**Project Specification**

**for the**

**SIUE Department of Computer Science**

**CS425 / CS499 Senior Project**

**Software Design and Implementation Courses**

**by**

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**of**

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**Learning Outcomes-Based Assessment Database Team**

Revision 1.0

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LOBA-SPEC

Change Log:

|  |  |
| --- | --- |
| Revision | Change Note(s) |
|  |  |
| 1.0 | * Initial Release |

Reviewed and Approved By:

Name Signature Date

1. **Project Description**

1.1 Business Process

Currently students “earn” points in courses by completing tasks (e.g. homework, exams). Grades are used not only to assess a students ability to complete a task but often you get graded for attendance and classroom participation. Then some metric is applied to determine the final grade. Many of these skills and desired behaviors are not related to the skills students are in that class to learn. The point of Outcome Based Assessment is to only assess the skills that instructors want the students to learn. This must be done in a way that’s transparent, and to do it in a way that has a final measurable level of mastery.

1.2 Background

LOBA is grading-by-points turned sideways. Outcomes-based scoring is designed to identify student level of mastery from a list of desired outcomes. With LOBA at the end of the day, the student and the professor both know where a students strengths and weaknesses are. LOBA allows students to know how far they are from mastery of a skill and to complete assignments to demonstrate improved mastery of material. The emphasis is always on mastery, not behaviors. The final grade is determined by how many of the outcomes the student masters (i.e. “A” = 90% or more of outcomes with a average score of 4.0 (out of 5.0) or better and no outcome with an average less than 2.0). Because the student can look and pull up every score the student cares about and see the students final average. If said student cares you do the extra assignments they will go out of their way to master that skill. This provides a tremendous advantage to the student and the teacher when the teacher wants to assess what a student has accomplished in single class or throughout their education. Teachers can now write letters of recommendation using tangible metrics to describe what a student knows instead of focusing on an overall grade. By applying this assessment one can accurately determine the difference between somebody who pushed for mastery or are you somebody who just wanted a lesser level of mastery. Did the student really want to learn it all, or were they just playing the game? And the faculty will be able to tell just by looking at the student’s scores.

1.3 Purpose

The team is not only concerned about this to provide better guidance for teaching but because it serves an administrative purpose as well. There have been many recent efforts by federal and local government to reduce college costs. Officials want all schools to demonstrate that they are learning something. In traditional grading, professors cannot portray what a student has learned with much precision. All the professor can report is that the student received a two out of ten on that problem and that’s all my grade book shows. The instructor has no idea what the student has actually learned. At the end of the day, the final letter grade does not show what a student has learned either. It’s some arbitrary combination of numbers. Mastery is becoming a buzzword for accreditation industries. For instance, ABET is an accreditation industry for engineering schools. If an engineering school is ABET accredited a lot of engineering programs are allowed to try for the professional engineering exam. If it wasn’t an accredited school they couldn’t go for that exam. ABET is beginning to look for assessments that exercise the LOBA paradigm. They want classroom details of mastery so each individual school’s process should be doing this, so they can help make the school’s programs available for accreditation.

1.3 End Goal

LOBA makes course grades meaningful; however it comes with a price, specifically a flexible organizational data management scheme to keep track of each student’s progress toward mastery. In small classes (30 or fewer students), Excel is often enough. But a more sophisticated “grade book” is needed for larger courses. In this age of greater accountability LOBA is transparent to the students, defendable to administration, and performance-based for the taxpayers.

2 Domain Glossary

* **Blackboard**: Web-based server software which features course management, customizable open architecture, and scalable design that allows integration with student information systems and authentication protocols.
* **Class**: A course of instruction. The Instructor may add or remove Students from the Class
* **Final Grade**: A grade determined by the Instructor for a student based on that students Masteries
* **Instructor**: The person teaching the class and using the software.
* **LOBA**: outcomes-based scoring to identify student level of mastery from a list of desired outcomes
* **Mastery**: The average of the Scores for a Skill over the duration of a Class. The mastery is used to calculate the Student’s Final Grade.
* **Outcome**: The Score assigned to a Skill for a single Task. Can be changed by the Instructor.
* **Student**: A person enrolled in the class. Views the reports from the software.
* **Skill**: A concept, defined by the instructor, that the student attempts to show some level of mastery in
* **Set**: A group of related tasks defined by the Instructor
* **Score**: A range defined by the Instructor, used to assess the Student’s Skills
* **Task**: Where the student displays some range of understanding for the skill.

3 Project Requirements

Project Requirements will be maintained in the LOBA-SPEC-REQ document.

4 Agile Use Cases

Agile use cases will be maintained in the LOBA-SPEC-AUC document.