**Methodologies for mark adjustment**

**1. Z-score normalization (see worked example in Appendix 1)**

***Purpose***

1.1 This method provides a systematic and auditable method for adjusting marks when one or more units of assessment in a module turn out to be easier or more difficult than originally intended. It is intended to be used for modules in FHEQ Levels 4 - 7.

1.2 The principle is to ensure that the distribution of marks for the module reflect the performance of students in relation to the learning outcomes of the module.

***Arithmetic***

1.3 The normalization procedure specifies the required mean and standard deviation (Req\_Mean and Req\_SDev).

1.4 For each candidate, the adjusted mark A is derived from the raw mark R using the following equation and inbuilt Excel function:

 A = S\*Req\_SDev + Req\_Mean

 where S = STANDARDISE(R, Raw\_Mean, Raw\_SDev)

NB: care must be taken to ensure that 0% ≤ A ≤ 100%. *(The spreadsheet provided will highlight any adjusted marks falling outside of this range; the Module Leader must then take appropriate action.)*

***Procedure***

1.5 When all units of assessment have been marked and the marks aggregated for the module, the Module Leader should look carefully at the distribution of marks in relation to the performance of the cohort and how candidates’ work maps on to the University’s grade descriptors. If the academic standards are correct then no further action is required. Otherwise, the Module Leader should notify the Board of Examiners Chair, propose values for the Required Mean and Standard Deviation, and carry out the marks adjustment using the spreadsheet provided. The adjustment can be carried out on the aggregated module marks or, where it is apparent that a particular unit of assessment is causing an unacceptable distribution of marks, the adjustment can be carried out on that single unit of assessment.

**2. Quadratic scaling (see worked example in Appendix 2)**

***Purpose***

2.1 This method provides a systematic and auditable method for adjusting marks when one or more units of assessment in a module turn out to be easier or more difficult than originally intended. It is intended to be used for modules in FHEQ Levels 4 - 7.

2.2 The principle is to ensure that the distribution of marks for the module reflect the performance of students in relation to the learning outcomes of the module.

***Arithmetic***

2.3 The scaling procedure requires a pair of points (Actual, Desired) where the Actual mark is to be adjusted to the Desired – for example (75%, 70%). The resultant marks adjustment will keep 0% and 100% fixed – something that Z-Score Normalization cannot always guarantee. Once the pair (Actual, Desired) are specified, a factor K is calculated thus:

 K = (Desired - Actual) / (Actual \* (Max - Actual))

2.4 For each candidate, the adjusted mark A is derived from the raw mark R using the following equation:

 A = R + K\*R\*(Max - R)

***Procedure***

2.5 When all units of assessment have been marked and the marks aggregated for the module, the Module Leader should look carefully at the distribution of marks in relation to the performance of the cohort and how candidates’ work maps on to the University’s grade descriptors. If the academic standards are correct then no further action is required. Otherwise, the Module Leader should notify the Board of Examiners Chair, propose values for the pair or points (Actual, Desired), and carry out the marks adjustment using the spreadsheet provided. The adjustment can be carried out on the aggregated module marks or, where it is apparent that a particular unit of assessment is causing an unacceptable distribution of marks, the adjustment can be carried out on that single unit of assessment.

**3. 4-point piecewise linear scaling (see worked example in Appendix 3)**

***Purpose***

3.1 This method provides a systematic and auditable method for adjusting marks when one or more units of assessment in a module turn out to be easier or more difficult than originally intended. It is intended to be used for modules in FHEQ Levels 4, 5 and 6 – where the pass mark is 40%. (For modules at FHEQ Level 7, where the pass mark is at 50%, 3-point piecewise linear sScaling should be used.)

3.2 The principle is to ensure that the distribution of marks for the module reflect the performance of students in relation to the learning outcomes of the module.

***Arithmetic***

3.3 The scaling procedure requires four scaling points **P**, **L**, **U** and **F**. These points are the marks which are considered to define the start of the **P**ass, **L**ower second, **U**pper second, and **F**irst class bands for the assessment concerned (normally 40, 50, 60 and 70% respectively).

3.4 For each candidate, the adjusted mark A is derived from the raw mark R using the following equations.

 When: R = 0 A = 0

 0 < R < P A = R×40/P

 R = P A = 40

 P < R < L A = 40 + (R-P)×(50-40)/(L-P)

 R = L A = 50

 L < R < U A = 50 + (R-L)×(60-50)/(U-L)

 R = U A = 60

 U < R < F A = 60 + (R-U)×(70-60)/(F-U)

 R = F A = 70

 F < R < 100 A = 70 + (R-F)×(100-70)/(100-F)

 R = 100 A = 100

If, for example, it is considered that first class performance is being evidenced by students who have achieved 74% or more, then F would be moved from 70 to 74%.

 ***Procedure***

3.5 When all units of assessment have been marked and the marks aggregated for the module, the Module Leader should look carefully at the work of those candidates that have marks close to the Pass and First class boundaries. If the academic standards are correct then no further action is required. Otherwise, the Module Leader should notify the Board of Examiners Chair, propose values for the scaling points, P, L, U and F, and carry out the marks adjustment using the spreadsheet provided. The adjustment can be carried out on the aggregated module marks or, where it is apparent that a particular unit of assessment is causing an unacceptable distribution of marks, the adjustment can be carried out on that single unit of assessment.

**4. 3-point piecewise linear scaling (see worked example in Appendix 4)**

***Purpose***

4.1 This method provides a systematic and auditable method for adjusting marks when one or more units of assessment in a module turn out to be easier or more difficult than originally intended. It is intended to be used for modules in FHEQ Level 7 (UG or PGT) where the pass mark is 50%. (For modules at FHEQ Levels 4-6, where the pass mark is at 40%, 4-point piecewise linear scaling should be used.)

4.2 The principle is to ensure that the distribution of marks for the module reflect the performance of students in relation to the learning outcomes of the module.

***Arithmetic***

4.3 The scaling procedure requires three scaling points **P**, **U** and **F**. These points are the marks which are considered to define the start of the **P**ass, **U**pper second (≡ Merit), and **F**irst class (≡ Distinction) bands for the assessment concerned (normally 50, 60 and 70% respectively).

4.4 For each candidate, the adjusted mark A is derived from the raw mark R using the following equations.

 When: R = 0 A = 0

 0 < R < P A = R×50/P

 R = P A = 50

 P < R < U A = 50 + (R-P)×(60-50)/(U-P)

 R = U A = 60

 U < R < F A = 60 + (R-U)×(70-60)/(F-U)

 R = F A = 70

 F < R < 100 A = 70 + (R-F)×(100-70)/(100-F)

 R = 100 A = 100

If, for example, it is considered that First class (Distinction) performance is being evidenced by students who have achieved 74% or more, then F would be moved from 70 to 74%.

***Procedure***

4.1 When all units of assessment have been marked and the marks aggregated for the module, the Module Leader should look carefully at the work of those candidates that have marks close to the Pass and First class boundaries. If the academic standards are correct then no further action is required. Otherwise, the Module Leader should notify the Board of Examiners Chair, propose values for the scaling points, P, U and F, and carry out the marks adjustment using the spreadsheet provided. The adjustment can be carried out on the aggregated module marks or, where it is apparent that a particular unit of assessment is causing an unacceptable distribution of marks, the adjustment can be carried out on that single unit of assessment.

**5. Board of Examiners**

5.1 When the marks adjustment has been applied, the Module Leader presents the completed spreadsheet to the Board of Examiners Chair, who will review the proposed marks adjustment. If the Board of Examiners Chair is satisfied with the distribution, the adjusted marks will be entered into SITS.

5.2 The Board of Examiners is presented with the raw and adjusted marks and advised of the adjustment procedure that has been applied and the justification for it. In exceptional circumstances the Board may request that the marks adjustment is modified – or that the raw marks are reinstated – in which case the marks be entered in SITS will be replaced by the new agreed distribution.

5.3 If marks adjustment has been carried out and agreed by the Board of Examiners, the External Examiner is presented with the raw and adjusted marks and advised of the adjustment procedure that has been applied and the justification for it. If the External Examiner is satisfied with the adjustment, no further action is required. Otherwise, the Board of Examiners Chair will discuss the matter with the External Examiner in order to reach consensus on the way forward.

5.4 If marks adjustment has been carried out and agreed by the Board of Examiners and the External Examiner, a report is made to Student Progress and Assessment Board (SPAB), in line with the *Code of practice for assessment and feedback* using the template below.

**Case for adjustment of marks**

*(please delete the prompts after completing the case)*

**Module code: ……………. Module title: …………….……………………………………….**

**Academic year: 2018/19 Semester: 2**

**Cohort size: ……..**

**Background and justification**

*Consider the following when making your decision to adjust marks:*

*Why is mark adjustment considered necessary: is the module mean, failure rate, or proportion of first class marks unusually high or low? Is this in comparison to performance in other modules in the same level and semester, or the historical performance of this module (3-5 year trend)? Is a particular unit of assessment responsible? (e.g. how do exam and coursework performance correlate?) If a scatterplot or cumulative distribution has been used to identify the anomaly, please include that here.*

*What is thought to have caused the anomalous mark distribution: is the module new? Has it been taught by different staff for the first time? Have the teaching and/or assessment methods been changed? Did student feedback or evaluations highlight any problems?*

…………………………..

**Details of proposed adjustment**

*Which method of mark adjustment has been used (z-score, quadratic, or piecewise linear) and what scaling parameters were used? What was the reason for choosing these values?*

*Histograms of raw and adjusted should be imported from the appropriate Excel workbook; right-click the chart, Copy, and then Paste Special | Picture (Enhanced Metafile) into this document.*

*Provide a summary of the key statistics to show the effect of the mark adjustment:*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  | **Raw** | **Adjusted** |
| **UoA** | **Type** *(exam, coursework, etc)* | **Weighting** | **Mean**  | **Std Dev** | **Mean**  | **Std Dev** |
| 001 |  |  |  |  |  |  |
| 002 |  |  |  |  |  |  |
| *etc* |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |

*Has the mark adjustment had the desired impact – for example on failure rate or proportion of first class marks?*

*Check that there has not been any undesirable consequences to the cohort following this process*

……………………

**Comments from External Examiner**

*Has the External Examiner been consulted? Were they in agreement with the proposed mark adjustment?*

*Was this undertaken at Pre-Board following advice from the External Examiner and then reported to the Board of Examiners? What was the date of the BoE where this was either reported or further discussed and agreed? Include any relevant extracts from the BoE Examiners’ minutes etc.*

………………..

**Future mitigation**

*What will be done to avoid a reoccurrence of the need for mark adjustment in the future?*

 ………………..

Chair of Board of Examiners: …………………

Date: …………………

Associate Dean (L&T): …………………

Faculty:

**Appendix 1**



**Appendix 2**



**Appendix 3**



**Appendix 4**

