

Synthesis Project 4 – Gradebook Version 2

Synthesis Project 4 builds on the gradebook you created for Synthesis Project 1. You can use your Synthesis Project 1 submission as a starting point, or you can start with a new file. If you start with a new file, download the Synth4Start Excel file, as it has the logging function built in. If you use your earlier Synthesis Project 1 submission, it already has the logging function activated.

Preparation for Synthesis Project 4

1. Read the feedback contained in the critiques uploaded to the Group Locker. You do not have to follow the suggestions, but the critiques of your work will get you to think critically about your solution.
2. Watch Dr. Aytes's video *Synthesis 1 Common Errors and Possible Solution Explanation*, which describes how some of the requirements for Synthesis 1 can be met.
3. You may download an Excel file containing a partial solution for Synthesis 1 (named Synth1 Solution). You may use this, instead of your own Synthesis 1 submission, as a starting point if you prefer (you are not required to use this file).
4. If you use your previous Synthesis 1 submission, make sure that macros are enabled and that edits are being logged in the Log worksheet.

Requirements for Version 2 of the Gradebook

Meet All Requirements for Synthesis 1

1. Allows you to enter a grade for each previous and future assignment in BMIS 211.
2. Displays your current course grade (listed by percentage – e.g. 87%) for those assignments for which a grade has already been entered (including zeroes for past assignments not submitted).
3. Displays a running total of the percentage of course completed (e.g., the total number of graded assignments for which a grade has already been entered divided by the total number of graded assignments in the course).
4. Displays the current percent grade by category of assignment (Level 1, Level 2, Level 3, Quizzes, Exams).
5. Applies conditional formatting to *all* scores to indicate the quality of grades (e.g., different colors for those over 90%, greater than 80% but less than 90%, etc.).
6. Would be easily understood (i.e., how to use it, and how to interpret it) by another student in this class.

New Requirements for Version 2

Dynamic Formulas

1. All formulas must calculate correctly without changing the formulas as new data (scores) are entered or removed.
2. All formulas must calculate correctly without changes to the formulas while accommodating dropped grades AND adding / deleting assignments as described below.

Dropping Grades

1. Your gradebook should be able to drop (i.e. not include them in the score calculation) the lowest N grades for each of the following assignment types:
 - a. SAM Trainings – drop the lowest five scores
 - b. SAM Textbook Projects – drop the lowest three scores
 - c. SAM Projects – drop the lowest one score
 - d. Quizzes – drop the lowest one score

Hint: You can use the SMALL function to do this. You can find examples of this in use for just this purpose by doing a search with the following terms: “Excel drop lowest 2 grades” or something like that.

2. When grades are dropped, remember that the total number of points available for that assignment type must be reduced as appropriate!

Adding/Deleting Assignments

- Your gradebook must be able to accommodate the addition or complete elimination of assignments. While no new categories of assignments can be added or deleted, specific assignments within existing categories can be added or deleted from the gradebook. All formulas should allow for proper grade calculations after addition or deletion of assignments without any modification to the formulas.

Inclusion of Letter Grades

- The following grade calculations must also display automatically a letter grade based on percentage for:
 - a. Current course grade
 - b. Current assignment category grade

MSU’s cut-offs for letter grades are:

Minimum Percentage	Letter Grade
93%	A
90%	A-
87%	B+
83%	B
80%	B-
77%	C+
73%	C
70%	C-
67%	D+
63%	D
60%	D-
<60%	F

Charts

- Include 2 to 3 charts that help the user visualize how they are performing in the class.

Criteria

1. Technical completeness: The above requirements must be met to receive full credit.
2. Spreadsheet Design – Layout: Spreadsheet makes effective use of screen space – minimal scrolling, important information prominently displayed.
3. Spreadsheet Design – Organization: Information is logically grouped, either by category of assignment, module, week, or some other useful approach.
4. Spreadsheet Design – Formatting: Colors and fonts are used to draw attention to important data and make information easy to understand.
5. Spreadsheet Design – Dynamic Updating: Formulas and functions provide updated information without needing modification when data (grades) are added or removed. It is easy to add data to the spreadsheet.
6. Formula Design – All formulas use named cells and ranges.
7. Documentation: Documentation clearly explains purpose of workbook, how user interacts with it (e.g., where data can be entered), what assumptions are made, and what testing was done to ensure information is accurate—and includes a list of Named Cells and Ranges and their respective cell references (use the Paste List feature accessible through Use in Formula...).