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Hands-on Guide for Academics #2 Turning Rubrics into Grades



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This Hands-on Guide is based on the contents of the CAOBE Forum with the same name held at Lingnan University on 10 May 2017.

*The videos and a soft copy of this Guide are available at:
<http://tlc.ln.edu.hk/caobe/events/ws5>*

Thanks is given to Profs James Pounder, Paul Whitla, Mark McGinley & Mark Hampton for their contributions to the Forum and this subsequent 'Hands-on Guide'.

1 Introduction

Lingnan University has been charged with full implementation of OBATL by the start of the 2017-18 academic year. Rubrics have already been prepared for all courses, and the last phase of this implementation requires using these to move over from norm-referencing to full criterion-referencing. This means that from September 2017 onwards, all grades assigned must be based on the assessment criteria as stated in the rubrics for each assessment task, rather than being distributed according to a bell curve. This crossover has brought up a challenge:

How do you convert the grades on rubrics into letter grades or GPAs? And how can we do this in a way “that reflects to the students and lets them know to what extent they have achieved the criteria and what they need to do to be able to achieve a certain final letter grade at the end of the year?” (Paul Whitla)

There is no 'one size fits all' method, but three possible methods were presented at a recent Forum at Lingnan University. The three methods will be described in detail in Section 3 of this document. **These are not exclusive nor mandatory; however, each of these methods is an acceptable alternative which may be borrowed or adapted for Faculty, Departmental or lecturer's own use.** Different disciplines using different kinds of assessment tasks may find a certain method more or less suited for their use.

Before presenting these three methods, section 2 will cover some background and important points regarding criterion-referencing and the use of rubrics. All references to any of the speakers (Profs Paul Whitla, Mark McGinley and Mark Hampton) relate to the content of their presentations in the aforementioned 'From Rubrics to Grades' Forum.

2

Criterion-referencing and rubrics

- 2.1 Why we need Criterion-referencing

Prof Whitla summarized the problems with norm-referencing and how criterion-referencing addresses these. Under norm-referencing, students would just get a number grade. Teachers may have given them the average score of the class as a whole and some comments but that was the only guidance students had as to how they were doing. They wouldn't really know how they were performing in specific traits, what they would need to do to be able to improve their performance, or what kind of grade they would finally end up with. And even if students did everything well, they could still end up with a lower grade than they expected if they were outperformed by enough of their classmates. These were some of the obvious limitations of the system of norm-referencing.

Even when rubrics were introduced, if the final grade was ultimately subjected to norm-referencing, then there was still a degree of arbitrariness in the final grades given to students. For instance, a student may have apparently done very well according to the rubrics, but got a lower mark than expected because s/he had more than a certain percentage of higher-performing classmates.

The principle with criterion-based referencing is that it gets rid of this unfairness in the students' eyes. Firstly, students can know their own performance in terms of how they are meeting the criteria. Their grades for each assessment as well as their final grade reflect their actual performance, and are not influenced by other classmates doing much better or worse than them. It also allows students to know how to get the kind of final grade that they are aiming for.

- 2.2 How can we maintain consistent and reasonable standards?

Within classes/courses

A common hesitation about full criterion-referencing is that it means that every student could potentially get an A. On the other hand, they could all potentially just get a C. However, although both of these are a possible scenario, it is highly unlikely.

- As Prof Hampton pointed out, if you write your criteria carefully, and have written your rubrics in a way which clearly articulates differences in levels, you will find your students performing at different levels, resulting in natural divisions in the gradings. But in this situation, the teacher needs to be careful to not think in terms of norming and revert to previous percentage weightings.
- Prof McGinley pointed out that it is important to vary the level of questions, for instance in a quiz or final exam. Each question should be directly related to one (or more) learning outcome(s), which should reflect a variety of levels of thinking skills (from lower order to higher order) on Bloom's Taxonomy. There should be enough questions at each level, in order to give opportunities for good, average and lower students to show what they can do.

- Prof Hampton emphasized that if we are giving too many A's, that is an indication that our standards are too low and we need to raise our standards and expectations of the students. Under criterion-based referencing, instead of having a problem with too many students getting high grades, in all likelihood the range of grading distributions will become even bigger.

Between faculty members

Another common concern that Prof Hampton raised is that if there's a 'free-for-all' every faculty member can do whatever they want to do. In fact, it does not matter if different instructors use different grading methods for different courses, or even if they use completely different numbering systems - as long as the above points about writing appropriate rubrics and assessments are taken into consideration. However, it does matter if you are team-teaching or on multi-sectional courses, such as core courses. Co-teachers need to be consistent with their grading, and the consistency is more important than the question of which mark equals which grade. The numbers are relatively arbitrary; they can change and we can change our perceptions of what the grades mean so the distribution of grades is the same. Therefore teachers involved in teaching the same course must agree on a way of grading that results in consistent grades for the students across the board. The same applies to rubrics – teachers of the same course must use the same rubrics, even if that means one or more of the teachers needs to compromise, for the students' sakes.

- 2.3 Communicating the standards

It is critical that the students understand the grading system. Before assessments, every teacher must communicate with their students about their rubrics, whether that explanation is by way of course syllabus or examples given in class and/or via Moodle . They must also understand the weightings of the criteria and how much each assessment is worth. Although rubrics and task sheets already communicate these in a written form, it is extremely important that teachers also explain it to their students. For each assessment task, students must understand the criteria and what they need to do in order to receive certain grades. 'Surprises of a non-positive nature' (Selke, 2013, p. 120) are not appreciated by students!

The same applies for the make-up of the final grade – students must know how their final grade will be calculated. This is especially important if different instructors are using different number grading scales (i.e. if a 75 represents an A to one, a C to another). It does not matter if different teachers or departments use different methods or grading scales – the most important thing is that the students have the method clearly explained to them so they know what to expect and how to interpret each mark or grade they are given.

Students will be a lot more comfortable with rubric assessment, or any kind of assessment for that matter, if explanations and examples of how rubrics may be applied are clear, well organized, and readily available. This is especially important if your students are either encountering rubric assessment for the first time or have had some bad experiences with it ... Well-designed rubrics can alleviate, rather than exacerbate, concerns about what to expect in regard to assessment and grading. (Selke, 2013, pp. 119-120)

- 2.4 The need for flexibility

Both Profs Hampton and McGinley stressed the need for flexibility, which was lacking under the norm-referencing system. Even though their systems equate certain numbers with certain GPA grades, they would still be flexible in some circumstances. The instructor still has the right to decide where the lines between grades fall. For instance, if it turns out that a final exam question was too difficult or unclear, or it uncovered problems in the instructor's own teaching, then both Profs Hampton and McGinley would rather adjust the grading to reflect these issues. They would tend to be lenient rather than strict, surprising the students with a higher grade rather than a lower one.

- 2.5 Advice on rubrics

Finetuning rubrics

There is a misconception that once submitted, rubrics can not be changed. On the contrary, there is generally a need for finetuning rubrics when they are put to use, often on an ongoing basis. This is a normal and expected process. Descriptions may be found to need more clarification; weightings between criteria may be altered, etc, to better reflect how well the ILO(s) were met on the task the rubric is meant to be assessing, or for better guidance for the students. Such minor changes to rubrics do not need AQAC approval; they can be approved at the Departmental level and do not require reporting to the AQAC.

Holistic rubrics for final exams

Another point that faculty members have found problematic is the use of rubrics for final exams. It may not be practical to use analytical rubrics for final examinations (or other summative purposes), due to the length of time it would take to mark a whole cohort's papers. This is where holistic rubrics can be very helpful.

Both analytic and holistic rubrics are effective as they both include all criteria and differentiate between levels of performance. **The main (and only) difference between the two types is that in a holistic rubric, the criteria are combined and conflated, into a single, detailed but concise description for each performance level.** This is very handy when quick, overall marking is required, such as in an exam situation.

However, analytic rubrics are more common for formative purposes, i.e. during the semester where the rubrics are not just used for grading but also to give specific feedback to the students. Rubrics can show students which criteria they are strong or weak in and which areas they need to work on if they wish to improve their grade in the next assessment. To see some sample holistic rubrics as well as examples of simple analytic rubrics turned into holistic rubrics, go to Appendix 2 of this Hands-on Guide.

- 2.6 Cumulative Course GPA Calculation Sheet

In order for students to calculate their cumulative GPA after each assignment, an Excel spreadsheet with the necessary calculations has been prepared and is available at Faculty members' request from the CAOBE Manager: juliegroves@ln.edu.hk

When requesting the Excel file, please provide the type of assignment and percentage breakdown for each assignment for the course, including the final examination (if any). The total weighting must equal 100%.

For instance,	<i>Oral presentation</i>	10%
for Fictional Course A,	<i>Mid-term Quiz</i>	25%
this is the information that	<i>Term paper</i>	25%
would be needed:	<i>Final Exam</i>	<u>40%</u>
		100%

The calculations will then be customized for your course and emailed to you.

- It is suggested that you save a master copy for your own purposes and upload a copy to Moodle, for students to download and use at their own convenience if they choose.
- Please note that you must be using a method that gives students a GPA number for each assignment, from 0 to 4 (e.g. 2.77) – it is this number that is what is entered into the excel file, not a percentage and not a GPA letter grade (e.g. A-).

All students then need to do is add in their number result for each assignment as they are completed, and they can see the progression of their cumulative course GPA. Before the final exam, they are able to enter different possible final exam marks to find out what kind of mark they need to get in the final exam to get the overall GPA they are aiming for.

NB: Faculty members could also use this system to help them in calculating students' final grades. It can also be handy to use for calculating individual rubric scores, especially when different criteria weightings are involved.

3

Three methods for turning rubrics into grades in a criterion-referenced system

METHOD 1: Cumulative Course GPA

(Provided by Prof Paul Whitla)

Summary: This system allows students to compute an ongoing GPA, like a cumulative course CGA.

Summary of Method: Instead of numbers, each column in the rubrics relate to GPA grades. Students are then given a letter grade for each assignment. Each assignment is weighted, and the cumulative GPA adjusts according to the mark of each assignment. This means that students can calculate based on each assignment what they will need to get in the remaining assessments or the final exam in order to get the final grade they want.

Advantages for the teacher:

- This method does away with the need to convert a number grade to a letter grade, by getting rid of the numbers altogether. This is helpful as numbers mean different things to people from different education systems, and different teachers have different number standards. For instance, a mark of 70 could be approaching an A, or a B or a C depending on the teacher's background.
- This system should work with already-existing rubrics (in particular from the Business Faculty, whose rubrics are already aligned for AACSB accreditation) as it just requires a different way of calculating.

Advantages for the students:

- Letter grades are more meaningful to students than number grades; the cumulative GPA is a system which students are already very familiar with.
- Being able to calculate a cumulative GPA allows students to know where they are at, at all stages throughout the course.

Other Comments: Prof Whitla has trialled this method with two classes, who accepted it very positively, because they could see why they got each grade they got, how they did on every criteria, and why a particular letter grade had been given to them for each task. They didn't need to compare themselves with other students, and they clearly understood why they were awarded a certain grade. As a result they didn't complain even when their grade was relatively poor.

Example:

Rubric 1 (available overleaf) – a sample of the proposed 'Cumulative GPA' method. Details of how to calculate the criteria, assignment and final grades follow the sample rubric.

EXAMPLE RUBRIC 1 (supplied by Prof Paul Whitla)

BUS108

GLOBAL BUSINESS ENVIRONMENT – GROUP PROJECT

Assessment and Marking Rubric

Section Number: 4 Student Names: Jon Marc

Group Number: 8 Vivian Preet

Industry: Swimwear

Countries: Malaysia VS Italy Julie Mark

Criteria	Good A A- B+	Satisfactory B B- C+ C	Poor C- D+ D F	Marking Weight
Students are able to identify criteria relevant to their industries and weight these criteria appropriately	A <u>A-</u> B+ Chooses highly appropriate criteria to study based on solid consideration of industry structure and firm requirements	B B- C+ C Chooses appropriate criteria with some consideration of industry structure and firm requirements.	C- D+ D F Does not identify criteria or chooses inappropriate criteria with little specific relevance to firm or industry.	3.67 (10/50) *0.20 = 0.734
Based on set criteria students are able to compare the business environments of selected countries.	A A- B+ Presents a clear comparison of the relative merits and demerits of each location highlighting specific advantages relevant to the firm or industry.	B B- <u>C+</u> C Identifies some of the merits and demerits of each location but is not industry-specific in comparison of country advantages.	C- D+ D F Fails to identify the merits and demerits of each location. Presents information of little relevance to the firm or industry.	2.33 (10/50) *0.20 = 0.466
Students find and utilise appropriate international data sources to find recent, relevant and comparable information on each country	A A- <u>B+</u> A good mix of data sources used with clearly sourced and labeled comparable and recent data	B B- C+ C Uses a satisfactory number of data sources but with some limitations in extraction or presentation of comparable and recent data	C- D+ D F Relies on a very limited number of data sources or presents poorly labeled, out of date or incomparable data.	3.33 (7.5/50) *0.15 = 0.499
Students demonstrate ability to develop and utilise a weighted country attractiveness matrix	A <u>A-</u> B+ A clearly structured matrix with appropriate data, calculations and conclusion.	B B- C+ C Satisfactory matrix but with some problems in data, calculations or conclusions.	C- D+ D F Failed to use matrix or uses incorrect data or calculations or draws wrong conclusions.	3.67 (7.5/50) *0.15 = 0.550

Students consider the ethical and cultural dimensions of operating in each location	A A- B+ Considers all ethical and cultural distance factors involved in country selection.	B <u>B-</u> C+ C Considers some of the ethical and cultural distance factors involved in country selection.	C- D+ D F Fails to consider ethical or cultural distance factors involved in	2.67 (5/50) *0.1 = 0.267
Students deliver a professional well-structured presentation of their findings	A A- B+ A smooth, well-structured presentation with clear data and conclusions. Well-handled answers to questions.	B B- C+ C A satisfactory presentation although with mistakes in data presented or showing signs of lack of preparation.	C- <u>D+</u> D F A poor presentation that displays a clear lack of preparation and significant flaws in information presented.	1.33 (5/50) *0.1 = 0.133
Students deliver a professional written report of their findings	A A- B+ A fully professional business report with good formatting, use of tables and charts, referencing and appendices	B B- <u>C+</u> C A satisfactory business report although missing some key elements or lacking in structure or grammar	C- D+ D F A poor report, confusing in structure or grammar. Fails to provide adequate tables, charts, referencing or appendices	2.33 (5/50) *0.1 = 0.233

ADDITIONAL COMMENTS

The criteria you identified as important for firms in this industry were appropriate and of relevance to this sector. Perhaps, the weighting assigned to labour costs should have been somewhat higher as this makes up a significant proportion of a firm's cost in this industry.

Your team turned up late to make this critical term presentation and it appeared that you were unprepared and had not practiced the presentation before delivering it. You should have provided copies of your presentation to the other teams for their reference.

Overall, a satisfactory effort, let down by poor delivery of the presentation on the day.

Grade:

2.88 / B

Assessed by: Paul Whitla

Date: March 16 2017

How to do the calculations

Note 1: Rubric grades and levels

In the Business Faculty, the rubric is split according to 3 levels, to match with the AACSB pattern of having 3 performance levels for each criteria:

A- to B+ = good

B to C = ok

C- down = poor

However, the match of grades and levels could be adjusted according to the number of performance levels in the rubric. Ideally, staff within a Department or Faculty could agree on where the splits are, in order to standardize the rubrics for their particular cohort(s) of students.

Note 2: Suggested Marking Scheme

As is usual, each GPA letter is comprised of a range of marks. The scheme that Prof Whitla uses is as follows. However, it is possible that other ranges be used instead; what is most important is that the Department or course using this system agree on the marking splits. (See Appendix 1 for Lingnan's official grading system.)

3.68 – 4.00 = A

3.34 – 3.67 = A-

3.01 – 3.33 = B+

2.68 – 3.00 = B

2.34 – 2.67 = B-

2.01 – 2.33 = C+

Note 3: Calculating rubric scores

For individual assessment rubrics, there are several steps in calculating the score, especially if the rubric strands are weighted differently.

1. For each rubric strand, each letter grade needs to be converted to its GPA equivalent number score in order to be added up.
➔ *Example:* In Example Rubric 1, the first criteria is rated an A-. This corresponds to a GPA of **3.67**.
2. If criteria are weighted differently, calculate the marking weight of each criteria. To do this, divide the criteria score by the total possible score.
➔ *Example:* In Example Rubric 1, the first criteria accounts for 10 out of a possible 50 points. **10 / 50 = 0.20**.
3. The raw criteria score is then multiplied by the marking weight.
➔ *Example:* **3.67** is multiplied by the marking weight of **0.20** to obtain a score for that criteria of **.734**.
4. Each strand is then added up and can be converted back to a letter grade.
➔ *Example:* In Example Rubric 1, the total weighted score adds up to **2.88**, which equals a 'B' letter grade for this assignment.

Note 4: Calculating cumulative course GPA

A reminder that, in order for students to calculate their cumulative GPA after each assignment, an Excel spreadsheet with the necessary calculations has been prepared and is available at Faculty members' request from the CAOBE Manager (juliegroves@ln.edu.hk). Please see section 2.6 above for details on how to go about requesting and using this tool.

For those mathematically-minded lecturers who would like to see exactly how the Cumulative Course GPA would be calculated, here is an example in the table below. This shows Fictional Student A's cumulative GPA grade after the first three assignments (test, essay and project). The participation and exam have not been assessed yet, so these are not yet calculated.

Assessment	Grade		% final grade	Cumulative % of final grade	Cumulative GPA	
Test	B-	2.67	10	10	2.67	B-
Essay	A-	3.67	20	30	3.34 #	B+
Project	C-	1.67	25	55	2.58 ##	C+
Participation			5	60		
Exam			40	100		
TOTAL			100	100		

It is important to note that each assessment grade is weighted according to its percentage of the final grade.

- The GPA for her first assessment, the test, was 2.67 which equals a B-. No need for any calculations yet.
- For each succeeding assessment, the assessment GPA is the average of the scores for all assessments to date (test and essay), each one individually multiplied by the weight of the assessment, then multiplied by the total possible score so far and divided by 100%

$$\# \quad (2.67 \times 0.10 + 3.67 \times 0.20) / 30 \times 100$$

$$\#\# \quad (2.67 \times 0.10 + 3.67 \times 0.20 + 1.67 \times 0.25) / 55 \times 100$$

Note 5: Calculating the final grade

To calculate each student's final grade manually, take the GPA number for each assignment, multiply it by the weighting for each assignment, then add up all assignment grades and you end up with one final GPA grade.

Again, you may feel free to request the excel sheet from the CAOBE Manager which can do this calculation, not just for your students, but also for teachers. (See section 2.6 for details.)

For an example of manual calculation, let's continue with Fictional Student A's record. This time we have replaced the 'cumulative percentage' column with a 'weighted score' column for each assignment.

Assessment	Grade		% final grade	Weighted score (= Grade x %)	Cumulative GPA	
	Letter	Number			Letter	Number
Test	B-	2.67	10	.267	2.67	B-
Essay	A-	3.67	20	.734	3.34	B+
Project	C-	1.67	25	.4175	2.58	C+
Participation	B+	3.30	5	.85	2.65	B-
Exam	B	2.91	40	1.164	2.75	B
TOTAL			100	2.75	2.75	B

Putting this step by step:

- Take the GPA number for each assignment and multiply it by the percentage weighting for each assignment.
 - ➔ Example: Fictional Student A got a GPA number score of **2.67** for the first test. This was worth **10%** of the final grade, so multiply **2.67** by **10%**. This gives a score of **.267** for that assessment.
- Add up each assessment's weighted score to get the final GPA number grade.
 - ➔ Example: Adding up all the weighted scores (**.267 + .734 + .4175 + .85 + 1.164**), gives a total score of **2.75**.
- Convert the final GPA number grade back to the corresponding GPA letter grade.
 - ➔ Example: A number score of **2.75** is equivalent to a 'B' letter grade.

METHOD 2: The American System

(Provided by Prof Mark McGinley)

Summary: This system assigns final grades as determined by the American grading system where there is a consistent correspondence between percentage marks and letter grades:

90 or above	A	Excellent
80 or above	B	Good
70 or above	C	Adequate/Acceptable
60 or above	D	Poor
Below 60	F	Fail

Summary of Method: Each completed assessment is given a percentage grade, i.e. out of 100%. For each assessment, the students are reminded of how their mark would convert to a letter grade, using the grading system above. At the end of the semester, the final grade is calculated as the average of all assessments (taking into account the weighting for each assessment). That number is then turned back into a letter grade, according to the splits:

- A = 95
- A- = 92
- B+ = 88
- B = 85
- B- = 82
- C+ = 78
- C = 75
- C- = 72

Advantages for the teacher:

- This method uses a numbering system that many teachers are already familiar with.

Advantages for the students:

- Rubrics with numbers give very clear expectations to the students when they know what the numbers stand for.
- Because students are ultimately assigned letter grades, it is important that they understand how any numerical grades they are given relate to a letter grade. Giving each assessment a score out of 100% enables the students to know what letter grade (and by extension, GPA score) they have achieved for each assessment. This means they can anticipate what kind of final grade they might receive.

Other Comments:

- In reality, different kinds of exam questions need to be graded in different ways. As Prof McGinley is a science teacher, he needs to deal with results in the forms of numbers, which he then needs to convert into grades. Therefore a numbering system suits his discipline best.
- Although the grading scale may seem similar to the practice under norming, it needs to be emphasized again that lecturers need to design their questions wisely. Prof McGinley stressed that in exams, it is crucial to write questions with different levels of difficulty in order to differentiate between different levels of students, preferably moving from easier towards more difficult questions. Reflecting the Intended Learning Outcomes, there should be:
 - Some simple questions that everyone should get right (testing for adequate knowledge)
 - Some questions that fewer get right (testing for good mastery)
 - A few that are most challenging so that only the best students will get it correct

Example:

Rubric 2 (available overleaf) – a sample of the proposed 'American system' method.

EXAMPLE RUBRIC 2 (supplied by Prof Mark McGinley)

CLD9012

NATURAL DISASTERS: SCIENCE AND SOCIETY

Grading Rubric for Term Paper

Worth 15% of final grade

Name: **FICTIONAL STUDENT B**

Criteria	Exceeds standard	Meets standard	Fails to meet standard	Points
Science (35%)	A A- B+ B Student (1) accurately and completely describes the scientific basis of natural disaster, (2) accurately and completely discuss how local conditions influence the specific natural disaster, and (3) effectively uses visual aids where appropriate.	B- C+ C C- (1) describe the scientific cause of natural disaster (2) discusses how local conditions influence the disaster. Student may make some errors and some discussions may be incomplete.	D F Fails to address the scientific basis of natural disasters accurately.	B 85
Science and society (35%)	A A- B+ B Student (1) accurately and completely discusses the effect of the disaster on the local society, (2) accurately and completely discusses lessons learned as a result of the disaster, and (3) effectively uses data, models, or visual aids where appropriate.	B- C+ C C- Students (1) discuss how natural disaster affects local society and (2) discuss how lessons learned from this, or previous disasters, can be used to mitigate the effect of future disasters. Students may make some errors and some discussions may be incomplete.	D F Fails to adequately discuss how natural disasters affect society.	B 85
Communication skills (20%)	A A- B+ B Student (1) demonstrates a thorough understanding of context and audience, (2) organizes the material in a thoughtful and effective manner, and (3) uses language that effectively conveys the message and contains few errors.	B- C+ C C- Student (1) demonstrates attention to the audience and purpose of the assignment, (2) organizes the material, and (3) uses clear language. These efforts may be simple, ideas could be communicated more effectively, and the use of language may contain some errors.	D F Fails to communicate effectively.	C+ 78
Research and use of sources (10%)	A A- B+ B Student (1) accurately uses information taken from variety of reliable and appropriate sources, (2) clearly identifies sources of all information.	B- C+ C C- Student (1) uses information taken from variety of sources. Some of these sources may inappropriate or of uncertain reliability and may not accurately indicate the source of information used.	D F Fails to use clear language.	A 95
Total / 100%				84.6 / B

How to do the calculations

Note 1: Rubric grades and levels

Like Prof Whitla, Prof McGinley splits the rubric according to 3 levels. Note that Prof McGinley's splits the grades differently to Prof Whitla; there is no one definitive way to do this; each Department or Faculty can determine where the splits are as best befits their own students and courses.

- A- to B = exceeds standard
- B- to C- = meets standard
- D below = fails to meet standard

Note 2: Suggested Marking Scheme

For converting numbers into grades, Prof McGinley uses this scale:

Letter grade	Percentage
A	95 %
A-	92 %
B+	88 %
B	85 %
B-	82 %
C+	78 %
C	75 %
C-	72 %

Note 3: Calculating rubric scores

1. Each student is assigned one letter grade for each criteria on the assignment.
➔ *Example:* In Example Rubric 2, there are 4 criteria. Fictional Student B was given a **B**, **B**, **C+** and **A** for these criteria.
2. Each of these letter grades is 'translated' into a number grade according to the scale above.
➔ *Example:* Fictional Student B's letter grades of **B**, **B**, **C+** and **A** correspond to **85 + 85 + 78 + 95**.
3. Then the weightings need to be taken into consideration. The 4 criteria are worth **35%**, **35%**, **20%** and **10%** for this particular assignment (notice the total adds up to 100%) – which for multiplication purposes equal 0.35, 0.35, 0.20 and 0.10 (adding up to 1). So each criteria mark must be multiplied by this percentage and then the total added up.
➔ *Example:* **$85 \times 0.35 [= 29.75] + 85 \times 0.35 [= 29.75] + 78 \times 0.2 [= 15.6] + 95 \times 0.1 [= 9.5] = \text{TOTAL } 84.6$**
4. The final number grade for an assignment does not need to be converted into a letter grade by the instructor, but the students can calculate this for themselves as the instructor has already given them the grading scales (above).
➔ *Example:* **TOTAL 84.6 = 'B' grade**

Note 4: Calculating the Final Grades

This requires a similar process to calculating the individual rubric score. Take the number grades for each assessment, multiplied by the weight of each assessment, then add the weighted grades up to get a final number. This number is then converted back to a grade, again according to the above table.

For instance:

ASSIGNMENTS	WEIGHTING	Fictional Student B's grades
Quizzes	40%	84
Class Participation/Writing Assignments	20%	79
Term Paper	15%	80
Final Quiz	25%	88
TOTAL	100%	83.4 = B

➔ Example: $84 * 0.40 [= 33.6] + 79 * 0.20 [= 15.8] + 80 * 0.15 [= 12] + 88 * 0.25 [= 22] = \text{TOTAL } 83.4 = \text{'B' final grade}$

Again, you may feel free to request the excel sheet from the CAOBE Manager which can do this calculation, not just for your students, but also for teachers. (See section 2.6 for details.)

Note 5: Calculating cumulative course GPA

A reminder that, in order for students to calculate their cumulative GPA after each assignment, an Excel spreadsheet with the necessary calculations has been prepared and is available at Faculty members' request from the CAOBE Manager (juliegroves@ln.edu.hk). Please see section 2.6 above for details on how to go about requesting and using this tool.

METHOD 3: The Aligned System

(Provided by Prof Mark Hampton)

Summary: This system is similar to Method 2 (the American System) in that it uses a similar grading scale and numbered rubrics. However it differs in that the teacher uses numbers only throughout the semester, and converts the final number into a letter grade only at the end of the course.

Summary of Method: Each rubric incorporates both letter grades and associated numbers, based on the grading scale above. In other words, the numbers and letter grades are aligned on each rubric. However, the letter grades are mainly for the students' benefit. After assignment weightings are taken into consideration, the teacher adds up the number score for each assignment at the end of the course, then converts this into a final GPA according to Lingnan's Grading System (in Appendix 1).

Advantages for the teacher:

- It is relatively simple for the teacher to come up with a final grade, as s/he only needs to add up the scores for each assessment, taking the weighting into consideration. The final mark then equates with the relevant GPA letter grade to become the students' final grade.

Advantages for the students:

- Because both the numbers and letter grades are embedded and aligned in the rubrics, they serve a double purpose. While the instructor takes the numbers from each rubric to calculate a final grade, the students also know from each assessment what their letter grade is, and therefore what their relative GPA is for each assessment.

Other Comments: Strictly speaking, this method does not 'turn rubrics into grades' as each rubric already produces a grade, which are weighted and added together at the end to get a final grade, i.e. there is no need for any 'converting'. About 50-60% of the Arts Department already calculates their grades this way, including all instructors in the History Department.

Example:

Rubric 3 (overleaf) – a sample of the proposed 'Aligned System' method.

EXAMPLE RUBRIC 3 (supplied by Prof Mark Hampton)

HST 356

EUROPEAN HISTORY IN THE NINETEENTH CENTURY

Grading Rubric for Essay Assignment

Name: **FICTIONAL STUDENT C**

Traits	Excellent/ Very good (points)	Very Good/ Good (points)	Satisfactory (points)	Marginally satisfactory (points)	Unsatisfactory (points)
Conception and articulation of argument (30%)	Paper has a clear thesis that is analytically interesting and creative, plausible, and is historically falsifiable; the analysis has impressive depth (27-30 points)	Paper meets most of the criteria listed in the column to the left, but is lacking in one or more of them—or accomplishes all of them at a slightly lower level than excellence (24-27 points)	Paper has an identifiable thesis, but it may be a bit mundane or uninteresting, and not particularly creative; the analysis is superficial (21-24 points)	Paper has an identifiable thesis, but it is not analytically interesting, plausible or historically falsifiable; there is little analysis (18-21 points)	Paper lacks any clear thesis and little to no analysis (0-18 points)
Use of supporting evidence (30%)	Paper provides ample evidence in support of its thesis, with no extraneous detail; evidence is well-connected to the thesis; documentation is clear (27-30 points)	Paper provides significant amounts of supporting evidence, well-connected to the thesis; some detail is extraneous; documentation is mostly clear (24-27 points)	Paper provides supporting evidence, but less than is needed to make the argument; there is a significant amount of extraneous detail; documentation is incomplete or unclear (21-24 points)	The details of the paper relate very thinly to a main argument; the evidence is poorly documented (18-21 points)	Paper provides little to no evidence in support of a main argument; most evidence provided is undocumented (0-18 points)
Organization and integration (30%)	All paragraphs relate to the thesis in a clear manner; individual paragraphs have a clear focus; there are clear transitions between paragraphs or ideas; the order in which the ideas are presented makes sense (27-30 points)	Nearly all paragraphs relate to the thesis in a clear manner; all or most individual paragraphs have a clear focus; there are generally clear transitions between paragraphs or ideas; the order in which the ideas are presented makes sense (24-27 points)	Most paragraphs relate to the thesis in a clear manner, most individual paragraphs have a clear focus, and the order in which the ideas are presented generally makes sense; but there are often unclear transitions between ideas (21-24 points)	Most paragraphs relate to the thesis in a clear manner, most individual paragraphs have a clear focus; it is often unclear why ideas are presented in their particular order, and there are often unclear transitions between ideas (18-21 points)	The paper is extremely disorganized to the point that the order in which ideas are presented appears virtually random (0-18 points)

Communication/ presentation (10%)	Paper displays excellent English language skills, with few mistakes, and is easily understandable (9-10 points)	Paper contains several fairly minor errors, but the writing is clear and understandable (8-9 points)	Paper contains several minor errors and/ or a few major ones; the writing is mostly clear but may be difficult to understand in places (7-8 points)	Paper contains numerous writing errors that are serious enough that the paper is very difficult to understand (6-7 points)	Paper contains an unacceptably large number of writing errors, major or minor, to the point of making it difficult or impossible to understand (0-6 points)
Total=100%	90-100 (A)	80-89.99 (B)	70-79.99 (C)	60-69.99 (D)	0-59.99 (F)

FICTIONAL STUDENT C'S FEEDBACK:

I. Conception and articulation of argument:

23 / 30

Satisfactory. You articulate a clear thesis, but then the argument doesn't entirely come together. For example, you don't really explain why the geographical difference would have contributed to different cultural elements. And you could elaborate more fully on the different cosmologies; it's not just how many gods there are or how powerful, but also how they relate to the people. One of the interesting points about the Hebrew God is not only that he's all powerful, but that he develops a specific bond (or "covenant") with a specific man and his descendants.

II. Use of supporting evidence

24 / 30

Good. Some of your citations are incomplete. In addition, you seem to be counting a book review as your scholarly journal article. For the next paper, please look for an article instead of a book review (you can use a book review also, but please make sure you have at least one journal article).

III. Organization and Integration

26 / 30

Good. See comment 5.

IV. Communication/ Presentation

7 / 10

Satisfactory. See my in-text corrections for some examples of areas in which you could improve. This includes things like correct tense (was vs. were, for example), correct form of the word (controlled vs. controlling, for example), and using "the" or not using it, as appropriate.

Total: 80 / 100

How to do the calculations

Note 1: Rubric grades and levels

Prof Hampton uses the following numbering system, which all of his students become familiar with.

90 or above	A	Excellent
80 or above	B	Good
70 or above	C	Adequate/Acceptable
60 or above	D	Poor
Below 60	F	Fail

For each rubric, the number grades vary depending on the maximum total points for the assignment, but stay in proportion with the grading table above. In other words, the 'A' range always consists of the top 10% points, the 'B' range the second 10%, the 'C' the third, and so on. For example, for an essay worth 70 points, the 'A' range is 63-70, the 'B' range 56-62, etc. For a small assignment worth only 10 points, a 9 or 10 scores an 'A', an 8 gets a 'B', a 7 a 'C', and so on. For examples, see Prof Hampton's holistic rubrics in Appendix 2.

Note 2: Calculating the final grade

The final grade is calculated very simply by adding up the scores of each assignment, taking the weighting into account. In practice this means taking the number grade for each assessment, multiplying each by the weight of the relative assessment, then adding the weighted grades up to get a final number. This number is then converted to a grade, according to the above table.

This process is the same as for Method 2 (Note 4). For instance:

ASSIGNMENTS	WEIGHTING	Fictional Student B's grades
Quizzes	40%	84
Class Participation/Writing Assignments	20%	79
Term Paper	15%	80
Final Quiz	25%	88
TOTAL	100%	83.4 = B

➔ Example: $84 \times 0.40 [= 33.6] + 79 \times 0.20 [= 15.8] + 80 \times 0.15 [= 12] + 88 \times 0.25 [= 22] = \text{TOTAL } 83.4 = \text{'B' final grade}$

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4 Summary

There is no one set way to 'convert rubrics into grades' when switching from a norm-referenced to a criterion-referenced system. This Guidebook presents three possible ways, which can be adopted and adapted for use at Lingnan University. It would be ideal for a Department or team of teachers to trial a particular system first before using it to calculate final grades.

The important points to remember are to **maintain consistent standards** by writing and finetuning rubrics which clearly articulate differences in performance levels, and by ensuring that assessments, especially final exams, have questions that cover a variety of levels of thinking skills (from lower to higher order, as in Bloom's Taxonomy), in order to distinguish students' true performance levels.

It is not so important if instructors of different courses or Departments use different grading systems, as long as these are **clearly communicated to the students**. Similarly, within a team-teaching or multi-sectional course situation, the instructors involved need to agree on which system to use and moderate their marking to ensure consistency across the board.

In regard to rubrics, it is important to remember that these are not 'set in stone'. **It is both possible and desirable to finetune rubrics**, for instance by changing wordings or criteria weightings, if needed to more clearly communicate the standards to students and more accurately be able to measure levels of performance. It is also necessary to consider whether analytic or holistic rubrics will suit a the purposes of a particular assignment best.

All of these factors must continue to be considered on an ongoing basis, in order to ensure that grading under a criterion-based referencing system is **consistent, fair and transparent to students**. Ultimately, this system should be more motivational to students because it enables them to know where they stand after each assessment, and to get the grades they have truly earned and deserve.

References

Hong Kong Polytechnic University. (n.d.). Guide to OBE: Aligning Curriculum, Teaching and Assessment with ILOs: Rubrics. Retrieved from http://www.polyu.edu.hk/obe/08_3_3.php

Mueller, Jon. (2016). Rubrics. Retrieved from <http://jfmuller.faculty.noctrl.edu/toolbox/rubrics.htm>

Selke, Mary J. Goggins. (2013). Rubric assessment goes to college : objective, comprehensive evaluation of student work. Lanham, Maryland : Rowman & Littlefield Education.

Relevant Lingnan University Resources

CAOBE (Centre for Advancement of Outcomes-Based Education). (2017a). *From Rubrics to Grades: Putting Criterion-Based Referencing into Practice* [Video], Open Forum by the CAOBE, Teaching and Learning Centre, Lingnan University, Hong Kong. May 10, 2017.

Available at: <http://tlc.ln.edu.hk/caobe/events/ws5/videos>

This is the video of the original 'From Rubrics to Grades' Forum where each of the three methods were explained and demonstrated by the three Professors who have contributed to this Guidebook.

CAOBE (Centre for Advancement of Outcomes-Based Education) (2017b). Resources: Rubrics. Retrieved from <http://tlc.ln.edu.hk/caobe/resources#rubrics>

This Rubrics section of the Resources page gathers together the links for all the CAOBE's resources related to rubrics and Criterion-Based Assessment, including past newsletters and website resources including the 'Online OBE Repository'.

Hampton, Mark (2016) *Workshop on Criterion Referenced Assessment and the Humanities*, Teaching and Learning Centre, Lingnan University, October 19, 2016.

<https://study.ln.edu.hk/tlc/events/criterion-referenced-assessment-and-humanities>

This workshop addressed the upcoming switch to full criterion-referencing in the 2017-18 year at Lingnan, by giving practical suggestions and examples of various kinds of rubrics, adapted for different tasks and different purposes. The example rubrics are available for download.

Appendix 1: Lingnan's Grading System

ACADEMIC REGULATIONS FOR UNDERGRADUATE PROGRAMMES Regulations Governing Undergraduate Studies (applicable to students of 4-year programmes)

From: <http://www.ln.edu.hk/reg/docs/arup4.pdf>

Point 18. Grading System (p 15)

18.2 Grades are awarded according to the following system:

Grade	Standard	Sub-divisions	Grade Points
A	Excellent	A	4.00
		A-	3.67
B	Good	B+	3.33
		B	3.00
		B-	2.67
C	Fair	C+	2.33
		C	2.00
		C-	1.67
D	Pass	D+	1.33
		D	1.00
F	Failure	F	0
I	Incomplete		0*
M	Merit		no grade point given*
VS	Very Satisfactory		no grade point given*
S	Satisfactory		no grade point given*
U	Unsatisfactory		no grade point given*
PASS/FAIL			no grade point given*

*Not included in the calculation of grade point average.

Appendix 2: Examples of Analytic and Holistic rubrics

As explained in the second section of this guide, both analytic and holistic rubrics incorporate the same information, in that they include all criteria and differentiate between levels of performance. The main difference between the two types is that in a holistic rubric, the criteria are combined and conflated, into a single, detailed description for each performance level. In a holistic rubric the descriptions would tend to be more concise than in an analytic rubric, making it much quicker to mark from a holistic rubric, but making it less effective in giving feedback to students. This is why, generally speaking, analytic rubrics are preferred for formative classroom assessments, while holistic rubrics are very useful for final examination or other summative purposes.

Examples 1 and 2 below give very clear examples of the same rubric in both analytic and holistic forms. Example 1 is simplified in order to make the correspondences clear.

Example 1: Analytic converted to Holistic

RESEARCH RUBRIC (Analytic)

(Adapted from Mueller, 2016, "Research Rubric")

This is a simplified example so readers can clearly see the relationship between analytic and holistic rubrics.

Criteria	Weighting	Poor (1)	Good (2)	Excellent (3)
Sources Used	10%	Few sources used; little engagement with sources	Some relevant sources used and engaged with	A good number and variety of sources used and engaged with well
Historical Accuracy	30%	Lots of historical inaccuracies	Few inaccuracies	No apparent inaccuracies
Organisation	10%	Cannot tell from which source information came	Can tell with difficulty where information came from	Can easily tell which sources information was drawn from
Bibliography	10%	Bibliography contains very little information	Bibliography contains most relevant information	All relevant information is included

RESEARCH RUBRIC (Holistic)

(Adapted from Hong Kong Polytechnic University, n.d., "Analytical vs. Holistic Rubrics")

This is the same rubric converted into a holistic form. Rather than judging every individual criteria and then adding up the marks, the marker makes a holistic judgement based on which level the students' work falls into on average.

<p>3 - Excellent Researcher</p> <ul style="list-style-type: none"> • good number and variety of sources used and engaged well with • no apparent historical inaccuracies • can easily tell which sources information
<p>2 - Good Researcher</p> <ul style="list-style-type: none"> • some relevant sources engaged with • few historical inaccuracies • can tell with difficulty where information came from • bibliography contains most relevant information
<p>1 - Poor Researcher</p> <ul style="list-style-type: none"> • few sources, little engagement • lots of historical inaccuracies • cannot tell from which source information came • bibliography contains very little information

Example 2: Holistic converted to Analytic

ANALYTIC RUBRIC

Content Knowledge for Teacher Candidates, Initial and Advanced

(From Selke, 2013, p. 26)

Table 3.3. NCATE Standard 1a Rubric Converted to Analytic Format

<i>STRAND</i>	<i>UNACCEPTABLE</i>	<i>ACCEPTABLE</i>	<i>TARGET</i>
Breadth of Content Knowledge	Teacher candidates have inadequate knowledge of content that they plan to teach.	Teacher candidates know the content that they plan to teach.	Teacher candidates have in-depth knowledge of the content that they plan to teach.
Professional, State, Institutional Standards Alignment	[Candidates] are unable to give examples of important principles and concepts delineated in professional, state, and institutional standards.	[Candidates] can explain important principles and concepts delineated in professional, state, and institutional standards.	[Candidates] demonstrate their knowledge through inquiry, critical analysis, and synthesis of the subjects as described in professional, state, and institutional standards.
Percentage of Program Completers Passing State Assessments	Fewer than 80 percent of the unit's program completers pass the content examinations in states that require examinations for licensure.	Eighty percent or more of the unit's program completers pass content examinations in states that require examinations for licensure.	All program completers pass the content examinations in states that require examinations for licensure.
Depth of Content Knowledge	Candidates in advanced programs for teachers do not have an in-depth knowledge of the content that they teach.	Candidates in advanced programs for teachers have an in-depth knowledge of the content that they teach.	Candidates in advanced programs for teachers are recognized experts in the content that they teach.

HOLISTIC RUBRIC

Content Knowledge for Teacher Candidates, Initial and Advanced

This is the same Analytic rubric as above but in holistic form (Selke, 2013, p. 25)

Table 3.2. NCATE Standard 1a—Content Knowledge for Teacher Candidates, Initial and Advanced

<i>UNACCEPTABLE</i>	<i>ACCEPTABLE</i>	<i>TARGET</i>
<p>Teacher candidates have inadequate knowledge of content that they plan to teach and are unable to give examples of important principles and concepts delineated in professional, state, and institutional standards. Fewer than 80 percent of the unit's program completers pass the content examinations in states that require examinations for licensure. Candidates in advanced programs for teachers do not have an in-depth knowledge of the content that they teach.</p>	<p>Teacher candidates know the content that they plan to teach and can explain important principles and concepts delineated in professional, state, and institutional standards. Eighty percent or more of the unit's program completers pass the content examinations in states that require examinations for licensure. Candidates in advanced programs for teachers have an in-depth knowledge of the content that they teach.</p>	<p>Teacher candidates have in-depth knowledge of the content that they plan to teach as described in professional, state, and institutional standards. They demonstrate their knowledge through inquiry, critical analysis, and synthesis of the subject. All program completers pass the content examinations in states that require examinations for licensure. Candidates in advanced programs for teachers are recognized experts in the content that they teach.</p>

Example 3: Lingnan sample Holistic rubrics

HISTORY DEPARTMENT Mid-term Quiz/ Final Exam Rubrics

Supplied by Prof Mark Hampton

Note:

These descriptors are "ideal types." Essays that are solidly characteristic of one of the descriptors above will normally be awarded a score right in the middle of one of the grade ranges: e.g., a solid B is a 59 and a solid C is a 52. Essays that exhibit some characteristics from one of the descriptors, and some characteristics of another descriptor will be awarded a borderline or intermediary grade: e.g., essays that exhibit some characteristics of an A and some characteristics of a B would be awarded a score around the border, say a 62 or a 63. In some cases, an essay may exhibit, e.g., some characteristics of an A and other characteristics of a C: in that case, a score in the B range is appropriate.

Short Answer Questions: 10 points each

A: 9-10	The answer contains no significant inaccuracy. It provides enough information to explain (as appropriate) "who or what," "where," and "when"; it concretely conveys a wider context that demonstrates the importance of the term in question.
B: 8	The answer contains no significant inaccuracy. It provides enough information to explain (as appropriate) "who or what," "where," and "when"; it conveys a wider context that demonstrates the importance of the term in question, but it may do so vaguely.
C: 7	The answer is mostly accurate, but may contain a significant inaccuracy. It provides enough information to explain (as appropriate) "who or what," "where," and "when," but it may do so somewhat vaguely or incompletely. It fails to convey an appropriate wider context.
D: 6	The answer may contain <u>some</u> meritorious concrete detail, but it either contains multiple significant inaccuracies or is too short to provide enough information to explain (as appropriate) "who or what," "where," and "when." It leaves out multiple essential details and fails to convey an appropriate wider context.
High F: 4-5	The answer may contain <u>some</u> meritorious concrete detail, but it either contains multiple inaccuracies or is too short to provide enough information to explain (as appropriate) "who or what," "where," and "when." Virtually every essential detail is missing from the answer, and the answer fails to convey an appropriate wider context.
Low F: 0-3	The answer is entirely or almost entirely inaccurate or without meaningful content.

(... over)

Essay Question: 70 points

A: 63-70	This essay highlights the significant points of the primary source (e.g., its argument or purpose, as appropriate); it explains clearly and thoroughly how the primary source illuminates wider themes of world history; it provides ample concrete examples; it does not contain inaccuracies. The essay is highly focused and does not contain extraneous information.
B: 56-62	This essay highlights significant points of the primary source; it explains how the primary source illuminates wider themes of world history, but it may omit a significant theme; it provides some concrete examples, but not enough to demonstrate an exceptional mastery of course material. The essay may contain minor inaccuracies or a small amount of extraneous information.
C: 49-55	The essay solidly describes the primary source, but may tend toward vagueness; it connects to some of wider themes of world history, but does so in a vague way; it has little concrete detail. The essay may contain minor inaccuracies or a significant amount of extraneous information.
D: 42-48	The essay provides a basic summary of the primary source. It shows some slight hint of engaging with major themes of world history, but does not do so with any concrete detail. The essay contains significant inaccuracies and significant amounts of extraneous information.
High F: 28-41	The essay provides a basic summary of the primary source, but little beyond that. The essay is silent on wider themes of world history, or contains major inaccuracies, or it consists almost entirely of extraneous information.
Low F: 0-27	The essay is incoherent or virtually incoherent, with virtually no concrete detail; alternately, it provides substantial detail but it is almost entirely incorrect. An essay that can at least adequately summarize the primary source would not receive a score this low, even if the student can provide no additional detail.

Centre for Advancement of Outcomes-Based Education
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<http://tlc.ln.edu.hk/caobe/resources>

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