production environment to test. |
| TEC28 | M | Plug-ins, SDKs, support for devs | The supplier should detail how system functionality can be modified or extended by the University’s application developers. Please detail what support exists, for example:   1. Community conferences, developer days, formal training for developers. 2. APIs and SDKs 3. Details of plugin architecture 4. Evidence of third party and community contributed plugins 5. Details of support for issues found with APIs. 6. Frequency of API changes and backwards compatibility |
| TEC29 | M | Cloud hosted and data protection | If all or some parts of the system are externally hosted please provide details of where this data is geo-located. Supplier should provide details on any data retention and deletion policies they implement and the ability for customers to define these.  Please also provide full details of the following:   1. privacy statement 2. purposes for which data is used (e.g. used for advertising or purposes other than the services procured by the University) 3. whether the company acts as a data owner or a data controller as defined by the Data Protection Act 1998. 4. (US companies only.) Whether your company is signed up to the Safe Harbour Agreement. 5. Also whether your data centres are audited to a standard e.g. SAS 70. |
| TEC30 | M | Monitoring and system reporting | The supplier should detail what tools exist for monitoring the operation of the system or recommended methods and parameters to be monitored by dedicated platforms. The University currently makes use of Nagios, Intermapper and Graphite.  Please describe how thresholds can be set for system alerts and how messages are delivered (email and SMS for example)  Please detail what facilities exist for producing reports and analytics on system usage that can contribute to operational activity, management reporting and planning. Provide details of support for any commonly used reporting frameworks e.g.:   1. Google Analytics 2. BIRT |
| TEC31 | HD | Locked down environment for summative assessments | The supplier should detail any support for summative assessment taking place in a “locked down” mode. For example where the system is used as part of an exam taken by students on campus in a PC classroom under exam conditions, and where access to facilities within and outwith the online learning system is restricted. |

## 3.5 Service requirements

### Future developments

|  |  |  |  |
| --- | --- | --- | --- |
| **Ref No.** | **Priority** | **Description** | **With a low risk that the system (or version pathway) will become obsolete in the next five years and require an unplanned migration over that period of time.**  **Be extensible and flexible to meet the University’s future needs.**  **Guidance on response** |
|  |  |  | **Service requirements** |
| FUT1 | M | Continuity of service | The supplier must be able to guarantee that the system will be available and supported for at least four years, and demonstrate a commitment to the UK market.  Suppliers should describe the expected product life for their solution and outline guarantees for the continuing support of the system in the event of financial failure of the company. |
| FUT2 | M | System extensibility and interoperability | Suppliers should describe the interoperability potential of the system and the ease with which the system can be expanded to encompass future requirements, e.g. additional tools and services. |
| FUT3 | HD | Feature request process | There should be an agreed process through which system changes are requested and tracked, including recommendations for new features to the system. |

### Deployment (Implementation, Migration Support and Training)

|  |  |  |  |
| --- | --- | --- | --- |
| **Ref No.** | **Priority** | **Description** | **Provide support services for the implementation of the system, including migration and training support provision.**  **Guidance on response** |
|  |  |  | **Service requirements** |
| DEP1 | M | Resource | The supplier must clearly outline the resource requirements that will be required by the University for each stage in the implementation process and beyond (service management and development). |
| DEP2 | HD | Skill set | It is Highly Desirable that the supplier outlines the skills that will be required by key role holders at the University during the implementation process and beyond (service management and development), and describe any training they might require to perform their required duties. |
| DEP3 | HD | Migration support | It is Highly Desirable that the system includes tools for bulk import of historical content and data from our existing Blackboard systems into the new online learning environment (see CON11 as well for bulk import of course sites).  It is Highly Desirable that the supplier also offers services to support the migration of course content and data to the new online learning environment. Services should be costed, with evidence provided on how these services have been offered to other institutions in previous implementations. |
| DEP4 | HD | Initial training | It is Highly Desirable for the supplier to provide comprehensive initial training for all key role-holders within the system: e.g. system administrator and technical support staff; application manager and central support staff; departmental champions and departmental administrators with devolved responsibilities for course / user management within their domain of the system.  Suppliers should describe the training model successfully used in previous implementations.  It is envisaged that once key role-holders are trained up, knowledge of the system will be passed on to system users in a training ‘cascade’, organised and run by central and departmental staff. |
| DEP5 | D | Future training needs | It is Desirable for the supplier to provide training services to the University after major software upgrades have been completed to support continuing and effective use of the system and any new functionality that becomes available. |
| DEP6 | M | Non-technical documentation | The supplier must provide comprehensive documentation, including training documentation, for all relevant aspects of the system and for all key role-holders within the system: e.g. application manager and departmental administrators. |
| DEP7 | D | Documentation re-use | It is Desirable for the University to be able to re-use the supplier’s documentation in locally developed materials (written and online) at no extra cost. |

## Summary of Specifications

### 3.6.1 Specifications which are Mandatory

##### i) Pedagogic functionality

|  |  |
| --- | --- |
| **Ref. No.** | **Description** |
| CON1 | Be able to upload a wide range of file types |
| CON8 | The ability to embed/play multimedia content. |
| CON14 | Content editing |
| CON16 | English text |
| CON27 | User-controlled flexibility over appearance and interface |
| CON30 | Facility to store content resources |
| CON31 | Upload workflow |
| CON33 | Access control / permissions |
| AS1 | Build assessments using a variety of assessment paradigms |
| AS2 | Build assessments using an easy to use assessment manager interface |
| AS5 | Question types |
| AS9 | Flexible test deployment configuration |
| AS16 | Data protection compliance for submitted files |
| AS18 | Assessment of assignments |
| AS30 | Repository for marks |
| COM1 | Create discussion groups |
| COM17 | Email |
| CM1 | Course structuring |
| CM2 | Non-course modules |
| CM4 | To manage the list of students associated with modules |
| CM5 | Manual enrolment of users to course sites |
| CM7 | Range of access rights |
| CM18 | Institutional facility for tailoring ‘look and feel’ of the system |
| CM23 | Archiving of course areas |
| CM24 | Navigation bar |

##### ii) System functionality

|  |  |
| --- | --- |
| **Ref. No.** | **Description** |
| ADM1 | Controlled access to tools |
| ADM2 | System housekeeping |
| ADM3 | Announcement facility to all users |
| ADM5 | System usage / reporting |
| INT1 | Integration |
| INT2 | Must interface with the SITS student records system |
| INT3 | Facilities for managing staff registration |
| INT4 | Email |
| INT5 | Integration with Library and archive systems |
| INT6 | Content interoperability and standards and content migration |
| INT8 | LDAP / Active Directory |
| INT9 | Single sign-on and chained authentication |
| TEC1 | High availability (99.9%) – plus easy/fast recovery in the event of failure |
| TEC2 | Conforms to disability / access requirements |
| TEC5 | The client application should run in a standards-compliant browser regardless of operating system including mobile devices |
| TEC7 | Back-up regime |
| TEC8 | The application must provide for secure uploading and protection of submitted documents |
| TEC9 | SSL |
| TEC10 | Well developed and tested implementation support programme |
| TEC11 | Supplier has a regular product maintenance release cycle and product development and enhancement release cycles |
| TEC12 | Well managed product development and enhancement environment |
| TEC13 | A single product development pathway |
| TEC14 | Supplier provides comprehensive advance information and training on new and changed features appearing in upgrades |
| TEC17 | Automatic notification of patches and fixes |
| TEC18 | Telephone, email and web help-desk with expert, approachable support staff |
| TEC19 | User experience of system errors |
| TEC22 | System requirements |
| TEC23 | Licensing |
| TEC24 | User data |
| TEC25 | Resilience and redundancy |
| TEC26 | Live to test copy |
| TEC27 | Disaster recovery |
| TEC28 | Plug-ins, SDKs, support for devs |
| TEC29 | Cloud hosted and data protection |
| TEC30 | Monitoring and system reporting |

##### iii) Service requirements

|  |  |
| --- | --- |
| **Ref. No.** | **Description** |
| FUT1 | Continuity of service |
| FUT2 | System extensibility and interoperability |
| DEP1 | Resource |
| DEP6 | Non-technical documentation |

### 3.6.2 Specifications which are Highly Desirable

##### i) Pedagogic functionality

|  |  |
| --- | --- |
| **Ref. No.** | **Description** |
| CON2 | The ability to create, insert, upload and import multiple content items in a few operations |
| CON3 | The ability to import multiple content files using WebDAV functionality |
| CON4 | The ability to link to or embed materials / services external to the online learning environment |
| CON5 | The ability to batch import external content |
| CON6 | The ability to embed external content within pages |
| CON7 | The facility to (seamlessly) integrate or link to open-source / locally written and external application software |
| CON9 | The ability to embed / insert interactive content resources |
| CON11 | The facility to import whole courses into the online learning environment |
| CON12 | Be able to export content out of the online learning environment |
| CON13 | Be able to export whole courses out of the online learning environment |
| CON15 | ‘Trusted user’ content creation tool |
| CON17 | Multi-lingual text – support for foreign languages |
| CON18 | Mathematical expressions |
| CON19 | Scientific expressions |
| CON20 | Advanced graphical support |
| CON21 | Support for streaming media |
| CON28 | Test view facility |
| CON29 | Mobile friendly access to content items and content editing tools |
| CON32 | Facility to manage content resources, allowing version control of content items |
| CON34 | Facility to manage and re-use content from different course areas within the online learning environment |
| CON42 | Facility to create searchable collections of content (learning and teaching objects) |
| CON45 | Housekeeping tools |
| CON46 | Adaptive release of content |
| CON47 | Content versioning |
| AS3 | Build surveys using an easy to use survey manager interface |
| AS7 | Create question pools |
| AS8 | Question management and re-use of question items across module sites |
| AS10 | Summative test deployment |
| AS11 | Creation of file submission points |
| AS12 | Flexible file submission |
| AS13 | Student file submission tools |
| AS14 | Text matching integration |
| AS15 | Integration with Turnitin UK |
| AS17 | Integration with Google Docs |
| AS19 | In-line marking facility |
| AS20 | Workflow management for assignment marking |
| AS22 | Assessment of all student-generated content within the VLE, with grading, feedback facilities and access controls |
| AS23 | Peer marking facility |
| AS24 | Multiple feedback channels |
| AS26 | Learner / student tracking facilities |
| AS27 | Assignment management tools |
| AS29 | Mark collation and export tools |
| AS31 | Reporting on student marks |
| AS32 | Student assessment archive |
| AS33 | Student portal for student marks |
| AS34 | Staff portal for student marks |
| COM2 | Discussion thread management |
| COM3 | Editing tools for discussion boards |
| COM4 | Reporting tools for discussion boards |
| COM5 | Assessment tools for discussion boards |
| COM6 | Create wikis |
| COM7 | Wiki management |
| COM8 | Editing tools for wikis |
| COM9 | Reporting tools for wikis |
| COM10 | Assessment tools for wikis |
| COM11 | Create blogs / journals |
| COM12 | Blog management |
| COM13 | Editing tools for blogs |
| COM14 | Reporting tools for blogs |
| COM15 | Assessment tools for blogs |
| COM16 | Integration with Google Docs and Google Sites |
| COM18 | Internal messaging tool |
| COM19 | Instructor permissions for messaging tool |
| COM24 | Create class announcements |
| CM3 | Course information |
| CM6 | Self-registration tools |
| CM8 | Access for external students on collaboratively taught courses |
| CM9 | Guest access to course sites |
| CM10 | Allow different types of users |
| CM11 | Departmental administration controls |
| CM12 | Group management tools |
| CM15 | Adaptive release of course components to groups |
| CM16 | Communication to groups |
| CM17 | Group tools |
| CM19 | Departmental / School branding |
| CM20 | Course templates |
| CM21 | Customisable e-portfolio templates |

##### ii) System functionality

|  |  |
| --- | --- |
| **Ref. No.** | **Description** |
| ADM4 | Course quota and maximum file size upload |
| ADM6 | Distributed reporting |
| INT7 | Access to online information resources |
| TEC3 | Underlying database |
| TEC4 | Open database schema |
| TEC6 | Links to content management tools |
| TEC15 | New releases and upgrades installed with minimum effect on normal operations |
| TEC16 | Additional supplier support available during and after upgrades |
| TEC20 | Online problem / fault / query logging and tracking |
| TEC21 | Active use groups and forums for higher education which influence product development and enhancement |
| TEC31 | Locked down environment for summative assessments |

##### iii) Service requirements

|  |  |
| --- | --- |
| **Ref. No.** | **Description** |
| FUT3 | Feature request process |
| DEP2 | Skill set |
| DEP3 | Migration support |
| DEP4 | Initial training |

### 3.6.3 Specifications which are Desirable

##### i) Pedagogic functionality

|  |  |
| --- | --- |
| **Ref. No.** | **Description** |
| CON10 | The facility to pull content from external sources |
| CON22 | Icon display |
| CON23 | Student review buttons |
| CON24 | System alerts for new content |
| CON25 | Content organisation tools |
| CON26 | Flexible presentation and navigation structures |
| CON34 | Facility to manage and re-use content from different course areas within the online learning environment |
| CON35 | Management of student files within the system |
| CON36 | Facility to add metadata to content resources |
| CON37 | Facility to inherit metadata fields |
| CON38 | Facility to add descriptions to links to external content items |
| CON39 | Facility to create / store & manage bookmarks |
| CON40 | Facility to mark up content |
| CON41 | Glossary |
| CON43 | Facility to share content across courses |
| CON44 | Facility to update multiple instances of a content file |
| CON48 | Add description / annotation |
| CON49 | Rating tool for resources |
| CON50 | Student filestore |
| CON51 | Develop / share presentations |
| CON52 | Report writing support |
| CON53 | Experiment results collation |
| AS4 | Build module evaluations using an easy to use interface |
| AS6 | Import assessments |
| AS21 | Assessment of student activities that take place outside the system |
| AS25 | Reporting tools on assessed work |
| AS28 | Marker management tools |
| AS35 | Student feedback / feed forward channel |
| COM20 | Synchronous chat tool |
| COM21 | Instructor permissions for synchronous chat tool |
| COM22 | Synchronous conferencing |
| COM23 | Synchronise system calendars with data from Google calendar |
| COM25 | Event triggers |
| COM26 | Student portal / home page |
| COM27 | Staff portal / home page |
| COM28 | User profile |
| COM29 | “Who is online?” facility |
| CM13 | Tutorial group sign-up facility |
| CM14 | Project sign-up facility |
| CM22 | Student generated and owned portfolios |
| CM25 | Progress bar |

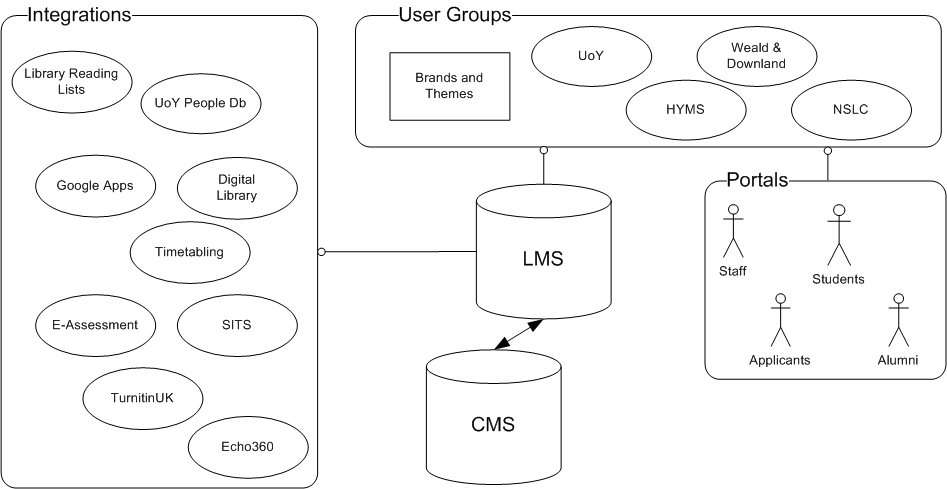
ii) System functionality

|  |  |
| --- | --- |
| **Ref. No.** | **Description** |
|  |  |

##### iii) Service requirements

|  |  |
| --- | --- |
| **Ref. No.** | **Description** |
| DEP5 | Feature training needs |
| DEP7 | Documentation re-use |

# Appendix 1: Conceptualisation of the Online Learning Environment



# Appendix 2: Basic project procurement and implementation plan

* OJEU announcement – call for tenders & invitation to complete pre-qualifying questionnaire(June 2013)
* Invitations to Tender - (August 2013)
* Evaluation of responses to statement of requirements (October 2013)
* Demonstration of shortlisted systems (November 2013)
* Identification of recommended supplier (November 2013)
* Sign-off by University Teaching Committee (December 2013)
* Contract award (December 2013)
* Finalising of requirements and implementation of programme of work (December 2013)
* Installation & piloting of system (Jan - June 2014)
* Further piloting (October 2014 – June 2015)
* Adaptation, reformat or migration of materials from old system to new system as required  
  and full rollout (Summer 2015)
* New solution is fully operational in supporting online teaching and learning activities (October 2015)
* Current Blackboard licences expire (December 2015)

# Appendix 3: OLS Specification Response Doc

* Appendix 3 has been provided as a separate document.