1 General Information

The Moderatorship examination in Mathematics for students of Mathematics and Theoretical Physics (and for students of Mathematics within Two-subject moderatorship) is in two parts. The JS and SS examinations count equally (apart from TSM pattern B students majoring in Mathematics, where the SS Mathematics result counts for 50% of their total degree TSM mark).

The grading scheme for Moderatorship examinations has third class honors (lowest passing grade) at 40% and a first class honors at 70%. There are intermediate thresholds at 50% and 60% for second class honors (2nd division and 1st division). Although there are failing grades of F.1 (30%-39%), F.2 (0-29%) these do not have any direct significance. However, a student’s average mark (plus the number of modules passed in the case of JS Maths) determines his or her results and care should be taken at all ends of the spectrum that the mark returned reflects the students work.

We have to award Gold Medals to students who end up with 80% in their Moderatorship result for Mathematics or Theoretical Physics. For TSM, there are more complicated rules, but still marks above 80% should be a sign of a really exceptional performance.

1.1 Design of examination papers

In particular, the questions and the marking scheme on the papers must allow weak students to show what they know, but should not allow the best students to get excessively good marks. That said, only truly exceptional students can deserve high marks.

In practice this means the following:

- Questions should cover a lot of the content of the module
• Individual questions should have a part that is within the reach of relatively weak students who have studied and understood the part of the module to which the question refers;

• All or most individual questions should have a part that allows the best students to show originality (for example an unseen problem or a necessity to draw together material in a way that is not verbatim in the notes);

• Moderatorship examinations dealing with 2 associated 5 credit modules (3 hour paper) should have two sections, one for each 5 credit module, and should normally have 4 questions in each section, with an expectation that students would do 3 of the 4 (in each section). For 5 credit modules with stand-alone (2 hour) exams, the suggested number of questions is 4 total, to do 3. Deviation is allowed but not recommended. Previous external examiners have wanted standardisation in respect of the number of questions.

• If you are examining 2 × 5 credit modules on a 3 hour paper, remember that in the past students could do at least moderately well with a knowledge of just the beginning parts of a 10 credit module. The new system introduced in 2010 does show how much they have mastered of the more advanced material in the second semester, but that could also be a harder hurdle for them. Please then make sure that there is material on the second part of the paper (as well as the first) where diligent students can show some competence, even if they are not brilliant. This may mean slightly easier parts of questions on the more advanced material than in the past.

• Well-designed examination papers should normally result in average marks for the module in the range 50–65%. Where it does not happen an explanation should be sought. This may be that a small group were exceptionally good or exceptionally weak — this will often be apparent from their other marks — or even a large group can sometimes pull one another down or up. Students should not make the mistake of thinking ‘everybody can’t fail’.

• In cases where the examination results are not in this range, a piecewise linear monotone scaling may be applied to the results.

2 Preparation Procedure

The procedure is that the Moderatorship examination question papers must be sent to the external examiner for comment/approval before the papers are sent off to the Senior Lecturer’s office for duplication.

Before we do that we need to have a meeting among the examiners to discuss the papers. The aim of the meeting is to identify (and address) as many issues as we can [in advance of the external examiner being sent the papers].
The College Assessment and Examination Procedure Regulations state that for each module the External Examiner should be supplied with

1. A Module Outline
   (The one at http://www.maths.tcd.ie/undergraduate/modules/index.php?file=ssmaths should be updated if it is not current)

2. Examination
   The points awarded to each question, sub question, etc, should preferably be clearly written on the question paper.

3. Model Solutions
   These should include an indication of what is pure bookmark and what is not.

4. A marking scheme (not so necessary if the points are indicated on the question paper.)

   Note: To make comparability across papers easier, we had agreed with the Extern, that each question will be marked out of 20 and then the totals scaled to give a percentage eventually.

   The external examiners visit Dublin at the end of the examining period when the marking has been completed, to review the marking of the scripts and to make recommendations about standards. They are then present at the Moderatorship examiners meeting where their opinions, if any, carry strong weight.

   Though it is permissible for an element of continuous assessment to be included in the final result for a module at Moderatorship level, care must be taken. There must be a system for making sure that a record is kept of all such work submitted and students must be clearly informed about deadlines, etc. If the weight given to such continuous assessment work is large (say more than 15%), the work must be kept for evaluation by the external examiner and the marks for the work must not be given to the students before the external examiner has a chance to recommend modifications.

3 Dates and deadlines

<table>
<thead>
<tr>
<th>Dates for 2011</th>
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<tr>
<td>Exams already typed, in the office week Tuesday February 22nd (week before study week)</td>
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<tr>
<td>Exam meetings to take place Friday 25th at 1pm</td>
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<tr>
<td>Exam period Tuesday May 3rd – Fri 27th May</td>
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<tr>
<td>All results due by Fri 27th May except for those scheduled 26/27th due as soon as possible</td>
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<tr>
<td>Preliminary Meetings will be on Thursday &amp; Friday the 2nd and 3rd of June</td>
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<tr>
<td>Examiners Meetings with Externs — Thursday June 9th</td>
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<tr>
<td>Publication of results — results for Mathematics and Theoretical Physics Moderatorships to be published 5pm, June 9th</td>
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It will be very helpful if all examiners for JS/SS modules can be available as needed during the period June 2nd — June 9th. We plan to deal with the Freshman modules Monday June 13th.

4 Examination period — procedures

Maths Office
As the Maths Office is the first point of call for the Examinations Office if a problem arises, it is vital that each examiner give their contact details/mobile phone number to Karen or Helen. If an examiner will not be present on the day of their exam it is their responsibility alone to ensure that the contact details of the replacing member of staff are given to the Maths Office. This will avoid any confusion on the day of the exam and any embarrassment for the School.

• Examiner (or deputy) to attend at start of each examination in which they are involved (and remain available throughout examination time in case of queries). Please also take care to visit venues for special needs students (if any).

• Scripts to be collected from Examinations Office (with Staff ID) 10am-12pm & 2.30-4.30pm — Monday to Friday. (Also 6–6.30pm on some days.)

• Scripts not to be taken outside Dublin.

• Scripts are anonymous. Anonymous (exam) number and seat number should match list provided. Scripts of special needs students are bundled separately but those students should have a place for their exam number in the main venue.

• When marking scripts, write marks on inside pages and transfer to front of script. Also give computation of raw total of marks on script. Later tabulate marks per question on a separate sheet.

• College requires that there should be evidence on each page of the students work that you have examined it. Write enough (even if only ticks and crosses) so you can reconstruct the rationale for the marks you gave, and so that the external examiner will be able to understand what you did by reference to the model answers and marking scheme.

• Procedure for converting to list with names and student ID numbers will be circulated nearer the time.

• For Sophister exams, need to prepare a table giving the marks per question for each candidate.
• If the exam says to answer \( x \) questions, then it is not permissible to change this during the marking process. Any adjustments should be of a piecewise linear variety, so that the ranking of candidates in each exam is retained.

• As well as return of final marks (for external examiner and examiners meetings consideration), all material listed in the next section has to be returned to the Maths office before the external examiners arrive.

5 Appeals and queries

Note that we will retain in storage in the Department:

1. The scripts
2. The marking scheme used
3. Model answers
4. Original sheet of (anonymous) marks which includes a tabulation of the marks awarded for each question and scaling method used if any
5. Print out of names, exam numbers and marks which will also show any continuous assessment marks added in.

All this material should then remain available for 13 months.

• Individual students can make appointments with their examiners to view and discuss their scripts ‘at reasonable times’. For such appointments, the examiner will temporarily check out the relevant script from the store.

If any examiner is away for a period, another member of staff should be designated to discuss papers with students. For this to be useful it means that scripts must be properly annotated with the marks and the rationale for them.

Thus comments, ticks, crosses and numerical marks should be written on the scripts and should correspond to the marking scheme used.

Richard Timoney February 18, 2011