

Frequently asked questions – Level 3, AS/A level Mathematics

Which units have coursework? Is it mandatory?

The following units have coursework:

Level 3 Certificate: Introduction to Quantitative Methods (G244)

A2 Mathematics: Methods for Advance Mathematics – Core 3 (4753)

AS Further Mathematics: Numerical Methods (4776)

A2 Further Mathematics: Differential Equations (4758).

Each of these units has a mandatory piece of coursework which is worth 20% of the mark for the unit. Each has 16 criteria statements by which the work is marked. There are, additionally, 2 marks for oral communication, giving a total of 18 marks. This is combined with the mark for the examination which is out of 72.

Why do you still have coursework?

This specification has been running in various forms since 1991. The philosophy of the MEI A level is that the assessment should be appropriate to the mathematical content. Solving equations using numerical methods, for instance, is best done with a computer, and so should be assessed with access to a computer. This particular task also requires candidates to discuss ways in which the given method may fail. For the Newton Raphson method candidates need to make a choice about what starting value of x should be used as being “close enough” to the root. These aspects of a candidate’s understanding of the topic cannot be assessed by a formal written examination.

Likewise, serious modelling with differential equations requires accessing all part of the modelling cycle: this is hard to assess in a timed written examination.

Where can I find out about the coursework tasks?

The starting point is the specification, which gives the criteria by which the work is assessed.

There is also a bank of suggested tasks for Numerical Methods and Differential Equations published by MEI.

Who marks the coursework?

The centre is responsible for marking the coursework. The centre is also responsible for ensuring that the marking is consistent and that a reliable order of merit is achieved by the marking. If the centre uses more than one assessor, this will include a process of internal moderation to bring the marking of different assessors in the centre into line.

Can we ask someone else to mark the coursework for us?

The centre is responsible for marking the coursework, but it does not have to be a teacher at the centre who does the marking. It is the responsibility of the centre to be able to authenticate the candidates’ work but that person does not need to do the marking. There may be situations where no teacher at the centre is experienced in the unit, for instance where a private candidate has been entered for a unit including coursework or if students are tutored through the Further Mathematics programme. It has happened that the only teacher able to do the marking of a particular unit has fallen ill. In such an instance the centre should contact MEI who will be able to suggest ways of dealing with this problem.

What do you expect to see for the oral communication mark and how is it moderated?

Moderators expect to see a report of the process undertaken by the assessor to ensure that the work is that of the candidate and that he or she can communicate effectively what has been done and what were the outcomes. This might be by a formal interview. In this case it would be a help if the questions that are asked were offered to the external moderator. It might be by ongoing discussion if the coursework is being carried out in the classroom under supervision, in which case this needs to be stated. A less usual, but nonetheless valid, process is to invite the candidate to present his or her report to the class.

This domain is not to be externally moderated. Nonetheless, the external moderator expects to see a report to indicate how this was assessed by the centre. These two marks should not be awarded on the basis of what has been written by the candidate. Additionally, marks may not be awarded in the other domains based on what the candidate has said in interview.

How are the marks submitted by the centre validated?

The Examinations Officer at the centre will have instructions regarding the submission of marks. The board then undertakes an external moderation process to ensure that the rank order is right and that the level of marking is consistent across all centres. If there are 10 candidates or fewer then you send the work of all candidates to your allocated moderator whose name will be given to you in advance of the deadline date. If there are more than 10 candidates then you should wait for a request for a sample of the total entry which will be the work of 10 candidates chosen at random. In practice, if you have, say 11 or 12 candidates you might like to send the work of all candidates anyway, although only the 10 chosen will be scrutinised. The sample selected is done by an algorithm to ensure full coverage of the range of marks.

Why are there two authentication forms?

One authentication form is for the candidate to sign to assert that he or she has done the work being submitted without any outside help. This form is for the use of the centre. This will help the centre to decide whether the work can be authenticated.

The centre authentication form (CCS160) must be signed by all markers asserting that the work being submitted is by the candidate whose name is on the task. This form must be sent with the sample of work to the external moderator.

In what ways can the internal moderation process be carried out and how should this be communicated to the moderator?

There are a number of ways in which an internal moderation process can be carried out, the purpose of which is to ensure that a reliable rank order is achieved.

If there is only one marker, then it is fair to assume that that marker has been consistent in his or her marking, however it is useful if someone else who is experienced in teaching the unit looks at a few of the scripts.

If there are a few sets then the most effective method is as follows:

Delegate the role of internal moderator to one of the markers who marks his or her own group.

This person then selects a sample of, say three, scripts from each of the other groups and remarks. If he or she agrees then it is reasonable to assume that the marks of all scripts are in line. Should there be disagreement then the external marker continues until a pattern of overmarking or undermarking is discerned, in which case all scripts in that group can be scaled. This is exactly the same as what happens in the external moderation process.

What is a “rank order” and what happens if the external moderator does not agree with the order?

A “reliable rank order” means that the centre, by the marks awarded, has effectively put the work into an order of merit. That means that if one piece is given more marks than another then it is because it is better. Two tasks of equal worth should be given the same mark and conversely two pieces given the same mark are deemed to be of equal worth.

If the rank order is not correct then the external moderator is unable to complete his or her task and so it is crucial that this is right. If it is not right, the external moderator may make suggestions about how to get it right and the centre may agree. Alternatively the sample may be returned with suggestions as to how the marking should be adjusted so that a reliable rank order may be achieved. This happens very rarely but is very time consuming when it does happen.

What happens if the moderator agrees with the rank order but not with the actual marks awarded?

If the rank order is correct then the marks may be adjusted by scaling. For instance, the external moderator may agree that all those given 18 were of equal worth but not worth 18 marks. An adjustment downwards may take place so long as the rank order is maintained. In other words, if the tasks given 18 are reduced to 16 then those given 17 must be adjusted downwards to at least 16. This does happen quite frequently and merely reflects the fact that the assessors within the centre may not have a clear understanding of national standards. Adjustments will be made without further reference to the centre so long as the rank order is reliable.

Do centres get feedback on their marking?

On results day centres get a record of the scaling applied to their marks, if any, and a written report from the external moderator. This report gives details of where, if anywhere, the centre’s marking deviated from national standards. There is also a general report on the moderation of coursework as a whole for each unit. These reports are valuable resources for the teaching and marking of subsequent cohorts.

What happens if we disagree with the decision made by the external moderator?

Centres have the option of appealing against the decisions taken. In such a case another external moderator will also look at the work. If a centre wants to appeal then they should do so in a very short space of time after the results day.

If candidates resit a unit, do they have to do the coursework again?

The candidate can choose to do the coursework again, or can resubmit the mark from a previous series. When the entry is made, 4753A means unit 4753 with coursework submitted and 4753B means unit 4753 with coursework mark carried forward.

Examinations Officers should refer to the Administration Guide for more details.

Note that candidates who resit a unit have to resit the examination.

Can a candidate improve on coursework which was submitted last series?

Coursework that is called in the sample is returned to the centre. Centres may return it to candidates. If candidates wish to submit a task in a later series they must submit a fresh piece of work, which must be marked and authenticated as a whole; they may, however, base their fresh attempt on their own previous work. The work must be the candidate's own, done without undue help. Telling the candidate the mark previously achieved is acceptable. Telling the candidate that by adding a particular calculation (for example) their mark would increase by 2 marks is undue help. The feedback offered and help given must be no more than during the original working of the task.

What should we do if we suspect malpractice?

The centre needs to authenticate the work of every candidate. This is done by using a form (CCS160) on which all markers sign to affirm that to the best of their knowledge the work is that of the candidate. If you are unable to do this because you believe that malpractice has occurred then you should not submit the work. You should record A for absent on the mark sheet. If the external moderator believes that there has been malpractice in the sample of scripts seen in spite of the centre authenticating the work then the work will be forwarded to the Malpractice team at OCR. The consequences could be more severe than merely giving 0 for the coursework component.

What should we do if staffing difficulties or personal issues affect students work?

You should write to OCR requesting special consideration.

What should we do if staffing or other issues mean we cannot submit the marks on time?

You should write to OCR requesting an extension.

What if coursework is lost before submission?

You should write to OCR outlining the situation that led to the loss. If this happens to be the work of one or two candidates who have been selected in the sample then OCR may request a different sample. In the unlikely event of the work of the total entry is lost then it is possible that OCR will accept the marks submitted by the centre. If the work is lost as a result of an error by the centre then OCR will not want to penalise the candidates.

What happens if coursework is lost during moderation?

It is highly unlikely that the external moderator will lose the work of a centre. It is possible that the sample may be lost in the post. Examination Officers are advised to send the work recorded delivery so that the parcel can be tracked. In this case a second sample will be requested. If the entry is not large enough for this to happen then the marks submitted by the centre will be accepted.

When are the deadlines?

There is currently only one examination series which is in the summer. The deadline for the submission of marks to the board is 15th May. By this time the marking and any internal moderation procedure should be completed so it is entirely reasonable that centres should set a deadline for the submission of tasks by candidates well before this date.

Can I get any more information?

There is a leaflet, 'Coursework Support', that outlines the resources and extra help available from OCR and MEI. It includes resources on the MEI website, a bank of exemplar material and contact details for further help.