**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:

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| --- | --- |
| Revision | Change Note(s) |
|  |  |
| 1.0 | * Initial Release |
| 1.1 | * Grammar Modification |

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 student’s ability to complete a task, but often are get graded for attendance and classroom participation. Some metric is then applied to determine the final grade. Many of these skills and desired behaviors are not related to the skills that students are in that class to learn. The point of Outcome Based Assessment is to only assess the skills that instructors want their students to learn. This must be done in a way that is transparent and has a final, measurable level of mastery.

1.2 Background

LOBA is grading-by-points turned sideways. Outcomes-based scoring is designed to identify a student’s level of mastery from a list of desired outcomes. At the end of the day, the students know where their strengths and weaknesses are because LOBA shows them how far they are from mastering the skills taught in class. They can then demonstrate improved mastery of material by completing assignments for a specific set of skills. If any student wants to master all of the skills, then they will go out of their way to do the extra assignments. The final grade is determined by how many of the outcomes the student masters (i.e. “A” = 90% or more of outcomes with an average score of 4.0 (out of 5.0) or better, and no outcome with an average less than 2.0). Each student is able to look at all of their scores as well as a final average. The emphasis of LOBA is always on mastery, not behaviors. The advantage here is that the teacher can evaluate what a student has accomplished in a single class, or throughout their entire 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 someone who pushed for mastery and someone who did only what was necessary to get by. The end result is that the faculty will be able to determine what kind of students they teach simply by the level of mastery that was demonstrated on assignments.

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 gradebook shows is that the student received a two out of ten on a certain homework assignment, but the instructor has no idea what that student has actually learned. When the class is finally over, the final letter grade does not represent in any way what a student has learned; it is just 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 was not an accredited school, then they could not go for that exam. ABET is beginning to look for assessments that exercise the LOBA paradigm. If schools start using LOBA, they can begin the process of making their programs available for accreditation.

1.3 End Goal

LOBA makes course grades meaningful, but it comes with a price. In order to keep track of each student’s progress towards master, it needs to use a flexible organizational data management scheme. In small classes (30 or fewer students), Excel is often enough. However, 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.