Software Requirements Specification

for

GooGrade

Version 2.9 approved

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BluGoo

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Table of Contents

Revision History

Name	Date	Reason For Changes	Version
Paul Phu	01-29-09	First Draft	1.0
Hermyn Mendez	02-02-09	First Major Revision (edited section 1,2, added 3)	2.0
Hermyn Mendez	02-05-09	Added/Revised Section 4 and Appendix C (Kathy, Paul, and Kalvin). Revised sections utilizing the QA document. Synced Section 3 with Use Case List.	
Paul Phu	2-10-09	Edits to all sections excluding section 3	2.2
Paul Phu	2-11-09	Add customer input on changes to all sections excluding section 3	2.3
Paul Phu	2-11-09	Revised Appendix and fixed small errors.	2.4
Hermyn Mendez	2-11-09	Updated section 3	2.5
Katherine Blizard	2-16-09	Fixed small errors. References, Glossary and Data Dictionary	2.7
Hermyn Mendez	2-17-09	Class to Course and Page to Display	2.8
Hermyn Mendez	2-17-09	Revised Section 3, mostly worked on Functional Requirements and formatting. Pasted in Data Dictionary and tried to bold Data Dictionary terms.	2.9

1.Introduction

1.1 Purpose

This SRS provides specifications for GooGrade v1.0 for complete development. This document states the functionality of GooGrade v1.0. Features for future releases are noted accordingly. All GooGrade v1.0 features have a higher priority than those features noted for follow-up releases. Items in the Data Dictionary will be indicated in bold font. This document is intended for members of the GooGrade development team, the BluGoo team, the customer Lauren Tsung and the user. The SRS contains features and information required for the release of GooGrade v1.0 and possible future releases. It should be read through thoroughly, though the table of contents may be used for immediate references. Sections 1 to 2.2 can give a quick overview of GooGrade while further down this document will give a more detailed specification.

1.2 Project Scope

GooGrade is an open source web based application designed to help teachers track and manage students and their respective grades in a course. It is also designed to allow students to track their grades and compare their progress to the rest of the peers in their course by means of grade metrics. Because GooGrade is open source, it complies with the Open Standard Requirements (OSR) for Software. The OSR states that the GooGrade must be freely available and royalty-free. GooGrade must not have any dependencies on technology that does not comply with the OSR.

For more information regarding the Business Requirements, see section 1 of the GooGrade Vision and Scope (see section 1.5).

1.3 References

1. Open Standard Requirements for Software http://opensource.org/osr
2. Blugoo Wiki http://wiki.csc.calpoly.edu/blugoo
3. Schalch, Stephen R. *Object Oriented Classical Software Engineering*
4. Blugoo, Vision and Scope Document.
5. Blugoo, Use Case Document.
6. *Web Content Accessibility Guidelines (WCAG) 2.0* http://www.w3.org/TR/WCAG20/
7. *Family Educational Rights and Privacy Act* (FERPA). http://www.ed.gov/policy/gen/guid/fpco/ferpa/index.html.

2. Overall Description

2.1 Product Perspective

GooGrade's conception is a response to many already available grading tools which do not effectively package commonly desired student/teacher functionality. Popular grading tools, such as Blackboard, are expensive and do not offer all of the features that GooGrade provides (see

Appendix A in Vision and Scope document). GooGrade not only provides a means of editing and tracking grades and progress, it also provides an environment for teachers and students to exchange electronic documents. Most students turn in their assignments to teachers via physical copies. To bring the submission process to the digital world, Cal Poly's Computer Science Department created a UNIX based program called *handin* to allow students to submit electronic copies of their assignments. Though the process is functional, it can be difficult to use because it requires experience in UNIX. GooGrade offers a web based interface which not only allows students to submit their assignments to teachers, but also allows teachers to upload documents for students to download. For these reasons, we believe GooGrade could replace programs like *handin*.

2.2 Product Features

GooGrade allows **Students** and **Teachers** access to a common grading application. **Teachers** are able to take attendance, add users, manage A**ssignment Grades**, post **Announcements** and, in release 2, upload **Files** for **Students** to download. **Students** are able to view their grades, view grade metrics, upload A**ssignments** for submission, and are able to project their grade with the grade predictor.

2.3 User Types and Characteristics

Teacher	The **Teacher** is the administrator for up to five **Courses**. They manage **Students**, their respective grades, manage **Teacher Assistants** (see below), manage **Assignments**, and have the ability to post **Announcements** and upload documents for the **Students**.
Teacher Assistant	The **Teacher Assistant** is a lower administrator. They are managed and given permissions by the **Teacher**. If the **Teacher** desires, the **Teacher Assistant** may have all of the functionality that a **Teacher** has.
Student	The **Students** are able to view any grades and **Announcements** posted by the **Teacher** and **Teacher Assistant** for a given **Course**. They are also given access to **Metrics** and also have the ability to upload **Assignments** for submission.

2.4 Operating Environment

OE-1: GooGrade will run on all supported web browsers.

OE-2: GooGrade has the ability to run on either Linux or Windows servers.

OE-3: Access to GooGrade is available both on-campus and off-campus.

2.5 Design and Implementation Constraints

CO-1: GooGrade will be web based

CO-2: All HTML shall implement the XHTML 1.1 Standard.

CO-3: GooGrade must work and look the same across all supported web browsers.

CO-4: GooGrade does not display any information a user does not have permission to view.

2.6 User Documentation

User Manuals, such as how to use GooGrade, shall be provided online on our website (see section 1.5) and included with GooGrade.

2.7 Assumptions and Dependencies

Assumptions and dependencies may be found in GooGrade Vision and Scope section 2.3 (see section 1.5).

3. System Features

Student

3.1 View Announcements
3.2 View Grade
3.3 Check Course Standing
3.4 Predict Grade in Course
3.5 Printer Friendly Display
3.6 Download File
3.7 Upload File
3.8 Reset Password

Teacher

3.9 View Metrics
3.10 Add Course
3.11 Remove Course
3.12 Edit Course
3.13 Add Users
3.14 Remove Users
3.15 Edit Users
3.16 Add Assignment
3.17 Remove Assignment
3.18 Edit Assignments
3.19 Add Announcement
3.20 Remove Announcement
3.21 Edit Announcement
3.22 Send Email
3.23 Grade Students
3.24 View roster
3.25 Take attendance
3.26 Adjust grading curve
3.27 Import data
3.28 Export data

3.1 View Announcements

3.1.1 Description and Priority

Description	The system shows all of the **Announcement**(s) posted by the **Teacher** sorted with the most recently posted **Announcement** at the top of the list. A **Student** can view this list and each **Announcement** shows a title, time and date, and the content of the **Announcement**.
Priority	High

3.1.2 Stimulus/Response Sequences

Stimulus	User selects “View Announcements”
Response	System takes user to the “View Announcements” display as described above.

3.1.3 Functional Requirements

REQ-1: If no **Announcement** has been made the system displays a "No announcements” message.
REQ-2: When user selects “View Announcements,” the system displays the **Announcements** in decreasing chronological order.

3.2 View Grade

3.2.1 Description and Priority

Description	The System displays a table that summarizes all of the grades the **Student** has received for the **Course**. This summary includes **Assignment Name**, **Assignment Grade**, and **Assignment Total** for each **Assignment**. By default, the table will be sorted with the oldest **Assignment** at the top.
Priority	High

3.2.2 Stimulus/Response Sequences

Stimulus	User selects “View Grade”
Response	System takes user to the “View Grade” display. This displays **Student Assignment Grades** and **Total Grade**.
Stimulus	User selects a column on the table displayed

Response	System sorts the table with respect to the column selected.

3.2.3 Functional Requirements

REQ-1: If an **Assignment Grade** has not been graded yet, System displays a table with **Assignment Grade** names but the **Assignment Score** is not displayed.
REQ-2: If no **Assignment Grades** exist yet, System displays the words "No Assignments Yet" instead of the table.
REQ-3: When user selects "View Grade," the system displays a table which summarizes all of the grades the **Student** has received for the **Course**.
REQ-4: If the user selects a column header, the System displays the table sorted in ascending alphabetical order with respect to that column.

3.3 Check Course Standing

3.3.1 Description and Priority

Description	The System displays a selection of graphs that show a comparison of the **Assignment Grades** and **Total Grades** of all the **Student**(s) in the **Course**.
Priority	Medium

3.3.2 Stimulus/Response Sequences

Stimulus	User selects "Check Course Standing"
Response	System takes user to the "View Grade" display. This displays **Student Assignment Grades** and **Total Grade**.

3.3.3 Functional Requirements

REQ-1: If the **Student** is alone in the **course,** the system displays an error message.
REQ-2: If no **Assignment Grades** exist, system displays an error message.
REQ-3: If no **Assignment Grades** have been graded yet, system displays an error message.
REQ-4: When user selects "Check Course Standing," the system displays a selection of graphs that show a comparison of the **Assignment Grades** and **Total Grades** of all the **Student**(s) in the **Course.**

3.4 Predict Grade in Course

3.4.1 Description and Priority

Description	TBD Nat Welch 2/19/09
Priority	Medium Low

3.4.2 Stimulus/Response Sequences

Stimulus	
Response	

3.4.3 Functional Requirements

REQ-1: TBD

3.5 Printer Friendly Display

3.5.1 Description and Priority

Description	The System display minimizes color usage by having no images and text that is formatted to be 8.5 inches wide.
Priority	Low

3.5.2 Stimulus/Response Sequences

Stimulus	User selects “Printer Friendly Display”
Response	System takes user to the “Printer Friendly” version of the previous display.

3.5.3 Functional Requirements

REQ-1: When user selects “Printer Friendly Display,” the System display minimizes color usage by having no images and text that is formatted to be 8.5 inches wide.

3.6 Download File

3.6.1 Description and Priority

Description	TBD Nat Welch 2/19/09
Priority	Low

3.6.2 Stimulus/Response Sequences

Stimulus	
Response	

3.6.3 Functional Requirements

REQ-1: If the download fails, the **User** will be notified.

3.7 Upload File

3.7.1 Description and Priority

Description	TBD Nat Welch 2/19/09
Priority	Low

3.7.2 Stimulus/Response Sequences

Stimulus	
Response	

3.7.3 Functional Requirements

REQ-1: If the upload fails, the **User** will be notified.

3.8 Reset Password

3.8.1 Description and Priority

Description	TBD Nat Welch 2/19/09
Priority	Medium Low

3.8.2 Stimulus/Response Sequences

Stimulus	
Response	

3.8.3 Functional Requirements

REQ-1: TBD

3.9 View Metrics

3.9.1 Description and Priority

Description	TBD Nat Welch 2/19/09
Priority	Medium Low

3.9.2 Stimulus/Response Sequences

Stimulus	
Response	

3.9.3 Functional Requirements

REQ-1: TBD

3.10 Add a Course

3.10.1 Description and Priority

Description	The **Teacher** creates a **Course** by entering information about the **Course**. This information includes **Course Title**, **Course Section**, **Course Number**, location of **Course**, time of **Course**, **Grading Rules**, and **Course Curve**.
Priority	High

3.10.2 Stimulus/Response Sequences

Stimulus	User selects “Add a Course”
Response	System takes user to the “Add a Course” display. This display prompts the User to information about the **Course** being added.

Stimulus	User inputs information
Response	System displays confirmation.

3.10.3 Functional Requirements

REQ-1: If the **Course Title**, **Course Section**, **Course Number**, or location and time of **Course** already exist, the system displays an error.
REQ-2: When user selects "Add a Course," the System display prompts the user for information about the **Course** being added.
REQ-3: When user selects "Add" and all of the information has been entered, the System creates a the new **Course**. The System then displays a confirmation.
REQ-4: When user selects "Add" and all of the information has not been entered, the System displays an error.

3.11 Remove Course

3.11.1 Description and Priority

Description	The **Teacher** deletes a **Course**.
Priority	Medium High

3.11.2 Stimulus/Response Sequences

Stimulus	User selects "Remove Course"
Response	System takes user to the "Remove Course" display. This prompts the User to select the **Course** to be removed.
Stimulus	User selects a **Course**.
Response	System prompts User to confirm the removal
Stimulus	User confirms.
Response	System displays confirmation.

3.11.3 Functional Requirements

REQ-1: When user selects "Remove Course," the System displays a list of **Courses** to select from.
REQ-2: When user selects "Remove" and a **Course** has been selected, the System prompts the user to confirm the removal. If the user selects "Remove," the **Course** will be removed from the System. If the user selects "Cancel," the System will return to the "Remove Course" display.
REQ-3: If no **Courses** exist, the System displays an error message.

3.12 Edit Course

3.12.1 Description and Priority

Description	The **Teacher** edits a **Course** by changing information about the **Course**. This information includes **Course Title**, **Course Section**, **Course Number**, location of **Course**, time of **Course**, **Grading Rules**, and **Course Curve**.
Priority	Medium High

3.12.2 Stimulus/Response Sequences

Stimulus	User selects "Edit Course"
Response	System takes user to the "Edit Course" display. This prompts the User to select the **Course** to be edited.
Stimulus	User selects a **Course**.
Response	System prompts User to edit **Course** information
Stimulus	User edits information.
Response	System prompts User to confirm the edits
Stimulus	User confirms.
Response	System displays confirmation.

3.12.3 Functional Requirements

REQ-1: When user selects "Edit Course," the System displays a list of **Courses** to select from.

REQ-2: When user selects "Accept" and a **Course** has been selected, the System prompts the user to confirm the edits. If the user selects "Accept," the **Course** changes will be saved. If the user selects "Cancel," the System will return to the "Edit Course" display.

REQ-3: If no **Courses** exist, the System displays an error message.

3.13 Add Users

3.13.1 Description and Priority

Description	The **Teacher** adds a new **User** to the system, and the new **User** is sent an **Email** their automatically generated **Password**.
Priority	High

3.13.2 Stimulus/Response Sequences

Stimulus	User selects "Add Users"
Response	System takes user to the "Add Users" display. This prompts the User to information about the new user being added.

Stimulus	User inputs information
Response	System displays confirmation.

3.13.3 Functional Requirements

REQ-1: If **username** specified already exists or email is already in use, System displays an error and user must correct the error to continue.
REQ-2: If **EmailAddress** isn't valid, the system displays an error message.
REQ-3: When user selects "Add User," the System display prompts the user for information about the user being added.
REQ-4: When user selects "Add" and all of the information has been entered, the System creates the new user and automatically sends an **Email** the user with a **Password**. The System then displays a confirmation.
REQ-5: When user selects "Add" and all of the information has not been entered, the System displays an error.

3.14 Remove User

3.14.1 Description and Priority

Description	The **Teacher** can remove an **Account** from the system. The system will notify the **Account** holder about the termination of the **Account**.
Priority	High

3.14.2 Stimulus/Response Sequences

Stimulus	User selects "Remove User"
Response	System takes user to the "Remove User" display. This prompts the User to select the user to be removed.
Stimulus	User selects a user.
Response	System prompts User to confirm the removal
Stimulus	User confirms.
Response	System displays confirmation.

3.14.3 Functional Requirements

REQ-1: If **Account** could not be removed, the system displays an error.
REQ-2: When user selects "Remove User," the System displays a list of users to select from.
REQ-3: When user selects "Remove" and a user has been selected, the System prompts the user to confirm the removal. If the user selects "Remove," the user will be removed from the System and the user will be notified via **Email**. If the user selects "Cancel," the System will return to the "Remove User" display.
REQ-4: If no Users exist, the System displays an error message.

3.15 Edit User

3.15.1 Description and Priority

Description	The **Teacher** can edit an **Account** from the system. The system will notify the **Account** holder about any changed made.
Priority	High

3.15.2 Stimulus/Response Sequences

Stimulus	User selects “Edit User”
Response	System takes user to the “Edit User” display. This prompts the User to select the user to be edited.
Stimulus	User selects a user and edits desired information
Response	System displays confirmation.

3.15.3 Functional Requirements

REQ-1: If **Account** changes could not be stored, the system displays an error.
REQ-2: If **EmailAddress** is changed, both the old and new address are notified.
REQ-3: If **Password** does not comply with SE-4 (see Section 5.3 in SRS), the system displays an error message.
REQ-4: If **EmailAddress** isn’t valid, the system displays an error message.
REQ-5: When user selects “Edit User,” the System displays a list of Users to select from.
REQ-6: When user selects “Accept” and a user has been selected, the System prompts the user to confirm the edits. If the user selects “Accept,” the user changes will be saved. If the user selects “Cancel,” the System will return to the “Edit User” display.
REQ-7: If no Users exist, the System displays an error message.

3.16 Add Assignment

3.16.1 Description and Priority

Description	The **Teacher** adds a new **Assignment** to the system.
Priority	High

3.16.2 Stimulus/Response Sequences

Stimulus	User selects “Add Assignments”
Response	System takes user to the “Add Assignments” display. This prompts the User to information about the **Assignment** being added.
Stimulus	User inputs information
Response	System displays confirmation.

3.16.3 Functional Requirements

REQ-1: If **Assignment** name already exists, the system displays an error.
REQ-2: When user selects "Add Assignment," the System display prompts the user for information about the **Assignment** being added.
REQ-3: When user selects "Add" and all of the information has been entered, the System creates the new **Assignment**. The System then displays a confirmation.
REQ-4: When user selects "Add" and all of the information has not been entered, the System displays an error.

3.17 Remove Assignment

3.17.1 Description and Priority

Description	The **Teacher** can remove an **Assignment** from the system. The system recalculates any **AssignmentGrade** dependent on removed **Assignment.**
Priority	High

3.17.2 Stimulus/Response Sequences

Stimulus	User selects "Remove Assignment"
Response	System takes user to the "Remove Assignment" display. This prompts the User to select the **Assignment** to be removed.
Stimulus	User selects an **Assignment**.
Response	System prompts User to confirm the removal
Stimulus	User confirms.
Response	System displays confirmation.

3.17.3 Functional Requirements

REQ-1: If **Assignment** could not be removed the system displays an error.
REQ-2: When user selects "Remove Assignment," the System displays a list of **Assignments** to select from.
REQ-3: When user selects "Remove" and an **Assignment** has been selected, the System prompts the user to confirm the removal. If the user selects "Remove," the **Assignment** will be removed from the System. If the user selects "Cancel," the System will return to the "Remove Assignment" display.
REQ-4: If no **Assignments** exist, the System displays an error message.

3.18 Edit Assignment

3.18.1 Description and Priority

Description	The **Teacher** can edit an **Assignment** in the system. The system recalculates any **AssignmentGrade** dependent on removed **Assignment.**
Priority	High

3.18.2 Stimulus/Response Sequences

Stimulus	User selects "Edit User"
Response	System takes user to the "Edit User" display. This prompts the User to select the user to be edited.
Stimulus	User selects an **Assignment** and edits desired information
Response	System displays confirmation.

3.18.3 Functional Requirements

REQ-1: If **Assignment** changes could not be stored, the system displays an error.
REQ-2: When user selects "Edit Assignment," the System displays a list of **Assignments** to select from.
REQ-3: When user selects "Accept" and an **Assignment** has been selected, the System prompts the user to confirm the edits. If the user selects "Accept," the **Assignment** changes will be saved. If the user selects "Cancel," the System will return to the "Edit Assignment" display.
REQ-4: If no **Assignments** exist, the System displays an error message.

3.19 Add Announcements

3.19.1 Description and Priority

Description	The **Teacher** is able to add a new **Announcement** for one or more **Courses**. This **Announcement** includes a title and body.
Priority	Medium High

3.19.2 Stimulus/Response Sequences

Stimulus	User selects "Add Announcement"
Response	System takes user to the "Add Announcement" display. This prompts the User to information about the **Announcement** being added.
Stimulus	User inputs information
Response	System displays confirmation.

3.19.3 Functional Requirements

REQ-1: When user selects "Add Announcement," the System display prompts the user for information about the announcement being added.
REQ-2: When user selects "Add" and all of the information has been entered, the System creates the new **Announcement**. The System then displays a confirmation.

REQ-3: When user selects "Add" and all of the information has not been entered, the System displays an error.

3.20 Remove Announcement

3.20.1 Description and Priority

Description	The **Teacher** can remove an **Announcement** from the system. Any other **Announcement** must be unaffected by the removal of an **Announcement.**
Priority	High

3.20.2 Stimulus/Response Sequences

Stimulus	User selects "Remove Announcement"
Response	System takes user to the "Remove Announcement" display. This prompts the User to select the **Announcement** to be removed.
Stimulus	User selects an **Announcement**.
Response	System prompts User to confirm the removal
Stimulus	User confirms.
Response	System displays confirmation.

3.20.3 Functional Requirements

REQ-1: If **Announcement** could not be removed the system displays an error.
REQ-2: When user selects "Remove Announcement," the System displays a list of **Announcements** to select from.
REQ-3: When user selects "Remove" and an **Announcement** has been selected, the System prompts the user to confirm the removal. If the user selects "Remove," the **Announcement** will be removed from the System. If the user selects "Cancel," the System will return to the "Remove Announcement" display.
REQ-4: If no **Announcements** exist, the System displays an error message.

3.21 Edit Announcement

3.21.1 Description and Priority

Description	The **Teacher** can edit an **Announcement** in the system.
Priority	High

3.21.2 Stimulus/Response Sequences

Stimulus	User selects "Edit Announcement"
Response	System takes user to the "Edit Announcement" display. This prompts the User to select the **Announcement** to be edited.

Stimulus	User selects an **Announcement** and edits desired information
Response	System displays confirmation.

3.21.3 Functional Requirements

REQ-1: If **Announcement** changes could not be stored, the system displays an error.
REQ-2: When user selects "Edit Announcement," the System displays a list of **Announcements** to select from.
REQ-3: When user selects "Accept" and an **Announcement** has been selected, the System prompts the user to confirm the edits. If the user selects "Accept," the **Announcement** changes will be saved. If the user selects "Cancel," the System will return to the "Edit Announcement" display.
REQ-4: If no **Announcements** exist, the System displays an error message.

3.22 Send Email

3.22.1 Description and Priority

Description	User can send an **Email** out to a **Student** by **Student Username** or **Email** address or to the entire **Course** or **Courses**.
Priority	Medium Low

3.22.2 Stimulus/Response Sequences

Stimulus	User selects "Send Email"
Response	System takes user to the "Send Email" display. This prompts the User to information about the **Email** being sent.
Stimulus	User inputs information
Response	System displays confirmation.

3.21.4 Functional Requirements

REQ-1: If the User selects **"**Send" with an **Email** with an invalid **username**, an invalid **course name** or invalid **email address** in the address line and the **Email** is not sent.
REQ-2: If the User selects **"**Send" with an **Email** with **Email Title,** an error is displayed.
REQ-3: If the User selects **"**Send" with an **Email** with no **Email Body**, an error is displayed.
REQ-4: When user selects "Send Email," the System displays blank fields which represent a new **Email**. These fields are **Email Title**, **Email Body**, and **Email Recipients**.
REQ-5: When user selects "Send," the System sends the **Email**.

3.23 Grade Students

3.23.1 Description and Priority

Description	The **Teacher** will choose a **course** to grade and will then be given a list of **Students** and **Assignments**.
Priority	High

3.23.2 Stimulus/Response Sequences

Stimulus	User selects "Grade Students"
Response	System takes user to the "Grade Students" display. This prompts the User to select the **Course** to be graded.
Stimulus	User selects a **Course**.
Response	System prompts User select an **Assignment** to be graded.
Stimulus	User selects an **Assignment**.
Response	System prompts User select a **Student** to be graded.
Stimulus	User inputs grade.
Response	System confirms that the grade was stored.

3.21.5 Functional Requirements

REQ-1: If the **Teacher** does not have a **Course** to grade, an error is displayed.
REQ-2: If the **Teacher** does not have an **Assignment** to grade, an error is displayed.
REQ-3: If the **Teacher** does not have a **Student** to grade, an error is displayed.
REQ-4: When user selects "Grade Students," the System displays a list of **Courses** for the user to choose from.
REQ-4: When user selects a **Course**, the System displays a table of **Assignments** and **Students** for the user to edit.
REQ-5: When user selects "Accept," the System prompts the user to confirm the edits. If the user selects "Accept," the grade changes will be saved and the system will display confirmation. If the user selects "Cancel," the System will not save the changes.

3.24 View Roster

3.24.1 Description and Priority

Description	The **Teacher** selects a **course** and will receive a roster of the **course.**
Priority	Medium High

3.24.2 Stimulus/Response Sequences

Stimulus	User selects "View Roster"
Response	System takes user to the "View Roster" display. This prompts the User to select the **Course** to be viewed.
Stimulus	User selects a **Courses**
Response	System displays the **Course** roster.

3.21.6 Functional Requirements

REQ-1: If the **Teacher** does not have any **Students**, an error is displayed.
REQ-2: If the **Teacher** does not have a **Course**, an error is displayed.
REQ-3: When user selects "View Roster," the System displays a list of **Courses** for the user to choose from.
REQ-4: When user selects a **Course**, the System displays a list of **Students** in the **Course**.

3.25 Take Attendance

3.25.1 Description and Priority

Description	The **Teacher** marks **student**s either absent or present.
Priority	Medium Low

3.25.2 Stimulus/Response Sequences

Stimulus	User selects "Take Attendance"
Response	System takes user to the "Take Attendance" display. This prompts the User to select the **Course** to be viewed.
Stimulus	User selects a **Courses**
Response	System displays the **Course** roster.
Stimulus	User edits the attendance records
Response	System displays confirmation.

3.21.7 Functional Requirements

REQ-1: If the **Teacher** does not have any **Students**, an error is displayed.
REQ-2: If the **Teacher** does not have a **Course**, an error is displayed.
REQ-3: When user selects "Take Attendance," the System displays a list of **Courses** for the user to choose from.
REQ-4: When user selects a **Course**, the System displays a table of **Students** in the **Course** and dates. This table has checkboxes which may be checked or unchecked.

3.26 Curve Adjustment

3.26.1 Description and Priority

Description	Our tool will have the ability to adjust the grading curve for each **Course**. Five text boxes with plus and minus buttons will let the **Teacher** increment or decrement the curve. The graphs will display the new curve. The new curve will not go into effect until the **Teacher** selects accept.

Priority	Medium

3.26.2 Stimulus/Response Sequences

Stimulus	User selects “Curve Adjustment”
Response	System takes user to the “Curve Adjustment” display. This prompts the User to select the **Course** who’s curve will be adjusted.
Stimulus	User selects a **Courses**
Response	System displays the **Course** curve adjustment interface.
Stimulus	User edits curve and saves.
Response	System displays confirmation.

3.21.8 Functional Requirements

REQ-1: If the **Teacher** does not have any **Students**, an error is displayed.
REQ-2: If the **Teacher** does not have a **Course**, an error is displayed.
REQ-3: When user selects “Curve Adjustment,” the System displays a list of **Courses** for the user to choose from.
REQ-4: When user selects a **Course**, the System displays graphs showing the current curve and text boxes which allow the curve to be adjusted.
REQ-5: When user adjusts the curve by modifying the text boxes, the System changes the graphs (in real time) to show this adjustment.
REQ-6: If the user selects “Accept,” the curve adjustment will be saved and the system will display confirmation. If the user selects “Cancel,” the System will return to the “Curve Adjustment” display.

3.27 Import Data

3.27.1 Description and Priority

Description	The **Teacher** imports a **File** containing data from **rosters**, **students**, or **assignments**.
Priority	Medium Low

3.27.2 Stimulus/Response Sequences

Stimulus	User selects “Import Data”
Response	System takes user to the “Import Data” display. This prompts the User to select to upload information for a **Course**, **Student**, or **Assignment**.
Stimulus	User makes a selection and uploads data **File**.
Response	System displays confirmation message.

3.21.9 Functional Requirements

REQ-1: If the **Assignment Grade** to be updated has a grade already in place, the System displays an error.
REQ-2: When user selects "Import Data," the System prompts with a choice of either importing a **Course**, **Student**, or **Assignment**.
REQ-3: When user selects the type of data to import, the System prompts the user to upload a **File**.
REQ-4: If the **File** being imported is invalid, the System displays an error.

3.28 Export Data

3.28.1 Description and Priority

Description	The system will be able to export each **Course** and all data items within the **Course** to a **File** on the **Teacher**'s computer.
Priority	Medium

3.28.2 Stimulus/Response Sequences

Stimulus	User selects "Export Data"
Response	System takes user to the "Export Data" display. This prompts the User to select the **Course** who's data items will be exported
Stimulus	User selects a **Courses**
Response	System creates a data **File** and redirects user to a location of this new **File**

3.21.10Functional Requirements

REQ-1: If exporting fails then an error message is displayed. Exporting can fail due to an inconsistency with the storage or a network error.
REQ-2: When user selects "Export Data," the System displays a list of **Courses** for the user to choose from.
REQ-3: When user selects a **Course**, the System will prompt the user for a location to save the **File**.

4 External Interface Requirements

4.21 User Interfaces

UI-1: The system conforms to the *Web Content Accessibility Guidelines (WCAG) 2.0*
UI-2: The system provides a help link for every interface that requires user input to explain how to use that interface.
UI-3: The user should navigate to any display they are permitted to view in fewer than four intermediate displays.
UI-4: The system doesn't use any design elements that force a display to take more then 15 seconds to download and 8 seconds on a DSL/Cable Connection.

UI-5: The system doesn't use more than two fonts or font colors to display text paragraphs.
UI-6: The system layout doesn't does not change if the window is resized or font size is changed with all features still accessible.
UI-7: The system labels all hyperlinks with text. If the hyperlink is in a sentence, the system underlines it. The system only underlines hyperlinks.

4.22 Hardware Interfaces

GooGrade runs on a web server accessible via the user's computer. The user interacts using a mouse and keyboard.

4.23 Software Interfaces

GooGrade server-side interface consists of an Linux or Window OS with an Apache web server. A storage server is needed. The user is able to interact with GooGrade using the any of the supported web browsers.

4.24 Communications Interfaces

The main communication interface is HTTP as the GooGrade is web based. Any supported web browser is able to interact with GooGrade. The system can send **Email** to users. As of version 2 a **Teacher** can compose **Email** and send them to users through the system. Transport Layer Security (TLS) is implemented. All information stored in the system is encrypted.

5 Other Nonfunctional Requirements

5.21 Performance Requirements

PE-1: GooGrade accommodates 200 users during any given time.
PE-2: Displays load within 15 seconds and 8 seconds or less on a DSL/Cable Connection.

5.22 Safety Requirements

No safety requirements are required at this time.

5.23 Security Requirements

SE-1: **User** must be valid (**Account** exists) and needs to be authenticated by the system in order to use GooGrade.
SE-2: GooGrade must complies with Family Educational Rights and Privacy Act (FERPA). FERPA is viewable online at http://www.ed.gov/policy/gen/guid/fpco/ferpa/index.html.

SE-3: After 5 failed log in attempts, the **User** is required to wait 10 minutes in order to attempt to log in again.

SE-4: User **Password** must contain at least 6 characters and must include the following: at least 1 number, at least 1 capital character and the **Password** may not be the same as the **Username**.

SE-5: User will be able to reset **Password** by answering identifying question that will prove that the User is the **Account** holder.

5.24 Software Quality Attributes

QA-1: GooGrade should be simple enough for a first time computer user to adapt within the first week of using it. Simplicity will be measured with a survey.

Appendix A: Glossary

A

- **Admin** - A User with administrative abilities. There are two kinds: Teacher and Teacher Assistant.
- **Application** - the software package to be installed by a host machine.
- **Attached File** - A File Attachment is a document that a user has uploaded onto the system to be distributed to other users.

C-E

- **Class(Depreciated)** - See course.
- **Core [modules]** - The central part of the software managing authorization of users, database connection, external modules etc.
- **Course** - A group of Students representing a college class. A Course is managed by at least one Teacher and can be assigned any number of Assistants.
- **Email** - A method of private communication between two or more people by sending messages to each user's inbox.
- **Exported Statistics** - A list of classes or students the teacher wishes to save to another format on his or her computer.

F

- **Features** - Actions that the system can take with data. Features can only be requested from users with appropriate permissions.
- **File Attachment** - An external file which is uploaded into the system to be downloaded by another user. For Instance, homework or a class reading.

G

- **Grade** - A value indicating a student's proficiency and rank in their class. An Assignment Grade is a score for a single, particular assignment while the Total Grade is their average.
- **Grading Rules** - A set of guidelines set by a teacher for the system to compute the total grade from.

H

- **Host Machine** - The computer in which software is installed and run.

I

- **Inbox** - A storage place for all email messages.
- **Interface** - Also known as a Graphical User Interface (GUI). The graphical, non-functional side of the system.
- **Imported Statistics** - A list of classes or students a teacher wises to import into the system for use.

L

- **Logged In User** - A user who has entered his or her password and is interacting with the system.
- **Logged Out User** - A user who is not interacting with the system or whose username and password has not been accepted by the system.

M

- **Metrics** - Five statistical values of grades: Maximums, Minimums, Quartiles, Medians, and Modes.
- **Module** - Package of code designed for a or a few related features.

O-P

- **OS** - Acronym for Operating System.
- **Password** - A string of characters that the user inputs with a username to log into the system and gain permissions that user has.
- **Permission** - Determines whether or not a Feature is available to an Account or a User.

R-S

- **Roster** - A list of students in a single class.
- **Software** - The final package of code we have produced which can be installed in separate instances.
- **Student** - A person enrolled in the class and who will be graded.
- **String** - A series of one or more alphanumeric characters and special characters.
- **System** - The local instance of the Software and all of it's stored data. It does not include its users.

T

- **Teacher** - The Teacher represents the one responsible for the class and grading.

- **Teacher Assistant** - A person brought in by a Teacher to assist the Teacher in some of the Teacher's tasks.

U-W

- **Unregistered User** - A human who attempts to access the system without any permissions.
- **User** - Any human with an **Account** within the System.

Appendix B: Data Dictionary

Account = Username
+ Name
+ Password
+ Permission
+ UserType
+ EmailAddress

Announcement = AnnouncementTitle
+ AnnouncementText
+ AnnouncementDate

AnnouncementDate = *A date and time in the default date and time format on the Host computer when the Announcement was published*

AnnouncementText = *A long string of 10,000 characters that indicated text body of announcement post*

AnnouncementTitle = *A string of 200 characters that indicates the title of the announcement*

Assignment = [Test | Quiz | Homework | Participation | Other]
+ DueDate
+ Name
+ AssignmentTotal

AssignmentGrade = Assignment
+ AssignmentScore

AssignmentScore = *A floating point number and letter grade, represented by a char, depicting the score of the assignment.*

AssignmentTotal = *A floating point number and a char depicting the total possible score points on this assignment*

Course = 1:200{Student}
+ 0:10{TeacherAssistant}
+ GradingRules
+ CourseTitle
+ CourseSection
+ CourseNumber
+ CourseCurve

CourseTitle = *A string of 100 characters indicating the title of Course, such as "Introduction to

Welding"*

CourseSection = *A positive integer indicating the section number of the Course, if the integer is single digit than a leading zero is displayed. *

CourseNumber = *A string of 32 characters indicating the short Course name, "CSC308"*

CourseCurve = *Five numbers indicating the minimum Total Grade required to obtain an A, B, C, and D*

DueDate = *The date, using the host machine default for time and date, when the Assignment must be turned in to the Teacher*

Email = EmailBody
+ EmailTitle
+ EmailAttachment
+ EmailRecipients

EmailAddress = *A email address format, represented by a string of 321 characters. that each user has that can be contacted by. The name of the address, the part before the @ sign, must be no longer than 65 characters and the domain, the part after the @ sign, must be no longer than 255 characters. *

EmailBody = *A string of text written by a user that acts as the body of the email. It holds a maximum of 10,000 characters.*

EmailTitle = *A string of 100 characters for the title of email*

EmailAttachment = *A string address of file to be uploaded and sent. It is no longer than 255 characters*

EmailRecipients = *A list of email addresses of the destinations. Each list item is a string of 321 characters.*

FilesUploaded = 1:100 {File}

File = *A file uploaded onto the host machine*

GradingRules = PercentageTest
+ PercentageQuiz
+ PercentageHomework
+ PercentageParticipation
+ PercentageOther
+ PercentageFinal
+ CourseCurve

ManageCourse = *A Boolean permission to add, edit or remove entire Course lists of students*

ManageGrade = *A Boolean permission to add, remove and modify grades*

ManageMetric = *A Boolean permission to add, delete different statistics based on student grades displayed*

ManageRoster = *A Boolean permission to add and remove Course rosters*

ManageStudent = *A Boolean permission to add, remove and modify students*

Name = *A string of item's full name. The maximum string length is 200 characters.*

Password = *A password that grants access to a user. It is at least 6 characters long and encrypted*

PercentageFinal = *An integer between zero and one hundred indicating what percentage of the total grade the final is worth*

PercentageHomework = *An integer between zero and one hundred indicating what percentage of the total grade homework is worth*

PercentageOther = *An integer between zero and one hundred indicating what percentage of the total grade other work is worth*

PercentageParticipation = *An integer between zero and one hundred indicating what percentage of the total grade participation is worth*

PercentageQuiz = *An integer between zero and one hundred indicating what percentage of the total grade quizzes are worth*

PercentageTest = *An integer between zero and one hundred indicating what percentage of the total grade tests are worth*

Permission = 0:1{ViewOwnGrade}
+ 0:1{ManageGrade}
+ 0:1{ManageStudent}
+ 0:1{SendEmail}
+ 0:1{ManageMetric}
+ 0:1{ManageAnnouncement}
+ 0:1{ManageRoster}
+ 0:1{UploadFile}

ManageAnnouncement = *A Boolean permission to post announcements to all students in Course*

SendEmail = *A Boolean permission to send emails*

Student = 1:100{AssignmentGrade}
    + TotalGrade
    + FilesUploaded

Teacher = 1:5{Course}
    + 1:100{Announcements}
    + FilesUploaded

TeacherAssistant = *A User type that has permissions equal to or less than a Teacher and more than a Student*

TotalGrade = *A calculated floating point number, the total score of AssignmentGrades, and a character, representing the letter grade, based on AssignmentGrade*

UploadFile = *A Boolean permission to upload external files onto the host machine*

Username = *A string of user's login name, maximum length of 40 characters*

UserType = ["Teacher" | "TeacherAssistant" | "Student"]

ViewOwnGrade = *A Boolean permission to view grades*

Appendix C: Analysis Models

Survey – TBD
Storyboard – TBD

Appendix D: Issues List

Issue-1: File-size limitations on uploads
Issue-2: File format support
Issue-3: Use case document format
Issue-4: Review nonfunctional requirements