BY LAWS & REGULATIONS OF THE MBBS (Colombo) DEGREE PROGRAMME

2012
CURRICULUM DEVELOPMENT AND EVALUATION COMMITTEE
FACULTY OF MEDICINE
UNIVERSITY OF COLOMBO
# BY LAWS AND REGULATIONS OF THE BACHELOR OF MEDICINE AND BACHELOR OF SURGERY – MBBS (COLOMBO) DEGREE PROGRAMME

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BY LAWS OF THE BACHELOR OF MEDICINE AND BACHELOR OF SURGERY – MBBS (COLOMBO) DEGREE PROGRAMME

By Laws made by the Council of the University of Colombo under Section 135 of the Universities Act No. 16 of 1978.

By- Laws

These By Laws may be cited as Bachelor of Medicine and Bachelor of Surgery (MBBS) Degree By Laws No 1 of 2012 and they must be read concurrently with the Bachelor of Medicine and Bachelor of Surgery (MBBS) Degree Regulations No.1 of 2012. These By Laws and Regulations will be applicable for the new entrants to the MBBS programme from 2012 onwards.

Part I – General

1. Subject to these By Laws a candidate may be admitted to the Degree of Bachelor of Medicine and Bachelor of Surgery provided the candidate:

   a) has been admitted as a student of the University under Section 15 (vii) of the Universities Act No. 16 of 1978,

   b) has been a registered student of the Faculty of Medicine, University of Colombo for the period prescribed by these By Laws,

   c) has completed to the satisfaction of the Vice Chancellor the course of study prescribed by these By Laws and Regulations thereunder in the University or in any institution recognized for such training but not permitted to grant its own degrees,

   d) has satisfied all the course requirements and has passed the examinations and assessments leading to the degree of Bachelor of Medicine and Bachelor of Surgery,

   e) has paid such fees or other dues as may have been prescribed by the University, and

   f) has fulfilled all other conditions or requirements as may have been prescribed by the By Laws and the Regulations and Rules of the University.

2. Subject to these By Laws the minimum period of study for the Degree of Bachelor of Medicine and Bachelor of Surgery shall be four years and eight months. A student must complete the MBBS course within ten years of registering for the course, unless the Senate has permitted extension for valid reasons. The medium of instruction and examination in the MBBS degree programme shall be in the English language.

3.

3.1 The MBBS Degree programme shall consist of course work which is arranged as five Stream courses. These are the,

   a) Basic Sciences Stream (BScS) course

   b) Applied Sciences Stream (Appl. SS) course

   c) Behavioural Sciences Stream (BSS) course
d) Community Stream (Comm. S) course

e) Clinical Sciences Stream (Clin SS) course

3.2 The word Stream is used to denote a section of the curriculum where the content areas are conducted over several terms or years. Often the content areas in a Stream have some relationship amongst them. Examples include the Community Stream and the Behavioural Sciences Stream.

4. The subjects and courses of study leading to the Degree of Bachelor of Medicine and Bachelor of Surgery, and the number of papers, oral examinations and other forms of assessments, and the marks apportioned to each subject/component shall be as specified by the Regulations made by the Senate.

5. The Senate shall have power, on the recommendation of the Faculty Board, to change, amend or to add or delete the number of subjects, modules, number of papers, courses of study or syllabuses, and to change or amend or add or delete any Rules and Regulations relating to any of the examinations leading to the Degree of Bachelor of Medicine and Bachelor of Surgery. Due notice decided by the Faculty Board shall be given to the students of any such amendments, changes, additions or deletions.

6. The examinations leading to the Degree of Bachelor of Medicine and Bachelor of Surgery shall take the form of continuous assessment examinations of Streams and/or end of course assessments and/or end of Stream examinations, module examinations, joint examinations between streams and examination of the Elective. The continuous assessment examinations may also be considered as in-course assessments.

7. The examinations leading to the Degree of Bachelor of Medicine and Bachelor of Surgery shall be,

a) The Basic Sciences Stream examinations,
b) The Applied Sciences Stream examinations,
c) The Behavioural Sciences Stream examinations,
d) The Community Stream examinations,
e) The Clinical Sciences Stream examinations.

The award of the Degree of Bachelor of Medicine and Bachelor of Surgery shall be based on the marks of the above examinations.

8. Each of the examinations prescribed by these By Laws and the Regulations thereunder shall be conducted by a Board of Examiners constituted for the conduct of that examination and authorized by the Senate.
9. A candidate shall not be permitted to take an examination unless the Dean of the Faculty has certified that the candidate has satisfactorily completed the prescribed course for that examination, fulfilled the attendance requirements, stipulated proportion of classes and any other requirements as may be prescribed by the Senate.

10. A candidate shall take each examination leading to the Degree of Bachelor of Medicine and Bachelor of Surgery on the first occasion on which the examination is held after the completion of the course of studies for that examination, unless the Senate, for a valid excuse permits the candidate to take the examination on the next occasion on which the examination is held, and where a candidate does not take an examination on the first occasion on which the examination is held after the completion of the course of study for that examination, the candidate shall be deemed, unless the Senate determines otherwise, to have taken the examination on the first occasion, which shall be taken into account when computing the total number of attempts in which an examination may be taken by a candidate. Any subsequent attempt must be taken at the very next available examination, subject to the proviso in respect of a valid excuse accepted by the Senate.

11. Reasons for granting valid excuses by the Senate include (i) illness of the candidate (ii) personal problem involving the immediate family of the candidate (iii) candidates participation in a university or national level activity for which prior permission has been obtained by the Senate or (iv) any other cause such as a natural disaster clearly precluding a candidate from sitting the examination. In all these instances the candidate must follow accepted university procedures (eg, submission of medical certificates) and the Senate may request further documents for authentication. The Senate reserves the right to grant or not grant a request for excuse at an examination.

12. In the event that a candidate is unable to appear for a practical, clinical or a viva voce component of an ongoing examination due to a reason for granting a valid excuse by the Senate (eg, a candidate being admitted to hospital with dengue), upon request by the candidate, the Head(s) of the relevant Department(s)/Stream and the Dean may consider re-scheduling that component enabling the candidate to complete the examination. This privilege is entirely at the discretion of the Dean and the relevant authorities. However, this privilege will not apply to written examinations.

13. A candidate who does not successfully pass an examination after the completion of the course of studies for that examination shall take that examination or the subject to be completed as the case may be on the next occasion on which the examination is held, and where a candidate does not take that examination or subjects on that occasion the candidate shall be deemed unless the Senate determines otherwise, to have taken the examination or the subject on that occasion, which shall be taken into account when computing the total number of attempts on which an examination may be taken by a candidate.
14. Candidates will have to register for each stream or module examination that they are required to appear. The Faculty may not allow registration to a prospective candidate when the candidate has not satisfactorily completed the course requirements to appear for that examination or for any other valid reason. For example, as Medicine is a discipline where the doctor-patient interaction is paramount, notwithstanding that a candidate may have completed all the academic requirements to appear for an examination, the Faculty reserves the right to recommend to the Vice Chancellor and the Senate, not to allow a candidate to register for an examination, when the attitudinal aspects or the doctor-patient interaction of that candidate are found to be deficient.

15. Appearing at an examination (or sitting or taking an examination) denotes taking all components of the examination needed for completion of the examination, at one and the same examination. Candidates who do not appear for all the components and complete an examination will not be able to pass that examination.

16. When a candidate appears for an examination in the second or subsequent attempt the mark obtained in the in-course assessments (or continuous assessments) will not be taken into consideration when computing the final mark for that subject/examination.

17. All regulations relating to examination procedure, offences and punishment Regulation No.1 of 1986, *mutatis mutandis*, apply to all assessments/examinations of the MBBS degree programme.

Part II – Basic Sciences Stream (BScS) Course

1. The BScS course shall commence in the first term, and shall be of such duration and course content as prescribed by Regulations made by the Senate.
   The course of study will include lectures, tutorials, practicals etc.

2. The subjects prescribed for the BScS course are Anatomy, Physiology and Biochemistry.

3. There will be continuous assessment examinations during the BScS course, and an End of BScS examination. The End of BScS examination shall comprise of separate assessments of subjects of Anatomy, Physiology and Biochemistry.

4. A candidate for the End of BScS examination shall have followed, to the satisfaction of the Dean, the prescribed course of study in each of the prescribed subjects. A candidate should be eligible to appear for all the subjects of the examination before the candidate is registered for that particular examination. Candidates will not be allowed to register for a separate subject at a particular examination unless the candidate has previously appeared for that subject and been referred or failed in that subject.

5. A candidate appearing at the End of BScS course examination for the first time must register and appear for all 3 subjects of this examination.
6. A candidate appearing for the End of BScS examination must appear for all the components of the examination pertaining to each subject and obtain a minimum % mark from the allocated marks for each component. This minimum mark will be 45% for theory component (MCQs and SEQs) and 25% for the practical and *viva voce* component. The marks allocated for each component of the subject will be specified in the Regulations. While fulfilling this minimum requirement for each component, the pass mark for each subject will be 50% from the 100 marks allocated for each subject in the final calculation. Even if the candidates have obtained 50% marks or above in the final calculation, they will not be able to pass that subject if they have not obtained the minimum mark for each component stated above.

7. To pass a subject the candidate should (i) obtain the minimum % mark for each component of the examination (stated in clause 6 above) and also (ii) obtain a cumulative mark of 50% or more for that subject.

8. A candidate is considered to have passed the End of BScS examination if the candidate has at one and the same examination, satisfied the Board of Examiners in each of the subjects of this examination (pass mark 50%) as prescribed by Regulations made by the Senate; provided that a candidate may be referred in one or more subjects at the End of BScS examination when the candidate has not obtained the pass mark (50%) for that particular subject. To be referred in a subject the candidate shall obtain a minimum of 25% in that subject. Such candidates shall be deemed to have passed the examination when they pass the referred subject(s) at a subsequent End of BScS examination.

9. A candidate who obtains less than 50% in all three subjects or less than 25% in any one of the subjects shall be considered to have failed the entire End of BScS examination. Such candidates shall be deemed to have passed the examination when they pass the three subjects at a subsequent End of BScS examination.

10. A candidate will not be allowed to appear for the theory components of the subject(s) in one examination and the practical and/or *viva voce* components of the subject(s) in a different examination and pass a subject. The candidate must complete all the components in one sitting.

11. A candidates following the BScS course may be absent from one continuous assessment examination for each subject on the basis of an approved medical certificate or any other reason accepted by the Senate. Where possible such a candidate should try to appear for this continuous assessment when it is conducted for a junior batch of students. A candidates who do not appear for two or more continuous assessment examinations, for whatever reason, will have to join a junior batch of students and complete the BScS course.

12. In the case of candidates who register for the End of BScS examination for the first time, but are unable to complete all the components of this examination (due to sickness or any other reason acceptable to the Senate), the results pertaining to the subjects
where all the components have been completed will be conveyed to the candidate. Such candidates will have to appear for the subjects that he/she could not complete at the next occasion that the examination is held. This appearance will be considered as the first attempt of this candidate at this examination provided the candidate has passed the subjects where he/she completed all the components and the results were conveyed to him/her. Otherwise they will not become eligible for honours. Such candidates should be aware that they will fail the whole examination if they score less than 25% marks in the subjects that they were allowed to take subsequently.

13. In the case of candidates who register for the End of BScS examination for the first time, but are unable to complete all the components of the examination and do not submit valid reasons of absence or the reasons are not accepted by the Senate, the results of the subjects where they have completed all the components will be considered as per Clause 8 above. They will not pass the subject(s) where they have not completed all the components. Whether they get referred or fail will be decided by the amount of marks that they have obtained in the components that they have been present. A mark below 25% will be a failure. Any mark above 25% (even if it is 50% and above) will be considered as being referred in that subject. Such candidates will not be eligible for honours.

14. In any given examination a candidate is required to register for all the subjects in which the candidate needs a pass to complete the examination.

15. A candidate who does not pass all the three subjects of the End of BScS examination by the fourth scheduled attempt will not be allowed to continue their registration in the MBBS course. Such a candidate will cease to be a registered student and will have to leave the MBBS course.

16. A candidate who does not register for a scheduled examination without a valid reason acceptable to the Senate shall be deemed to have used that attempt, and that attempt will be counted towards the four attempts mentioned in Clause 15 above.

17. The mark obtained by a candidate in the BScS examinations will form a component of the Cumulative MBBS Result, as prescribed by Regulations made by the Senate.

Part III – Applied Sciences Stream Course

1. The Applied Sciences Stream shall commence after completion of the BScS. Candidates who have passed the BScS examinations will be eligible to follow the Applied Sciences Stream. Sometimes if the results of the Repeat End of BScS Examination are not available at the time of commencement of the teaching activities of the Applied Sciences Stream, candidates who have not passed the BScS examinations may be allowed to start following the teaching activities of the Applied Sciences Stream. This concession is allowed only on the proviso that such students will be allowed to continue in the Applied Sciences Stream only if they pass the BScS examinations when the results of
the Repeat End of BScS Examination become available. If they have not passed the BScS examinations when the results of the Repeat End of BScS Examination become available, such candidates will have to discontinue following the Applied Sciences Stream. They will have to join a junior batch of students and pass the BScS examinations in order to become eligible to follow the Applied Sciences Stream.

2. The Applied Sciences Stream course shall comprise of Modules as specified by Regulations made by the Senate. The word Module is used to denote a content area in the curriculum which is comparatively smaller than the content area of a Stream, and is system or topic based. Examples include the Cardiovascular System Module etc. The course of study will include lectures, tutorials, practicals etc.

3. The student assessments of the Applied Sciences Stream shall comprise separate assessments of individual Modules (ie. Module Examinations). The number of such Module Examinations will be stipulated by Regulations made by the Senate.

4. A candidate appearing for a Module Examination in the Applied Sciences Stream shall have followed to the satisfaction of the Dean, the prescribed course of study for that Module.

5. A candidate appearing for a module examination must take all components of the examination needed for completion of the examination at one and the same occasion. Those candidates who absent themselves for part of the module examination will be considered to be referred in that module examination.

6. A candidate is deemed to have passed each stipulated Module examination if the candidate has satisfied the Board of Examiners as specified by Regulations made by the Senate.

7. A candidate who obtains 50% or more marks at a Module Examination is considered to have passed that Module. A candidate who obtains less than 50% marks is considered to have referred that Module. Candidates who get referred in one or more Modules shall appear for subsequent examinations of the respective Modules and obtain the pass mark of 50% or more, upon which such candidates are considered to have passed the respective Module Examinations.

8. A candidate who passes all the stipulated Module Examinations in the Applied Sciences Stream and obtains 50% or more of the total mark allocated for the Applied Sciences Stream at the end of all the stipulated module examinations is considered to have passed the Applied Sciences Stream. A candidate obtaining a mark below 50% is considered to be referred in the Applied Sciences Stream. Such a candidate shall be deemed to have passed the Applied Sciences Stream when the candidate passes all the stipulated Module Examinations and obtains 50% or more marks of the total mark allocated for the Applied Sciences Stream.
9. The mark obtained by a candidate in the Applied Sciences Stream examinations will form a component of the Cumulative MBBS Result as specified by Regulations made by the Senate.

Part IV – Behavioural Sciences Stream (BSS) Course

1. The BSS course shall commence in the first year and continue up to the end of the MBBS course. The course of study will include lectures, small group discussions, seminars etc.

2. The BSS assessments shall consist of 4 examinations; 3 Module Examinations held during the course and a fourth End of BSS examination as specified by Regulations made by the Senate.

3. To become eligible to appear for the examinations in the BSS a candidate shall have followed, to the satisfaction of the Dean, the prescribed course of study leading to each examination.

4. A candidate should have appeared for all the 3 Module Examinations for the candidate to be eligible to appear for the End of BSS examination or subsequent examinations of the End of BSS course. Although the pass mark for each of the three Module Examinations is 50%, candidates may continue in the BSS course without obtaining this 50% mark in each of the three module examinations.

5. To pass the BSS Course, a candidate should obtain 50% or more, of the total mark allocated for the BSS examinations. A candidate obtaining a mark below 50% is considered to be referred. Such a candidate shall be deemed to have passed the BSS examinations when the candidate obtains 50% or more marks at a subsequent End of BSS examination.

6. The mark obtained by a candidate in the Behavioural Sciences Stream examinations will form a component of the Cumulative MBBS Result as specified by Regulations made by the Senate.

Part V – Community Stream Course

1. The course of the Community Stream shall commence in the first year and shall continue up to the end of the MBBS course. The course of study will include course work, a family attachment, a community attachment and a research project.

2. There shall be 4 examinations in the Community Stream; 3 held during the course and a 4th End of Community Stream examination as specified by Regulations made by the Senate.

3. To become eligible to appear for the examinations of the Community Stream a candidate shall have followed to the satisfaction of the Dean, the prescribed course of study leading to each examination.
4. A student should attempt the 1st and 2nd in-course examinations of the Community Stream at least once, before being eligible to follow the rest of the teaching activities (Stage 4) of the Community Stream course. Irrespective of the results of the first three in-course examinations of the Community Stream, the students shall proceed with the Community Stream teaching programme.

5. A candidate should have passed each of the 3 in-course examinations (pass mark 50%) for the candidate to be eligible to appear for the End of Community Stream examination.

6. A candidate should pass the 4th End of Community Stream examination with a pass mark of 50% of above.

7. To pass the Community Stream course a candidate shall obtain at least 50% of the total mark allocated for the Community Stream at the end of the 4 examinations. A candidate shall be deemed referred in the Community Stream if the candidate fails to obtain at least 50% of the total mark allocated for the Community Stream at the end of the 4 examinations. Such candidates shall be deemed to have passed the Community Stream examinations when the candidate obtains 50% or more at a subsequent End of Community Stream examination.

8. The mark obtained by the candidate in the Community Stream examinations shall form a component of the Cumulative MBBS Result as specified by Regulations made by the Senate.

Part VI – Clinical Sciences Stream Course

1. The Clinical Sciences Stream course shall commence in the first year and shall continue up to the end of the MBBS course. The course of study will include lectures, tutorials, seminars, clinical training, ward classes etc. Specific activities on therapeutics and toxicology may also be included.

2. The Clinical Sciences Stream course consists of the following sections as specified by Regulations made by the Senate.

   i  Introductory Clinical Sciences course
   ii Clinical Appointments
   iii Professorial Appointments
   iv Elective

3. A candidate who has passed the Basic Sciences Stream (BScS) course shall be eligible to follow the Clinical Appointments.

4. Professorial Appointments shall be permitted only to students (a) who have completed all the Clinical Appointments to the satisfaction of the Dean and (b) who have passed all the module examinations of the Applied Sciences Stream.
5. In the event that a candidate has not had the opportunity to appear for any module examination(s) in the Applied Sciences Stream at least on two occasions or the results of such module examinations are not available at the time the candidate is required to commence the first professorial appointment, such a candidate may be permitted to start the professorial appointments although that candidate has not passed all the module examinations (ie. not satisfied Clause 4 b). Such candidates will be allowed to continue in the professorial appointments only if they pass all the module examinations when they have had the opportunity to appear for such module examination(s) at least twice. Those candidates who do not pass all the module examinations when the results of their second attempt are available will have to discontinue their professorial appointments. Such candidates will be allowed to re-commence the professorial appointments at a later date once they pass all the module examinations of the Applied Sciences Stream.

6. The student assessments of the Clinical Sciences Stream shall comprise of continuous assessments and 3 examinations, i. The Joint Applied and Clinical Sciences Examination ii. End of Clinical Sciences Stream examination and iii. an assessment of the Elective.

7. The End of Clinical Sciences Stream examination

7.1 The End of Clinical Sciences Stream examination shall comprise of separate assessment of 5 subjects. The subjects prescribed are Clinical Medicine, Surgery, Obstetrics & Gynaecology, Paediatrics and Psychological Medicine. The format of the examinations will take the form of continuous assessments, written and clinical examinations. A viva voce component may also be included.

7.2 A candidate for the End of BScS examination shall have followed, to the satisfaction of the Dean, the prescribed course of study in each of the prescribed subjects. A candidate should be eligible to appear for all the subjects of the examination before the candidate is registered for that particular examination. Candidates will not be allowed to register for a separate subject at this particular examination unless the candidate has previously appeared for that subject and been referred or failed in that subject.

7.3 To be eligible to appear for the End of Clinical Sciences Stream examination a candidate should have (i) completed all the Clinical Appointments and the 5 Professorial Appointments to the satisfaction of the Dean, (ii) passed all the Module Examinations of the Applied Sciences Stream (ie. passed the Applied Sciences Stream), (iii) had appeared for the joint Applied and Clinical Sciences Examination and (iv) completed the Elective and submitted a report to the Faculty, as specified by Regulations made by the Senate.

Sometimes a candidate may not have completed the Elective appointment by the time the candidate is to appear for the End of Clinical sciences Stream examination. Such candidates will have to complete the Elective appointment after appearing for the End of Clinical Sciences Stream Examination.
7.4 A candidate appearing at the End of Clinical Sciences Stream examination for the first time must register and appear for all the 5 subjects of this examination. Appearance at an examination denotes taking all the components of the examination needed for completion of the examination, at one and the same examination.

7.5 A candidates will not be allowed to appear for the theory components of the subject(s) in one examination and the practical and/or *viva voce* components of the subject(s) in a different examination and pass a subject. The candidate must complete all the components in one sitting.

7.6 A candidate appearing for each subject of the End of Clinical Sciences Stream examination must obtain a minimum % mark from the allocated marks for each component. This minimum mark will be 50% for the clinicals (long and short cases), 45% for theory papers (MCQs and SEQs) and 25% for the *viva voce* component. The marks allocated for each component of the subject will be specified in the Regulations. While fulfilling this minimum requirement for each component, the pass mark for each subject will be 50% from the 100 marks allocated for each subject in the final calculation. Even if the candidates have obtained 50% marks or above in the final calculation, they will not be able to pass that subject if they have not obtained the minimum mark for each component stated above.

7.7 To pass a subject the candidate should (i) obtain the minimum % mark for each component of the examination (stated in 7.6 above) and also (ii) obtain a cumulative mark of 50% or more for that subject.

7.8 A candidate is deemed to have passed the End of Clinical Science Stream examination if the candidate has at one and the same examination, satisfied the Board of Examiners in each of the 5 subjects of this examination as prescribed by Regulations made by the Senate; provided that a candidate may be referred in one or more subjects at the End of Clinical Sciences Stream examination, when the candidate has not obtained the pass mark (50%) for that particular subject. To be referred in a subject the candidate shall obtain a minimum of 25% in that subject. Such candidates shall be deemed to have passed the End of Clinical Sciences Stream examination when they pass the referred subject(s) at a subsequent End of Clinical Sciences Stream examination.

7.9 A candidate who obtains less than 50% in all five subjects or less than 25% in any one of the 5 subjects shall be considered to have failed the entire End of Clinical Sciences Stream examination. Such candidates shall be deemed to have passed the examination when they pass the five subjects at a subsequent End of Clinical Sciences Stream examination.

7.10 In the case of candidates who register for the End of Clinical Sciences Stream examination, but are unable to complete all the components of this examination (due to sickness or any other reason acceptable to the Senate), the results pertaining to the subjects where all the components have been completed will be conveyed to the
candidate. Such candidates will have to appear for the subjects that the candidate could not complete at the next occasion that the examination is held. This appearance will be considered as the first attempt of this candidate at this examination provided the candidate has passed the subjects where he/she completed all the components and the results were conveyed to him/her. Otherwise they will not become eligible for honours. Such candidates should be informed that they will fail the whole examination if they score less than 25% marks in the subjects that they were allowed to take subsequently.

7.11 In the case of candidates who register for the End of Clinical Sciences Stream examination but are unable to complete all the components of this examination and do not submit valid reasons of absence or the reasons are not accepted by the Senate, the results of the subjects where they have completed all the components will be considered as per Clause 7.8 above. They will not pass the subject(s) where they have not completed all the components. Whether they get referred in a subject or fail the entire examination will be decided by the amount of marks that they have obtained in the components where they have been present. A mark below 25% will be a failure. Any mark above 25% (even if it is 50% and above) will be considered as being referred in that subject. Such candidates will not be eligible for honours.

7.12 In any given examination a candidate is required to register for all the subjects in which the candidate needs a pass to complete the examination.

7.13 A candidate who has passed one subject at the End of Clinical Sciences Stream examination will have to pass at least one other subject within the next three scheduled attempts. Failing this, the candidate will have to re-sit the whole examination.

7.14 A candidate who has passed two subjects will have to complete the End of Clinical Sciences Stream examination by passing the other 3 subjects within the next three scheduled attempts following the pass of the second subject. Failing this, the candidate will have to re-sit the whole examination.

7.15 Notwithstanding the fact that a candidate may be otherwise eligible, such a candidate would not be permitted to appear for the End on Clinical Sciences Stream examination if a period of 10 academic years has elapsed since this candidate registered as a medical student. The registration of such candidates will expire after this period. All periods of exemption granted by the Senate will be excluded when computing this ten year period. Exemptions that will be considered for extension of this period will be in a case where the academic work of the Faculty was interrupted within this period due to unforeseen circumstances, and any period of illness of the candidate, which is supported by the recommendation of a Medical Board duly approved by the University. The periods of exemption will be added to the above period of 10 years when computing the maximum period of stay that will be allowed to such candidates.
8. Clinical Sciences Stream

8.1 As part of the student assessments of the Clinical Sciences Stream each candidate must appear for (i) the End of Clinical Sciences stream examination, (ii) the Joint Applied and Clinical Sciences Examination and (iii) satisfactorily complete an Elective appointment and submit a report which has to be assessed and accepted by the Faculty.

8.2 A candidate is deemed to have passed the Clinical Sciences Stream if the candidate has passed the End of Clinical Sciences Stream examination and also obtained at least 50% of the total mark allocated to the Clinical Sciences Stream at the end of the 3 examinations/assessments. (referred to in Clause 8.1)

8.3 A candidate who passes the End of Clinical Sciences Stream examination but fails to obtain a minimum of 50% of the total marks allocated for the Clinical Sciences Stream shall be required to appear for a specially constituted *viva voce* examination. A candidate who passes this *viva voce* examination (pass mark 50%) will be deemed to have passed the Clinical Sciences Stream. A candidate failing this *viva voce* examination will be deemed to have passed the Clinical Sciences Stream when this candidate appears for a subsequent *viva voce* examination and obtains a minimum pass mark of 50%. The panel of examiners conducting the initial *viva voce* examination may request the candidate to undergo further clinical training in the professorial wards before the candidate appears for a subsequent *viva voce* examination. The specific appointments that such candidates have to re-do and their durations will be decided by the panel of examiners.

8.4 The mark obtained by the candidate in the Clinical Sciences Stream examinations shall form a component of the Cumulative MBBS Result as specified by Regulations made by the Senate.

Part VII – Cumulative MBBS Result

1. The Cumulative MBBS result will be computed from marks of all five Streams in proportions specified by Regulations made by the Senate.

2. The Cumulative MBBS Result will appear in the academic transcript of each candidate.

Part VIII – Honours, Distinctions and Medals

1. Honours (Classes) will be awarded in the;

   a) Basic Sciences Stream
   b) Applied Sciences Stream
   c) Behavioural Sciences Stream
   d) Community Stream
e) End of Clinical Sciences Stream Examination
f) Clinical Sciences Stream
g) Cumulative MBBS Result

The honours awarded include first class honours, second class (upper division) honours and second class (lower division) honours.

2. With the exception of the Cumulative MBBS Result, a candidate is eligible for honours in a) to f) above, provided the candidate has passed all components of the End of Course examination in the relevant Stream in the first scheduled attempt, unless the Senate for some specified reason permits the candidate to take the examination at the next occasion on which the examination is held. The marks of the relevant subjects (or modules or stream examinations) will be considered when computing the total mark on which the honours will be decided. The following classification is used in deciding on the honours.

70% and above – First class honours
Between 65% and below 70% - Second class (upper division) honours
Between 60% and below 65% - Second class (lower division) honours
Between 50% and below 60% - Pass

3. In the case of the Cumulative MBBS Result, candidates who may be referred in an intra-stream subject, module or examination will be eligible to obtain honours provided the candidates have repeated a subject, module or examination not more than once per Stream. The mark carried forward to the Cumulative MBBS Result in such repeated subjects, modules or examinations shall be 50%. When deciding on honours in the Cumulative MBBS Result the same classification given above (Part VIII clause 2) will be used.

4. A candidate may be awarded Subject or Stream based Distinctions or Medals. The eligibility and criteria of award will be specified by Regulations made by the Senate.

Part IX – Special Provisions

1. The Vice Chancellor shall have authority, on the recommendations of the Dean of the Faculty of Medicine to take such action or give such direction not inconsistent with the principles underlying the provisions of these By Laws, as appears to him/her to be necessary or expedient for the purpose of removing any difficulties that may arise in relation to academic issues pertaining to any batches of students or individual students.
Part X – Interpretation

1. In these By Laws unless the context otherwise requires,

   “Council” means the Council of the University of Colombo constituted by the Universities Act No. 16 of 1978 and its subsequent amendments.

   “Senate” means the Senate of the University of Colombo constituted by the Universities Act No. 16 of 1978.

   “Faculty” means the Faculty Board of the Faculty of Medicine of the University of Colombo constituted by the Universities Act No. 16 of 1978.

2. Any questions regarding the interpretation of these By Laws shall be referred to the Council, whose decision thereon shall be final.

These By Laws were approved by the University Senate at its meeting No. 345 of 27th April, 2011, minor amendments suggested by the Legislative Committee (Meeting No. 92 of 13th January, 2012) and approved in the final form by the Council.
REGULATIONS

These Regulations are made by the Senate of the University of Colombo under Section 136 of the Universities Act No. 16 of 1978 and may be cited as the Bachelor of Medicine and Bachelor of Surgery (MBBS) Degree Regulations No.1 of 2012. These Regulations must be read concurrently with the Bachelor of Medicine and Bachelor of Surgery (MBBS) Degree By-Laws No.1 of 2012.

The Faculty of Medicine of the University of Colombo conducts a MBBS Degree Programme. It is a comprehensive, integrated professional course imparting the trainees with the knowledge, skills and attitudes that are necessary to function as a basic doctor. The mission of the programme is to develop a graduate who will contribute to fulfill the health requirements of the individual and of the community with competence, compassion and care. The programme is of about five and half years duration. The programme is conducted at the Faculty of Medicine, Kynsey Road, Colombo 8 and the clinical and other training is conducted at the National Hospital of Sri Lanka, other hospitals in and around Colombo, and at other approved training institutions. The academic activities of the MBBS degree programme are organized as 5 Streams (Figure 1).

1. Basic Sciences Stream (BScS)
2. Applied Sciences Stream
3. Behavioural Sciences Stream (BSS)
4. Community Stream
5. Clinical Sciences Stream

Fig 1: five streams of the curriculum
1. BASIC SCIENCES STREAM (BScS)

The BScS is designed to give an understanding of the structure and function of the human body to the newly enrolled medical student. The educational activities and examinations of the BScS are organized in a subject-based manner. Yet the sequencing of the teaching activities is such that the student is given an integrated knowledge of the content areas. The BScS starts in term 1 of the MBBS programme and, inclusive of the examinations is conducted over 4 terms. A term has 10 weeks and an academic year has 3 terms.

An introduction to the content areas and the examinations of the BScS is given below.

1.1 Academic Programme

1.1.1 Anatomy

Core topics: Introduction, cell, basic tissues, lymphoid tissue, excitable tissue, epithelia and glands; upper limb, pectoral and scapular region, shoulder joint, axilla, brachial plexus, arm, forearm, elbow and radio-ulnar joint, hand; lower limb, thigh, adductor and flexor compartment, hip joint, gluteal region, knee joint, leg, ankle joint, foot; vertebral column; body wall and cavities, anterior abdominal wall; cardiovascular system, thoracic wall, mediastinum, heart; respiratory system, trachea, bronchi, lungs, pleura; alimentary system, peritoneum and peritoneal cavity, oesophagus, stomach, intestine, colon, liver, biliary system, pancreas, spleen, posterior abdominal wall; renal system, male and female reproductive system, perineum, pelvic wall, floor, bones and joints of pelvis, pelvis viscera, pelvic nerves and vessels; head and neck region, bones of skull and cervical vertebrae, cranial cavity temporal and infratemporal fossa, superficial and deep structures of the neck, nasal cavity and larynx, oral cavity and pharynx.

Central nervous system, neuroanatomy
Human embryology
Basic human genetics
Histology of cardiovascular, respiratory, gastrointestinal and urinary systems, male and female reproductive system, skin

Duration: Approx. 215 hours; additional time is provided for dissection, viewing of prosected specimens and museum specimens

Teaching/learning methods: Lectures (123 hours), small group activities (66 hours); histology (small group activities 26 hours),
Formative assessments 8

Recommended Reading

1. Gross Anatomy
   iv. Last’s Anatomy, Sinnathamby, ed 12
2. Histology
   i. Wheater’s Functional Histology, Young, Heath, Lowe, Stevens, ed 5

3. Neuroanatomy

4. Embryology
   i. Langman’s Medical Embryology, Sadler, ed 11, Baltimore, William & Wilkins 1990

5. Clinical Anatomy

1.1.2 Physiology

Core Topics: Introduction, homeostasis and feedback mechanisms, SI units; body fluids and edema; hormones and receptors; blood, components and their functions, blood groups; excitable tissues, nerves, synapses, muscle, neuromuscular junction, autonomic nervous system; gastrointestinal system, mouth and oesophagus, stomach, exocrine pancreas, small intestine, large intestine and defecation, liver and gall bladder; cardiovascular system, electrical properties of the heart, cardiac cycle, cardiac output, dynamics of blood and lymph flow, cardiovascular regulatory mechanisms, regional circulation, applied physiology; respiratory system, external and internal respiration, functions of the respiratory system, mechanism of breathing, alveolar surface tension, surfactant, lung compliance, lung volumes and capacities, dead space, alveolar and pulmonary ventilation, assessment of respiratory function, diffusion capacity, ventilation/perfusion ratio, oxygen-haemoglobin dissociation curve, carbon dioxide transport, regulation of respiration, hyperventilation; exercise physiology; renal physiology, functions of the kidney, glomerular filtration rate, filtration fraction, autoregulation, clearance, tubular handling of different substances, kidney in regulation of extracellular fluid volume, osmolality and blood pressure, renin angiotensin aldosterone mechanism, dilution and concentration of urine, regulation of hydrogen ions in the body, diuresis and diuretics, acid base balance; reproduction, sexual differentiation, puberty, male and female reproductive system, fertilization, pregnancy, partus, puerperium and lactation, contraception; central nervous system, sensory and motor systems, hypothalamic functions, sleep and EEG, blood brain barrier and cerebrospinal fluid; special senses, vision, hearing and equilibrium, smell and taste; temperature regulation; micturition reflex

Laboratory sessions (practicals) include activities on blood, ECG and blood pressure, lung function, exercise, renal function, contraceptives, nervous system and special sense function

Duration: Approx. 141 hours

Teaching/learning methods: Lectures (86 hours), small group discussions (13 hours), practicals (26 hours), CD sessions on practicals (10 hours)

Formative assessments 6
Recommended Reading

2. Guyton’s Textbook of Medical Physiology, Hall, ed 12, W.B. Saunders & Co.

1.1.3 Biochemistry

Core Topics: Introduction and overview, function of the cell, pH, buffers, biomolecules (carbohydrates, lipids, proteins, nucleic acid); biomembranes (composition, function, transport); cytoskeleton, extracellular matrix; vitamins, enzymes, bioenergetics and oxidative phosphorylation; glucose and glycogen metabolism, lipid biosynthesis, fatty acid catabolism, Acetyl Co A metabolism and TCA cycle, lipid transport, protein metabolism, gluconeogenesis and glucose homeostasis; purine and pyrimidine metabolism, haem metabolism; information transfer, DNA replication, transcription, translation, regulation of gene expression, post-translational modification of proteins, DNA damage, repair and mutation; basic DNA-based techniques in molecular medicine, molecular basis of cancer, human genome sequence

Laboratory sessions (practicals) include common tests for carbohydrates, lipids, proteins, pH, buffering action, enzymes; separation techniques (electrophoresis, chromatography, dialysis), body fluids and estimation of haemoglobin, alanine transaminase and alkaline phosphatase; constituents in urine; DNA based techniques in medical diagnosis, principles of clinical biochemistry

Duration: Approx. 94 hours

Teaching/learning methods: Lectures (59 hours), tutorials (11 hours), practicals (24 hours)
Formative assessments  5

Recommended Reading

1. Lippincott’s Illustrated Reviews – Biochemistry, Richard Harvey, ed 5, Lippincott, Raven press.
2. Illustrated Biochemistry, Harper, Murray, Rodwell, ed 29
3. Text Book of Biochemistry with Clinical Correlations, Thomas Devlin, ed 7

1.2 Examinations of the Basic Sciences Stream

The examinations of the BScS include continuous assessments (CAs) and an End of BScS Examination. At these examinations there will be separate assessments in Anatomy, Physiology and Biochemistry.

Each subject (i.e. Anatomy, Physiology and Biochemistry) has 3 CA examinations. If a candidate has not appeared for one CA examination (per subject) and a valid excuse is granted by the Senate, the marks apportioned for the CAs for that subject will get distributed between 2 CA examinations (instead of 3 examinations). A candidate who is absent for 2 or more CAs for any subject for whatever reason will have to join a junior batch of students and complete the BScS programme.
A candidate who has not passed all the 3 subjects at the Main End of BScS Examination may appear for the subjects that the candidate could not pass (1, 2 or all 3 subjects as the case may be) at the Repeat End of BScS Examination which will be scheduled 6 weeks after release of results of the Main End of BScS Examination. Candidates who do not pass the 3 subjects in these two examinations will have to join a junior batch of students and complete the BScS examinations subsequently.

1.2.1 Examinations in Anatomy

Continuous Assessments (CAs)

1st Term (CA I)
- MCQ - 30 (60 minutes)
- SEQ - 02 (30 minutes)
- OSPE - 20 stations (45 seconds each)

2nd Term (CA II)
- MCQ - 30 (60 minutes)
- SEQ - 02 (30 minutes)
- OSPE - 20 stations (45 seconds each)

3rd Term (CA III)
- MCQ - 30 (60 minutes)
- OSPE - 20 stations (45 seconds each)

Each CA will get 10 marks and the contribution of the CA marks to the final mark in Anatomy is 30%.

End of BScS Examination
This will have a Theory component (60% marks) and a viva voce component (10% marks).

Theory component
- MCQ - 30 (60 minutes) – 30 marks
- SEQ - 06 (30 minutes) - 30 marks

Viva voce examination to test the surface and applied anatomy (7 minutes per candidate)
- 10 marks

Contribution of the End of BScS Examination to the final mark in Anatomy is 70%.
Final mark (100%) = CAs (30%) + End of BScS Exam 70%

Criteria for passing Anatomy (first attempt)
Minimum pass mark 50% from the Final 100 marks allocated for Anatomy, while getting minimum of 45% in the Theory component (ie. 45% out of 60 marks) and minimum of 25% in the viva voce component (ie. 25% out of 10 marks). There is no minimum pass mark for the CA component.

Criteria for passing Anatomy (2nd, 3rd and 4th attempts)
Minimum pass mark 50% from the Final 100 marks allocated for Anatomy, while getting minimum of 45% in the Theory component (ie. 45% out of 90 marks) and minimum of 25% in the viva voce component (ie. 25% out of 10 marks).
The CA marks are not considered when the final mark is calculated in the subsequent attempts.
The 30 marks allocated for the CA component in the first attempt is now added to the Theory component so that the theory component is getting a total of 90 marks (60 + 30 marks). See Table 1.

### 1.2.2 Examinations in Physiology

**Continuous Assessments (CAs)**

<table>
<thead>
<tr>
<th>Term</th>
<th>Assessments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Term (CA I)</td>
<td>MCQ 20 (60 minutes)</td>
</tr>
<tr>
<td></td>
<td>SEQ 04 (60 minutes)</td>
</tr>
<tr>
<td>2nd Term (CA II)</td>
<td>MCQ 20 (60 minutes)</td>
</tr>
<tr>
<td></td>
<td>SEQ 04 (60 minutes)</td>
</tr>
<tr>
<td>3rd Term (CA III)</td>
<td>MCQ 30 (90 minutes)</td>
</tr>
</tbody>
</table>

Each CA will get 10 marks and the contribution of the CA marks to the final mark in Physiology is 30%.

**End of BScS Examination**

This will have a Theory component (60% marks) and a Practical component (10% marks).

**Theory component**
- MCQ - 40 (120 minutes) - 30%
- SEQ - 04 (60 minutes) - 30%
- Practical component (OSPE) - 10%
- 20 spots (2 minutes per each spot)

Contribution of the End of BScS Examination to the final mark in Physiology is 70%.

Final mark (100%) = CAs (30%) + End of BScS Exam 70%

**Criteria for passing Physiology (first attempt)**

Minimum pass mark 50% from the Final 100 marks allocated for Physiology, while getting minimum of 45% in the Theory component (ie. 45% out of 60 marks) and minimum of 25% in the Practical component (ie. 25% out of 10 marks). There is no minimum pass mark for the CA component.

**Criteria for passing Physiology (2nd, 3rd and 4th attempts)**

Minimum pass mark 50% from the Final 100 marks allocated for Physiology, while getting minimum of 45% in the Theory component (ie. 45% out of 80 marks) and minimum of 25% in the Practical component (ie. 25% out of 20 marks).

The CA marks are not considered when the final mark is calculated in the subsequent attempts. The 30 marks allocated for the CA component in the first attempt is now redistributed between the Theory and the Practical components. See Table 1.
1.2.3 Examinations in Biochemistry

Continuous Assessments (CAs)

1st Term (CA I)  
MCQ 10 (30 minutes)  
SEQ 02 (30 minutes)

2nd Term (CA II)  
MCQ 10 (30 minutes)  
SEQ 02 (30 minutes)

3rd Term (CA III)  
MCQ 10 (30 minutes)  
SEQ 02 (30 minutes)

Each CA will get 10 marks and the contribution of the CA marks to the final mark in Biochemistry is 30%.

End of BScS Examination

This will have a Theory component (60% marks) and a Practical component (10% marks).

Theory component
MCQ 30 (90 minutes) - 30%
SEQ 04 (90 minutes) - 30%

Practical component (OSPE) (60 minutes) - 10%

Contribution of the End of BScS Examination to the final mark in Biochemistry is 70%.
Final mark (100) = CAs (30%) + End of BScS Exam 70%

Criteria for passing Biochemistry (first attempt)
Minimum pass mark 50% from the Final 100 marks allocated for Biochemistry, while getting minimum of 45% in the Theory component (ie. 45% out of 60 marks) and minimum of 25% in the Practical component (ie. 25% out of 10 marks). There is no minimum pass mark for the CA component.

Criteria for passing Biochemistry (2nd, 3rd and 4th attempts)
Minimum pass mark 50% from the Final 100 marks allocated for Biochemistry, while getting minimum of 45% in the Theory component (ie. 45% out of 80 marks) and minimum of 25% in the Practical component (ie. 25% out of 20 marks).

The CA marks are not considered when the final mark is calculated in the subsequent attempts. The 30 marks allocated for the CA component in the first attempt is now redistributed between the Theory and the Practical components. See Table 1.

1.3 Criteria for passing the End of Basic Sciences Stream Examination
A candidate is deemed to have passed the End of BScS Examination if the candidate has at one and the same examination passed each of the 3 subjects of this examination as prescribed by By Laws made by the Council; while fulfilling the minimum requirement for the separate components of the 3 subjects stated above, the pass mark for each subject is 50%; provided
that a candidate may be referred in one or more subjects at the End of BScS Examination, when the candidate has not obtained the minimum pass mark (50%) for that particular subject. Such candidates shall be deemed to have passed the End of BScS Examination when they pass the referred subject(s) at a subsequent End of BScS Examination. Those candidates who fail the End of BScS Examination will have to appear for the 3 subjects at subsequent End of BScS Examinations and pass each of the 3 subjects upon which they will be considered to have passed the End of BScS Examination. Once a candidate has passed the End of BScS Examination that candidate is considered to have passed the BScS examinations.

**Calculation of marks for award of classes in the BScS examinations**

Only candidates who have passed the BScS examinations at the first scheduled attempt are considered eligible for award of classes. The % mark obtained by a candidate at the first attempt for each of the 3 subjects (i.e., Anatomy, Physiology and Biochemistry) is added up and divided by 3 to get the % cumulative mark for the 3 subjects. This mark is called the % cumulative BScS examination mark. This mark is used in awarding classes. The classes are decided according to the classification of marks described below.

70% and above – First class honours  
Between 65% and below 70% - Second class (upper division) honours  
Between 60% and below 65% - Second class (lower division) honours  
Between 50% and below 60% - Pass

**Basic Sciences Stream contribution to the Cumulative MBBS Result**

The Basic Sciences Stream will contribute 10 marks (10%) to the 100 marks of the Cumulative MBBS Result.
### Table 1: Allocation of marks for different components of the BScS examinations

<table>
<thead>
<tr>
<th></th>
<th>1\textsuperscript{ST} Attempt</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Allocation</td>
<td>Breakdown of Allocation</td>
<td></td>
</tr>
<tr>
<td><strong>Anatomy</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CAs x 3</td>
<td>30%</td>
<td>Theory 24%</td>
<td>Practical(OSPE) 6%</td>
</tr>
<tr>
<td>End of BScS Exam</td>
<td>70%</td>
<td>Theory 60%</td>
<td><em>Viva Voce</em> 10%</td>
</tr>
<tr>
<td><strong>Physiology</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CAs x 3</td>
<td>30%</td>
<td>Theory 30%</td>
<td></td>
</tr>
<tr>
<td>End of BScS Exam</td>
<td>70%</td>
<td>Theory 60%</td>
<td>Practical(OSPE) 10%</td>
</tr>
<tr>
<td><strong>Biochemistry</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CAs x 3</td>
<td>30%</td>
<td>Theory 30%</td>
<td></td>
</tr>
<tr>
<td>End of BScS Exam</td>
<td>70%</td>
<td>Theory 60%</td>
<td>Practical(OSPE) 10%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>2\textsuperscript{ND}, 3\textsuperscript{RD} and 4\textsuperscript{TH} Attempts</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Allocation</td>
<td>Breakdown of Allocation</td>
<td></td>
</tr>
<tr>
<td><strong>Anatomy</strong></td>
<td>100%</td>
<td>Theory 90%</td>
<td><em>Viva Voce</em> 10%</td>
</tr>
<tr>
<td><strong>Physiology</strong></td>
<td>100%</td>
<td>Theory 80%</td>
<td>Practical(OSPE) 20%</td>
</tr>
<tr>
<td><strong>Biochemistry</strong></td>
<td>100%</td>
<td>Theory 80%</td>
<td>Practical(OSPE) 20%</td>
</tr>
</tbody>
</table>
2. APPLIED SCIENCES STREAM

The activities of the Applied Sciences Stream are arranged as Modules. The academic activities start in the second year and continue up to start of the professorial appointments. Presently candidates are examined in 17 modules. The schedule of modules is given below in Table 2.

Table 2: Schedule of Modules

<table>
<thead>
<tr>
<th>Term</th>
<th>Name of Module</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Foundation Module - 1</td>
</tr>
<tr>
<td></td>
<td>Foundation Module – 2</td>
</tr>
<tr>
<td>6</td>
<td>Endocrine &amp; Metabolism Module</td>
</tr>
<tr>
<td></td>
<td>Infections and Parasitic Diseases Module</td>
</tr>
<tr>
<td>7</td>
<td>Cardiovascular System Module</td>
</tr>
<tr>
<td></td>
<td>Respiratory System Module</td>
</tr>
<tr>
<td>8</td>
<td>Nutrition, Growth &amp; Development Module</td>
</tr>
<tr>
<td></td>
<td>Gastrointestinal System Module</td>
</tr>
<tr>
<td>9</td>
<td>Nephrourology Module</td>
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<tr>
<td></td>
<td>Blood &amp; Lymphoreticular System Module</td>
</tr>
<tr>
<td>10</td>
<td>Neurology Module</td>
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<tr>
<td></td>
<td>Mental Health Module</td>
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<tr>
<td></td>
<td>Special Senses Module</td>
</tr>
<tr>
<td>11</td>
<td>Musculoskeletal System Module</td>
</tr>
<tr>
<td></td>
<td>Medico-Legal Module</td>
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<tr>
<td></td>
<td>Trauma Module</td>
</tr>
<tr>
<td>12</td>
<td>Reproductive Health Module</td>
</tr>
</tbody>
</table>

Some introductory notes about the academic activities of each module are given below. More details can be obtained from the module handbooks and the relevant staff members. The students will be informed about details of the teaching activities, learning resources, continuous assessments and other examinations and when changes are made in them.

2.1 Foundation Module -1

Core Topics: Foundation Module is the first module of the Applied Sciences Stream. In this module students are introduced to the causes of disease and the pathophysiological mechanisms through which disease processes occur. They also learn the basic principles of pharmacology. This module helps to link what has been learnt in the Basic Sciences Stream to what the student will learn later.

Pathology and Immunology: Introduction, aetiology and predisposing factors of disease, principles of epidemiology, pathogenesis and classification of disease, immune response and its protective role, tissue damage caused by immune mechanism, alterations in structure and function, symptoms and signs of disease and explaining how they come about, complications
and sequelae, impact of disease on wellbeing, differential diagnosis, investigation based on pathogenesis and pathophysiology, multisystem involvement, prevention and control of communicable and non communicable diseases, risk factors, principles of prevention, relate principles of management with the pathogenesis and pathology of disease.

Pharmacology: Introduction, nomenclature of drugs, drug development, pre-clinical studies, clinical trials, ethical aspects, compliance and adherence, pharmacokinetics, pharmacodynamics, drug receptors, selectivity, drug information, adverse reactions, autonomic nervous system and drugs acting on the autonomic nervous system, essential medicines, autacoids, introduction to pain mechanisms and analgesics.

Duration: 89 hours, (pathology (53 hours) and pharmacology (36 hours) approximately).

Teaching/learning methods: Lectures, tutorials, practical sessions, virtual learning sessions, clinical lecture demonstrations, specimen and slide viewing

Module Examination

MCQ 50 (best answer type)
SEQ 05
Minimum pass mark 50%

Recommended Reading

Pathology

1. Muir’s Textbook of Pathology, David Levison, ed 14
2. Concise Pathology, Chandrasoma and Taylor, ed 3
3. Pathology Illustrated, Robin Reid, ed 7
4. Clinical Chemistry in Diagnosis and Treatment, Zilwa, Pannell and Mayne, ed 6

Immunology

1. Immunology – a short course, Richard Coico, ed 6, John Wiley and Son Publication
2. Immunology of Medicine in the Tropics, Greenwood, Whittle, Edward Arnold Publishers
3. Essentials of Clinical Immunology, Helen Chapel and Mansel Haeny, ed 4, Blackwell Scientific Publications
4. Essential Immunology, Ivan Roitt, ed 11, Blackwell Scientific Publications
5. Immunology, Donald Weir and John Stewart, Churchill Livingstone
6. Lecture notes on Immunology, Ian Todd, Blackwell Scientific Publications
7. Clinical Immunology, Jonathan Brostoff, Glenis Scadding, David Male, Ivan Roitt, Gower Medical Publishing

Pharmacology

1. Relevant chapters in the recommended books in pathology, pharmacology and immunology (see end of this document)
2. Foundations of Pharmacology for students of medicine and allied health sciences, Jayakody, Ananda Press, 2009
3. Clinical Pharmacology (Laurence’s text book), Bennet, Brown et al, ed 10
4. Pharmacology, Rang and Dale, ed 7
5. Sri Lanka Hospitals Formulary- 1996

2.2 Foundation Module - 2

Core Topics: Introduction, infections causing acute inflammation of upper and lower respiratory tract, central nervous system, urinary tract, skin, abdominal cavity, genital tract; sexually transmitted diseases; organisms causing diarrhoea, hepatitis; fever, fever and rash; nematodes, cestodes, intestinal and urogenital protozoa; malaria; chronic inflammation, tuberculosis, leprosy, leishmaniasis, toxoplasmosis, filariasis; latent infections, introduction to herpes viruses; toxin mediated damage; medically important arthropods; emerging and re-emerging infections; sterilization and disinfection, principles of management of infections; antimicrobials, sensitivity tests, immunization and vaccines
Laboratory based activities (practicals): Microbiology- Gram stain, microscopy and colony morphology of pathogens
Parasitology - Intestinal nematodes, cestodes and protozoa, arthropods and snakes, malaria and filariasis and leishmaniasis; CD on snakes

Duration: 53 hours approximately.

Teaching/learning methods: Lectures, practicals, viewing CD

Module Examination

MCQ 50 (best answer type) – 80 marks
Laboratory based practical examination in microbiology – 10 marks
Laboratory based practical examination in parasitology – 10 marks
Total 100 marks

Minimum pass mark 50%

Recommended Reading

Microbiology

1. Notes on Medical Microbiology, Timbury, Christine McCartney, Bishan Thakker and Katherine Ward, ed 1
2. Medical Microbiology and Infection at a glance, Stephen Gillespie and Kathleen Bamford, ed 2
3. Lippincott’s Illustrated Reviews – Microbiology, Richard Harvey, Pamela Champe and Bruce Fisher, Lippincott, William & Wilkins, ed 2
4. Medical Microbiology, Greenwood, ed 17
5. Infection: Microbiology and Management. Barbara Bannister, Stephen Gillespie and Jane Jones, ed 3
Parasitology

2. Essential Malariology, David Warrell. ed 4

2.3 Endocrine & Metabolism Module

Core Topics: Introduction, general endocrinology, anatomy of endocrine system, common clinical presentations of endocrine disorders, physiology of hypothalamic, pituitary and thyroid hormones, disorders of hypothalamus and pituitary; radiological investigations of endocrine disorders, thyroid disorders (pathology, investigations and management), thyroxine and antithyroid drugs, thyroid diseases in children, epidemiology of thyroid disorders; calcium and parathyroid physiology, disorders of calcium metabolism, vitamin D therapy, metabolic interrelationships; obesity related chronic disorders; physiology of endocrine pancreas, diabetes, biochemistry of diabetes mellitus, investigation of diabetes mellitus, pathological changes in diabetes, insulin and oral hypoglycaemics, management of diabetes, diabetes mellitus in children, diabetic emergencies, principles of surgery in endocrine disease, surgery in diabetic patients, epidemiology of diabetes, adrenal cortex, physiology, adernal medulla, physiology, corticosteroids, principles of hormone replacement therapy

Duration: 79 hours approximately.

Teaching/learning methods: Lectures, tutorials, problem based tutorials, small group discussion, seminars, practicals, specimen and slide viewing, skills lab activities and formative assessments

Module Examination

MCQ - 25
SEQ - 02
Minimum pass mark 50%

Recommended Reading

1. Text Book of Biochemistry with Clinical Correlations, Thomas Devlin, ed 7,
2. A handbook on fine needle aspiration biopsy, Kumarasinghe
3. Lecture Notes on Endocrinology, William Jeffcoate, ed 5
4. Relevant chapters in recommended books in anatomy, physiology, biochemistry, pathology, immunology, pharmacology, medicine, surgery, paediatrics, Obstetrics & gynaecology etc

2.4 Infections and Parasitic Diseases Module (IPD Module)

Core Topics: Introduction to infectious disease, microbes, pathogens, pathogenesis, pathophysiology, diagnosis, different levels of diagnosis, laboratory diagnosis, interpretation
of reports, principles of antimicrobial chemotherapy and chemoprophylaxis, use of drugs in combination, different groups of antimicrobial drugs, individual antimicrobial drugs, sensitivity testing and resistance, drugs modifying host immunity, principles of prevention and control; acute fevers (malaria, leptospirosis, typhus, influenza, dengue, SIRS; fever and rash; sexually transmitted infections; chronic fevers (tuberculosis, enteric fever, pyrexia of unknown origin, human immunodeficiency virus infection; chronic and subclinical infections (latent infections, filariasis); hospital associated infections, infection in health care workers; zoonosis (rabies, leptospirosis); vector borne diseases, principles of vaccination, expanded programme of immunization, miscellaneous topics (congenital, perinatal and neonatal infections, emerging infectious disease, medically important arthropods)

Duration: 80 hours approximately

Teaching/learning methods: Lectures, inter-departmental activities, clinical lecture demonstrations, practicals, small group discussions, case discussions, skills sessions, campaign visits and visit presentations, fixed learning modules etc.

Module Examination:

In-course assessment – 20 marks (20%)
Assignment 1: Audiovisual presentation of visit – 8 marks
Please note that a group mark will be given only to students who attend the visit presentation. Attendance at the visit presentation is compulsory and attendance will be marked.
Assignment 2: Written report on visit – 8 marks
Attendance – 4 marks

A student who has a minimum of 80% attendance in the small group discussions, practicals, skills sessions, pharmacology tutorials and visits shall receive the 4% mark allocated for attendance. A student who does not have a minimum of 80% of such cumulative attendance in the above activities shall not receive the 4% mark allocated for good attendance, and shall not be eligible for the award of distinctions and medals in microbiology and parasitology.

End of Module Examination – 80% marks

MCQ (40 questions over 2 hours) - 35 marks
SEQ (2 questions over 1 hour) - 25 marks
OSPE (20 stations over 1 hour) - 20 marks

Total 80 + 20 = 100 marks
Minimum pass mark 50%

Recommended Reading

1. Infection: Microbiology & Management, Barbara Bannister, ed 3, Wiley
2. Master Medicine: Microbiology and Infection, Timothy Inglis, ed 3, , Churchill Livingstone
3. Infection section in recommended textbooks in Medicine
2.5. Cardiovascular System Module (CVS Module)

Core Topics: Introduction, structure and function of the heart and the blood vessels, aetiology and mechanisms of disease; abnormal structure and function (congenital heart disease, ischaemic heart disease, hypertensive heart disease, rheumatic heart disease, inflammations, endocarditis, atherosclerosis, arrhythmias, cardiac failure, diseases of arteries, veins and lymphatics); gross and microscopic changes in diseases, natural history, epidemiology and complications; history, examination and investigation of patients with cardiovascular disease, signs and symptoms, diagnosis, differential diagnosis; indications, basis, accuracy, interpretation, safety, cost and availability of investigations and invasive surgical and radiological procedures; cardiopulmonary arrest; prevention of cardiovascular disease; management of cardiovascular disease (therapeutic objectives, modalities of therapy, their efficacy, safety, cost); cardiovascular drugs; basics of conduct of simple epidemiological/clinical survey and evaluating a cardiovascular research publications; skills of obtaining an ECG.

Duration: 36 hours approximately.

Teaching/learning methods: lectures, small group discussions, problem based tutorials, skills lab activities, inter-disciplinary activities (seminars), case discussions, virtual learning environment session, pathology demonstrations

Module Examination

MCQ 40 (multiple true/false type)
2 Structured essay questions
Minimum pass mark 50%

Recommended Reading

1. Cardiology, Desmond Julian, ed 8
2. ECG made easy, John Hampton, ed 7
3. ABC of Vascular diseases and ABC of Heart Failure, BMJ publications
4. Relevant chapters in recommended books in anatomy, physiology, pathology, pharmacology, medicine, surgery, paediatrics, obstetrics & gynaecology, psychological medicine etc

2.6. Respiratory System Module (RS module)

Core topics: Introduction, structure and functions of the respiratory system, defense mechanisms, respiratory tract infections in children and adults, stridor, pneumonia and acute respiratory distress syndrome in adults, asthma in children and adults, treatment, guidelines, inhaler devices, chronic obstructive airways disease, tuberculosis (pathology, clinical aspects, treatment), chronic lung infections, diseases of the pleura, respiratory failure, neoplasms, environmental pollution, occupational lung disease, tobacco smoking, epidemiology and prevention of lung disease, examination, investigation and imaging of the respiratory system, surgical aspects, perioperative care.
Duration: 69 hours approximately.

Teaching/learning methods: lectures, inter-disciplinary teaching, problem based tutorials, tutorials, fixed learning modules, skills training, audio visual sessions, virtual learning environment, case studies.

Module Examination

MCQ 40 (multiple true/false type) 60 marks
2 structured essay questions 40 marks
Minimum pass mark 50%

Recommended Reading.

1. Respiratory Physiology : the Essentials, John West, ed 8, Lippincott, William & Wilkins
2. Guidelines on asthma. SLMA
3. Tuberculosis manual for intern medical officers. Department of Microbiology, FMUC
4. Relevant chapters in recommended books in anatomy, physiology, pathology, microbiology, immunology, pharmacology, medicine, surgery, paediatrics etc

2.7. Nutrition, Growth & Development Module

Core Topics: Nutrition: Introduction; nutrition throughout the life cycle, energy and macronutrients, carbohydrates, fats, proteins, minerals and vitamins, factors affecting dietary requirements of health individuals, food based dietary guidelines for a healthy life, assessment of nutritional status in individual and the community, foods, basic concepts of planning diets for different age groups; nutrition in special physiological states; nutritional deficiency disorders; nutrition in chronic disease; nutrition of hospitalized patients Growth & Development: Normal growth, factors affecting growth, growth assessment and abnormal growth, normal development, developmental assessment and abnormal development, parenting, puberty, prescribing in children, children residing outside the family setting; exercises on assessment of growth, assessment of development and how disease conditions affect growth to be done doing ward work.

Duration: 60 hours approximately.

Teaching/learning methods: Lectures, problem based tutorials, slide show, interactive CDs, community assignment, skills lab activities, ward assignments

Module Examination

MCQ 30 multiple true/false type - 60 minutes
SEQ 03 - 40 minutes
Minimum pass mark 50%
Recommended Reading

1. Present knowledge in nutrition, Barbara Bowman, ed 9, General Reading ILSI, North America
3. William’s Essentials of Nutrition and Diet Therapy, Schlenker, ed 10
4. Human Nutrition and Dietetics, Garrow, James, Ralph, ed 10, Churchill Livingstone
5. From Birth to Five Years, Mary Sherriden, ed 3
6. Paediatric clinical skills, Richard Goldbloom, ed 4

2.8 Gastrointestinal System Module (GI Module)

Core Topics: The module consists of several themes based on key clinical features related to disordered structure and/or function of the gastrointestinal tract. Under each theme a few relevant diseases or disorders have been identified. The main themes include dysphagia and reflux, anorexia, nausea and vomiting, abdominal pain and dyspepsia, abdominal distension and abdominal mass, diarrhea, constipation, perianal irritation, bleeding per rectum, lump in the anal area, special topics, jaundice and liver disorders, disorders of the mouth, jaws and salivary gland. The student should be able to evaluate information from the cases and investigations, arrive at a diagnosis, analyse the treatment options and learn about prevention and disease control. The intention of the teaching activities is to facilitate students to apply knowledge to get a deeper understanding of the underlying conditions responsible for above diseases/disorders. Skills activities include abdominal and internal examination, insertion of a nasogastric tube, endoscopy, liver biopsy.

Duration: 75 hours approximately.

Teaching/learning methods: Lectures and other large group teaching activities, case studies, fixed learning modules, small group discussions, video presentations.

Module Examination

MCQ 25
SEQ 02
Minimum pass mark 50%

Recommended Reading

1. Relevant chapters in recommended books in anatomy, physiology, pathology, microbiology, immunology, pharmacology, medicine, surgery, paediatrics

2.9 Nephrourology Module

Core Topics: Introduction, aetiology, pathogenesis, pathology, signs and symptoms, diagnosis, differential diagnosis, management, prevention, epidemiological aspects of the following diseases and conditions; pain in the loin, burning sensation when passing urine, increased frequency, difficulty in passing urine, red coloured urine, haematuria, acute and chronic retention,
passage of urine from abnormal sites, incontinence, polyuria, oliguria, anuria, oedema, lump in abdomen, lump in scrotum, anomalous sexual organs; specific examples include medical, surgical and gynaecological conditions such as congenital anomalies, urinary tract infection, glomerulonephritis, nephritic syndrome, acute and chronic renal failure, dialysis, tumours, prostatic disease, calculus disease, trauma etc; skills aspects include internal examination, catheterization, collection and transport of specimens, urine analysis, interpretation of laboratory reports, dialysis.

Duration: Approximately 50 hours

Teaching/learning methods: Lectures, inter-disciplinary activities, problem based tutorials, fixed learning modules, case studies

Module Examination

MCQ 20
SEQ 02
Minimum pass mark 50%

Recommended Reading

1. Renal Pathology for Students of Medicine, Angunawela
2. Pocket guide to Urology & Nephrology, Neville Perera, Rushika Lonerolle
3. Relevant chapters in recommended books in anatomy, physiology, biochemistry, pathology, microbiology, immunology, pharmacology, medicine, surgery, paediatrics etc

2.10 Blood & Lymphoreticular System Module

Core Topics: Haematology: Introduction, aetiology, pathophysiology, investigation, diagnosis, principles of management, prevention, health education aspects of iron deficiency anaemia, macrocytic anaemia, haemolytic anaemia, vitamin B12 and folate deficiency anaemia, anaemia of chronic disease, coagulation disorders, platelet disorders, disseminated intravascular coagulation, thrombophilia; haemolytic disease of the newborn, lymphoproliferative disorders, acute leukaemia, myeloma, myelodysplastic syndrome, pancytopenia, myeloproliferative disorders, anticoagulants; blood transfusion.

Immunology: Immunity to infection, immunodeficiency, autoimmunity, immunological arthropathies, immunological renal diseases and skin disease, immunological methods of diagnosis of disease, immune manipulation, transplantation, hypersensitivity.

Laboratory sessions (practicals): specimen collection, morphology of blood cells in health and disease, blood count, reticulocyte count, erythrocyte sedimentation rate, blood transfusion.

Duration: 56 hours approximately.

Teaching/learning methods: Lectures, practicals, seminars, virtual learning environment, film, tutorials, poster, computer assisted learning, skills lab, problem based tutorials; formative assessments
In-course assessment – 10 marks

1. A poster competition on ‘Anaemias in pregnancy’, for which 5% of the total module mark will be given
2. Minimum of 80% attendance at problem based and other tutorials, skills sessions and practicals, will carry 5% of the total module mark. When attendance is less than 80% no marks will be awarded.

Module Examination – 90 marks

MCQ 50 questions 70% marks
OSPE 10 questions 20% marks

Contribution from in course assessment 10%

Total 100%

Criteria for passing the Module Examination

Minimum pass mark 50% from the Final 100 marks allocated for the Module Examination, while getting minimum of 25% in the MCQs, OSPE and Poster components. If a candidate obtains less than 25% for any of the individual examination components, even if the candidate has obtained the minimum pass mark, such candidates will be considered to have failed the Module Examination.

Recommended Reading

1. Immunology – a short course, Richard Caico, Geoffrey Sunshine, ed 6, John Wiley & Son Publishers
2. Essential Haematology, Hoffbrand, and Molish, ed 6, Blackwell Publishing

2.11 Neurology Module

Core Topics: The content area covered include applied neuroanatomy, physiology of cerebrospinal fluid circulation and development of intracranial pressure, pathogenesis of neural tube defects and hydrocephalus, epidemiology of neurological disorders, pathology of nervous system infection, CNS tuberculosis, cerebral infections in children and adults, treatment of CNS infections, headache, pathology of tumours of the central nervous system, clinical features of intracranial space occupying lesions, head injury, pathology of cerebrovascular diseases, clinical presentations of transient ischaemic attacks and stroke, management of stroke, movement disorders and Parkinson disease, classification of epilepsies in adults and children, anticonvulsant therapy, peripheral neuropathy, acute flaccid paralysis, spinal cord and root compression, non compressive myelopathies, mononeuropathies, disorders of the neuromuscular junction, memory disorders, cerebellar and gait disorders, common disorders of cranial nerves, development delay and cerebral palsy, mental retardation and rehabilitation, encephalopathies in children, neurorehabilitation in stroke, rehabilitation in cerebral palsy, coma, management of unconscious patient, motor neurone disease, neuro-radiology, evidence based neurology.
Skills aspects covered include lumbar puncture, diagnosis of speech disorders, local and general anaesthesia and neuropathic pain.

Duration: 69 hours approximately.

Teaching /learning methods: Lectures, tutorials, problem based tutorials, skill sessions, audio visual sessions, seminar, case studies.

Module Examinations

MCQ 30 - multiple true/false type
SEQ 02
Minimum pass mark 50%

Recommended Reading

1. Neurology: An Oxford Core Text, Michael Donaghy, ed 2
2. Neurological Examination Made Easy, Geraint Fuller, ed 4
3. Neurology for PACES, Peiris and Peiris
4. Neurology & Neurosurgery Illustrated, Kenneth Lindsay and Ian Bone, ed 5
5. DVDs on 'The examination of the nervous system' and 'Lumbar Puncture' (available in the library and skills lab).

2.12 Mental Health Module

Core Topics: Introduction, concept of mental illness, categorization of mental illness, patient assessment and phenomenology, depression, bipolar affective disorder, schizophrenia and other psychotic disorders, phobic anxiety disorder and other anxiety disorders, psychoactive substance use, suicide and deliberate self harm, child and adolescent mental health, behaviour and emotional disorders in children, developmental disorders in children, psychological therapies, dementia, psychometric assessment, somatoform disorder and dissociative disorder, psychiatric emergencies, reaction to stress, psychiatry and law, community psychiatry, sexual disorders, eating and sleep disorders, psychopharmacology (anxiolytics, antidepressants, antipsychotics, stimulants).

Teaching/learning methods: Lectures, small group discussions, tutorials

Duration: 28 hours of lectures and small group discussions

Module Examination

MCQ 20 multiple true/false type)
Minimum pass mark 50%

Recommended Reading

1. Shorter Oxford Textbook of Psychiatry, Gelder, Cowen and Harrison, ed 5
2. Child Psychiatry, Goodman and Scott, ed 2
2.13 Special Senses Module

Core Topics: Dermatology: Introduction, terminology used in dermatology, biology of the skin, eczema and dermatitis, skin infections and infestations, nail and hair disorders, papulosquamous eruptions, sebaceous and sweat gland disorders, drug eruptions, skin changes in systemic diseases, blistering disorders, tumours, pigmented disorders, inherited disorders, miscellaneous conditions

Otorhinolaryngology: Investigation, diagnosis and management of common ear, nose and throat diseases, including diseases of external and middle ear, nose and paranasal sinuses, pharynx, larynx; deafness

Ophthalmology: Proptosis, enophthalmos, lacrimal gland and drainage system, eye lids, ptosis, lid pathology, lagophthalmos, conjunctival diseases, sclera, cornea, lens, iris and pupil, ciliary body, choroid, retina, optic nerve, refractory errors, squints, cranial nerve palsies, trauma, miscellaneous conditions

Duration: 30 hours approximately.

Teaching/learning methods: Lectures, fixed learning sessions, audio visual sessions, skills lab activities supplemented by material learnt during relevant clinical appointments with dermatologist, eye and ENT specialists.

Module Examination

MCQ 30 (multiple true/false type) – 100 marks
Minimum pass mark 50%

Recommended Reading

Dermatology
1. Clinical Dermatology, Hunter, Savin and Dahl, ed 4

Otorhinolaryngology
1. Lecture notes on ENT Surgery, Bull, ed 10

Ophthalmology

2.14 Musculoskeletal System Module

Introduction, anatomy of joints, clinical and radiological examination of the musculoskeletal system, drugs used in the management of rheumatological disease (paracetamol, cox-2 inhibitors, nonsteroidal anti-inflammatory drugs, disease modifying drugs), inflammatory arthropathies and autoimmune connective tissue diseases, infections of bones and joints, dysplasias, bone and soft tissue tumors, pathological aspects, metabolic bone disease; degeneration disease, soft tissue rheumatism, regional pain syndromes, diseases of muscles, musculoskeletal disease in the paediatric patient, genetic aspects, physical fitness and role of sports medicine.

Duration: 37 hours approximately.

Teaching/learning methods: Lectures, demonstrations, fixed learning modules, teacher centered seminars, symposia
Module Examination

MCQ 30 - Multiple true/false type – 90 minutes
SEQ 02 – 30 minutes
Minimum pass mark 50%

Recommended Reading

1. Apley’s System of Orthopaedics and Fractures, Louis Soloman, ed 9
2. ABC of Rheumatology, BMJ Group

2.15 Medico-Legal Module

Core Topics: Introduction, definition and scope of forensic medicine, injuries, their medico-legal significance, sequalae and complications of regional injuries, head injuries, face and neck injuries, thoracic injuries, abdominal and pelvic injuries, category of hurt in relation to penal code-section 311, road traffic accidents, fire arm injuries, death following explosions, examination of blood and other stains, mechanical asphyxia and drowning, thermal and corrosive burns, hypothermia, hyperthermia, electrical injuries, medico-legal aspects of alcohol and addictive drugs, medico-legal autopsy, scene of crime, identification of the living and dead, death, post mortem changes and determination of time since death, sudden natural death, sudden infant death syndrome, sexual offences, abortion, infanticide, child abuse, starvation and neglect, torture and human rights violations, investigation of mass disaster, toxicology, medical evidence in courts, role of the expert witness, law relating to medical practice

Usually the activities related to toxicology may be conducted separately.

Duration: 47 hours approximately.

Teaching/learning methods: Lectures, handouts, fixed learning modules, slide demonstrations, video demonstration, problem based tutorials, seminars, drama, self study

Training in Forensic Medicine is supplemented by a 2 week clinical appointment (approx. 48 hours) with the Judicial Medical Officer.

Module Examination

20 Multiple Choice Questions – 20 marks
4 Structured Essay Questions – 80 marks
Minimum pass mark 50%

Recommended Reading

1. Simpson’s Forensic Medicine, Richard Sheppard, ed 12
2. Principles and Practice of Medical Jurisprudence, Taylor, 13th ed
3. Clinical Forensic Medicine, McClay, ed 3
4. Handbook of Forensic Pathology, Di Maio and Dana. Ed 2
5. Medico Legal Aspects of Injuries, de Alwis, ed 1
6. Relevant chapters in standard references in forensic medicine, medical jurisprudence, pathology, surgery etc.

2.16 Trauma Module

Core Topics: Introduction, anatomical basis of trauma, metabolic and neuroendocrine response to trauma, assessment and resuscitation of a patient with multiple injuries, pathology of wound healing, open wounds, vascular injuries, tendon and nerve injuries, principles of management of fractures and dislocations, head injuries, spinal injuries, ENT injuries, facio-maxillary injuries, thoracic injuries, abdominal trauma, injury to kidney, bladder, urethra, burns, rehabilitation of trauma patients, epidemiology and prevention of trauma

Duration: 21 lecture hours approximately.

Teaching/learning methods: Lectures, skill workshop in peripheral venous cut-down, insertion of a chest drain, suturing of skin

Module Examination

MCQ 20 of multiple true/false type – 100 marks
Minimum pass mark 50%

Recommended Reading

1. Adams Outline of Fractures
2. Apley’s Orthopaedics and Trauma, Louis Soloman, ed 9
3. Relevant chapters in standard references in surgery.

2.17 Reproductive Health Module

Core Topics: Obstetrics: Introduction, anatomy and physiology of female reproductive system, reproductive embryology, puberty, adolescence, breast, human genetics, prenatal and preconception diagnosis, foetal needs during pregnancy; changes during pregnancy, placenta, antenatal care, high risk pregnancy, ectopic pregnancy, bleeding during early pregnancy, antepartum haemorrhage, pregnancy induced hypertension, medical disorders complicating pregnancy, multiple pregnancy, foetus at risk, Rh disease, special problems during pregnancy, malpresentation and malposition, imaging during pregnancy; normal labour, complicated labour, preterm labour, postpartum haemorrhage, emergencies in obstetrics; puerperium, perinatal and maternal mortality, bereavement; neonatology, (care and assessment, IUGR, small for dates, prematurity, jaundice, infections, respiratory distress, seizures, birth asphyxia, resuscitation, perinatal mortality);
Gynaecology: abnormalities in menstrual bleeding, sexually transmitted diseases and syndromes, infections, lumps, endometriosis, subfertility, trophoblastic disease, contraception and family planning, tumours, urogynaecology, neoplasms of ovary, uterus, menopause, hormone replacement, bleeding, sexual function, endoscopy, diseases of the breast.

Duration: 75 hours approximately.
Teaching/learning methods: Lectures, problem based tutorials, fixed learning modules, seminars, inter departmental activities, student seminars

Module Examination

MCQ 20
Minimum pass mark 50%

Recommended Reading

1. Essential Obstetrics, Arulkumaran, ed 1
3. Detecting Pre-eclampsia (A practical guide), WHO publication, 2005

2.18 Module examinations and passing the Applied Sciences Stream examinations

Criteria for passing individual Module Examinations
A candidate who obtains a minimum pass mark of 50% at a Module Examination is considered to have passed that Module. Additional requirements that have to be satisfied for passing specific modules are indicated under each of them. A candidate who fails to obtain the minimum pass mark of 50% is considered to be referred in that Module Examination. Candidates who get referred in one or more Module Examinations shall appear for subsequent examinations of the respective Modules and obtain the minimum pass mark of 50%, upon which such candidates are considered to have passed the respective Module Examinations.

Criteria for passing the Applied Sciences Stream examinations
Presently candidates are examined in 17 modules. A candidate who passes all the stipulated Module Examinations of the Applied Sciences Stream and obtains a minimum pass mark of 50% from the total mark allocated for the Applied Sciences Stream examinations is considered to have passed the Applied Sciences Stream examinations. Candidates who get referred in one or more Module Examinations are considered to be referred in the Applied Sciences Stream examinations. Such a candidate shall be deemed to have passed the Applied Sciences Stream examinations when the candidate passes all the stipulated Module Examinations and obtains the minimum pass mark of 50% at a subsequent module examination(s).

Calculation of marks and award of classes in the Applied Science Stream examinations
Only the students who have passed all the Module Examinations in their first attempt will be considered eligible for award of classes. The % mark obtained by the candidate at the first attempt for each of the 17 Module Examinations is added up and divided by 17 to get the % cumulative mark for all 17 Modules. This is called the % cumulative Applied Sciences Stream examination mark. This mark is used in deciding on the classes. The classes are decided according to the classification of marks described previously. This calculation may be changed periodically due to curricular changes and such changes will be informed to the students.
Applied Science Stream contribution to the Cumulative MBBS Result

The Applied Sciences Stream will contribute 20 marks (20%) to the 100 marks of the Cumulative MBBS Result. This contribution may be changed periodically due to curricular changes and such changes will be informed to the students.

3. THE BEHAVIOURAL SCIENCES STREAM (BSS)

Introduction

There has been growing awareness among medical schools around the world of the need to train potential doctors in areas such as communication skills, interpersonal relations, ethical behaviour and personal development, in addition to the subject matter of medicine taught to them. This has led many medical schools around the world to introduce the teaching of these areas into the MBBS Curriculum. It was in a similar vein that the Faculty of Medicine, Colombo introduced the Behavioural Sciences Stream to its new medical curriculum in 1995.

In keeping with the Mission of the Faculty of Medicine to develop a graduate who will fulfill the health needs of the individual and the community, with competence, compassion and care, the BSS conducts its teaching activities focusing not only on professional development of the individual but also on their personal development. This is believed to empower the individual to function as an effective member of the health care team. Many activities in the BSS curriculum are those that would support and facilitate several of the teaching/learning activities that the students undertake in the other Streams, especially the Clinical Sciences Stream and the Community Stream.

The behavioural sciences is a field of study primarily concerned with the understanding, prediction and control of human behaviour, especially types of behaviour that develop from interpersonal relations. The curriculum has been derived from broad themes, based on 5 types of interactions commonly encountered by a practicing doctor. The interactions being with self, patients, family members of the patient, members of the health care delivery team and the community. The curriculum has been designed with the aim of imparting and refining within students the knowledge, skills and attitudes needed for them to develop in these interacting areas.

The BSS has identified a series of circumstances and challenges that students might face in their work. Using these examples, the students will be provided with a variety of learning opportunities to gain the knowledge, skills and attitudes necessary to deal with such circumstances and challenges.

3.1 Academic Programme

Activities of the BSS are arranged as 6 Modules. Approximately 3 hours are allocated a week and during a 10 week term, altogether 30 hours of BSS activities are conducted. The organization of BSS activities are shown in Table 3.
Table 3: Organization of Modules in the BSS

<table>
<thead>
<tr>
<th>Module No.</th>
<th>Name of Module</th>
<th>Term</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Personal Development I</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Personal Development II</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>No BSS teaching/learning activities</td>
<td>4</td>
</tr>
<tr>
<td>2</td>
<td>Basic Behavioural Sciences</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Basic Behavioural Sciences II</td>
<td>6</td>
</tr>
<tr>
<td>3</td>
<td>Communication Skills I</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Communication Skills II</td>
<td>8</td>
</tr>
<tr>
<td>4</td>
<td>Medical Ethics I</td>
<td>9</td>
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<tr>
<td></td>
<td>Medical Ethics II</td>
<td>10</td>
</tr>
<tr>
<td>5</td>
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<td>Changing Behaviour II</td>
<td>12</td>
</tr>
<tr>
<td>6</td>
<td>Health Management</td>
<td>13</td>
</tr>
</tbody>
</table>

An introduction to each module is given below.

### 3.1.1 Personal Development Module

Research has shown that an individual’s personal characteristics have a profound effect on his/her professional development. Therefore as individuals striving to become effective professionals it is important to pay attention to aspects of personal development. The teaching/learning activities in this module will facilitate the refinement of these skills which would greatly contribute towards the student’s professional development.

On completion of this module students should be able to:

- Identify and apply effective skills in learning, thinking, reading, writing, and making an effective presentation
- Identify the skills and strategies of facing the stressors of life as a student and health professional effectively
- Identify the application of the principles of formal and informal learning in adult education
- Identify and apply the techniques useful in information technology for medical practice
- Practice methods of improving physical, mental and spiritual wellbeing

Recommended Reading

2. Essential study skills, Wong L, ed 7, Houghton Mifflin Co, Boston, 1994
3. Perfect Mental Health, Wasantha Gunatunga
3.1.2. Basic Behavioural Sciences Module

This module will introduce students to some of the key concepts of the behavioural sciences. An understanding of these concepts will give students an insight into human nature and it is believed that this will enhance their effectiveness as a health professional. The teaching/learning activities will help them to become more aware of themselves as a person and also enable them to relate better to others including their patients and colleagues.

On completion of this module students should be able to:

- Recognize the importance of the study of human behaviour and its relevance to the health care profession
- Recognize that each individual is unique, possessing characteristics that are distinctively his/her own.
- Identify and analyze the different factors which strengthen and inhibit human behaviour.
- Identify factors which influence social perception, social interaction and how these could affect ones functioning as an effective health professional.
- Recognize ways of developing the quality of the various types of human relationships you are involved in as a person and as a professional

Recommended Reading

2. Introduction to Social Psychology, Vaughan and Hogg, ed 4, Pearson Education, NSW, 2005

3.1.3. Communication Skills Module

The communication skills module will look at several groups with whom a doctor communicates including patients, their families, other members of the health care team, professionals in the field and the general public. It will also look at a range of situations that students may be placed in as practicing doctors which require good communications skills. The module will attempt to develop and refine within students, the communication skills and techniques which would be effective to deal with the communication challenges that they will be confronted with in their future career.

On completion of this module students should be able to:

- Identify and practice effective communication skills
- Identify and practice effective relationship building skills
- Identify the interpersonal and communication skills needed to face challenging situations
- Appraise and thereby refine their own communication skills

Recommended Reading

1. The Oxford Practice skills Course: Ethics, Law and communication Skills in Health Care education, RAH
2. Communication Skills for Doctors, Maguire
3.1.4. Ethics Module

Through the ethics module it will be attempted to give students the knowledge, skills and attitudes necessary to guide their professional conduct and decision making processes. The ultimate aim of this exercise is to obtain a change in behaviour that will be beneficial to students, the patients and the society.

On completion of this module students should be able to:
- Identify and be sensitized to ethical and moral issues commonly encountered in medical practice
- Evaluate current procedure adopted when faced with such situations
- Formulate a framework within which such issues could be resolved
- Recognize the ethical principles of dealing with different groups of patients
- Develop into medical practitioners who are aware of and sensitive to ethical issues

Recommended Reading

2. Sri Lanka Medical Council, Guidelines on ethical conduct for medical and dental practitioners registered with the Sri Lanka Medical Council, 2003
3. Health Ethics in South East Asia, WHO, Vol 1-4, 2005

3.1.5. Changing Behaviour Module

This module will explore some of the techniques and strategies for dealing with the challenging health behaviours of individual patients as well as the role of the health professional to create ‘change’ on a wider scale such as with the general public, other professionals and opinion leaders. The module will also examine some of the challenges faced by health professionals whilst attempting to engage patients in behaviour change strategies.

On completion of this module students should be able to:
- Recognize the clinical situations which need change in attitudes and behaviours
- Identify techniques and formulate strategies for initiating change
- Develop the skills necessary for engaging in changing patients attitudes and behaviours
- Identify at a community level, attitudes and behaviours which are harmful to health and strategies for changing them.
- Identify challenges and barriers faced in changing attitudes and behaviours and formulate strategies for dealing with such situations

Recommended Reading


3.1.6. Health Management Module

This module will attempt to provide you the knowledge and refine within you the skills necessary to become an effective manager working within the health care system.
On completion of this module students should be able to:

- Describe the structure and function of the health care delivery system in Sri Lanka
- Recognize the problems that may arise when working as a team in the health care delivery system
- Develop the ability to work harmoniously with other members of the health care delivery system
- Identify methods of improving the system to give better service to patients
- Develop the ability to use research finding in improving clinical practice and decision making

Recommended Reading

1. Personal psychology for life and work, Rita K. Baltus, ed 5 www.library.nhs.uk.healthmanagement

3.2 Examinations of the Behavioural Sciences Stream

A minimum of 80% attendance at all student-centered activities (small group discussions, student seminar presentations, assignments etc.) is a required before a candidate is allowed to appear for each examination.

Follow up activities for students who are unable to complete the BSS examinations

With regard to attendance:
1. Reminders at the beginning of each term about maintaining the required attendance.
2. Displaying the attendance of students well ahead of examinations.
3. Sending personal letters to students who have poor attendance.
4. Allowing and encouraging students having poor attendance to improve on the attendance by participating in corresponding activities with junior batches of students.

With regard to examinations:
Since there is no cut off pass mark for the BSS examinations (I, II and III), students who have scored low marks (<50%) for any Examination are given the option to improve their overall mark by sitting with a junior batch of students for the corresponding examination(s).

There will be 3 Examinations during the course (in-course assessments) and an End of BSS Examination. Marks obtained at these examinations will contribute towards a cumulative total obtained at the end of the BSS examinations.

The details of the examinations of the BSS are given in Table 4.
Table 4. BSS examinations and marks schedule

<table>
<thead>
<tr>
<th>Examination</th>
<th>Content area assessed (modules)</th>
<th>Period</th>
<th>% Marks</th>
<th>Format of Exam</th>
<th>Duration of Exam</th>
</tr>
</thead>
<tbody>
<tr>
<td>Examination I</td>
<td>Personal Development &amp; Basic Behavioral Science</td>
<td>End of Term 6</td>
<td>20%</td>
<td>3 SEQs</td>
<td>1 1/2 hrs</td>
</tr>
<tr>
<td>Examination II</td>
<td>Communication Skills &amp; Medical Ethics</td>
<td>End of Term 10</td>
<td>20%</td>
<td>3 SEQs</td>
<td>1 1/2 hrs</td>
</tr>
<tr>
<td>Examination III</td>
<td>Changing Behaviour &amp; Health Management</td>
<td>End of Term 13</td>
<td>20%</td>
<td>2 SEQs</td>
<td>1 1/2 hrs</td>
</tr>
<tr>
<td>End of BSS Examination</td>
<td>All Modules</td>
<td>End of MBBS Programme (approx. Term 15 or later)</td>
<td>40%</td>
<td>5 SEQs</td>
<td>3 hrs</td>
</tr>
</tbody>
</table>

Total marks for 4 examinations of the BSS: 100

End of BSS Exam (Repeat exams): All Modules
Approx. 4-6 weeks after release of results of first End of BSS exam: 100
5 SEQs: 3 hrs

SEQ: Structured Essay Questions
(% marks refer to marks allocated out of the 100 marks allocated for BSS examinations)

Criteria for Passing the BSS examinations
Performance of each candidate in the BSS examinations at the end of the MBBS degree programme will be based on the total mark of the BSS examinations that has been obtained by each candidate. This mark will be calculated by aggregating the marks obtained by each candidate at the 4 examinations of the BSS using the apportioning of marks given in Table 4. This is called the % cumulative BSS examination mark. Those candidates who obtain a minimum pass mark of 50% for the % cumulative BSS examination mark will be considered to have passed the BSS examinations. A candidate is deemed referred in the BSS examinations if the candidate fails to obtain the minimum pass mark of 50% stated above. Such a candidate is deemed to have passed the BSS examinations when the candidate obtains the minimum pass mark of 50% at a subsequent End of BSS Examination.

Calculation of marks for award of classes in the BSS examinations
Only the marks obtained by the candidates in their first attempt at the 4 examinations of the BSS will be considered when the % cumulative BSS examination mark is computed for award of classes in the BSS examinations. Award of classes will be based on this % cumulative BSS examination mark obtained by each candidate. The classes are decided according to the classification of marks described previously.
BSS contribution to the Cumulative MBBS Result

The BSS will contribute 10 marks (10%) to the 100 marks of the Cumulative MBBS Result.

4. COMMUNITY STREAM

The expectations of the public, their knowledge on health and illness, which have advanced with the developments in information and communication technology, have to be taken into consideration when designing undergraduate medical curricula. It is no longer adequate to treat illnesses when those afflicted seek care, but we also have to take a proactive and positive approach to promote health, prevent occurrence of risk factors and illnesses, maintain the best possible level of health, cure diseases and rehabilitate the disabled. The future doctors have to be able to carry out all these activities throughout the life cycle of a person. Hence, the ability to provide comprehensive health care is a basic skill expected of a graduating doctor.

The teaching/learning activities and experiences of the Community Stream in the MBBS degree programme are organized and implemented as 4 Stages from the first year onwards until the end of the degree programme, and are designed to achieve several faculty objectives. Participation of students is expected, both individually and as groups, to acquire the necessary knowledge, skills, attitudes and attributes in order that they may best meet the health needs of the individual and the community with competence, integrity, compassion and care.

4.1 Academic Programme

4.1.1 Stage I: Health: Concepts, determinants and promotion

Introduction, concept of health, dimensions of health, definition of health; factors influencing health of the individual, family and community; improving health; measuring health; prioritization of health requirements and health care; natural history of diseases, levels of prevention, health promotion, strategies and role of the doctor in health promotion; health care systems in Sri Lanka; primary health care strategies and the role of millennium development goals in achieving health and development.

Demography: Introduction, demographic transition, mortality and fertility trends, factors influencing transition; implications of changing population structure for health and health care; measure of mortality and fertility; health data amongst population groups and comparison of data; health information maintained by Ministry of Health and collection of vital statistics and vital registration system.

Period in Community Stream training: Terms 2 and 3 (approx.)

Duration: 60 hours approximately.

Teaching methods: Small group discussions (SGDs), lectures, discussions, student presentations, preparing brief reports, designing posters, enacting a drama etc.

Group assignment: Groups of students will be given the task of preparing a Group Report based on the small group discussions. This will be marked and a group mark given.

Examination: CSA-I held after completion of Stages I and II.
Recommended Reading


4.1.2 Stage II: Basic Statistics and Epidemiology

Basic Statistics: Relevance of basic statistics in health and health care to medical professionals; numerical and non numerical methods of data presentation, prediction from sample data to populations, groups, tests of significance, confidence intervals, calculations and interpretation; sampling techniques

Basic Epidemiology: Relevance of basic epidemiology in health and health care, measures of disease frequency, their calculations and interpretation; distribution and determinants of disease; measures of effect; epidemiological methods

Period in Community Stream training:
Basic Statistics  Term 5  30 hours
Basic Epidemiology Term 6  30 hours

Teaching methods: lectures, self learning modules, group work, field visits, seminars, fixed learning modules. In addition groups of students will visit to health care settings to study the health information systems in place followed by student presentations in groups

Examination: CSA-I held after completion of Stages I and II.

Recommended Reading (Basic Statistics section)

1. Basic Statistics: a self-learning module. Department of Community Medicine, Faculty of Medicine; Lankathilake, Seneviratne, Rajapakse, Fernando, Colombo; 2009. Volume-I.

2. Basic Statistics: a self-learning module. Department of Community Medicine, Faculty of Medicine; Lankathilake, Seneviratne, Rajapakse, Fernando, Colombo; 2009. Volume-II.

3. Statistics at Square One, Michael Campbell, ed 11, London

4. Basic Statistical Analysis, Sprinthall, ed 9, Allyn and Bacon.


7. Medical Statistics Made Easy, Harris ed 2, Edinburgh, Churchill Livingstone

Recommended Reading (Basic Epidemiology section)

1. Epidemiology – A Handbook for Medical Students. Rajapakse, Seneviratne, Fernando, Arambepola, Lankathilake, Department of Community Medicine. Faculty of Medicine, Colombo, 2009.


5. Epidemiology. Leon Gordis. ed 4, 2004

4.1.3 Stage III: Community Based Learning and Research project

This stage has 3 components

A. Community Attachment
B. Family Attachment
C. Research Project

A. Community Attachment

Core Topics: Health status of a community, nutritional status, communicable and non-communicable diseases, disability; healthcare needs of a community, resources available for health care and health promotion; health related behaviour and factors influencing it; use of health care services and factors influencing it; application of primary health care concepts: physical and socio-economic factors influencing health of the community; plan and implement interventions to improve health and health related behaviour of the community based on identified physical and social factor that influence health, through community participation and ensuring sustainability, effectiveness of interventions; reflection on community stream learning; develop leadership skills, health care team concept; effective communication with the individual, family, community; favourable attitudes towards learning from the community, caring for patients and families.

B. Family Attachment

Core Topics: Health status of the family, assessment of health status and health needs; accessibility and utilization of health resources; factors influencing health related behaviour and use of health care services; physical and social factors influencing health of the family; carry out measures to improve health and health related behaviour of the family based on identified physical and social factors that influence health; provide first contact care under supervision; motivating family to improve health; develop favourable attitudes in caring for the individual and the family.
C. Research Project

Core Topics: Design and write a research protocol, access, review and compile scientific work on a research topic; ethical issues and obtaining ethical clearance; data collecting using appropriate, valid methods and instruments, data analysis using statistical software; interpret results and draw valid conclusions, write a report on the research study; dissemination of findings.

Period in Community Stream training: Terms 8 to 13

Duration: The Terms in which the Community Stream teaching activities are scheduled are subject to change as these activities are influenced by the allocation of students to clinical appointments and activities of other Streams. Hence the information given below has to be treated as approximations. One week per Term each is assigned to community based learning in Terms 8 to 13. Family attachment is introduced in Terms 12 and 13. Further learning sessions are scheduled within Terms 12 and 13. The total durations of the community and family attachments together add up to approximately 240 hours. The research project is conducted in Terms 13 and 14 and consists of approximately 100 hours.

Setting and teaching/learning methods

For the Community Attachment programme, each student group is assigned to a ‘community’ of 25-30 households. Each student group is supervised by an academic staff member throughout the attachment.
For the Family Attachment, one family from the same community is assigned to a pair of students.
Students are provided with a study guide which is used as a guide for the learning process, and to maintain records of the activities they perform including reflective logs.

Teaching/learning methods include field based activities such as assessment of health status and factors influencing health in communities and families; planning and implementing and evaluating health interventions; and developing health education material and conduct of communication activities towards change of behaviour. Lecture discussions, small group discussions, workshops, student seminars are the main faculty based teaching methods.

Students in groups of 3, will design and conduct a research project under the guidance of a supervisor.
Teaching is in the form of lectures, student seminars and workshops. A hands on training workshop is held on using statistical software.
The learning activities include selecting a topic, collecting background information, review of scientific information, formulating objectives and writing a comprehensive research proposal. The research proposals are submitted to the Ethics Review Committee of the Faculty of Medicine, University of Colombo. Students develop data collecting instruments, collect data, and conduct statistical analysis. A research report is prepared according to the guidelines provided.

The students are given an opportunity to disseminate their findings at the annual Community Stream scientific session.
Examinations: CSA-II and CSA-III held after completion of Stage III.

Recommended Reading (for teaching/learning activities in Terms 8 to 13)

1. Community and Family Attachment- a study guide, Vol I, Arambepola, Gunawardane, Withanapathirana. Department of Community Medicine, Faculty of Medicine, Colombo; 2010.

2. Community and Family Attachment - a study guide, Vol II, Arambepola, Gunawardane, Department of Community Medicine, Faculty of Medicine, Colombo; 2010

3. Student Research programme- a study guid,; Arambepola, Department of Community Medicine, Faculty of Medicine, Colombo, 2011.

4.4 Stage IV: Community perspective of patient care

Evaluating the influence of family and community on a given patient presentation; effect/impact of patient on a family and community; health seeking behaviour; social, family and community factors affecting patient management; promoting health using comprehensive approaches through stake holder participation; carrying out legal and statutory duties conforming to ethical standards and national policies; demonstrate caring attitude towards patients, families and the community.

Timing and duration: 40 hours in Terms 13, 14, 15

Teaching methods: lectures, discussions of case studies, student presentations, seminars, exhibition

Examination: CSA-IV held after completion of Stage IV.

Recommended Reading


4.2 Examinations of the Community Stream

Community Stream Assessment 1 (CSA-I)

Academic activities covered during Stages I and II will be examined in CSA-I. Candidates who have a minimum of 80% attendance at small group discussions and other group work during Stages I and II will be eligible to appear for the CSA-I. Candidates who are ineligible
to appear for CSA-I due to not having the required attendance will have to appear for the CSA-I held for a subsequent batch of students and it will be considered as their second attempt at the CSA-I. To be eligible to appear for this assessment they are required to successfully complete an individual assignment specified by the Community Stream.

Candidates who obtain a minimum pass mark of 50% at the CSA-I will be considered to have passed the CSA-I. Those candidates who fail (obtain less than 50% marks) at the above examination shall be deemed to have passed the CSA-I examination when they appear for a subsequent CSA-I examination and obtain the minimum pass mark of 50%.

For any candidate who passes CSA-I in an attempt other than the candidate’s first attempt, the maximum mark carried would be 50% for that assessment irrespective of the mark the candidate has obtained.

All students, irrespective of results of CSA-I will proceed with the Community Stream teaching programme.

**Group assignment and Report**

Average mark given for the Group Report submitted, based on the group assignment given during Stage I (Terms 2 & 3) will be considered as the group mark. All members of the group will be given the same mark.

**CSA-II**

CSA-II is a written examination covering the learning during the Community Attachment which is held at the end of Term 11.

Candidates who have a minimum of 80% attendance at the relevant group work, field visits, specified lectures and seminars of Community Stream Stage III, will be eligible to appear for the CSA-II. Candidates who are ineligible to appear for CSA-II due to not having the required attendance will have to appear for the CSA-II held for a subsequent batch of students and it will be considered as their second attempt at the CSA-II. To be eligible to appear for this assessment they are required to successfully complete an individual assignment specified by the Community Stream.

Candidates who obtain a minimum pass mark of 50% at the CSA-II will be considered to have passed the CSA-II. Those candidates who fail (obtain less than 50% marks) at the above examination shall be deemed to have passed the CSA-II when they appear for a subsequent CSA-II examination and obtain the minimum pass mark of 50%.

For any candidate who passes CSA-II in an attempt other than the candidate’s first attempt, the maximum mark carried would be 50% for that assessment irrespective of the marks the candidate has obtained.

All students, irrespective of results of CSA-II will proceed with the Community Stream teaching programme.
CSA-III

CSA-III comprises different assessment methods that examine the learning during the Community Attachment, Family Attachment and Research Project.

The Community Attachment is assessed by continuous assessment by the supervisor, end of programme field based assessment, and a Report prepared by each student group.

The Family Attachment is assessed by end of programme field based assessment, a Report prepared by student groups (2 to 3 students per group) and a *viva voce* examination.

The Research Project is evaluated on the Report and a *viva voce* examination.

Students who have passed or have appeared for the CSA-1 at least once and have a minimum of 80% attendance at the group work, field visits, specified lectures and seminars of Community Stream Stage III and have completed all work related to the Community Attachment, Family Attachment and the Research Project and submitted the relevant reports on time will be eligible to appear for CSA-III. Those candidates who do not have the required attendance at the Community and/or Family Attachment programmes will have to undertake an individual field based assignment specified by the Community Stream. On its successful completion these candidates will be allowed to appear at the CSA-III with the same batch of students and this will be considered as the second attempt of these candidates at this examination (CSA-III).

The reports of the Community Attachment, Family Attachment, and the Research Project should be submitted on or before the date specified by the Community Stream. One to 7 days delay in submission will be subjected to a 10% reduction of the marks allocated for the specific report. Reports submitted after seven days will not be accepted. Such candidates will have to submit the reports for the next available examination.

The apportioning of marks for different components of the CSA-III examinations is given in Table 5. Candidates who obtain a minimum pass mark of 50% at the CSA-III will be considered as having passed CSA-III.

Those who fail the CSA-III (obtain less than 50% marks) will have to appear for the Repeat CSA-III. In the Repeat CSA-III students are required to carry out special assignment(s) relevant to the components they have scored less than 50%. For failures of the Community Attachment the special assignment will be a field-based assignment. For failures of the Family Attachment the special assignment will be a field-based assignment. Those who fail in the Research Report will have to make the necessary modifications/corrections specified by the examiners and resubmit the Research Report.

Those candidates who failed CSA-III shall be deemed to have passed the CSA-III when they appear for a Repeat CSA-III subsequently and obtain the minimum pass mark of 50%.

For any candidate who passes CSA-III in an attempt other than the candidate's first attempt, the maximum mark carried would be 50% for that assessment, irrespective of the marks the candidate has obtained.
CSA-IV

Academic activities covered during Stage I, II, III and IV will be examined in CSA-IV. Candidates should have passed the CSA-I, CSA-II and CSA-III, to be eligible to appear for the CSA-IV. In addition, they should have a minimum of 80% attendance at Stage IV teaching activities. Those who do not have the required attendance will have to appear for the Repeat CSA-IV, and it will be considered as their second attempt at the CSA-IV. To be eligible to appear for this assessment they are required to successfully complete an individual assignment specified by the Community Stream.

Students who obtain a minimum pass mark of 50% at the CSA-IV will be considered as having passed CSA-IV. Those candidates who fail (obtain less than 50% marks) at the above examination shall be considered to have passed the CSA-IV examination when they appear for a Repeat CSA-IV examination and obtain the minimum pass mark of 50%.

For any candidate who passes CSA-IV in an attempt other than the candidate’s first attempt, the maximum mark carried would be 50% for that assessment, irrespective of the mark the candidate has obtained.

Table 5: Examinations in the Community Stream

<table>
<thead>
<tr>
<th>Examination</th>
<th>Apportioned Mark (out of 150)</th>
<th>Format of Exam.</th>
<th>Timing</th>
</tr>
</thead>
<tbody>
<tr>
<td>*CSA-I</td>
<td>35</td>
<td>Written paper</td>
<td>Completion of Stages I and II</td>
</tr>
<tr>
<td>Group assessment</td>
<td>05</td>
<td>Group reports</td>
<td>During Terms 2 &amp; 3</td>
</tr>
<tr>
<td>CSA-II</td>
<td>25</td>
<td>Written paper</td>
<td>End of Term 10-11</td>
</tr>
<tr>
<td>CSA-III</td>
<td>55 (marks breakdown given in parentheses)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Community attachment</td>
<td></td>
<td>Continuous assessment</td>
<td>***On completion of relevant teaching and field/community work</td>
</tr>
<tr>
<td>(05)</td>
<td>Report</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(10)</td>
<td>Field-based Assessment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(05)</td>
<td>Family attachment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(05)</td>
<td>Report</td>
<td>***On completion of relevant teaching and field/community work</td>
<td></td>
</tr>
<tr>
<td>(05)</td>
<td>Field-based assessment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(05)</td>
<td>Viva-voce</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Research projects</td>
<td></td>
<td></td>
<td>***On completion of relevant teaching activities</td>
</tr>
<tr>
<td>(10)</td>
<td>Report</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(10)</td>
<td>Viva-voce</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CSA-IV</td>
<td>30</td>
<td>Written paper</td>
<td>End of professorial appointments</td>
</tr>
<tr>
<td>Total marks</td>
<td>150**</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* CSA: Community Stream Assessment
** Marks scored out of 150 is converted to a percentage and is expressed as the % cumulative Community Stream examination mark.
*** The timing of the examinations is subject to change.
Criteria for passing the Community Stream examinations
Performance in the Community Stream examinations at the end of the undergraduate medical course will be based on the % cumulative Community Stream examination mark. This mark is calculated by aggregating the marks obtained by students for CSA-I, the group assessment, CSA-II, CSA-III and CSA-IV and expressing it as a percentage. The apportioning of marks for each CSA and the group assessment are given in Table 5. Those who obtain the minimum pass mark of 50% for the % cumulative Community Stream examination mark will be considered to have passed the Community Stream examinations. A candidate is deemed referred in the Community Stream examinations if the candidate fails to obtain a minimum pass mark of 50% stated above. Such a candidate shall be deemed to have passed the Community Stream examinations when the candidate obtains the minimum pass mark of 50% at a subsequent CSA-IV Examination.

Calculation of marks for the award of classes in the Community Stream examinations
Only the candidates who have passed the CSA-I, II, III and IV in their first attempts will be considered for award of classes in the Community Stream examinations. Award of classes will be based on the % cumulative Community Stream examination mark obtained by each candidate. The classes are decided according to the classification of marks described previously.

Community Stream contribution to the Cumulative MBBS Result
The Community Stream will contribute 15 marks (15%) when the total allocation for the Cumulative MBBS Result is taken as 100 marks.

5. THE CLINICAL SCIENCES STREAM

In the Clinical Sciences Stream certain selected introductory activities are conducted in the first four terms of the MBBS programme. From term 5 onwards up to the end of the professorial appointments the students go to the wards and go through a series of training appointments with consultants in the National Hospital of Sri Lanka, other hospitals in the Colombo group and in other approved institutes. While the hospital training is taking place theoretical inputs are given in the faculty. Such teaching occurs mainly during the teaching activities of the Applied Sciences Stream. These are supplemented by the activities of the Community Stream and the BSS. Figure 1 shows the expansion of Clinical Sciences Stream activities in the later part of the curriculum.

The content areas of the 5 clinical specialties (Medicine, Surgery, Obstetrics & Gynaecology, Paediatrics and Psychological Medicine) are covered by a series of system based lectures, problem based tutorials, fixed learning modules and other teaching/learning activities conducted by the relevant modules and streams. These activities cover the relevant basic sciences, clinical applications and clinical skills in relation to the core topics of the subjects. Separate lectures in therapeutics and toxicology may also be included. Teaching/learning is complemented by hospital clinical appointments in the relevant specialties and a range of allied and sub-specialties to provide a comprehensive exposure and training in the assessment and principles of management of elective and emergency (including trauma) conditions related to these specialties. The principal learning methods in the wards include ward teaching based on patients with different disease conditions, ward classes, case discussions, skills demonstrations and practice in ward, clinic and operative theatre settings, clinical lecture demonstrations, teaching in community settings etc. In each specialty the training concludes with a period of intensive
training during the professorial appointment in the final year of the MBBS Programme. At the beginning of each professorial appointment the students will be informed about the details of the training programme in each specialty and about the continuous assessments and other examinations.

In the following section core topics of each subject, the clinical appointments, and recommended reading are given.

5.1 The Academic Programme

5.1.1 Medicine (Clinical Medicine)

Core Topics: Obtaining a clinical history, performing a physical examination, interpreting the findings, arriving at a diagnosis, interpreting investigations, treatment including emergency care and therapeutic procedures, prevention, understanding pathophysiology in the following conditions. Diseases caused by infective organisms; disorders of the cardiovascular system; disorders of the respiratory system; disorders of the nervous system; disorders of the gastrointestinal, biliary systems, liver and pancreas; disorders of the endocrine system and metabolism; disorders of the kidney and genitourinary system; disorders of the blood and lymphoreticular system; disorders of the joints, bone and connective tissue; disorders of the skin; diseases caused by genetic factors, environmental factors, nutritional factors, poisons and toxins; diseases of the elderly

Clinical Appointments

1. Clinical Medicine – 2 appointments (5 – 8 weeks each)
2. Cardiology (1 – 3 weeks)
3. Neurology (1 – 3 weeks)
4. Respiratory Medicine (1 – 3 weeks)
5. Nephrology (1 – 3 weeks)
6. Dermatology (1 – 3 weeks)
7. Rheumatology (1 – 3 weeks)
8. Sexually Transmitted Diseases (1 – 3 weeks)
9. Transfusion Medicine (1 – 3 weeks)
10. Professorial Medicine appointment (8 weeks)

Recommended Reading

When textbooks are cited as recommended reading students are advised to read from the latest editions of these books.

1. Clinical Medicine, Kumar and Clark, ed 7
2. Davidson’s Principles and Practice of Medicine, Nicki Colledge, Brian Walker, Edwards, Bouchier, ed 21
3. Oxford Handbook of Clinical Medicine, Murray Longmore et al, ed 8
4. Harrison’s Principles of Internal Medicine, ed 17
5. Hutchison’s Clinical Methods, Michael Swash, ed 22
6. MacLeod's Clinical Examination, Graham Douglas et al, ed 12
7. Introduction to Clinical Examination, MJ Ford JF Munro

5.1.2 Surgery

Core Topics: Wounds, inflammation, tissue repair and scarring; cysts, tumours, ulcers, sinuses and fistulae, hernias; surgical infections and the maintenance of sterility; fluid, electrolyte and acid-base balance in the surgical patient; preoperative assessment and optimisation of the surgical patient; nutrition in the surgical patient; neoplasia and the principles of cancer management; burns – assessment and the principles of early and late management; trauma – mechanisms, assessment of injuries and principles of management; disorders of the bones and joints- congenital, infections, tumours and trauma; disorders of the ear, nose and throat; disorders of the eye and orbit; surgical disorders of the thorax; disorders of the breast and endocrine glands – thyroid, parathyroids, adrenals; disorders of the upper gastrointestinal tract – oesophagus, stomach and duodenum; disorders of the lower gastrointestinal tract – small bowel, appendix, colon, rectum and anal canal; disorders of the liver, biliary tract and pancreas; disorders of the upper and lower urinary tract; disorders of the testis and scrotum; disorders of the neonate, infant and child; disorders of the arterial, venous and lymphatic systems; principles of transplantation

Clinical Appointments

1. General Surgery 12 weeks (2 x 6 weeks)
2. Orthopaedic Surgery 3 weeks
3. Neurosurgery 2 weeks
4. Trauma surgery 2 weeks
5. Nephro-urolgy 1 week
6. Thoracic Surgery 1 week
7. Otorhinolaryngology (ENT) 2 weeks
8. Ophthalmology 2 weeks
9. Anaesthesiology 2 weeks
10. Radiology 1 week
11. Professorial Surgery appointment (includes general, vascular and transplant and paediatric surgery - 8 weeks

Recommended Reading


5.1.3 Obstetrics & Gynaecology (O & G)

Core Topics: Introduction, reproductive health, anatomy and physiology of female reproductive system, normal pregnancy and complications, antenatal care, identification of high risk pregnancy, normal labour, abnormal labour, partograms, complications of labour, post partum haemorrhage, puerperium, placenta, risk groups, malpositions and malpresentations, hyperemesis, ectopic pregnancy, medical conditions complicating pregnancy (diabetes, heart disease etc), pregnancy induced hypertension, multiple pregnancy, antepartum haemorrhage, imaging, emergencies in obstetrics, drugs used in obstetrics, and prescribing, pain relief during labour;
Ovulation, fertilization, early development, subfertility, assisted reproductive technology;
Bereavement, counselling; family planning, contraceptives;
Genetic problems, sexual characteristics, differentiation, intersex;
Newborn, assessment and care, birth asphyxia, respiratory distress, jaundice, infection, seizures, foetal needs, foetus at risk, growth restriction;
Menstrual disorders, bleeding in early pregnancy, vaginal discharge, infections, sexually transmitted infections, pelvic inflammatory disease, endometriosis, dysfunctional bleeding, benign and malignant neoplasms of reproductive system, vulval disease, urogynaecology, trophoblastic disease, sexual disorders, menopause, hormone replacement, laparoscopy, emergencies in gynaecology;
Breast disease, diagnosis and management;
History taking, examination and investigation of persons with obstetric and gynaecological problems, internal examination, pelvic assessment, record keeping;
Pre- and postoperative management of obstetric and gynaecological patients, labour room management, episiotomy, common operations, instruments, specimen collection;
Maternal and perinatal mortality and statistics

Clinical Appointments

1. VOGs – (4 weeks x 2)
2. Professorial O & G appointment – 8 weeks (includes oncology and family planning)
   Supplemented by paediatric training

Recommended Reading

1. Obstetrics, Ten Teachers, ed 19
2. Gynaecology, Ten Teachers, ed 19
3. Obstetrics Illustrated, Kevin Hanretty, ed 7
4. Gynaecology Illustrated, Catrina Bail et al , ed 6
5. Textbook of Obstetrics, Dutta, ed 7
6. Textbook of Gynaecology, Dutta, ed 5
7. Medical disorders in pregnancy, Desai, 2001
8. Jeffcoate’s Principles of Gynaecology, Pratap Kumar, ed 7
5.1.4 Paediatrics

Core Topics: Factors affecting intrauterine growth; aetiology, complications, management and prevention of common congenital abnormalities (structural and chromosomal); genetic and chromosomal abnormalities, inheritance, pedigree charts and risk assessment of common genetic diseases; common intrauterine infections and their sequelae; preconception and prenatal health strategies that reduce abnormalities in the newborn; principles and practical aspects of resuscitation of asphyxiated newborns; examination of newborns, maturity assessment and routine care; pathophysiology, clinical features and complications of common neonatal problems in Sri Lanka and their management and prevention; compare and contrast human and cow milk and describe the advantages of human milk in infant nutrition and current recommendations on breast feeding in Sri Lanka; principles of infant nutrition including breast feeding, complementary feeding and recommended diets (specifying food items) for healthy infants and preschool children; recognize the pattern of normal postnatal growth and identify abnormalities such as failure to thrive, obesity, short and tall stature, their complications and management; describe normal development of the infant and preschooler specifying important milestones and recognizing deviations from the normal; primary child health strategies recommended in Sri Lanka eg. Expanded Programme of Immunization, growth monitoring, use of CHDR, vitamin and nutrition supplementation programmes etc.; take a relevant paediatric clinical history, identify and prioritize the information; conduct a systematic clinical examination including growth parameters and development assessment; relevant diagnostic investigations and interpret the results of a given clinical situation; diagnose and manage bronchial asthma and describe precipitating factors, assessment of severity, treatment options and control methods; pathogens causing diarrhoeal diseases in children in Sri Lanka; diagnose and manage diarrhoea including assessment of level of hydration and fluid therapy; aetiology, clinical features, diagnosis, treatment including recognizing and managing complications and their long term follow up and prevention where applicable of common renal disorders, common congenital and acquired heart disease, common respiratory infections (including interpretation of common radiological findings), common gastrointestinal and hepatobiliary disorders, common neurological disorders, common developmental disorders (eg. mental retardation, cerebral palsy, etc), common behavioural and psychiatric disorders in childhood (e.g. autism, ADHD, enuresis, tantrums, psychosomatic disorders etc), common endocrine and metabolic disorders, common haematological and immunological conditions, common childhood malignancies – especially leukaemias and common solid tumours (brain, renal, bone), common musculoskeletal disorders in children, common dermatological conditions in childhood; procedures involved in administration of blood and blood products; epidemiology of common communicable diseases among children in Sri Lanka and recognize and manage other infections that cause outbreaks; epidemiology of non communicable diseases in the paediatric age group in Sri Lanka and be able to diagnose, treat, prevent and advice on prognosis of same; identify common nutritional problems, predisposing factors, presentations, management and complications in Sri Lanka (e.g. protein energy malnutrition, obesity, iron deficiency, iodine deficiency, vitamin A deficiency and other micronutrient deficiencies); common childhood complaints such as infantile colics, recurrent abdominal pain, constipation,
limb pain etc.; recognize and describe the immediate management of common paediatric emergencies; principles of basic and advanced life support in paediatrics; the "emergency trolley" and be familiar with the dosages of emergency/life saving medications; demonstrate skills in clinical procedures commonly carried out in a paediatric ward; contra-indications and common/important adverse effects of routinely used medications in paediatric practice and name the sources from where drug information can be obtained regarding paediatric prescribing; be familiar with the most recent national guidelines on management of dengue fever and dengue haemorrhagic fever in children; surgical problems encountered in newborn and their immediate management; risk factors and management of road traffic and home accidents, poisoning (e.g., kerosene oil ingestion and paracetamol overdose), insect stings and animal bites (dog and snake); vaccines in the expanded program of immunization (EPI) in Sri Lanka, vaccine storage conditions, the sites, routes and age of administration, adverse effects and their notification; non EPI vaccines; notifiable diseases in Sri Lanka and mechanisms of notification; presentations of child abuse including physical, emotional and sexual abuse and be familiar with issues related to child rights and child protection; break bad news to parents in the event of a child's death, serious illness or disability; familiar with cultural habits, beliefs and alternative healing methods practiced in Sri Lanka; environmental hazards such as air and water pollution and common zoonotic illnesses and their impact on child health; current morbidity and mortality patterns in paediatrics in Sri Lanka (perinatal, neonatal, infant under five mortality etc), their trends, underlying causes and interventions towards improvement.

Clinical Appointments

1. Visiting paediatricians (3 x 3 weeks each)

2. Paediatric Professorial appointment (8 weeks).

3. Community exposure to child health issues through community and family attachments in the Community Stream and home visiting exposure during the final year

Recommended Reading

1. Illustrated Textbook of Paediatrics, Tom Lissauer and Graham Clayden, ed 4
2. Examination Paediatrics: a guide to paediatric training, Wayne Harris, ed 3

5.1.5 Psychological Medicine

Core Topics: Signs and symptoms of psychiatric disorders, their classification and diagnosis; psychiatric history and mental state examination; reactions to stressful experiences; anxiety and obsessive disorders; somatoform and dissociative disorders; mood disorders; schizophrenia; paranoid symptoms and delusional disorders; dementia delirium and other neuropsychiatric disorders; eating and sleep disorders; psychiatry and medicine; suicide and deliberate self-harm; alcohol and substance use disorders; problems related to sexuality and gender identity; psychiatry of the elderly; drugs and other physical treatments; psychological treatments; child psychiatry; learning disability; law and psychiatry
Clinical Appointments

1. Consultant psychiatrists (2 weeks at National Institute of Mental Health, Angoda)
2. Professorial Psychological Medicine appointment 6 weeks at the University Psychiatric Unit, NHSL During these six weeks students have placements in the child guidance clinic in Children's hospital, the outpatient department of the National Hospital and community clinics run by the University Psychiatry Unit.

Recommended Reading

2. Psychiatry: An Oxford Core Text (Oxford Core Texts), Michael Gelder, Richard Mayou and John Geddes, ed 3
3. International Classification of Diseases, Chapter V, Classification of Mental and Behavioural disorders - WHO

5.2 Examinations of the Clinical Sciences Stream

The examinations of the Clinical Sciences Stream include continuous assessments (CAs) and the following examinations.

1. End of Clinical Sciences Stream Examination
2. Joint Applied Sciences Stream and Clinical Sciences Stream Examination (4th year MCQ & OSCE) and
3. Elective (Elective appointment and report)

5.2.1 End of Clinical Sciences Stream Examination

This examination is conducted at the end of the Clinical Sciences Stream training programme. It is a subject based examination where Medicine, Surgery, Obstetrics & Gynaecology, Paediatrics and Psychological Medicine are assessed separately. Details about the continuous assessments and the terminal examination of each subject are given below.

5.2.1.1 Examinations in Medicine (Clinical Medicine)

Continuous assessments (CA)
The continuous assessment provides 20 marks out of the total 100 marks allocated to the examinations in Medicine. Students are evaluated during the medicine professorial appointment by the following 3 assessments.

i. The end of professorial appointment OSCE – 50% (ie, 10 marks)
ii. An observed history taking session – 20% (ie, 4 marks)
iii. The end of professorial appointment viva voce examination – 30% (ie, 6 marks)

(Calculation: 10 + 4 + 6 = 20 marks)
End of Clinical Sciences Stream Examination

This examination has (1) a theory component, (2) a clinical component and (3) an investigation oriented practical (IOP). Details are given in Table 6.

1. The theory component consists of:
   i. A MCQ paper (also called the Common MCQ) - 40 question in 2 hours, multiple true/false type; 10 marks
   ii. Another MCQ paper (also called the Departmental MCQ) - 20 questions in 1 hour, best answer type; 10 marks
   iii. An Essay paper - 5 structured essay questions in 3 hours; 15 marks

   Total marks for the theory component (ie. i + ii + iii) = 35 marks

2. The clinical component consists of:
   i. A Long case - 45 minutes with a patient, 10 minutes to formulate discussion away from patient, 20 minutes discussion with a panel of 2 examiners; 20 marks
   ii. Short cases - 30 minutes, 4 cases, one each of cardiovascular, respiratory, nervous system and abdomen. 2 panels of 2 examiners each; candidate spends 15 minutes with each panel and sees 2 cases (7.5minutes x 2), then moves to the other panel to see 2 more cases. 5 marks x 4 = 20 marks

   Total marks for the clinical component (ie. i + ii) = 40 marks

3. Investigation oriented practical (IOP)
Investigation oriented practical consist of 5 stations. Each station 3 minutes, total 15 minutes per candidate-5 marks.

Table 6: Marks allocation for various components of the Examination in Medicine

<table>
<thead>
<tr>
<th>Component</th>
<th>Allocated Marks</th>
<th>Minimum requirements for passing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Continuous assessments(CA)</td>
<td>20</td>
<td>No minimum requirement</td>
</tr>
<tr>
<td>End of Clinical Science Stream Exam</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Theory component</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MCQ (common MCQ paper)</td>
<td>10</td>
<td>Total marks for Theory is 35. A minimum of 45% is needed to pass the subject.</td>
</tr>
<tr>
<td>MCQ (Departmental paper)</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Essay paper</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>Clinical component</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Long case</td>
<td>20</td>
<td>Total marks for Clinicals is 40. A minimum of 50% is needed to pass the subject.</td>
</tr>
<tr>
<td>Short cases</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>IOP</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Investigation Oriented Practical</td>
<td>5</td>
<td>No minimum requirement</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>Minimum pass mark 50%</td>
</tr>
</tbody>
</table>
Criteria for passing Medicine in the first attempt

In order to pass the subject of Medicine a candidate must (i) obtain a minimum % mark from the marks allocated for the Theory component (45% out of 35 marks) and the Clinical component (50% out of 40 marks) and (ii) also obtain a minimum pass mark of 50% from the 100 marks allocated for the subject of Medicine.

Criteria for passing Medicine in subsequent attempts

In order to pass the subject of Medicine a candidate must (i) obtain a minimum % mark from the marks allocated for the Theory components (45% out of 45 marks) and the Clinical components (50% out of 50 marks) and (ii) also obtain a minimum pass mark of 50% from the 100 marks allocated for the subject of Medicine.

The CA marks are not considered when the final mark is calculated in the subsequent attempts. The 20 marks allocated for the CA component in the first attempt is now redistributed equally between the Theory and Clinical components.

5.2.1.2 Examinations in Surgery

Continuous assessments (CA)

The continuous assessment provides 10 marks out of the total 100 marks allocated to the examinations in Surgery. Students are evaluated at the end of the professorial surgery appointment by an OSCE. It consists of 10 stations. (10 marks)

End of Clinical Sciences Stream Examination

This examination has (1) a theory component, (2) a clinical component and (3) a viva voce examination.

1. The theory component consists of:
   i. A common MCQ paper - 40 question in 2 hours (multiple true/false type) - 20 marks
   ii. A structured essay paper of 6 questions – 3 hours - 20 marks

   Total marks for the theory component \( (i.e. \ i + ii) = 40 \) marks

2. The clinical component consists of:
   i. A long case – 20 marks
   ii. Short cases- each student must do a minimum of 3 short cases within the allocated time – 20 marks

   Total marks for the clinical component \( (i.e. \ i + ii ) = 40 \) marks

3. Viva voce examination (10 marks)
Criteria for passing Surgery in the first attempt

In order to pass the subject of Surgery a candidate must (i) obtain a minimum % mark from the marks allocated for the Theory component (45% out of 40 marks), the Clinical component (50% out of 40 marks) and the viva voce component (25% out of 10 marks) and (ii) also obtain a minimum pass mark of 50% from the 100 marks allocated for the subject of Surgery.

Criteria for passing Surgery in subsequent attempts

In order to pass the subject of Surgery a candidate must (i) obtain a minimum % mark from the marks allocated for the Theory component (45% out of 45 marks), the Clinical component (50% out of 45 marks) and the viva voce component (25% out of 10 marks) (ii) also obtain a minimum pass mark of 50% from the 100 marks allocated for the subject of Surgery. The CA marks are not considered when the final mark is calculated in the subsequent attempts. The 10 marks allocated for the CA component in the first attempt is now redistributed equally between the Theory and Clinical components.

5.2.1.3 Examinations in Obstetrics & Gynaecology

Continuous assessments (CA)

The continuous assessment provides 10 marks out of the 100 marks allocated to the examinations in Obstetrics & Gynaecology. Students are evaluated during the professorial appointment in O & G by the following 3 assessments.

i. Log book and general ward work – 60% ie. 6 marks
ii. Performance of skills 15 marks – 15% ie. 1.5 marks
iii. OSCE – 25% ie. 2.5 marks

Total 10 marks

End of Clinical Sciences Stream Examination

This examination has (1) a theory component, (2) a clinical components and (3) viva voce examinations.

1. The theory component consists of:
   i. A common MCQ paper - 40 question in 2 hours - 20 marks
   ii. A structured essay paper of 4 questions – 3 hours - 20 marks

   Total marks for the theory component (ie. i + ii) = 40 marks

2. The clinical component consists of:
   i. A long case in Obstetrics (40 minutes) – 20 marks
   ii. A long case in Gynaecology (40 minutes) – 20 marks

   Total marks for the clinical component (ie. i + ii) = 40 marks
3. Viva voce examinations (10 marks)
   i. Viva voce examination in Obstetrics – 5 marks
   ii. Viva voce examination in Gynaecology – 5 marks
There will be two viva voce examinations, one in Obstetrics and the other in Gynaecology. Each is allocated 5 marks. The mark of both these is added and considered as a composite mark.

Criteria for passing Obstetrics & Gynaecology in the first attempt

In order to pass the subject of Obstetrics & Gynaecology a candidate must (i) obtain a minimum % mark from the marks allocated for the Theory component (45% out of 40 marks), the Clinical component (50% out of 40 marks) and the viva voce component (25% out of 10 marks) and (ii) also obtain a minimum pass mark of 50% from the 100 marks allocated for the subject of Obstetrics & Gynaecology.

Criteria for passing Obstetrics & Gynaecology in subsequent attempts

In order to pass the subject of Obstetrics & Gynaecology a candidate must (i) obtain a minimum % mark from the marks allocated for the Theory component (45% out of 45 marks), the Clinical component (50% out of 45 marks) and the viva voce component (25% out of 10 marks) (ii) also obtain a minimum pass mark of 50% from the 100 marks allocated for the subject of Surgery. The CA marks are not considered when the final mark is calculated in the subsequent attempts. The 10 marks allocated for the CA component in the first attempt is now redistributed equally between the Theory and Clinical components.

5.2.1.4 Examinations in Paediatrics

Continuous assessments (CA)

The continuous assessment provides 40 marks out of the total 100 marks allocated to the examinations in Paediatrics. Students are evaluated at the end of the professorial paediatric appointment by the following assessments. (40 marks)
Continuous assessment consists of the following.

i. Investigation oriented practical - 18 marks
ii. Portfolio assessment - 5 marks
iii. Community paediatrics and communication skills viva - 3 marks
iv. Attitude assessment (spot check) - 5 marks
v. Remarks - 2 marks
vi. Acute paediatrics assessment - 3 marks
vii. Ward presentation /Integrated ward class -4 marks
Total 40 marks

End of Clinical Sciences Stream Examination
This examination has (1) a theory component and (2) a clinical component.
1. The theory component consists of:
   i. A common MCQ paper - 40 questions of multiple true/false type -15 marks
   ii. An Essay paper, 5 structured essay questions (3 hours) -15 marks

   Total marks for the theory component (ie. i + ii) = 30 marks

2. The clinical component consists of:
   i. A long case (1 hour) -15 marks
   ii. Short cases- 2 cases (40 minutes) -15 marks

   Total marks for the clinical component (ie. i + ii) = 30 marks

**Criteria for passing Paediatrics in the first attempt**

In order to pass the subject of Paediatrics a candidate must (i) obtain a minimum % mark from the marks allocated for the Theory component (45% out of 30 marks) and the Clinical component (50% out of 30 marks) and (ii) also obtain a minimum pass mark of 50% from the 100 marks allocated for the subject of Paediatrics.

**Criteria for passing paediatrics in subsequent attempts**

In order to pass the subject of Paediatrics a candidate must (i) obtain a minimum % mark from the marks allocated for the Theory component (45% out of 50 marks) and the Clinical component (50% out of 50 marks) and (ii) also obtain a minimum pass mark of 50% from the 100 marks allocated for the subject of Surgery.

The CA marks are not considered when the final mark is calculated in the subsequent attempts. The 40 marks allocated for the CA component in the first attempt is now redistributed equally between the Theory and Clinical components.

5.2.1.5 Examinations in Psychological Medicine

**Continuous assessments (CA)**

The continuous assessment provides 15 marks out of the total 100 marks allocated to the examinations in Psychological Medicine. Students are evaluated at the end of the professorial psychological medicine appointment by the following assessments.

   i. Case book
   ii. A *viva voce* examination consisting of patient management problems in adult and child psychiatry

   Total marks for both i + ii = 15

Students have to submit a case book of ten cases they have followed up during the clinical appointment. They will be questioned on 2 patient management problems during the *viva voce* examination.
End of Clinical Sciences Stream Examination

This examination has (1) a theory component and (2) a clinical component.

1. The theory components consist of:
   i. A MCQ paper - 30 questions of multiple true/false type -25 marks
   ii. An Essay paper having 5 structured essay questions -25 marks

   Total marks for the theory component (ie. i + ii) = 50 marks

2. The clinical component consist of:
   i. A clinical case examination (45 minutes) -35 marks

Student will assess a patient for 30 minutes during which time they are expected to take a relevant history, perform a mental state examination, a relevant physical examination and formulate a management plan. The student will be examined for 15 minutes by a panel of two examiners.

   Total marks for the clinical component (ie. i + CA mark) = 50 marks

When marks are computed in Psychological Medicine, the 15 marks allocated for the continuous assessments are considered as part of the clinical component. Hence the clinical component will get 50 marks (35 + 15 marks).

Criteria for passing Psychological Medicine in the first attempt

In order to pass the subject of Psychological Medicine a candidate must (i) obtain a minimum % mark from the marks allocated for the Theory component (45% out of 50 marks) and the Clinical component (50% out of 50 marks) and (ii) also obtain a minimum pass mark of 50% from the 100 marks allocated for the subject of Surgery.

Criteria for passing Psychological Medicine in subsequent attempts

In order to pass the subject of Psychological Medicine a candidate must (i) obtain a minimum % mark from the marks allocated for the Theory component (45% out of 50 marks) and the Clinical component (50% out of 50 marks) and (ii) also obtain a minimum pass mark of 50% from the 100 marks allocated for the subject of Psychological Medicine.

The 15 marks apportioned to the CA component is added to the Clinical component and it is marked out of 50%.

5.2.1.6 Criteria for passing the End of Clinical Sciences Stream Examination

A candidate is deemed to have passed the End of Clinical Science Stream Examination if the candidate has at one and the same Examination passed each of the 5 subjects of this Examination as prescribed by By Laws made by the Council; while fulfilling the minimum requirement for the separate components of the 5 subjects stated above, the pass mark for each subject is 50%; provided that a candidate may be referred in one or more subjects at the End of Clinical Sciences Stream Examination, when the candidate has not obtained the minimum pass mark
(50%) for that particular subject. Such candidates shall be deemed to have passed the End of Clinical Sciences Stream Examination when they pass the referred subject(s) at a subsequent End of Clinical Sciences Stream Examination. Those candidates who fail the End of Clinical Sciences Stream Examination will have to appear for the 5 subjects at subsequent End of Clinical Sciences Stream Examinations and pass each of the 5 subjects upon which they will be considered to have passed the End of Clinical Sciences Stream Examination.

**Calculation of marks for award of classes in the End of Clinical Science Stream Examination**

Only candidates who have passed the End of Clinical Sciences Stream Examination at the first attempt are considered eligible for award of classes. The % mark obtained by a candidate at the first attempt for each of the 5 subjects (Medicine, Surgery, Obstetrics & Gynaecology, Paediatrics and Psychological Medicine) is added up and divided by 5 to get the cumulative % mark for the 5 subjects. This mark is called the % cumulative End of Clinical Sciences Stream Examination mark. This mark is used in awarding classes. The classes are decided according to the classification of marks described previously.

### 5.2.2 Joint Applied Sciences Stream and Clinical Sciences Stream Examination (4th year MCQ & OSCE)

This examination is conducted under the Clinical Sciences Stream and the content areas examined include applied aspects of material taught in the modules, clinical appointments and in therapeutics and toxicology courses. It is scheduled towards the end of 4th year (approx. Term 14). It has MCQ components and an OSCE component.

1. Paper 1 60 MCQs -
2. Paper 2 in Therapeutics 40 MCQs
3. OSCE - 20 stations (includes 2 to 3 therapeutics questions)

This Examination is presently getting 14 marks out of the 45 marks allocated for the Clinical Sciences Stream examinations. There is no specific pass mark for this examination. Whatever mark the candidate scores will be considered when the Clinical Sciences Stream marks are computed. One examination is conducted per batch of students. No repeat examinations are conducted. However, students who have scored low marks (<50% marks) have the option of appearing for this examination to improve their marks when it is conducted for a junior batch of students.

### 5.2.3 Elective (Elective appointment and Report)

The Elective (or Elective appointment) is conducted under the Clinical Sciences Stream and during this appointment each student has to satisfactorily complete an Elective (2 to 4 weeks duration) and submit a Report. Details about the Elective would be issued by the Electives Committee of the Faculty. The assessment of the Elective will include examination of the Elective Report and a *viva voce* examination based on the Report. The Elective will be marked out of 100, and to pass the Elective, each student has to satisfactorily complete an Elective and submit a Report which has to be accepted by the Faculty and obtain a minimum pass
mark of 25%. A candidate will fail the Elective when the candidate fails to complete the Elective satisfactorily and/or the Report is not accepted by the Faculty and/or does not obtain the minimum pass mark of 25%. Such candidates will be deemed to have passed the Elective when they complete it satisfactorily and submit a Report which is accepted by the Faculty and obtain the minimum pass mark of 25%. The Elective contributes 1(one) mark to total marks allocated to the Clinical Sciences Stream. A candidate will not be awarded the MBBS degree unless the candidate passes the Elective.

5.3 Criteria for passing the Clinical Sciences Stream examinations
A candidate is deemed to have passed the Clinical Sciences Stream examinations if the candidate has (1) passed the End of Clinical Sciences Stream Examination, (2) appeared for the Joint Applied Sciences Stream and Clinical Sciences Stream Examination (4th year MCQ & OSCE), (3) passed the Elective AND also (4) obtained the minimum pass mark of 50% of the total mark allocated to the Clinical Sciences Stream examinations.

Calculation of marks for deciding on pass/referred status in the Clinical Science Stream examinations

The marks for the Clinical Sciences Stream come from 3 examinations which are numbered as 1, 2 and 3 in Table 7.

Table 7: The Clinical Sciences Stream examinations and the apportioning of marks

<table>
<thead>
<tr>
<th>Exam Number</th>
<th>Name of Examination</th>
<th>Marks allocation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>End of Clinical Sciences Stream Examination</td>
<td>30</td>
</tr>
<tr>
<td>2</td>
<td>Joint Applied Sciences Stream and Clinical Sciences Stream Examination (4th year MCQ &amp; OSCE)</td>
<td>14</td>
</tr>
<tr>
<td>3</td>
<td>Elective</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Total marks for the Clinical Sciences Stream exams</td>
<td>45</td>
</tr>
</tbody>
</table>

The computing of marks for the Clinical Sciences Stream examinations is done only for candidates who have (1) passed the End of Clinical Sciences Stream Examination, (2) appeared for the Joint Applied Sciences Stream and Clinical Sciences Stream Examination (4th year MCQ & OSCE) and (3) passed the Elective. In this computation the subject based apportioning of marks indicated in Table 8 is used and the mark obtained by each candidate for each subject at the End of Clinical Sciences Stream Examination is calculated.

Table 8: Apportioning of marks at the End of Clinical Sciences Stream Examination

<table>
<thead>
<tr>
<th>Subject</th>
<th>Marks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medicine</td>
<td>7</td>
</tr>
<tr>
<td>Surgery</td>
<td>6</td>
</tr>
<tr>
<td>Obstetrics &amp; Gynaecology</td>
<td>6</td>
</tr>
<tr>
<td>Paediatrics</td>
<td>6</td>
</tr>
<tr>
<td>Psychological Medicine</td>
<td>5</td>
</tr>
<tr>
<td>Total marks for the End of Clinical Sciences Stream Examination</td>
<td>30</td>
</tr>
</tbody>
</table>
For example the subject of Medicine is apportioned 7 marks (out of the 30 marks for the End of Clinical Sciences Stream Examination), and the mark each candidate gets for Medicine is calculated as follows. If a candidate scores 50% marks for Medicine at the End of Clinical Sciences Stream Examination, the calculation would be $\frac{50}{100} \times 7 = 3.5$.

This candidate would get 3.5 marks out of 7 for Medicine. The contributions from all the 5 subjects are calculated in a similar manner and are added up so that the total mark for the End of Clinical Sciences Stream Examination is arrived. This would be out of 30 marks which is the allocation for the End of Clinical Sciences Stream Examination. The marks from each of the other examinations which are contributing marks to the Clinical Sciences Stream (ie. exam numbers 2 and 3 of Table 7) are initially marked out of 100, and calculated as a fraction of the apportioned mark as per Table 7. For example if a candidate at the Joint Applied Sciences Stream and Clinical Sciences Stream Examination scores 75% marks, this examination would be contributing $\frac{75}{100} \times 14 = 10.5$ marks. When the contributions from the 3 examinations indicated are added up the total mark (out of 45) for the Clinical Sciences Stream examinations is arrived. Next this is converted to a percentage mark which is called the % cumulative Clinical Sciences Stream examination mark. Those candidates who obtain a minimum pass mark of 50% for the % cumulative Clinical Sciences Stream examinations will be considered to have passed the Clinical Sciences Stream examinations. A candidate may be referred in the Clinical Sciences Stream examinations if the candidate fails to obtain the minimum pass mark of 50%. The method for such referred candidates to pass the Clinical Sciences Stream examinations is described below.

Candidates who pass the End of Clinical Sciences Stream Examination but get referred at the Clinical Sciences Stream examinations

A candidate who has (1) passed the End of Clinical Sciences Stream Examination, (2) appeared for the Joint Applied Sciences Stream and Clinical Sciences Stream Examination and (3) passed the Elective, but fails to obtain a minimum of 50% of the total marks allocated for the Clinical Sciences Stream examinations will be considered referred in the Clinical Sciences Stream. Such a candidate shall be required to appear for a specially constituted viva voce examination. A candidate who passes this viva voce examination (pass mark 50%) will be deemed to have passed the Clinical Sciences Stream examinations. For candidates who are failing this viva voce examination, the panel of examiners conducting the viva voce examination may request the candidate to undergo further clinical training in the professorial wards before the candidate appears for a subsequent viva voce examination. The specific appointments that such candidates have to re-do and their durations will be decided by this panel of examiners. Such a candidate will be deemed to have passed the Clinical Sciences Stream examinations when this candidate appears for a subsequent viva voce examination and obtains a minimum pass mark of 50%.

5.4 Award of classes in the Clinical Science Stream examinations

Only the students who have passed the End of Clinical Sciences Stream Examination in their first attempt will be considered eligible for award of classes in the Clinical Sciences Stream examinations. Award of classes will be based on the % cumulative Clinical Sciences Stream examination mark. The classes are decided according to the classification of marks described previously.

The Clinical Sciences Stream examinations will contribute 45 marks (45%) to the 100 marks of the Cumulative MBBS Result. This contribution may be changed periodically due to curricular changes and such changes will be informed to the students.
5.5 Calculation of the Cumulative MBBS Result

Table 9: Apportioning of marks for the examinations of the 5 Streams used in calculating the Cumulative MBBS Result

<table>
<thead>
<tr>
<th>Stream examinations</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic Sciences</td>
<td>10%</td>
</tr>
<tr>
<td>Applied Sciences</td>
<td>20%</td>
</tr>
<tr>
<td>Behavioural Sciences</td>
<td>10%</td>
</tr>
<tr>
<td>Community Stream</td>
<td>15%</td>
</tr>
<tr>
<td>Clinical Sciences</td>
<td>45%</td>
</tr>
<tr>
<td>Total marks for the Examinations of the MBBS Degree Programme</td>
<td>100%</td>
</tr>
</tbody>
</table>

The Cumulative MBBS Result is calculated only after the candidate has passed all the examinations in the MBBS degree programme. The cumulative mark that each candidate has obtained for each Stream is used to calculate the contribution from each Stream to the Cumulative MBBS Result. For example, if a candidate has obtained 50% marks for the Applied Sciences Stream examinations, that would contribute 10 marks (50/100 x 20 = 10) to the calculation of the Cumulative MBBS Result. The contributions from all 5 Streams are calculated according to the apportioning indicated in Table 9 and these are totaled to get the Total marks for the examinations of the MBBS degree programme. This marks which is out of 100 is called the Cumulative MBBS Result.

The contributions by the 5 Streams to the Cumulative MBBS Result may be changed periodically depending on the ongoing changes that are made in the curriculum. Such changes will be informed to the students.

Eligibility for award of Classes based on the Cumulative MBBS Result

When awarding Classes for the Cumulative MBBS Result, in addition to candidates who have passed all the examinations of the respective Streams in the first scheduled attempt, candidates who have been referred once in an intra-Stream subject (BScS and Clinical SS), Module Examination (Applied SS and BSS) or an examination in the Community Stream, are also considered eligible. Such candidates should have repeated a subject, module examination or in-course examination not more than once per Stream. The maximum mark carried forward to the Cumulative MBBS Result for such repeated subjects, modules or examinations shall be 50%. Other than this difference the marks calculation for the Cumulative MBBS Result is the same as what has been described previously.

Award of classes at the Cumulative MBBS Result

The method of calculating the Cumulative MBBS Result has been described above. This mark is used in deciding on award of classes. The classes are decided according to the classification of marks described previously.

The bulk of the contents of the Regulations document appear in the minutes of the University Senate (meeting No. 356 of 28th March, 2012, pages 255 – 308) approved at meeting No.357 of April 25, 2012, minute No. 356.10.7 .2, page No. 44). One minor change has had Senate approval previously.