MBChB Phase 1

Code of Practice for Assessment: Summary

For students entering Year 1 or 2 in September 2017

Foreword:

The newly-updated Code of Practice for Assessment is available on the Medical School Website: http://www2.le.ac.uk/departments/medicine/regulations

This summary should be read in conjunction with the full Code of Practice and should be used as a quick reminder of the content, not as a substitute document.

Sometimes the School may need to make changes to assessments in response to advice from the General Medical Council or the Medical Schools' Council. Should this be necessary the School will notify students as soon as possible.
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**General principles of assessment theory**

In order to understand why we use a variety of different assessment formats, you will need to consider the variety of skills that you will acquire during your undergraduate medical education. Miller’s pyramid (1990) is commonly used to equate the basic principles of learning in medicine with the assessment methods employed:

As your knowledge and skills increase during Years 1 and 2 of the MBChB course (termed Phase 1), you will progress from learning and understanding the basic medical sciences and basic clinical medicine in each discipline ('knows') to being able to apply this knowledge in clinical problem-solving scenarios ('knows how'). In the Leicester MBChB curriculum, there is an early emphasis on the understanding and application of knowledge to clinical problems and this is reflected in the design of the assessments during Phase 1 of the Course.

You will also work with patients from the start of Phase 1 and clinical skills will be gained alongside theoretical knowledge and concepts. Hence, by the end of Phase 1, you will therefore be required to demonstrate basic competency in clinical communication, physical examination and practical skills consistent with this early stage of your medical education ('shows how').

In order to assess these different, but complimentary, elements of medical competence, different examination formats are used. You will need to prove yourself satisfactory in all examinations and demonstrate that you have acquired the necessary knowledge, skills, attitudes and behaviours to proceed to the next Phase of the course and eventually to graduation.
Principles of the assessment programme in Phase 1

1. There is close alignment of the assessments with the curriculum. All assessment items are mapped to the course learning outcomes and to the GMC document Outcomes for Graduates.

2. Assessment in Phase 1 includes basic medical sciences, clinical sciences, health psychology, sociology and population health sciences, communication skills (history-taking and information sharing), physical examination and practical skills in simulation, interpersonal skills and professional behaviours. Students must be able to demonstrate the ability to recall facts and describe basic concepts, to be able to explain them (to show understanding) and to be able to apply their knowledge and understanding to new situations, for example clinical problem-solving.

3. Feedback related to performance in assessment is given throughout the course.

Process of assessment

*Figure 2: Blueprinting and quality assurance (QA)*
Who are the examiners?

Your exam papers are written and marked by the unit leads who are responsible for the design and delivery of your curriculum. The role of the assessment team is to quality-assure every stage of the process from the initial blueprinting through to the recommendations made to the Board of Examiners (figure 2), including providing training and support to the unit leads in the principles and practice of assessment. OSCE examiners must attend the mandatory OSCE training.

The external examiners are members of the profession who have relevant expertise in assessment of medical undergraduates and also in the scientific and/or clinical aspects of Phase 1. They quality assure the content of the assessments and the assessment process, and have an advisory role to the Board of Examiners.

What formats of assessment are used in Phase 1?

For a summary of the MBChB summative assessments and progression points, see the figure below:

Key: ESA = End of Semester Assessment
OSCE = Objective Structured Clinical Examination

In Phase 1, the exam papers include the following:

- **Written paper**: this comprises three types of exam paper - Single Best Answer (SBA; best of five options); Short Answer Questions (SAQ) and in Year 1 only, an Integrated Understanding Assessment (IUA).
  - **Short Answer Questions (SAQs)**: You will be presented with a clinical or laboratory scenario and will be asked a series of questions relating to this. You will be required to give short answers to demonstrate knowledge, understanding and application of knowledge to solve clinical problems appropriate to your stage of learning.
  - **Single Best answer questions (SBAs)**: You will be presented with a clinical or laboratory scenario, a question and five answer options. You are required to select the single ‘best’ (most appropriate) answer from the list.
  - **Integrated Understanding Assessment (IUA)**: You will rotate around a circuit answering questions that involve looking at models, anatomy projections, bones, graphs, X-rays and other images. The questions will be presented in written format and you will be required to select the best answer from a list of options.
The written paper is divided into an assessment at the end of Semester 1 comprising SBAs and SAQs (End of Semester 1 Assessment; ESA1), and a larger assessment at the end of Semester 2 (ESA2) comprising SAQs, SBAs and the Integrated Understanding Assessment (IUA). The papers become longer through the year as the content of the course grows. Although the material from the most recent semester is sampled more extensively within each paper, ESA2-4 assess all prior learning during the course, not just the units taught in the immediately preceding semester i.e. your learning should be cumulative rather than modular.

All of the written papers assess knowledge at the 'knows' and 'knows how' levels of Miller's pyramid (Figure 1).

- **Clinical and Practical Assessments:**
  - **Objective structured clinical examination (OSCE):** This is formative, but mandatory, in Year 1 and is summative in Year 2. It assesses the outcomes of the Compassionate Holistic Diagnostic Detective (CHDD) course, including clinical communication (history-taking and information-giving), physical examination and procedural skills.
  - **Integrated understanding practical assessment (IUPA):** This assessment takes place at the end of Year 2 and will be examiner-led. It is designed to test a student’s ability to interact with an examiner as well as to demonstrate an integrated understanding of the topics taught during Phase 1 of the course. The questions will be delivered verbally by the examiner and you will be required to give verbal responses as well as indicating answers on an anatomy prosection, radiograph, model etc.

The marks from the Year 2 OSCE and IUPA will be combined to give a single Combined Clinical and Practical Assessment mark for the Year.

Throughout the course, no compensation is allowed between the written and clinical/practical examinations. Therefore Year 2 students are required to pass both the written paper and the 'combined clinical and practical assessment' separately. Unsatisfactory students are only required to resit the component of the Year 2 examination in which they were unsatisfactory in the first sitting i.e. 'written' (SBA and SAQ) or 'combined clinical and practical' (OSCE and IUPA).
The table below shows a summary of the assessment strategy for students commencing Year 1 or 2 of the MBChB course in September 2017:

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<tr>
<th>Year</th>
<th>Format of assessments</th>
<th>Total marks available</th>
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<tr>
<td><strong>Year 1</strong></td>
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<tr>
<td>Written:</td>
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<tr>
<td>ESA 1 minimum 6 Short Answer Questions (SAQ) = 60 marks; minimum 30 Single Best Answer (SBA) questions = 30 marks</td>
<td>ESA1 (SBA+SAQ) = 90 marks</td>
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<tr>
<td>ESA 2 – minimum 12 SAQ = 120 marks; minimum 60 SBA = 60 marks; Integrated Understanding Assessment: minimum 50 marks</td>
<td>ESA 2 (SBA + SAQ + Integrated understanding assessment) = 230 marks</td>
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<tr>
<td>Combined to give a single overall satisfactory/unsatisfactory grade for the Year 1 written paper</td>
<td>Total marks available = minimum 320 marks</td>
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<td><strong>OSCE – formative assessment</strong> comprising 3 to 4 stations of 10 minutes each.</td>
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<td><strong>Year 1 re-sit Examination</strong></td>
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<tr>
<td>Written: minimum 15 SAQ = 150 marks; minimum 120 SBA = 120 marks; Integrated Understanding Assessment: minimum 50 marks</td>
<td>Resit examination: Total marks available = minimum 320 marks</td>
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<td><strong>Year 2</strong></td>
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<td>Written:</td>
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<td>ESA 3 - minimum 12 SAQ (120 marks); minimum 60 SBA (60 marks)</td>
<td>ESA3 (SBA + SAQ) = 180 marks</td>
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<td>ESA 4 - minimum 15 SAQ (150 marks); minimum 90 SBA (90 marks); Combined to give a single overall satisfactory/unsatisfactory grade for the Year 2 written paper</td>
<td>ESA4 (SBA + SAQ) = 240 marks</td>
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<td><strong>Combined clinical and integrated understanding practical assessment:</strong></td>
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<tr>
<td>OSCE: summative assessment comprising a minimum of 6-12 stations of 5-12 minutes each. The examination will generate a minimum of 12 separate items to be awarded a mark and grade.</td>
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<td>Integrated Understanding Practical Assessment (IUPA): summative assessment comprising a minimum of 5 stations of 8 minutes each, to generate a minimum of 5 separate items to be awarded a mark or grade.</td>
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<tr>
<td>Combined to give a single overall satisfactory/unsatisfactory grade for the Year 2 clinical exam</td>
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<tr>
<td>Students are required to pass both the written paper and the OSCE</td>
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<td><strong>Year 2 re-sit written:</strong></td>
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<tr>
<td>Written: minimum 15 SAQ (150 marks); minimum 120 SBA (120 marks)</td>
<td>Resit written: SBA + SAQ = 270 marks</td>
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<td><strong>Year 2 resit combined clinical and practical assessment:</strong></td>
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<tr>
<td>OSCE: summative assessment comprising of a minimum of 1 hour testing time with 6-12 stations of 5-10 minutes each. The examination will generate a minimum of 10 separate items to be awarded a mark and grade.</td>
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<tr>
<td>Integrated Understanding Practical assessment (IUPA): summative assessment comprising a minimum of 40 minutes testing time (minimum 5 stations) to generate a minimum of 5 separate items to be awarded a mark or grade.</td>
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**Implications:**

1. ESA 1 is not a pass/fail assessment and contributes 90/320 (28%) of the total marks in Year 1
2. ESA 3 is not a pass/fail assessment and contributes to 180/420 (43%) of the total written marks in Year 2
How are the exam papers marked?

Single Best Answer (SBA): Following a successful introduction with Year 1 students in 2016-17, it is our intention to deliver and mark these papers using Examsoft software on your iPads this year. This will apply to students in both Year 1 and Year 2. The cut score (pass mark) is set by a panel of experienced examiners using the modified Angoff method and further details are given in the Code of Practice for Assessment.

Short Answer Questions (SAQs): These questions are team-marked with the unit leads taking responsibility for the marking of questions that originated from their own unit. We go to great lengths to make our marking as reliable as possible. All students scoring between -5 and +2 marks of the cut score (for the SAQ paper alone and for the combined written papers) will have their papers double-marked by senior academics. In resit assessments, all papers are routinely double-marked and those at the pass-fail borderline are triple-marked. A sample of marking is scrutinised by the external examiners as part of the quality-assurance process. The modified Angoff method is used to set the cut score.

Year 1 Integrated Understanding Assessment (IUA): Students shade the correct answer options on specially-designed mark sheets and answers are marked using an optical mark reader.

The Cut Score (Primary Standard or Pass Mark): During the Standard Setting Meeting, a primary standard is determined which will be applied following post-examination analysis. In Year 1, the primary standard applied will be the sum of the averaged Angoff proportions obtained at standard setting minus one standard error of the measurement (SEM). In Year 2 and all subsequent years of the course, the primary standard applied will be the sum of the averaged Angoff proportions obtained at standard setting. This reduction in the cut score in Year 1 only is in recognition of the challenges that students starting at University and in particular a Medical course face. You should be aware that in post-graduate assessments the SEM is never removed and is sometimes added to the primary standard. It is for this reason that the SEM adjustment applies only to year 1 assessments, including the resit.

Year 2 Integrated understanding practical assessment (IUPA): Questions will be asked verbally and you will be observed and marked by experienced examiners using a checklist and defined mark scheme. Examples of material that may be assessed include cadaveric anatomy, radiographs, bones, Gram stains etc. Examiners will also assess your overall approach to the tasks and how clearly you are able to demonstrate your understanding of the practical elements of the Phase. They will award a global rating of 'Fail, borderline, satisfactory, good or excellent’. The cut score is set using the Borderline Group Regression (BGR) method whereby the mean borderline scores for each 'station' are summed to give the cut score for the assessment.

In addition, throughout the MBChB course, a merit/demerit system is applied in order to prevent compensation across the different elements of the Phase. Students will be awarded 2 demerits for each global rating of 'fail', 1 demerit for 'borderline', 1 merit for 'good' and 2 merits for 'excellent'. The maximum number of demerits permissible in the assessment is at the discretion of the Board of Examiners but is typically set at half the total number of stations assessed. The number of merits contributes to the award of merit or distinction for the Year 2 Combined Practical and Clinical Assessment, as well as being a valuable feedback tool for yourselves.
The cut score and demerit system operate independently and students must score a numerical score above the cut score without exceeding the maximum number of permissible demerits. Merits and demerits are calculated independently and do not cancel each other out.

**Year 2 OSCE:** This is marked as per the Year 2 integrated understanding practical assessment above, using the BGR method to set the numerical cut score plus allowing a maximum number of demerits. The Year 1 OSCE is formative and feedback will be provided verbally after each station as well as in written format after the examination. In the Year 2 OSCE, written feedback will be provided. The scores from the Year 2 OSCE and Integrated Understanding Practical Assessment are combined to give an overall Combined Clinical and Practical Assessment.

**How will I receive feedback?**
You are responsible for your own learning during the MBChB course. All assessments will generate feedback that describes your profile of strengths and weaknesses and will help you to set your priorities for future learning.

**Written paper feedback:**
Students in Phase 1 of the course will receive feedback for the End of Semester Assessments and re-sit examinations that will include the following information:
- SAQ mark, SBA mark, Integrated Understanding Assessment mark, and Total mark.
- Pass mark for the combined written papers
- Individual Z score and class Z score range (see below; this score enables you to compare your performance with that of your cohort)
- Decile for the assessment (your cohort are divided into equal groups based on performance. decile 1 is the top scoring 10% of students in this assessment, decile 10 is the lowest-performing group of students).
- A breakdown of your SAQ and SBA marks related to individual blocks of teaching and to key domains. The domains include basic sciences such as anatomy, biochemistry, physiology, pharmacology, sociology, scientific methodology etc. and skills relevant to Phase 1 of the course e.g. diagnosis, prescribing decisions, patient safety.
- The total marks available in the paper for each teaching block and domain will be shown alongside the average class performance for comparison.

**Z scores:** Your Z score indicates whether your particular score is equal to the mean, below the mean or above the mean of all scores for your cohort, and by how far. It therefore gives you an indicator of how your performance compares with that of your peers.
As shown in the figure below, if your Z-Score:
- Has a value of 0, your score in the exam is equal to the group mean score of \( \bar{x} \) (this Z score is circled in red in the figure overleaf).
- Is positive, your score is above the group mean score of \( \bar{x} \)
- Is negative, your score is below the group mean score of \( \bar{x} \)
- Is equal to +1, your score is 1 Standard Deviation above the mean score of \( \bar{x} \) and you are performing very well.
- Is equal to +3, your score is 3 Standard Deviations above the mean score of \( \bar{x} \) (Z score circled in blue in the figure below). This represents an outstanding performance.
- Is equal to -1, your score is 1 Standard Deviation below the mean score of \( \bar{x} \). You may still have passed the examination, but your Z score indicates that you may be starting to fall behind your peers. This should prompt you to evaluate the effectiveness of your learning strategies and to seek advice.
• Is equal to -2, your score is 2 Standard Deviations below the mean score of $\bar{x}$. This is a strong indication that you should re-evaluate your learning strategies and seek advice from your personal tutor, academic support and pastoral support (if needed).

(www.statisticshowto.com)

This feedback will be returned to you electronically and will also be sent electronically to your personal tutor. You should discuss your exam feedback with your personal tutor. Advice and support is also available through the pastoral and academic support teams and you can either be referred by your personal tutor or can self-refer.

**Clinical and practical examination feedback:**

All students will be provided with feedback following a clinical and / or practical examination. The Year 1 OSCE has been developed as a purely formative assessment with the intention of giving you feedback regarding your progress in achieving the outcomes of the Compassionate Holistic Diagnostic Detective (CHDD) course that you have completed to date. Attendance at this assessment is compulsory and you will receive verbal feedback from the examiners during the OSCE.

Following all Summative OSCEs and practical assessments, you will receive a report containing:

• Examiner grade (fail, borderline, pass, good, excellent) for each individual section within each station.
• Number of merit and de-merit scores
• Total mark for the OSCE alongside the maximum mark available and the average cohort performance
• Pass mark for the assessment in terms of total mark and maximum permitted de-merit points.
• Examiner comments: Each student will receive a report of the individual examiner comments that have been transcribed from the examination sheets. As examiner comments currently require manual input and review, these will be released after the main results have been published with the exception of students who were unsatisfactory in the OSCE examination,
when examiner comments will be available at the same time as they are notified of their examination results.

Any concern related to patient safety will be flagged and fed back to students individually by the assessment team. The professionalism support group will follow up any students about whom professionalism concerns have been raised.

**Award of merits and distinctions**

In Phase 1, we award merits and distinctions for the written papers in Year 1 (ESA1 and 2 combined) and Year 2 (ESA3 and 4 combined) and also for the Combined Clinical and Practical Assessment. We also award merits and distinctions for Phase 1 overall which are based on your performance in all of the above assessments. The scores required to achieve a merit or distinction are at the discretion of the Board of Examiners. However, to give you an approximation, a merit is typically awarded for a Z score above 0.9-1.1 and a distinction is typically awarded for a Z score above 1.3-1.5.

For the clinical and practical examinations in year 2, where borderline group regression is used, secondary cut scores will be determined as follows: A student’s individual merit score will be multiplied by a factor of 10 and added to the BGR cut score to give a total ‘decile’ score that will used to rank students and determine the secondary thresholds for merit and distinction.

The recommendation for merit and distinction will be made by the Assessment Group and confirmed by the Panel and Board of Examiners, who have the power to modify the recommendation.

**Award of Honours**

The degree of Bachelor or Medicine and Surgery (MBChB) is an unclassified degree. However candidates obtaining consistently high grades will be considered for the award of MBChB with honours. Honours calculations are based on the points allocated across the curriculum for merit and distinction awards. Performance in Intercalated BSc, Masters and PhD examinations will not be taken into consideration. The award of Honours can only be given to those students representing the best performing students, therefore the threshold for the award of honours can vary slightly from year to year.

**Other information**

Advice on submission of mitigating circumstances and academic appeals can be found on the School of Medicine Website:

[http://www2.le.ac.uk/departments/medicine/regulations](http://www2.le.ac.uk/departments/medicine/regulations)

**UK Foundation programme**

All applicants for the United Kingdom Foundation Training Programme are assessed and ranked on their performance at medical school in relation to their graduating cohort up to the point of application to the Foundation Programme. You should access information on the UKFP from the following website:

Educational Performance Measure (EPM) framework: The current EPM framework is available to download:


Leicester EPM: The EPM score and ranking are derived from the Assessments in the first four years of the course, hence your results in Phase 1 are important! The weighting given to each assessment will be agreed with students during a forthcoming consultation process. Currently the students have opted to increase the weighting given to each assessment as they progress through the course, in accordance with the cumulative nature of the curriculum and their developing clinical knowledge and skills. However, this decision will be revisited with further cohorts of students, particularly following the introduction of the new curriculum.