Functional Requirements Report for Duke University's Elearning Roadmap Committee

February 7, 2010

In the following, requirements are broken down into seven main categories, and each category has a number of specific requirements. All categories and specifics are considered required, although the report drafters do not attempt in this document to define the tests for achieving a requirement. This document was not designed to be a checklist or gradesheet. We believe that the committee must analyze both the individual features and the environment's overall potential as a coherent service, including growth potential and systemic weaknesses or limits, within the context of Duke's overall learning culture and strategic goals.

I. Must be adaptable to different learning methodologies

The elearning environment must be flexible, allowing users or different groups within the university to plug in or link tools that fulfill their particular needs, if any built-in tools do not provide the desired functionality.

Specifics:

- Must support single sign-on with Duke's authentication methods
- Must allow for persistent roles (set the role, such as instructor, TA, grader, course builder, student, auditor, observer, etc. in the authentication/authorization and it is respected in the environment and plugged-in applications)
- Must provide an API or advanced forms of web services so that new unforeseen components can be added to the environment
- Must provide integration with computing resources at Duke, such as the Virtual Computing Lab

II. Must support ad hoc groupings

The environment must allow both administrators and individual users to create persistent ad hoc groupings, in addition to standard classes and the standard course-roster-based groups.

Specifics:

- Must integrate with a standards-based tool, such as Grouper, that uses existing authentication and authorizations at Duke
- Must create groups that are not subordinate to course rosters, such as cohorts, teams, and student defined groupings.
- Must support multiple-section courses
- Must support grouping of materials across sections, courses and semesters

III. Must enable synchronous collaboration and communication

Users must be able work together over distance. Users must have the ability to conduct real-time online class sessions with distributed participants.

Specifics:

- Document sharing
- Desktop and application sharing
- Voice over Internet
- Instant Messaging
- Integration with the phone system
- Video over Internet
- Web conferencing environment that integrates all the above

IV. Must enable asynchronous collaboration and communication

Users must be able to work together regardless of time zone differences and other temporal displacements.

Specifics:

- Outgoing email to entire class or specific individuals or groups
- Threaded web-based discussion boards
- Workgroup work spaces, or subsites
- Wikis
- Blogs
- Document repositories
- Workflow (task management)
- Group calendaring

V. Must enable rich assessment

Environment must support a broad range of assessment and surveying tools.

Specifics:

- All standard question types in both test and survey modes
- Rule-based release of assignments and tests
- Plug-in architecture for third-party assessment modules
- Full-featured gradebook
- Integration with assignments, assessment tools and third-party tools
- Integration with Duke's grade submission process

VI. Must support user customization

The environment must allow the individual to organize materials according to preferences.

Specifics:

- Personalized portal page, with both optional and required content
- Integration with appropriate other tools, such as DukePass and Facebook (if vetted)
- Provides calendar overlaying with other calendaring resources

VII. Must be accessible, in the broadest sense of the word

The Environment must provide accessible options for all members of the Duke learning community and for their particular needs.

Specifics:

- Support for Unicode, including right-to-left and two-byte languages
- Support for mathematical symbols, equations and formulae
- Support for screen readers
- Support for captioning
- Support for stylesheets that ease reading
- Support for mobile devices