

6. GRADES

6.1 Grades Interface

The Moodle grades area is a tool for tracking student scores in your course. You can use it for scored activities in the class, in Moodle and in extracurricular activities.

You can access the grades area for each student in a course in the course gradebook, or 'Grader report' in Administration > Course administration > Grades.

The grader report collects items that have been graded from the various parts of Moodle that are assessed, and allows you to view and change them as well as sort them out into categories and calculate totals in various ways. When you add an assessed item in a Moodle course, the gradebook automatically creates space for the grades it will produce and also adds the grades themselves as they are generated, either by the system or by you.

Note that various default options for the gradebook are set at system level by the administrator and can be marked as being overridable by you, or fixed. This means that the options will not always be set up the same way for every user when they see the grader report for the first time.

6.2 Viewing Grades

The View Grades page, as shown in Figure 6.1, contains several rows: first the course, then the category, then the columns for each graded activity (for example: Assignments, Field Reports, Quizzes, etc.). Any activities settings which were left "uncategorised" will appear in the general category which is named after the course by default.

There are three ways that the categories can be displayed:

- (a) Grades only - without the category totals column
- (b) Collapsed - Category total column only
- (c) Full view - grades and the aggregates (the totals column for the category)

Each section has a small icon immediately to the right of its name. Clicking this will cycle through these display modes for that category. + Goes to grades only view, o goes to full view and - goes to collapsed view.

GINEERING ► Department of Agricultural Engineering ► Postgraduate ► Year 1 ► AEN6211 ► Grade administration ► Grader report Turn editing on

Grader report

Grader report

All participants: 3/3

First name :AllA B C D E F G H I J K L M N O P Q R S T U V W X Y Z
Surname :AllA B C D E F G H I J K L M N O P Q R S T U V W X Y Z

			AEN6211 Rural ...								
			Continuous Assessment								
			Assignments			Field Reports	Mid-term test	Final Examination			
Surname	First name	Department	Institution	Assignment 1	Assignment 2	Assignments total	Field Reports total	Mid-term test total	Continuous Assessment total	Final Examination total	Course total
	Luqman Ebow Daud	Agricultural Engineering	University of zambia	-	-	-	-	-	-	-	-
	Eddie Lusambo	Agricultural Engineering	University of Zambia	-	-	-	-	-	-	-	-
	Mukuwa Mukwangole	Agricultural Engineering	University of zambia	-	-	-	-	-	-	-	-
Overall average				-	-	-	-	-	-	-	-

Figure 6.1 Viewing Grades

6.3 Editing

Editing anything in the gradebook refers to editing the grades only and none of the available operations bear any relationship to editing the main course page i.e. the appearance of your course page cannot be influenced by anything you do in the gradebook.

The "**Turn editing on**" button functions separately from the main course one, so editing can be on in the gradebook, but simultaneously off when you switch back to course view. This is because editing grades and editing the course page are separate capabilities.

6.3.1 **Highlighting rows and columns**

When your gradebook starts to grow, it can be hard to keep track of which student and which assignment a cell refers to. Highlighting solves that.

- Clicking on empty space in the cell that contains the students name will toggle the highlighting of that entire row
- Clicking on empty space in the cell at the top of each column will toggle highlighting of the entire column.

6.3.2 **Sorting by columns**

- Click the symbol near the top of a column to sort by that column. This will change the symbol to a single down arrow.
- Clicking again will sort lowest-to-highest (ascending), changing the symbol to an up arrow. The arrows will toggle between these two states until you click on a different column.
- The student name columns do not have the symbol. Clicking on either the first or last name will cause the report to sort.

6.3.3 **Highlighting scores that are either adequate or unacceptable in red and green**

- Turn editing on and click on the edit icon in the controls cell at the top of the column. You can then see the option to enter a 'grade to pass' (you may need to click 'show advanced').
- Once set, any grades falling above this will be highlighted in green and any below will be highlighted in red.

Note that the highlighting will not show if the Grader report is viewed in the editing mode.

6.3.4 **Horizontal scrollbar**

A horizontal scrollbar enables teachers to scroll grades in the grader report. The horizontal scrollbar is available both at the bottom and at the top of the grader report.

6.3.5 **Mouse-over tooltips**

Whenever you move your mouse each grade cell in the table displays a tooltip indicating the user and grade item to which the grade belongs.

6.3.6 **Hiding columns or individual grades**

In the context of the gradebook, hiding refers to whether a student will be able to see that grade or grade item in their user report. You can have an activity available on the course page for

which you would not want the students to know their grade. Also in reverse - an offline activity that is hidden in the course page, but which you want the students to know their grade for.

- To hide/show columns or individual grades just click - "**Turn editing on**"
- Click the Gear Icon link which will take you to the control page of that individual activity or column where you can check the "Hidden" checkbox for hiding the grades.

6.3.7 **Altering the grades**

- Click "**Turn editing on**" at the top right to show an edit icon next to each grade.
- Click on the edit icon so that you bring up the editing screen for that grade. This will allow you to set the grade, its written feedback and a number of other attributes.
- Alternatively, you can choose "Quick grading" and "Quick feedback" in 'My preferences' to make the report appear with editable boxes containing each grade, so you can change many at once.

6.4 **Set Preferences**

Preferences: Grader report is found in *Administration > Grade administration > Setup*.

You can set your personal preferences for the grader report via 'My preferences'. These settings will apply to all courses for you as a lecturer. You can change them at any time.

The Set Grade Report Preferences page is shown in Figure 6.2.

The Set Preferences page contains the following settings:

- **Show calculations:** If enabled, when editing is turned on, a calculator icon is shown for each grade item and category, with tool tips over calculated items and a visual indicator that a column is calculated.
- **Show show/hide icons:** If enabled, when editing is turned on, a show/hide icon is shown for each grade for controlling its visibility to the student.
- **Show column averages:** If enabled, the grader report will contain an additional row displaying the average (mean) for each category and grade item.
- **Show locks:** If enabled, when editing is turned on, a lock/unlock icon is shown for each grade for controlling whether the grade can be automatically updated by the related activity.
- **Show user profile images:** You can choose to display user profile pictures for easy identification of students.
- **Show activity icons:** If enabled, activity icons are shown next to activity names.
- **Show ranges:** If enabled, the grader report will contain an additional row displaying the range for each category and grade item.
- **Show grade analysis icon:** If the activity module supports it, the grade analysis icon links to a page with more detailed explanation of the grade and how it was obtained.
- **Grades selected for column averages:** This setting determines whether cells with no grade should be included when calculating the average (mean) for each category or grade item.

Grader report preferences

Change report defaults

▼ Show/hide toggles

Show calculations ⓘ Report default (No) ▾

Show show/hide icons ⓘ Report default (No) ▾

Show column averages ⓘ Report default (Yes) ▾

Show locks ⓘ Report default (No) ▾

Show user profile images ⓘ Report default (Yes) ▾

Show activity icons ⓘ Report default (Yes) ▾

Show ranges ⓘ Report default (No) ▾

Show grade analysis icon ⓘ Report default (Yes) ▾

▼ Special rows

Grades selected for column averages ⓘ Report default (Non-empty grades) ▾

Show number of grades in averages ⓘ Report default (No) ▾

+ Show more...

▼ General

Quick grading ⓘ Report default (Yes) ▾

Show quick feedback ⓘ Report default (No) ▾

Students per page ⓘ

Show only active enrolments ⓘ Report default (Yes) ▾

Enable AJAX ⓘ Report default (No) ▾

Figure 6.2 Setting Grade report preferences

- Show number of grades in averages: If enabled, the number of grades used when calculating the average (mean) is displayed in brackets after each average.
- Quick grading: If enabled, when editing is turned on, a text input box appears for each grade, allowing many grades to be edited at the same time. Changes are saved and highlighted when the update button is clicked.
Note that when a grade is edited in the grader report, an overridden flag is set, meaning that the grade can no longer be changed from within the related activity.
- Show quick feedback: If enabled, when editing is turned on, a feedback text input box with a dotted border appears for each grade, allowing the feedback for many grades to be edited at the same time. Changes are saved and highlighted when the update button is clicked.

Note that when feedback is edited in the grader report, an overridden flag is set, meaning that the feedback can no longer be changed from within the related activity.

- Students per page: This setting determines the number of students displayed per page in the grader report.
- Show only active enrolments: This setting determines, if only active enrolled users will be visible in gradebook report. If enabled suspended users will not be shown in gradebook.
- Enable AJAX: Adds a layer of AJAX functionality to the grader report, simplifying and speeding up common operations. Depends on JavaScript being switched on at the user's browser level.

6.5 Grade Categories

Grades can be organised into grade categories. A grade category has its own aggregated grade which is calculated from its grade items. There is no limit to the level of nesting of categories (a category may belong to another category). However, each grade item may belong to only one category. Also, all grade items and categories belong to at least one, permanent category: the course category.

Important note: *it is not recommended to change the aggregation method once grades have been entered. Therefore, it is considered best practice to set up the Gradebook at the beginning of the term.*

6.5.1 Adding a grade category

To add a grade category:

- Select "Categories and items" from the gradebook dropdown menu.
- Click the "Add category" button near the bottom of the page.
- Give the grade category a meaningful name.
- Select the aggregation method for the grades: The aggregation determines how grades in a category are combined, such as
 - (i) Mean of grades - The sum of all grades divided by the total number of grades
 - (ii) Median of grades - The middle grade when grades are arranged in order of size
 - (iii) Lowest grade
 - (iv) Highest grade
 - (v) Mode of grades - The grade that occurs the most frequently
 - (vi) Sum of grades - The sum of all grade values, with scale grades being ignored
- In the "Category Total" Section:
 - (i) Grade Type: There are 4 grade types:
 - None - No grading possible
 - Value - A numerical value with a maximum and minimum
 - Scale - An item in a list
 - Text - Feedback only

Only value and scale grade types may be aggregated. The grade type for an activity-based grade item is set on the activity settings page.

- (ii) **Scale:** This setting determines the scale used when using the scale grade type.
- (iii) **Maximum and Minimum Grade:** Enter the maximum and minimum grades for the category. You can also set passing marks for the category by clicking the "Show More" link.
- (iv) Select grade category settings as appropriate. Advanced settings may be made available by clicking the "Show More" button.
- (v) Click the "Save changes" button.

6.5.2 *Aggregating and assigning weights to grade categories*

In most courses, the grading strategy consists of a set of assessments, each carrying their own weight towards the course total. The weight is often different than the maximum grade for an activity. For example, the midterm is marked out of 100 marks, but it weighs 15% towards the course total.

The default grading strategy in Moodle (Simple weighted mean of grades) does not calculate grades in this manner despite what its name might suggest. The grading strategy, or aggregation method, required to assign specific weights to grades must be changed to **Weighted mean of grades** in order for the grades to be calculated based on a specific weighted grading scheme.

In order to assign the weights for grades, it is important that all graded items are included in the Gradebook. Any Moodle assessment activities (i.e. Assignments, quizzes, etc.) will automatically appear in the Gradebook once added to the course. If required, you can add "offline" assessments to your course such as exams, oral presentations and participation, etc. Once all the grade items are in your Gradebook, you can begin assigning weights to individual items.

Follow the instructions given below to change the way grade categories are aggregated and to assign weights to each category.

- (a) First, it is necessary to change how grades are aggregated in the Gradebook.

To change how grades are aggregated:

- Click **Grades** from the *Administration* block on the course homepage.
- Click **Setup** tab.
- Click the **Categories and items** link.
- Click on **Edit** in the **action** column of the top level folder (usually the course name)
- Click on **Show more** in the **Grade category** to show Aggregation option.
- Select **Weighted mean of grades** from the **Aggregation** drop down list. This sets the aggregation method for the selected category

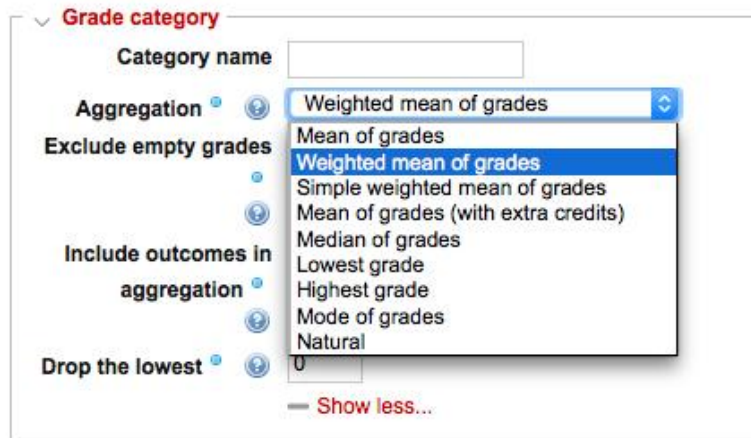


Figure 6.3 Aggregation types

- (b) Secondly, it is necessary to assign weights to grade items that will be aggregated in the Gradebook.

To assigning weights to grade items (assessments)

- Click **Grades** from the *Administration* block.
- Click **Setup** tab.
- Click the **Categories and items** link.
- Be sure that **Weighted mean of grades** is selected at the course level.
- The **Weight** column appears with an entry field for each item in the category.

Name	Weights	Max grade	Actions	Select
AEN6211 Rural Infrastructure Design		-	Edit	All / None
Continuous Assessment	40.0	-	Edit	All / None
Assignments	5.0	-	Edit	All / None
Assignment 1	1.0	100.0	Edit	<input type="checkbox"/>
Assignment 2	1.0	100.0	Edit	<input type="checkbox"/>
Assignments total Weighted mean of grades.		100.0	Edit	
Field Reports	15.0	-	Edit	All / None
Field Reports total Simple weighted mean of grades.		100.0	Edit	
Mid-term test	20.0	-	Edit	All / None
Mid-term test total Simple weighted mean of grades.		100.0	Edit	
Continuous Assessment total Weighted mean of grades.		100.0	Edit	
Final Examination	60.0	-	Edit	All / None
Final Examination total Simple weighted mean of grades.		100.0	Edit	
Course total Weighted mean of grades.		100.0	Edit	

Figure 6.4 Assigning weights to grade items

- Enter the corresponding percentage weight values for each item in the **Weight** column. Ensure your weights add up to 100. If the weight category does not add up to 100, the grade displayed will not be accurate
- Click **Save changes**.

(c) Thirdly, you should assign weights to various categories in the Gradebook

Your Gradebook should be organised into categories. For example, you may have categories for Quizzes, Assignments, Tests and/or Discussions Forums. When you change the course grade aggregation method to **Weighted mean of grades**, there is a box in the **Weight** column to assign weights to individual categories. For example, Assignments might be worth 15% of the course total regardless of how many assignments are given.

If you choose to use categories, it is important to choose the appropriate aggregation method to calculate the total for each category, so that your grades are calculated in the way you intend. Figure 6.5 below depicts a Gradebook with categories for Assignments and Quizzes. The Assignments category is configured to aggregate using the *Weighted mean of grades* method while the Quizzes category is configured to aggregate using *Simple weighted mean of grades*.

Categories and items

View Setup Scales Outcomes Letters Import Export

Categories and items Course grade settings My preferences: Grader report

Name	Weights	Max grade	Actions	Select
Jananeh_ImportCourseTest		-	Edit	All / None
Quizzes	25.0	-	Edit	All / None
Quiz 1		100.00 +	Edit	<input type="checkbox"/>
Quiz 2		100.00 +	Edit	<input type="checkbox"/>
Quizzes total Simple weighted mean of grades.		100.00	Edit	
Forum Category	15.0	-	Edit	All / None
TestForum-LikeScore	15.0	Like (1)	Edit	<input type="checkbox"/>
Forum's Total Weighted mean of grades.		100.00	Edit	
Assignment Category	20.0	-	Edit	All / None
Assignment 1	10.0	100.00	Edit	<input type="checkbox"/>
Assignment 2	10.0	100.00	Edit	<input type="checkbox"/>
Assignment Category total Weighted mean of grades.		100.00	Edit	
Final Exam	40.0	100.00	Edit	<input type="checkbox"/>
Course total Weighted mean of grades.		100.00	Edit	

Save changes

Move selected items to Choose...

Figure 6.5 Different configurations for aggregating grade items

Refer below for an explanation of the difference between the two most common aggregation methods to determine which best suits your needs.

Using Weighted Mean of Grades to Calculate a Category Total

Typically, there are predetermined weights for every grade item in a category, as specified by the lecturer at the beginning of the term in the course assessment breakdown. Therefore, Weighted mean of grades is the most suitable aggregation method for categories under most circumstances

Assignment Category	Weight	Grade	Weighted Mean of Grades
Assignment 1	10.0		
Assignment 2	10.0		
Assignment Category total Weighted mean of grades.	20.0		100.00

Figure 6.6 Using Weighted Mean of Grades to Calculate a Category Total

If *Weighted mean of grades* is selected, boxes appear in the Weight column, where lecturers can specify the weight for each item.

The sum of the weights for individual grade items in a category must equal the category weight. For example, if the Category weight is 20 as above, the two items in the category must add up to 20. In the example above, we can see that: $10 + 10 = 20$

Using Simple Weighted Mean of Grades to Calculate a Category Total

The *Simple weighted mean of grades* aggregation method will calculate the category totals giving more weight to items that have higher maximum grades and less weight to those with lower maximum grades. For example, a quiz out of 30 points will be worth more than a quiz worth 20 points.

In broad terms, Moodle calculates the total by taking the sum of points earned for each of the items in the category divided by the sum of the maximum grades for the category. This number is then multiplied by 100 to make it a percentage. Finally, it is converted to give a grade based on the weight specified for the category.

Quizzes	Weight	Grade	Weighted Mean of Grades
Quiz 1	30.00		
Quiz 2	20.00		
Quizzes total Simple weighted mean of grades.	25.0		100.00

Figure 6.7 Using Simple Weighted Mean of Grades to Calculate a Category Total

The Simple weighted mean of grade aggregation method would be particularly advantageous to students who receive high scores (compared to other grades in the category) on grade items with a high maximum marks, and disadvantageous to students who receive low scores on these items since they carry a bigger weight in the calculation.

Consider the Example:

There are three assignments in the Assignments category each with different maximum grades. Assuming two students receives the following identical results for the three assignments: 13/20, 28/30 and 20/25. Consider that the Assignment category contributes 15% to the overall grade of the course.

The following is the calculation for the category total using the ***Simple weighted means of grades*** aggregation method for Student1 and the calculation for Student2 using ***Weighted mean of grades***, where each assignment is worth 5% (i.e. each score is normalized out of 5% to get a total of 15% for the three assignments).

Student	Assign1	Assign2	Assign3	Total Score	Ave out of 15	Percentage Score	Grade
	20	30	25	75			
Student1	13	28	20	61	12.20	81.3	A
Student2	13	28	20				
Out of 5	3.25	4.67	4.00	11.92	11.92	79.4	B+

Notice that, although the difference is only 0.3 out of 15, this difference in percentage is nearly 2%, which would mean a larger discrepancy in categories weighted higher.

Also note that the bigger the range in the maximum marks of items in a category, the likelier the potential for a greater difference between the two calculations.

6.6 Grade Calculations

A grade calculation is a formula used to determine grades, based (optionally) on other grade items. Calculations for the gradebook follow the pattern of formulas/functions in popular spreadsheet programs. They start with an equal (=) sign, and use common mathematical operators and functions to produce a single numerical output. This output is then used as the computed value for the grade item you are editing.

6.6.1 Assigning ID numbers

You can include the values of other grade items by using their ID number as references in your formulas. The ID number is surrounded by double square brackets, for example if you have a grade item with Quiz.3 as ID number, you will refer to this item as `[[Quiz.3]]` in your calculation.

Below the calculation field is a list of your course with its grade categories and grade items. Next to each item or category's total is displayed the ID number you can use in your calculation (already surrounded with double square brackets). However, since the ID number is optional, some items may not have one. These items without an ID number have instead a form field which lets you enter an ID number directly.

As soon as you have assigned the ID numbers you need, you can click the "Add ID numbers" button, and the page will reload and show you the same list with the ID numbers you have just assigned.

6.6.2 Setting a grade calculation

To set a grade calculation:

- Click on Grades in the course administration block
- Click the 'Categories and items' tab (or select it from the gradebook dropdown menu)
- Click the 'calculator symbol' (in the 'Actions' column, on the category total line) for the category you wish to set a calculation for
- Start with an equal sign (=)
- Choose a function; Example: =sum()
- Enter your ID numbers enclosed in double square brackets, for example
=sum([[item1]][[item2]][[item3]])
- Separate each ID number with a comma, for example
=sum([[item1],[[item2],[[item3]])
- Click the "*Save Changes*" button.

6.6.3 Calculation functions

Every calculation must start with an equal sign (=). Following is a list of the functions supported by the calculation. The comma (,) character is used to separate arguments within function brackets. The comma can also be used to separate different functions. (The separator character could be a semicolon (;) in other languages, see below).

- average([[item1]], [[item2]]...): Returns the average of a sample
- max([[item1]], [[item2]]...): Returns the maximum value in a list of arguments
- min([[item1]], [[item2]]...): Returns the minimum value in a list of arguments
- mod(dividend, divisor): Calculates the remainder of a division
- pi(): Returns the value of the number Pi
- power(base, power): Raises a number to the power of another
- round(number, count): Rounds a number to a predefined accuracy
- floor(number): Maps a real number to the largest previous integer
- ceil(number): Maps a real number to the smallest following integer

- `sum([[item1]], [[item2]]...)`: Returns the sum of all arguments
- an asterisk (*) gives the product of two items: `[[item1]]*[[item2]]`

6.7 Letter Grades

Letter grades, are symbols used to represent a range of grades. You may choose letters (e.g., A, B, C, D, E) or words (e.g., Fail, Pass, Credit, Merit, Distinction).

To set your letter grade scale:

Letter grades are set initially at site level. To use different letter grades in a particular course:

- Follow the grades link in the course administration block.
- Select Letters from the Gradebook dropdown menu.
- Click the edit tab in the middle of the page.
- Check the override site defaults box.
- Change grade letters and/or boundaries as required. (You may wish to use words, for example Fail, Pass, Credit, Merit, Distinction, rather than letters.)
- Scroll to the bottom of the page and click the "Save changes" button.

Displaying letter grades

To change particular grade items, category and course summaries (called aggregations) in the grader report and user reports to display letter grades:

- Follow the grades link in the course administration block.
- Select "Categories and items" from the gradebook dropdown menu.
- Click the edit icon for Category total or Course total.
- From the Grade display type menu, select letter.
- Click the "Save changes" button at the bottom of the page.

Repeat this for any other totals that you want displayed as letters.

Alternatively, to display ALL grades as letter grades:

- Follow the grades link in the course administration block.
- Select "Course settings" from the gradebook dropdown menu.
- From the Grade display type menu, select letter.
- Click the "Save changes" button.

6.8 Student Grade View

Students can check their grades by clicking the Grades link in their Administration block. They can see only their own grades, not the other students', as shown in Figure 6.8.

User report - Eddie Lusambo

Grade item	Calculated weight	Grade	Range	Percentage	Letter grade	Feedback	Contribution to course total
AEN6211 Rural Infrastructure Design							
Continuous Assessment							
Assignments							
Assignment 1	-	-	0-100	-	-		-
Assignment 2	-	-	0-100	-	-		-
Assignments total Weighted mean of grades.	-	-	0-100	-	-		-
Field Reports							
Field Reports total Simple weighted mean of grades.	-	-	0-100	-	-		-
Mid-term test							
Mid-term test total Simple weighted mean of grades.	-	-	0-100	-	-		-
Continuous Assessment total Weighted mean of grades.	-	-	0-100	-	-		-
Final Examination							
Final Examination total Simple weighted mean of grades.	-	-	0-100	-	-		-
Course total	-	-	0-100	-	-		-

Internet | Protected Mode: On

Figure 6.8 Viewing grades as student

6.9 Export Grades

It is recommended that you regularly download your gradebook for backup. Your system administrator should be backing up the entire server on a regular basis, but you can never be too certain. After all, your students will complain to you if they lose their grades, not to the system administrator.

To download your gradebook:

- Navigate to Administration > Grade Administration > Export and choose the format in which you want to export the gradebook.
- Select the preferences for exporting the grades like items to be included and including feedback in export etc. and click Submit.
- It will take you to the preview page where you can take a preview of the exported file.
- Click Download to download the gradebook to your computer.

If you follow the backup procedure on a regular basis, you will have a record of student grades if there is a catastrophic loss of data on the server. You can always recover students' grades up to that point in the semester if you have a regular backup.

6.10 Import Grades

Grades may be imported as a CSV or XML file. The import file format is the same as the corresponding export format.

To import grades into the gradebook:

- Navigate to Administration > Grade Administration > Import & Select your chosen import format from the gradebook dropdown menu.
- Browse and upload your previously saved file.
- Set options as required.
- Click the "Upload grades" button.