



University of
St Andrews

Assessment: marking and standard setting

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UNIVERSITY OF ST ANDREWS

POLICY ON ASSESSMENT: MARKING & STANDARD SETTING

1. Preface

The paper Assessment Policies and Procedures deals with the formal processes involved in assessment (for example, setting assessments, examination procedures, Module Boards, the role of External Examiners, Module Boards, deferred assessment, the return of exam scripts and security of the examination process). It also made various suggestions in relation to marking practices.

This policy does not contradict the Assessment Policies and Procedures policy but simply serves to amplify and clarify details of the procedures surrounding marking.

The formulation of this policy has been guided by the Academic Infrastructure outlined by the QAA and in particular the UK Quality Code. All assessment practices also aligned with the SCQF (Scottish Credit and Qualifications Framework).

2. Introduction

The 'Assessment Policies & Procedures' document outlines the procedures in the conduct of examinations but also makes brief comments about marking practices. It is made clear that External Examiners should see samples of continuous assessment; that External Examiners should not change individual marks; that oral presentation is a legitimate part of assessment (and that appropriate record keeping is important for this); that anonymisation by matriculation number at all levels for assessed written coursework and examinations is required where practicable; and that (student) peer assessment should not normally constitute more than 25% of the work of a module. In addition the paper makes **three specific points about marking:-**

- **Schools are expected to produce and publish grade/mark descriptors for each level of study and type of assessment** (where appropriate), which conform to the SCQF guidelines for that level (eg 1000-level modules map onto SCQF level 7, 2000-level modules onto SCQF level 8, etc.). Grade/mark descriptors should be sufficiently relevant to the assessment for which they are used so as to provide meaningful feedback to students about their performance. Additional comments on assessment should amplify further the judgments made, highlighting areas for improvement as well as justifying the award of the mark.
- **The descriptors will have been notified to the External Examiner** as part of an initial briefing, on which an External Examiner may comment.
- **Schools vary in practice with regard to marking strategies.** Marking strategies should be appropriate both for the form of assessment and for the subject disciplines, and they should be in accordance with best practice in that discipline. Some Schools use blind double marking; in some others, the second marker has the advantage of the comments of the first marker. The External Examiner should be briefed about the School practices and has the right to comment. A student's final module grade should not normally be awarded on the basis of a single individual's marking of all elements, and in exceptional cases where this does occur, this should be notified clearly to the External Examiner and to the Assistant Vice-Principal (Dean of Learning & Teaching). The identification of second markers is the responsibility of the Head of School (or other delegate). A second marker may be appointed

outwith the School or University, if necessary, for example when an appropriate specialist is not available in the University.

3. Assessment

Assessment is made of students' abilities in the various modules that they take. **Assessment must take place against published criteria** that are appropriate for the work in hand and must reflect what it is that modules and programmes at specific SCQF levels intend to deliver.

Note that not every element of every programme has to deliver on all that the programme sets out to achieve: the properties of various modules combine to deliver on the programme.

Assessment can be diagnostic, formative or summative (and in some instances will be two or three of these – they are not mutually exclusive). **Diagnostic assessment** can be used to determine standards of pre-existing knowledge or competency at the start of a class; **formative assessment** is used to help determine how students are progressing without the need to have the marks used as a formal judgment. **Summative assessment** – that which counts towards module grades – is generally also formative. Effective feedback on performance in summative examinations should help students improve their performance in future tests.

Key features of the University of St Andrews Assessment Strategy

If Schools identify processes that ensure that assessment is transparent, reliable, valid and objective, then the University and students can have confidence that the marks assigned are appropriate.

- **Transparent:** There are clear criteria against which the work is being judged and students are informed of all assessment procedures at the beginning of each phase of the programme.
- **Reliable:** Assessment provides an accurate estimate of student performance such that, if assessed again by a different exam or examiner the same outcome would occur.
- **Valid:** Does the examination test what it should? Does the assessment match the learning objectives or exam blueprint?
- **Objective:** The ideal for assessment – both content and procedures – is that it should be sufficiently clear and free from bias such that two independent, properly informed markers would reach the same mark.

Standard setting can be understood as a simple question: *how is it determined that a particular element of work is worth the mark given?* **Standard setting** in St Andrews University does not involve relative (norm-referenced) methodology requiring the fitting of marks to a predetermined, normally distributed, grade curve such that a fixed proportion of students achieve particular grades (and such that the proportions of students achieving those grades can be standardized across disciplines). This approach would require homogeneity of student abilities and numbers for every module in every subject in every academic year. It also cuts across the independence of different Schools and disciplines to determine their own standards. In most academic Schools standard setting is relatively straightforward.

- Many tests of complex calculation or knowledge allow for an accumulation of marks on an objective basis. All that is normally required here is that the questions set show an incremental level of difficulty such that there is sufficient challenge to discriminate between students with different aptitudes and abilities.

- For more qualitative work (such as essays, dissertations, reports) the normal standard setting methodology is that every student's work is assessed individually using criterion referenced standards. This approach determines whether a student knows enough for a particular purpose such as passing a module or is achieving a level of performance consistent with certain degree classification levels. The assessor determines the level of performance required of students. Effective marking must reflect properly what the intended learning outcomes of the teaching in question are.

There are however particular requirements in some disciplines, such as Medicine, where issues of professional competency require a more formal approach to standard setting. Traditionally, pass marks for assessments have been set at an arbitrary level. However since assessments are likely to vary in difficulty some mechanism must be adopted by which an appropriate pass mark is determined. In order to achieve this, the Bute Medical School applies standard setting to individual components of every assessment. Here, standard setting is a procedure which estimates the degree of difficulty of an assessment. It ensures consistency of results between different forms of assessment and between different modules and requires that specific levels of competency be shown in order to pass a test. This requires methods based on judgments about test questions, such as the Angoff (or a modified Angoff). The Medical School draws the test judges from those who taught the material in the modules and those who had particular expertise in certain disciplines within the programme. These judges meet to consider and standard set the exam paper.

External Examiners and Assistant Vice-Principal (Dean of Learning & Teaching) have a Critical Role in Standard Setting. Both External Examiners and the Assistant Vice-Principal (Dean of Learning & Teaching) have a role in approving programmes of study and modules; examination and coursework formats; exam questions; and in reviewing the performance of students in examinations. The External Examiners provide a discipline-based reference point for work in St Andrews, while the Assistant Vice-Principal (Dean of Learning & Teaching) provides Faculty-wide perspectives that allow them to monitor examination outcomes year-on-year and to require review of module outcomes if there is variance from expected outcomes (expressed for example, as a disproportionate number of failing grades, the absence of grades at the highest levels, or by distributions of marks that are skewed in some way); see below under "grade adjustment".

Marking

The intention here is to deliver in systematic form a representative mark for each piece of work within a module that can be accumulated with other marks to form a single composite grade for that module. It is important to make clear the difference between marks and grades.

Marks are given to pieces of work – essays, dissertations, examination questions, oral presentations and so on. This marking will often be out of 20 (that is, direct onto the Common Reporting Scale) but need not be. Equally permissible is the use of percentage scales to mark particular types of work, or cumulative scores out of any number (the total number correct from a 55 item multiple choice questionnaire for example).

Grades are expressed on the 20-point Common Reporting Scale and give a final standardized outcome for work done. Grade conversion refers to the process by which marks are converted to grades on the 20-point Common Reporting Scale. The grades used across all assessed work must be scaled identically in order that reliable comparisons can be made of students' abilities across different modules, and so that a reliable overall grade point average (GPA) can be calculated if required. The GPA can be used either as a summary statistic of students' performance in and of itself, or it can be used as the basis of Honours Degree Classification.

The grades for individual modules, and an overall summary statistic taken at the end of any year of study, are of value to students as indices of academic progress; they are of value to academic Schools in determining admission to different programmes and levels of study; and they are of value to employers in that they provide a reliable and valid indicator of ability in specific subjects.

The key to marking does not lie in the 20-point Common Reporting Scale, nor a percentage scale, nor even in grade conversion and/or adjustment. Rather, the critical parts are the construction of good questions and marking that is transparent, reliable, valid and as objective as possible.

All grades for all credit bearing modules, across Faculties and levels of study (SCQF 7–11 [1000–5000]) are reported on the 20-point Common Reporting Scale, **allowing comparability of outcomes across all modules**. The 20-point Common Reporting Scale was introduced (in academic year 1994-1995) in order to have consistency of module results across Schools. At the time of introduction there was a need, in the new modular degree structure, for a common approach to module grade reporting in order for Schools effectively to run joint degrees. The introduction of degree programmes that cross multiple Schools (such as the undergraduate Sustainable Development programme) and the development of interdisciplinary degree programmes reinforces the need for a common reporting mechanism.

As well as comparability across all credit bearing modules, the use of a Common Reporting Scale has merit in that **it allows for flexibility of marking strategies across Schools**. Different marking strategies, appropriate to particular disciplines or types of assessment, can all be accommodated under a Common Reporting Scale. Such flexibility is essential in a multi-Faculty University where very different types of examination and marking strategies are required by different disciplines.

As with most forms of test measurement, there are points that require clarification. In this context, it is important to understand that theories of psychometric measurement are not immutable and that there has been, and still is, debate about them. ^[1] The 20-point Common Reporting Scale can potentially be used and understood in different ways. For example:

- **The 20-point Common Reporting Scale could be thought of as an ordinal scale** (following the terminology of Stevens [1951] ^[2]). That is, it could be used in categorical terms, in which the numbers themselves have no meaning beyond the fact that they can be ordered from smallest to largest. If marking is done on another scale (for example, percentages) then conversion can be made by systematically interpreting particular bands of marks as belonging to particular grade categories. If this procedure is used properly, the only grades appearing would be integers from 0 to 20, these being discrete categories. An ordinal scale measures rank order – biggest to smallest; first, second, third, and so on. Decimal points between ranks cannot be used because the distances between categories are not necessarily constant – the distance from first to second will likely be different to that between second and third. It is not possible to have "first and a half".
- **The 20-point Common Reporting Scale can be thought of as an interval scale** (again following Stevens) in which the intervals between integers are equal (and if zero is taken as an absolute reference point, it could be thought of as a ratio scale). In this case the 20-point Common Reporting Scale is not one of rank-ordered categories but a quantitative measure in which decimal places are meaningfully used (inferring that the intervals between numbers are equal). Following conversion from the marking scale, grades between 0 and 20 (with decimal places used) are assigned to work, and from these simple descriptive statistics such as means and medians are meaningfully calculated. ^[3]

- **The 20-point Common Reporting Scale is used in many Schools as a marking scale as well as a reporting scale:** that is, marking is done directly onto the 20-point scale. If this is the case for all elements that contribute to the overall grade for a module then there is no distinction between marks and grades, and at the point of reporting marks on the 20-point scale become grades.
- Regardless of the process by which different Schools arrive at the grades for modules **only module grades on the 20-point Common Reporting Scale are used for degree classification.** For degree classification, credit weighted grade point averages (GPAs) and credit weighted medians are calculated, and decimal places used. Since its introduction in 1994, the 20-point scale has been used as an interval scale that permits generation of statistics (means and medians) that have meaning to students, staff and External Examiners. It is commonplace for staff and students to track GPAs over time in order to monitor academic progress, and all Schools use the 20-point Common Reporting Scale for Honours Degree Classification, using decimal places and treating it as an interval scale.

[1] See for example Hand DJ (1996) Statistics and the Theory of Measurement. *Journal of the Royal Statistical Society, Series A (Statistics in Society)* 159: 445-492.

[2] Stevens SS (1951) Mathematics, measurement and psychophysics. In *Handbook of Experimental Psychology* (ed. SS Stevens). Wiley, NY. It is notable that in discussing problems of measurement, and in formulating the differences between nominal, ordinal, interval and ratio scales, Stevens noted that in practice it is often not possible to decide "... into which category a given scale falls" (p. 30).

[3] Note that while, in principle, translation from a 20 point interval scale to a percentage scale could be straightforward, it is made more difficult because there are criteria for passing and for achieving particular categories in a percentage scale. For example, if 40% is set as a 7 and 75% as a 17, the translation between the 20-point Common Reporting Scale and the percentage scale will not be linear.

4. Programme Specifications, Graduate Attributes and Grade/Mark Descriptors

Programme Specifications

Programme specifications contain basic data about a programme of study (its length, the intended qualification, SCQF levels and so on) and information about the methods of teaching and assessment. More importantly, programme specifications contain a description of the **intended learning outcomes** of the programme and the means by which those outcomes will be achieved and demonstrated. Programme specifications are of value to prospective students, current students and staff, and form an important part of students' transcripts on graduation. The intended learning outcomes can be most effectively described in terms of **graduate attributes** – what knowledge, skills, and qualities we wish our students to acquire and to demonstrate.

Graduate Attributes

The term **graduate attributes** describes the knowledge, skills and qualities that distinguish an individual in possession of a University degree. The University's ELIR Reflective Analysis provides a list of graduate attributes appropriate for students in St Andrews. Collectively, what is described represents the intended learning outcomes of our programmes: teaching is intended to equip students with these graduate attributes.

Grade/Mark Descriptors

The term "grade/mark descriptors" was previously used in the 'Assessment Policies & Procedures' document but here a distinction is drawn between grade and mark descriptors.

In discussing **grade and mark descriptors** it is important to maintain the clear separation between marks and grades referred to above. The Common Reporting Scale is intrinsically descriptive: 20 is the very best mark, 0 clearly the worst, with all others scaled between. To understand a grade, reference needs to be made to the list of graduate attributes: high grades will indicate better performance in relation to these. The value of grade descriptors lies in the ability of Schools to use particular graduate attributes to define integers or levels along the Common Reporting Scale.

Mark descriptors are of critical importance because they identify, in an explicit rather than implicit manner, clearly and precisely what qualities are being assessed in any given piece of work. Mark descriptors are key words and phrases that should be associated with graduate attributes, identifying succinctly the dimensions on which marks can be awarded. An essay for example might be judged against a series of mark descriptors. For example, one graduate attribute may be the "ability to evaluate hypotheses, theories, methods and evidence within their proper contexts". In regard to a particular piece of work an Examiner could look for evidence of the mark descriptor "evaluation".

It should normally be possible to specify, for each class of assessed work, what graduate attributes are being fostered and what mark descriptors are appropriate. Mark descriptors must suit the level of work (1000–5000), the nature of the work (examination essay, extended dissertation, short answer [gobbet] and so on) and relate directly to the graduate attributes specified by modules and programmes.

When marking it is effective to use **factorized mark descriptors** in a grid. Illustrated below is how factorized mark descriptors can be created. In each cell a small piece of text describes what would be required of a piece of work to merit a particular evaluation. As many descriptors as required can be used. Such a grid need not be used algorithmically. It serves as a clear guide to students as to what is expected and required; it serves as a guide for examiners while marking; and it provides a basis for clear feedback on performance to students.

Mark descriptor	0-3	4-6	7-10	11-13	14-16	17-20
Evaluation	Descriptive text in cell					
Core knowledge						
Resource use						

Using graduate attributes and mark descriptors makes it possible to establish clear relationships between **programme specifications** (*which specify as intended learning outcomes graduate attributes that we wish our students to possess as a result of their education*) and **mark descriptors** (*how we mark the various forms of assessment*). Mark descriptors offer guidance to students preparing for assessments, and to staff marking them; it should be clear to students what is expected of them and how they will be assessed; similarly, staff must have expectations and mark in accordance with them.

5. Forms of Marking and Assessment

Schools vary in practice with regard to marking strategies but within agreed limits set down by the University. As made clear in the 'Assessment Policies & Procedures' document marking strategies should be appropriate both for the form of assessment and for the subject disciplines, and they should be in accordance with best practice in that discipline.

The use of programme specifications, graduate attributes and mark descriptors in setting and marking assessments is a process that applies to all Schools. The content and form of these will differ dependent on each discipline's needs.

Role of External Examiners and the Assistant Vice-Principal (Dean of Learning & Teaching): External Examiners and the Assistant Vice-Principal (Dean of Learning & Teaching) have a role both before and after examinations. Grade descriptors, forms of assessment, the details of examinations and coursework should be reviewed by External Examiners and the Assistant Vice-Principal (Dean of Learning & Teaching). After the assessment, work is reviewed by External Examiners and all proposed module grades are subject to final approval by the Assistant Vice-Principal (Dean of Learning & Teaching), who has the power to return proposed module grades to School for review.

Examination and Coursework Setting: All assessments should test the relevant intended learning outcomes. To this end the form, level and content of any assessment should be appropriate to the module. It is important to be clear at the outset of teaching a module what it is that students should achieve, both in terms of knowledge and the other attributes that teaching and learning should foster.

Academic Misconduct: It is important in setting any assessment to attempt to reduce the likelihood of academic misconduct. For example, very generic questions are more likely to have an answer that can be downloaded or purchased. Questions should reflect the specific teaching delivered in a manner that requires a focused response and continual assessments should be varied from year-to-year to minimize the opportunity for copying.

Volume of Assessment: This should relate explicitly to the credit weighting of the module. It is inappropriate to use either too much or too little assessment. The credit weighting of a module is calculated on hours of study: one credit is worth ten hours of study. This should be reflected in the volume of assessment.

Various forms of assessment can be used: Programmes of study should include a range of different forms of assessment that will be suited to different discipline requirements and challenge students accordingly. Though it will often be appropriate, it is **not** necessary to include different forms of assessment within one module. The use of different forms of assessment *within* and *between* modules is permitted, within the context of programmes of study in which the different component parts will serve different educational ends. It is expected that there will be a coherent strategy that reviews the portfolio of assessments used in the modules constituting a programme of study, to ensure that it contains enough variety and complementarity of assessment. Moreover, it is important to consider the timing of assessments, such that students can pace their work appropriately. Various forms of assessment include, *inter alia*:

Examinations

- **Unseen Examinations:** These are standard end of module examinations.
- **Seen Examinations:** In which students are told the questions in advance, but still attend an examination to complete the assessment. These offer the opportunity to revise for and reflect on specific questions.

- **Take away Examinations:** In which students write exam essays in their own time away from a standard examination hall setting.
- **Multiple Choice Questions:** These are explicit tests of knowledge, often based on recognition memory but capable of being used to test other skills. Guessing corrections can be applied if required but if they are going to be used, students must be informed in advance of the assessment.
- **Short note Answers (Gobbets):** These are tests of knowledge based on the recall of information rather than recognition. These have the potential to be marked semi-quantitatively if questions are drafted such that key words, phrases or ideas must be presented in order to earn marks.

Coursework

- **Group Work and Single Author Work:** The majority of assessment will be of individual students, but group working is not discouraged. Group work is when two or more students collaborate in the production of a collectively authored part of a piece of work submitted for assessment. Team working (that is when two or more students work together on a project or class assignment) is an attribute that Higher Education should encourage, and does not necessarily imply the production of collectively authored assessments. Group working should not constitute more than one fifth of an undergraduate programme or one third the work of a taught postgraduate programme, and often will be much less (down to nothing if appropriate for a particular discipline). The particular problems associated with the assessment of group work are discussed below.
- **Dissertations:** These may be of varying length, from very short pieces of journalism to final year extended study dissertations.
- **Practical Class or Fieldwork Reports:** These will often be presented in the form of a scientific paper (abstract, introduction, methods, results, discussion, references) or in some other appropriately structured format.
- **Poster Presentations, Oral Reports and Viva Voce Examinations:** Are all appropriate forms of assessment for many disciplines.
- **Alternative Forms of Assessment:** Schools are at liberty to develop alternative forms of assessment, particularly for use in resit examinations. These must be discussed with and approved by External Examiners and the Assistant Vice-Principal (Dean of Learning & Teaching).
- **Other forms of Assessment:** The forms of assessment are continually developing and changing, in response to (for example) emerging discipline needs or technological capability. Schools are encouraged to develop new forms of assessment, in consultation with External Examiners and the Assistant Vice-Principal (Dean of Learning & Teaching).

Different forms of Assessment require different forms of Marking

It is important to consider when setting assessments – either examinations or coursework – what the appropriate form of marking will be. Various types of marking include, *inter alia*:

- **Quantitative:** Marking that requires the accumulation of marks through a series of short exercises or problems producing a cumulative mark for the whole piece.
- **Qualitative:** Marking that requires academic judgments about the quality of a piece of work, typically written work. For this, factorized grade descriptors are valuable marking tools.
- **Competency-Based Marking:** Common in cases where it is important that standards of competency be demonstrated by the student and maintained in the discipline; Medicine provides clear examples of this.

- **Marking in Percentage Scales:** Will be appropriate for many quantitative exercises in which marks are accumulated across a series of exercises or steps within a larger problem.
- **Marking in other Scales:** Certain forms of assessment will produce marks out of a particular number (N). For example, multiple choice questionnaires can contain any number of elements that will produce an overall mark of X/N. Marking short answer questions (gobbets) might produce marks of this nature.
- **Marking on the Common Reporting Scale:** Marking on the Common Reporting Scale is most appropriate for longer items of written work, including coursework essays, examination essays or dissertations and reports. The use of factorized grade descriptors enables an explicit reference to be made to the knowledge and attributes that the work seeks to test and develop. Care must be taken when marking on the 20 point scale: being able to make twenty clearly discriminable judgments is feasible, but more than this requires examiners to be confident of the ability to discriminate at finer levels of resolution. It is not recommended that anything more than half-marks be attempted. The combined mark of two members of staff, or the combination of marks from a series of essays, can be reported to one decimal place.
- **Marking Oral Reports:** The use of clear criteria for the marking of both the content and form of an oral presentation should be available to students in advance of the exercise being undertaken. A written record of the assessment, made at the time of the oral presentation, should be available for feedback purposes. It is recommended that more than one assessor should be present during the oral presentation, but if this is not possible it is particularly important to have very clear marking criteria and written notes to show the student(s) and External Examiners how the mark has been arrived at.
- **Marking Poster Presentations:** The use of clear criteria for the marking of both the content and form of the poster should be available to students in advance of the exercise being undertaken.
- **Peer Assessment:** Is the assessment made by one student of another students' work. (This is also known as peer-to-peer assessment.) Peer assessment should not normally constitute more than 25% of the work of a module (see 'Assessment Policies & Procedures'). The use of peer-to-peer assessment has value in making transparent to students how assessment criteria work in practice. Further information on the use of these methods can be found at the Higher Education Academy.

Note that factorised mark descriptors can be used for many different forms of assessment such as written work, oral presentations and posters and can be made suitable for the level and nature of the work in question. All that is required is that consideration be given to what it is that the assessment is trying to achieve, with subsequent marking according to those factors.

Marking and Moderation

In disciplines where the norms for marking diverge from the guidelines below, the Assistant Vice-Principal (Dean of Learning & Teaching) should be informed and asked to approve School practices.

A student's final module grade should not normally be awarded on the basis of a single individual's assessment of all elements, and in extraordinary cases where this does occur, this should be notified clearly to the External Examiner and to the Assistant Vice-Principal (Dean of Learning & Teaching).

(i) Definitions

In blind double marking, two markers each attribute a mark and a full set of comments to a script without conferring during the initial marking process.

In second marking, the second marker produces her/his own mark and comments having seen the annotations, comments and mark of the first marker. The second marker's comments may be as full as the first marker's, or be relatively brief (e.g. a simple agreement with those of the first marker). The determining principle should be to provide whatever feedback might be of most use to the student.

In moderation, a sample of scripts is second marked, and the moderator either endorses the first marker's evaluation or suggests changes. The moderator produces a brief addendum to the first marker's comments, or writes a short separate report covering all scripts sampled.

In each case, an agreed mark is established, potentially accompanied by a third set of comments explaining how the mark has been reached, for example if there was initially a significant discrepancy between the two evaluations.

Systematic double and second marking of all assessed work are **not** a requirement of the University, although some Schools may choose to adopt these practices.

In every case, the External Examiner should be briefed about School practices and has the right to comment.

(ii) Requirements

Set out below are the University's minimum requirements. It is expected that many Schools will choose to operate somewhat above the minimum level, according to the needs of their discipline and in the interests of their students.

The University's minimum requirement is that marks and feedback for some assessed work in every module should be moderated regularly internally, and reviewed periodically by the external examiner, in such a way as to ensure fairness, clarity and the maintenance of standards.

Moderation should be carried out by a suitably qualified member of staff who scrutinises a sample of assessed work (examination scripts or coursework) from a given module after first marking is complete. The moderator should see samples of work in each assessment banding, including fails, plus any contentious, borderline or undecided marks). The moderator should comment on the marks awarded for the individual pieces of work; the marking scheme (where appropriate) and standards in general; and the quality of proposed feedback where applicable.

Following moderation (or second/double marking), a discussion should take place between marker and moderator, which may lead to some adjustment of the original marks. If the moderator is in complete agreement with the first marker, no further marking need take place. If the moderator can discern a regular pattern (e.g. of over- or under-marking), marks throughout the whole batch of scripts may all be altered accordingly in consultation with the first marker, and no further marking need take place. If, however, the moderator cannot discern any regular pattern to discrepancies in the assessment of first marker and moderator, the whole batch of scripts must be second marked.

In modules with several assessed elements, moderation of a single, significant, element may suffice unless other conditions require further moderation (see below). Schools may set their own levels, but as a guideline, 'significant' means coursework or an examination script worth at least 40% of the overall module grade.

Where a module is marked by a single member of staff, a significant element of the assessment (coursework or examination) must be moderated internally. Schools may set their own levels, but as a guideline, 'significant' means coursework or an examination script worth at least 40% of the overall module grade.

Where pieces of coursework and examinations are to be first-marked by more than one marker, a process should **always** be devised by which standards and marking conventions are internally set, clearly understood and applied by all. Marking should also be checked before feedback is released and marks are reported. This process may be set up, for example, by issuing detailed marking instructions, or by a preparatory meeting or marking workshop for the whole team. The scheme should be checked when marking is complete, for example by second or double marking, by the exchange of scripts between markers, or by sampling by the module convenor or another senior member of the marking team.

Postgraduate students, inexperienced markers and all staff who are new to St Andrews should always be supported through second marking or moderation by more experienced colleagues until they are completely familiar with the relevant practices.

Honours and Masters Dissertations and Projects, where the first marker will often have been closely involved in the development of the assessed piece, should always be second marked, and both markers should provide feedback / comments on their assessment. The same rule applies to marking carried out by individuals who are not academic members of the University (e.g. external placement supervisors).

The identification of markers and moderators is the responsibility of the Head of School (or other delegate). A marker or moderator may be appointed outwith the School or University, if necessary, for example when an appropriate specialist is not available in the University.

External Examiners are not expected to act as markers, but should be asked routinely to review coursework and/or examinations on a rolling schedule. Such a schedule should ensure that some assessed work from each element of a School's programmes is seen by an External Examiner at least once every 3-4 years. The University does not require that an External Examiner should always review examination scripts: she/he should be invited to moderate a mix of coursework and examinations across the year and throughout her/his term of office.

Group Work

This presents particular difficulties for the assessment of individual students. When group work has been done, it must be possible to assign marks to individual students, rather than automatically award the same mark to every student in a group. If this is not possible (that is, all students in the group are to receive the same mark for the work) the **group element should not constitute more than one fifth the overall grade for an undergraduate module (levels 1000–4000) or one third the overall grade for a taught postgraduate module (level 5000).**

It is important to be able to recognize the contribution of each individual student to group work. For this reason when group work has been done, it should normally be possible to assign marks to individual students, rather than automatically award the same mark to every student in a group. In those cases where individual marks are assigned to students for group work, those marks used to differentiate individual contributions to an assessment must be apportioned such that when combined with marks from individually assessed work more than 50% of the module grade has come from individually assessed material. (This idea complies with the earlier reference that 'the

majority of assessment will be of individual students'.)

A particular difficulty occurs when **academic misconduct is detected in group work**, raising the possibility that all students in a group might have to accept the consequences of the actions of one unidentified member, which could have serious (and potentially inequitable) consequences. The importance of clear guidance to the group regarding academic misconduct cannot be overemphasized. It should be a matter of normal practice that, when group work has taken place, the group as a whole should submit a collective account of "who did what", in the form of an outline of the principal responsibilities of each group member. In addition, each chapter or section should have one person who is accountable: this does not necessarily mean that it is singly authored, but that one person accepts accountability, including collating material detailing how the part was written. Difficulty can arise when one chapter incorporates sections written by different group members, because it can be difficult, if plagiarism is detected, to identify authorship. It is best practice to allow each major section of work (chapters, laboratory report sections *etc*) to be written by one individual and then commented on by others, minimizing the risk that plagiarized text be included and clarifying responsibility for the text. In the case of detected plagiarism, the accountable person would be the first point for establishing responsibility. Furthermore, detailed notes on the collection of data, resource and information should be kept by each student and be available for inspection by other students and staff.

6. Mark-to-grade Conversion ("grade conversion") and Grade Adjustment

This section does not relate to the conversion of grades from Study Abroad Programmes.

Two processes are recognized: **grade conversion** (the movement of marks from another scale onto the 20-point scale); and **grade adjustment** (the re-scaling of grades).

Any conversion procedure must be reliable and transparent; should be approved by External Examiners; and should be published in advance of use.

If marking is accurate and any required *conversion* process is clear, *grade adjustment* will rarely be needed. When it is, a clear case for doing so and an appropriate methodology must be presented to External Examiners prior to the reporting of grades to the Assistant Vice-Principal (Dean of Learning & Teaching). Wherever possible students should be aware of the procedures used to adjust grades.

Where a module has more than one element (examination and continuous assessment components for example) not marked directly on the 20-point Common Reporting Scale, consideration must be given as to whether any conversion should occur before or after collation. If the same conversion process (marks to grades) is used for all elements then conversion to the 20-point Common Reporting Scale can occur **after** the marks have been collated. On the other hand, if different conversion processes (marks to grades) are used for different elements each element must be converted to the 20-point Common Reporting Scale individually and the different grades collated to one overall grade for the module. This might be the case when, for example, it has been determined that one type of assessment out of several in the module requires a relatively high percentage score in order to pass because of critical competency issues. Note that some care must be taken in defining what an "element of a composite grade" is. An examination paper for example will typically contain several questions. It is not necessary to convert the mark for every question onto the 20-point scale: the examination is "the element". Continuous assessment might consist of one or two substantial pieces of work (essays or laboratory reports for example) but in other instances continuous assessment might be several small pieces of work that could meaningfully be aggregated before conversion. In order to maintain coherence across Schools, the Assistant Vice-

Principal (Dean of Learning & Teaching) should be consulted.

Grades forming part of the formal assessment of a module that are returned to students **before** completion of the module serve a valuable feedback and formative function. However, students must be told that all such grades are provisional until approved, first by External Examiners and finally by the Assistant Vice-Principal (Dean of Learning & Teaching).

Grade Conversion

Grade conversion refers to the procedures used in translating marks realized on a dedicated marking scale onto the 20-point Common Reporting Scale. **Schools have discretion in making such conversions, but any conversion procedure must be reliable, valid and transparent and must be approved by External Examiners and the Assistant Vice-Principal (Dean of Learning & Teaching)** in advance to ensure both suitability for the discipline and concordance with University practices. Grade conversion tables and/or procedures must be published to students in advance of use. There are essentially two ways of achieving grade conversion:

- By using conversion tables set *a priori* that equate the marking scale used with the 20-point Common Reporting Scale. Such conversion tables must establish a clear and systematic relationship between the marking and reporting scales; the relationship need not be linear. [The question of linearity is not serious if we assume that the conversion from percentage marks is approximately linear through the bulk of the grades (7–16) and that it accelerates below 7 towards zero, and over 16 towards 20. All this does is offer advantage at the top of the distribution and disadvantage at the bottom]. This approach could be used, for example, when marking is done using a percentage scale, or when marking a multiple choice questionnaire – fixed proportions of marks can be equated to the 20-point Common Reporting Scale.
- By using a post-hoc procedure that establishes benchmarks set either by student performance or by procedures that use Boards of Examiners to establish expected levels of achievement (such as the Angoff method used in the Bute Medical School). It will be possible to explain to students the methodologies in advance of use.

Grade Adjustment

Grade adjustment is a procedure that can be adopted (after conversion to the 20-point Reporting Scale has been completed) by a Module Board. It refers to the systematic adjustment of the distribution of grades in the module: **it is neither a licence to manipulate the grades awarded to specific individual students nor to generate an artificial inflation (or deflation) of grades.** Rather it is a procedure used to address anomalies in the distributions of grades for a specific question or overall grades for a module which create outcomes that might be inappropriate. For example, if three out of four elements on a module produce identical distributions of grades but the fourth has a skewed distribution that depresses the overall grade, it would be advisable to question that element. If (and only if) it could be shown that the assessment was flawed in some way, it would be appropriate to adjust the grades for that element.

It is important that the setting of assessments should be well thought out, and that all marking should be transparent, reliable, valid and as objective as possible. The intention is to mark accurately and fairly in a manner that can be reproduced by an independent marker, and can be clearly understood by students. If this is achieved it will rarely, if ever, be necessary to adjust grade distributions.

Nevertheless, there are circumstances in which it might be necessary to adjust grades, either for the overall module grade, or the grades awarded for a particular element of a module's assessment (for example, a continuous assessment exercise). Any manipulation of grades must be equitable and transparent. Students and External Examiners should understand – in advance of the fact whenever possible – under what circumstances manipulation of grades would be appropriate and what methods would be used. The following is intended as a guide to Module Boards as to when grade adjustment might be considered; note that the Assistant Vice-Principal (Dean of Learning & Teaching), when signing off reported module results, will also follow this guidance.

Grade adjustment might be thought appropriate where:-

- Fewer than 5% or more than 30% of students have obtained a grade of 16.5 or more.
- The highest grade(s) awarded are less than 16.9.
- There is very strong bunching such that 80% or more of grades lie between 14–16, with few below or above this range.
- The mean or median grade is less than 12 (for Honours modules only).

Careful analysis of the module data might reveal specific problems with particular elements, which could be adjusted and then re-entered into the overall calculation. Alternatively, the overall grade distribution might require attention.

The following are three different forms of grade adjustment that might require intervention to ameliorate an anomalous distribution:-

- **Stretching the range** (either at the top end or the bottom end, or both). This can be done using simple arithmetic by, for example, fixing a point in the grade distribution and then incrementally adding to the grades above or below, as required.
- **Compressing the range** (either at the top end or the bottom end, or both). This can be done using simple arithmetic by, for example, fixing a point in the grade distribution and then incrementally subtracting from the grades above or below, as required.
- **Various mathematical transformations will change the shape of a distribution.** If the results set has an unexpected distribution (bimodal for example), linear (Euclidean) transformation can be used to stretch and shift. This might be used when the range of marks is too restricted or extended (in one or other direction, or both). Cubic or quadratic transformations will have other effects on smoothing unexpectedly crazy distributions.

If Module Boards inspect grade distributions and find them to be aberrant, but have limited confidence in their ability to deal with them effectively, they should feel free to contact colleagues in other Schools who will be able to help. The Assistant Vice-Principal (Dean of Learning & Teaching) will give advice on whom to contact.

7. Reassessment

Reassessment examination is possible when a module has been failed (only if a student has gained a grade of 4.0 or above); reassessment examinations take place at a diet during the summer. Honours grades passed at reassessment will be capped at grade 7.0. Note that it is also possible for Schools to use alternative forms of assessment rather than have students attend the reassessment diet. **Deferred assessments** are not the same as reassessment examinations; the policy for deferred assessments is described in 'Assessment Policies & Procedures'.

8. Procedures for use in the Accumulation of Marks to form a Grade

Outlined below are the procedures for marking work submitted for assessment (both continuous assessment and examination material). Schools must be open about the procedures they use in marking and assigning grades, publishing to students details of, *inter alia* –

- Mark descriptors and how they are used.
- The relative weighting of different elements of assessment in a module (continuous assessment and the elements of each examination).
- Anonymisation procedures.
- Mark-to-grade conversion procedures.
- Grade adjustment procedures (though this will most likely be after the fact).

Continuous Assessment

	Procedure	Notes
Step 1	Mark each piece of work (anonymized whenever practicable) using an appropriate marking scale.	The University requires anonymization by matriculation number at all levels for assessed written coursework and examinations where practicable.
Step 2	Second marker either double/second marks (blind or not, as determined by School policy) or moderates marks.	A student's final module grade should not normally be awarded on the basis of a single individual's marking of all elements.
Step 3	Collate marks for all pieces of work and convert to grades on the 20-point Common Reporting Scale.	
Step 4	Schools may or may not have a scrutiny process at this point to determine whether grade adjustment is required.	
Step 5	For coursework, once the marking (and moderating or second marking, where applicable) has been anonymously completed, it is permissible to record marks against the student's name and provide formative feedback to the student on an individual basis.	The Head of School is ultimately responsible for ensuring that the School has processes in place to protect the security of examination questions and of assessments results prior to reporting to Registry.
Step 6	Return of work to students (either by name or matriculation number) with (a) the original mark and details of any grade conversion and adjustment processes; (b) detailed feedback that will allow students to reflect on and improve their performance. (c) it is at the Schools discretion whether or not a provisional grade is returned to the student at this point.	It must be made clear to students that grades indicated before scrutiny by the External Examiners and Assistant Vice-Principal (Dean of Learning & Teaching) are provisional and can be changed.

Examinations/Dissertation Modules

	Procedure	Notes
Step 1	Mark each piece of work (anonymized whenever practicable) using an appropriate marking scale.	The University requires anonymization by matriculation number at all levels for assessed written coursework and examinations where practicable.
Step 2	Second marker either double/second marks (blind or not, as determined by School policy) or moderates marks.	A student's final module grade should not normally be awarded on the basis of a single individual's marking of all elements.
Step 3	Collation of marks for all pieces of examination work and conversion to grades on the 20-point Common Reporting Scale. If the same conversion process (marks to grades) is used for all elements than conversion to the 20-point Common Reporting Scale can occur after the marks have been collated. If different conversion processes (marks to grades) are used for different elements each element must be converted to the 20-point Common Reporting Scale individually and the different grades collated to one overall grade for the module.	
Step 4	Create a single spreadsheet listing all assessments in the module, with each students' data anonymized. Schools can choose at this point to have a meeting prior to the formal Module Board to consider grade distributions and determine appropriate adjustment if necessary (which will subsequently require approval by the External Examiner).	

Module Boards

	Procedures	Notes
Step 1	Module Boards should consist of the module coordinator, the relevant External Examiner and the signatory designated by the Head of School, who is responsible for reporting results; Schools can choose to include other staff (other members of the assessment team, Examination Officers, Directors of Teaching <i>etc.</i>) at Module Boards if they wish. Where the External Examiner is not present for a diet, his/her views on the module must be presented formally by a member of the Module Board, and minuted. In exceptional circumstances, and with the approval of the Head of School (or delegate), another member of the assessment team for that module may deputise for the module coordinator. Careful and detailed minutes of all decisions taken at Module Boards must be kept and	The results of every module should be considered at an individual Module Board (i.e., one specific Board for each module).

retained.

Step 2	The Board considers all grade distributions and approves any grade adjustment that might be required.
Step 3	S-coding requirements are introduced but should not be discussed; this will have taken place at a separate committee. S-coding will have been considered and recorded by a separate committee.
Step 4	The final module grades for each student are reported to Registry for scrutiny by the Dean. The Assistant Vice-Principal (Dean of Learning & Teaching) has the right to return grades to School for reconsideration.

Version number	Purpose / changes	Document status	Author of changes, role and school / unit	Date