"This prospectus is made under the provisions of the Universities Act, the Postgraduate Institute of Medicine Ordinance, and the General By-Laws No. 1 of 2016 and By-Laws No. 2 of 2016 for Degree of Doctor of Medicine(MD) and Board Certification as a Specialist"

POSTGRADUATE INSTITUTE OF MEDICINE
UNIVERSITY OF COLOMBO, SRILANKA

PROSPECTUS

DOCTOR OF MEDICINE (MD) AND

BOARD CERTIFICATION

IN

ORTHOPAEDIC SURGERY

2016

SPECIALTY BOARD IN ORTHOPAEDICS

AAAEC – 20.04.2016 *BOM – 07.05.2016* *Senate – 25.05.2016*

Content

1. Nomenclature

Full title:	Doctor of Medicine and Board Certification in Orthopaedic Surgery
Abbreviated title:	MD & Board Certification (Orthopaedics)
University:	University of Colombo
Faculty / Institute:	Postgraduate Institute of Medicine
Department:	Speciality Board in Orthopaedics and Board of Study in Surgery

2. Introduction

Orthopaedic Surgery is a major surgical specialty. It is the second biggest surgical specialty after general surgery. It has now developed to such an extent that sub-specialties of Orthopaedic surgery such as Paediatrics, Spine, Sports Medicine, Adult Reconstructive Surgery (Hip/Knee arthroplasty), Upper Limb, Oncology, and Foot & Ankle are well recognized entities. The aim of the training programme is to offer a structured training with periodic evaluations to produce an orthopaedic surgeon who is adequately trained and knowledgeable to provide a high standard of care safely.

3. Eligibility for entry into the training programme

An applicant should

i. Hold a medical degree registered with the Sri Lanka Medical Council
ii. Complete one year of internship recognised by the Sri Lanka Medical Council
iii. Complete one year of work experience in Sri Lanka after internship by the closing date for applications for the selection examination.
iv. Have six (6) months of surgical experience (Surgery or Obstetrics and Gynaecology) as a pre-registration house officer or senior house officer
v. Produce a medical certificate from a consultant physician, indicating general mental and physical fitness and comply with any other PGIM regulations.

If a trainee develops a health condition which would compromise his / her ability to train and function as a surgeon, it is his / her responsibility to duly notify the PGIM of such condition, in writing.

4. Selection examination

Eligible applicants should be successful at the MD Surgery Part I examination conducted by the PGIM (Refer MD Surgery prospectus of PGIM) in order to be considered for entry to the MD Orthopaedics training programme.

After the examination, successful candidates will be enrolled into the training programme directly. The allocation of training slots for Basic and Higher Orthopaedic training will be done by the subcommittee appointed by the Specialty Board in Orthopaedics in conjunction with the Board of Study in Surgery, according to the available training posts and based on the ranking of the candidate obtained at the Part I examination and preference of the candidate.

If a candidate undergoing training in General Surgery or in any other surgical specialty stream wishes to change over to the orthopaedics training programme, he/ she shall do so by conveying his/ her request in writing to the board of study in orthopaedics and he/she will then be interviewed at a board meeting. This entry from a general surgery / any other surgical specialty stream is allowed up to the MD part II examination.

5. Number to be selected for training

Available training opportunities will be indicated by the PGIM in the public circular for the MD Surgery Part I examination. The number of training slots will be pre-determined each year by the Specialty Board in Orthopaedics and the Board of Study in Surgery subject to approval by the Board of Management in consultation with the Ministry of Health.

6. Learning outcomes and competencies

The programme is designed to provide the type of training that would equip the orthopaedic surgeon at the end of the training to treat various types of musculoskeletal disorders of the human through a multidisciplinary approach. It is expected that the fully trained specialist would be up-to-date with all recent developments in the field of Orthopaedic Surgery and would be in a position to provide holistic care for those patients who need the expertise of a Specialist Orthopaedic Surgeon to minimize mortality and morbidity of such patients.

The exit outcomes of the training programme are as follows:

i. Patient care.
ii. Medical knowledge.
iii. Interpersonal and communication skills.
iv. Professionalism.
v. Practice-based and evidence-based approach.

The competencies required by the specialist:

In order to fulfill the exit outcomes at the end of the training programme, the trainee should be able to achieve the following competencies.

a. Apply knowledge of basic sciences, epidemiology, natural history and outcome of musculoskeletal diseases in the management of patients.
b. Perform special and specialized orthopaedic surgeries in patients with advanced /complex musculoskeletal disorders and their complications or recurrent problems in premeditated and unpredicted situations.
c. Determine the best management option from available treatment modalities for individual orthopaedic patients.
d. Apply the knowledge of other specialties such as radiology, rheumatology, plastic and reconstructive surgery, critical care etc. in the management of the patients.
e. Identify potential benefits, risks and complications of multidisciplinary therapy and selection of patients for surgical therapy in combination with other forms of treatment.
f. Develop and support institutional programmes to further expand delivery of orthopaedic services inclusive of establishing a joint registry, theatre designing, drafting institutional policies regarding orthopaedic programmes / problems and procurement of instruments and implants for patients with musculoskeletal diseases.
g. Manage trauma and orthopaedic emergencies.
h. Design and institute psycho-social and rehabilitative programmes for patients with musculoskeletal disease and their families.
i. Design and implement a prospective database.
j. Conduct a clinical trial.
k. Train undergraduates and postgraduate trainees

7. Content areas

The main content areas are as follows:

a. Basic sciences
b. Adult reconstructive orthopaedics
c. Arthroscopy and sports medicine
d. Foot and ankle
e. Musculoskeletal malignancies
f. Paediatric orthopaedic surgery
g. Spine
h. Trauma module
i. Trauma and complex reconstruction
j. Upper limb

8. Structure of training programme

The training programme is conducted in two stages: basic orthopaedic training (BOT) and higher orthopaedic training (HOT).

The **basic orthopaedic training** programme extends over a period of three (3) years and three (3) months, during which the trainee will go through the following appointments:

1. Six (6) months of training in general surgery in a Teaching Hospital or non-teaching hospital
2. One year of orthopaedic surgery in a Teaching Hospital (Two separate six (6) month appointments in different units)
3. Three (3) months of orthopaedic surgery in a Teaching Hospital in a different province
4. Three (3) months of orthopaedic surgery in a non-teaching hospital (Regional centres)
5. Two (2) months of paediatric orthopaedic surgery at LRH
6. Four (4) months appointment in Orthopaedic Trauma and ICU in Accident Service, NHSL of which one mandatory month will be in the ICU
7. Two (2) months of Neuro / Spine surgery
8. Two (2) months of plastic surgery
9. Two (2) months of vascular surgery
10. One month of thoracic surgery at TH Welisara
11. One month of radiology and imaging
12. One month of rheumatology

The **higher orthopaedic training** programme consists of one year of advanced level training in two different orthopaedic units in a teaching hospital, each lasting for 6 months. The MD Orthopaedics examination will be held at the end of 4 years and 3 months of training.

Allocation of training units for training in orthopaedic surgery, surgery in general and related appointments up to the MD Orthopaedics examination: this allocation will be done by a sub committee appointed by the Specialty Board in Orthopaedic Surgery in conjunction with the subcommittee appointed by the Board of Study in Surgery according to available training posts and based on the merit rank obtained at the MD (Surgery) Part 1 examination and the preference of the candidate.

9. Learning activities during training

Trainees are expected to engage in all routine service activities in the assigned training unit. Trainees are also expected to maintain a log of all procedures carried out during the training period, and a reflective portfolio as outlined in Annexes IV and V.

9.1 Research project

All orthopaedic trainees are expected to undertake a research project during their pre-MD training. Such a study does not include case reports, but may take the form of a well-designed audit. The objective of this exercise is to expose the trainee to

research methodology and scientific writing. The work should be original. In the research project the trainee should demonstrate his/her ability to identify a problem, conduct a literature search, design and conduct a study, collect and manage data, carry out appropriate statistical analyses and present the results, and prepare a dissertation with rational conclusions after a discussion.

The research proposal for this dissertation should be submitted to the specialty BOS for approval within three months of the commencement of the Basic Orthopaedic Training and approved before commencement of the study. The format for such proposals is provided in Annexure VI (as per the PGIM requirements).The proposal shall be evaluated by one reviewer nominated by the specialty BOS. The format for reviewers to report on research proposals is shown in Annexure VII.

The proposal should have a reasonable timeline for completion. If the proposal is unsatisfactory, the reviewers may recommend modification of the proposal or submission of a different proposal. The trainee should commence the study only after obtaining approval of the Specialty BOS and ethical clearance.

Relevant ethics clearance, and in the case of clinical trials, registration with a Clinical Trials Registry must be obtained prior to commencement of the study.

The trainee is required to nominate a primary supervisor for the project, usually the trainee's current trainer. Guidance to supervisors is provided in Annexure VIII.

The trainee must submit 6 monthly progress reports through the primary supervisor to the BOS. The format for progress reports is shown in Annex IX. Feedback would be provided to the candidate as to whether the project is progressing satisfactorily.

10. Trainers and training units

All trainers are specialists in Orthopaedic Surgery or other relevant discipline, with at least three (3) years of experience after Board Certification.

The currently accredited training units are as follows:

Institution / Hospital	**No of training units available**	**Maximum number of SRs**	**Maximum number of Registrars**
NHSL	4	8 (2 per unit)	12 (3 per unit)
Colombo South TH	1	1	2
Colombo North TH	1	1	2
Sri Jayewardenepura GH	1	2	3
TH-Peradeniya	1	2	3
TH-Kandy	2	4 (2 per unit)	6 (3 per unit)
TH-Jaffna	1	1	2
TH-Galle	2	2 (1 per unit)	4 (2 per unit)
Hospitals for			

regional training			
PH-Anuradhapura	1	0	2
PH-Ratnapura	1	0	2
PH-Badulla	1	0	2
PH- Kurunegala	1	0	2
DGH-Chilaw	1	0	2
DGH-Kalutura	1	0	2
DGH-Matara	1	0	2

11. Monitoring progress during pre-MD training

Trainees are required to successfully complete **the OSCE and the OSVE** during the training programme. The OSCE can be attempted six (6) months after the commencement of the basic orthopaedic training (BOT) programme and the OSVE can be attempted six (6) months after commencement of the higher orthopaedic training programme (HOT).

Successful completion of the OSCE will be a pre-requisite to proceed for HOT (i.e. 4th year of training). A trainee who fails to pass the OSCE at the initial attempt will be permitted to proceed to HOT on passing the OSCE at a subsequent attempt. However, the extra period of time taken to complete / pass the OSCE will not be counted for training purposes.

The trainee must pass both the OSCE and the OSVE to be eligible to apply for the MD-Orthopaedics Part II examination. This will be one of the eligibility criteria to sit for the Part II examination.

11.1 OSCE

The OSCE will be held twice a year and the dates will be decided at the beginning of each calendar year and will be separate from the MD part II examination dates.

The OSCE will consist of 10 stations which assess the following content areas:

- Clinical skills - history and examination stations
- Interpretation of investigations
- Communication skills
- Procedural skills - non-operative orthopaedic procedures (plastering skills, splinting, traction, intra-articular injections)

The OSCE stations will be as follows:

Station 1. Observed history taking
Station 2. Discussion of the patient & interpretation of investigations
(Stations 1 & 2 will be combined into one 10 minute station)
Station 3. Short case Hip (5 minutes)
Station 4. Short case- Knee (5 minutes)
Station 5. Short case – Shoulder and Elbow (5 minutes)
Station 6. Short case- Foot and Ankle (5 minutes)
Station 7. Short case- Spine (5 minutes)

Station 8. Communication skills (10 minutes)
Stations 9& 10.Procedural skills**(these will be tested separately in the ward or clinic setting with the nominated two examiners with two clinical scenarios)**
Each station will be marked according to the scheme set out in Annexure 1 (7-11 marking scheme).

In order to pass the OSCE, a trainee must obtain an average mark of 9 or more for stations 1 – 8 and an average mark of 9 or more for the two procedural skills assessments (stations 9 & 10).

11.2 OSVE

Trainees undergoing HOT will have to appear for the OSVE within three (3) months of starting the HOT. The trainees are advised to sit for the first available examination. This will be held twice a year and the dates will coincide with the OSCE examination and will be notified at the beginning of each calendar year.

The OSVE will take the form of a structured viva voce in the following topics. The duration per station will be 10 minutes.

Station 1. Operative surgery
Station 2. Basic sciences
Station 3. Orthopaedic principles
Station 4. Trauma
Station 5. Paediatric orthopaedics

Each station will be marked using the marking scheme given in Annexure I.

In order to pass the OSVE, the trainee must obtain an average mark of 9 or more from the five stations.

11.3 RITA (Record of in-service training assessment)

RITA will be conducted during the

a. Six (6) months period of training in surgery in general
b. First six (6) months of orthopaedic surgery training
c. Second six (6) months of orthopaedic surgery training
d. End of first six (6) months of the HOT
e. End of second six (6)months of the HOT

The RITA will be carried out by two (2) assessors using a preformatted assessment tool(See Annexure 6).One of the assessors will be the trainer of the candidate and other assessor will be nominated by the Specialty Board of Study in Orthopaedics at the beginning of the each part of the training programme

The 7-11 marking scheme with the same descriptors will be used in the RITA (Annexure VI). Candidates are required to obtain a minimum of 9 in all components. Unsuccessful candidates will have to repeat the RITA with the assessors.

Assessment will be done based on the current assessment form used by the Board of Study in Surgery and Specialty Board of Study in Orthopaedics.

11.4 Portfolio Assessment

This component of the assessment will be done during the third year of training.
The portfolio assessment will be done by three assessors appointed by the Board of Study. Trainees will be requested to submit their portfolios one week before the said assessment dates. A trainee will have to pass this assessment to be eligible to apply for the MD Part II Orthopaedics examination.

All of the following five criteria should be fulfilled by the candidate in order to pass the portfolio assessment.

I. Surgical log book including outcomes (morbidity and mortality and details of learning from the procedure / surgery) – should be up to date and endorsed by the supervising consultant.
II. Evidence of clinical presentation (minimum of 4) and evidence of clinical audit (minimum of 2). Criteria for pass: the certificate of endorsement issued by the consultant or organizing association or body.
III. Evidence of continuous medical education (CME) activities – conferences / workshops / academic meetings attended (minimum of 3)
IV. Reflective notes (minimum of 5, refer Annexure IV for guidelines)
V. Evidence of teaching activities – Undergraduate, postgraduate, nursing and paramedical staff

11.5 Research project

In order to be eligible to sit for the MD examination, the research project must be accepted by the Speciality Board in Orthopaedics.
Acceptance of the research project by the BOS may be based on fulfilment of either of the following:

1. Publication of the research findings as an **original full paper** (not case reports) in a **peer-reviewed journal** with the trainee as the first author. No further evaluation will be required since the paper is already peer-reviewed.
2. Submission of a detailed project report to the BOS. **A generic format for such project reports is shown in Annexure X.** This should be evaluated by 2 assessors nominated by the BOS, and marked as either satisfactory, or unsatisfactory.
    a. If the project is considered unsatisfactory by both assessors, the trainee will be requested to revise and resubmit, with written feedback on the required revisions. If the project report is still unsatisfactory, the trainee may, at the discretion of the BOS, be asked to extend the same research project or undertake a new research project which will have to go through the same procedure of approval as the initial project.

b. If there is disagreement between the two assessors, with only one assessor's decision being 'unsatisfactory', the project report should be sent to a third assessor for a final decision.
c. Presentation of the research findings at a recognized scientific congress, either local or international, as an oral or a poster presentation, with a published abstract, with the trainee as first author, will be given credit during the assessment process.

The original full paper or the research project report should be submitted to the PGIM at **least six (6) months before the closing date** of the applications for the MD Examination. The original full paper or the research project report must be accepted prior to the completion of the study period. The acceptance of the dissertation is a prerequisite to be eligible to sit for the MD Examination

Once the research report is accepted by the specialty BOS, the trainee is encouraged to submit the research findings to a suitable conference or journal, if not already done.

12. MD Examination

12.1 Eligibility to apply

The final examination in MD-Orthopaedics will be held at the end of 4 years and 3 months of training.

In order to be eligible to apply for the MD (Orthopaedics) Examination, applicants must fulfil the following criteria:

a. Successful completion of the training programme approved by the specialty board of study in orthopaedics
b. Satisfactory completion of the clinical training appointments in BOT and HOT
c. Passed the OSCE and OSVE
d. Passed the portfolio assessment
e. Acceptance of research component by the Specialty Board of study in Orthopaedics
f. Satisfactory completion of RITAs

12.2 Components of the MD Examination

The MD Orthopaedics examination consists of the following components:

i. Theory Paper I
ii. Theory Paper II
iii. Operative Surgery - OSVE
iv. Orthopaedic Principles and Basic Sciences - OSVE
v. Clinicals I - Long Case and Communication Skills- OSCE
vi. Clinicals II - Short Cases – OSCE

Each component will be marked based on the marking scheme given in Annexure 1

12.2.1. Theory Paper I

This paper consists of four structured essay questions to be answered in 2 hours
The questions will cover the following topics:

a) Trauma
b) Basic sciences and surgery in general
c) Adult orthopaedics
d) Paediatric orthopaedics

Each question will be marked from 0 to 100 by the two (2) examiners. If a question has subsections, marks allocated to each subsection will be indicated in the paper. The individual marks awarded for each question by both examiners will be added and averaged. The average thus obtained will be converted to a close mark in accordance with the table given below.

If a candidate fails to answer a question or writes a completely irrelevant answer, zero marks will be awarded for that question. The marks awarded for the other questions will then be added and divided by the total number of questions (i.e. 4) to obtain the final mark for the component.

Conversion table

Percentage marks for Paper I or II	Closed Marks
<50	7
50-59	8
60-69	9
70-79	10
>80	11

12.2.2. Theory Paper II

This is a multiple choice question paper with a total of 50 questions to be answered in 2 hours. The distribution of the MCQs will be as follows:

a) True or False type (MTF)-20
b) Single Best Answer(SBA) - 15
c) Extended Matching Items(EMI) - 15

For the MTF type questions, one mark will be awarded for a correct response (5 x 20 =100 marks). Each incorrect response will carry a negative mark and the negative marks will not be carried over to the next question.

For questions of the SBA type and the EMI type, 3 marks will awarded for each correct response (3×15= 45 marks and 3×15=45 marks,). Incorrect responses will not carry a negative mark. The SBAs and EMIs will be considered together accounting for a total of90 marks. This will then be converted to a mark out of 100.

The total marks for the MCQ = 200 (MTF 100 + SBA/EMI 100). This will be converted as per the above table to a close mark between 7 and 11.

12.2.3. Operative Surgery OSVE

Candidates will be examined by two (2) panels, each consisting of two (2) examiners for a total of 30 minutes. One of the examiners will be an external examiner nominated and recommended by the board. Each panel will examine the candidate for 15 minutes, and each examiner will mark the candidate independently using the 7-11 close marking scheme.

The final mark for operative surgery will be the average mark (up to two decimal points) of all four (4) examiners.

12.2.4. Orthopaedic Principles and Basic Science OSVE

Candidates will be examined by two (2) panels, each consisting of two (2) examiners for a total of 30 minutes. One of the examiners will be an external examiner nominated and recommended by the board. Each panel will examine the candidate for 15 minutes, and each examiner will mark the candidate independently using the 7-11 close marking scheme.

The final mark for orthopaedic principles and basic sciences will be the average mark (up to two decimal points) of all four (4) examiners.

12.2.5. Clinical I (Long Case) -Stations 1 to 3 of the OSCE

12.2.6. Clinical II (Short Cases) - Stations 4 to 9 of the OSCE

These two components will be assessed in the form of an OSCE with nine stations, as described below:

a) Clinical examination I- long case (15 minutes per station)
- Station 1- Observed history taking and examination
- Station 2- Discussion of the patient in station 1
- Station 3- Communication skills

b) Clinical Examination II - short cases (5 minutes per station)
- Station 4- HIP
- Station 5- KNEE
- Station 6 - UPPER LIMB
- Station 7 - SPINE
- Station 8 -FOOT AND ANKLE
- Station 9 - Miscellaneous- NERVE PALSIES, LUMPS

Stations 1 to 3 will be assessed by a panel of two examiners, one of whom will be the external examiner. Each examiner will mark the candidate independently. The final mark for the long case will be the average mark (up to two decimal points) of both examiners using the 7-11 close marking scheme indicated above.

Stations 4 to 6 will be examined by a panel of two examiners and stations 7 to 9 will be examined and assessed by a separate panel of two examiners. The external examiner will be involved in either one of the panels in stations 4- 6 or stations 7-9. Each

examiner will mark the candidate independently. The final mark for the short cases will be the average mark (up to two decimal points) of four (4) examiners using the 7-11 close marking scheme indicated above.

12.3 Requirements to pass the MD (Orthopaedics) Examination

To be successful at the MD Orthopaedics examination, a candidate must obtain a minimum mark of 9 or above in at least five (5) components and a minimum mark of 8 in the remaining component. The mark obtained in each component will be the average of all the individual marks awarded for that component. The marks obtained in each component will be presented in 2 decimal points and will **not** be rounded off to the closest integer.

12.4 Requirements to qualify for the medals and prizes awarded at the MD Orthopaedics examination

The candidate should fulfil each of the following criteria:

a. be successful at the first attempt
b. have obtained the highest total mark (raw total) among all candidates
c. not have been awarded a mark of 7 by any of the examiners
d. be a PGIM trainee
e. be recommended by the board of examiners

13. Post MD training

Candidates who are successful at the MD Part II examination will undergo a further two (2) years of training in Orthopaedics and Trauma. One year of this of the training will be spent overseas and one year in Sri Lanka. The trainees undergoing advanced orthopaedic training after the MD-Part II Orthopaedic examination will be designated as Senior Registrars.

The allocation of training sites will be done in accordance with the MD Orthopaedics Part II candidate merit list and the choice of the trainees

During this period, trainees are expected to maintain a portfolio that documents achievement of the following learning outcomes, during local and/or overseas training:

1. Subject expertise
2. Teaching
3. Research and audit
4. Ethics and medico-legal issues
5. Information technology
6. Life-long learning

The contents of the portfolio should be divided into sections according to the above outcomes, followed by a final section that contains evidence of reflective practice.

1. Subject expertise
    - Progress reports from the supervisors
    - Supervisor feedback on communication skills
    - Log book containing surgical procedures with outcome

- Results of any work place assessments conducted

2. Teaching undergraduates, postgraduates and ancillary health staff
3. Research and audits carried out during the post MD period with reports or dissertation.
4. Ethics and medico-legal issues
   - Completed professionalism observation form (as per PGIM regulation)
   - Completed PTR forms during post- MD training
5. Information Technology
   - Participation in training programmes / workshops
   - Evidence of searching for information and application of findings in practice
6. Life-long learning
   - Participation in conference and meetings
7. Reflective practice
   - Narration of at least one learning event experienced by the trainee, in relation to the each of the above outcomes with reflection on what and how the trainee learned from the experience.

The portfolio for the 1st year of local training will be reviewed every six months (i.e. two assessments). The portfolio for the year of overseas training will be submitted upon completion of training.

14. Eligibility for Pre-Board Certification Assessment (PBCA)

In order to be eligible for the Pre-Board Certification Assessment, a trainee must present documentation of the following to the PGIM

a. Successful completion of one year of local and one year of overseas training
b. Satisfactory progress reports from each of the supervisors, to cover the entire period of two years of post-MD training
c. The portfolio, completed according to the requirements set out in Section 13 (3 copies).

15. Format of PBCA

The PBCA includes the following:

a. Portfolio viva (30 minutes) conducted by a minimum of two (2) examiners and
b. Presentation (15-30 minutes) to the board of study to cover the details of the training received and the future vision.

The PBCA will take the form of a final summative assessment of the trainee's portfolio, carried out by two (2) independent examiners appointed by the Specialty Board of Study in Orthopaedics. This will be an oral examination during which he/ she will be questioned on the portfolio.

Based on the assessment of each of the main sections, an overall decision of satisfactory or unsatisfactory is made.

If the portfolio assessment is unsatisfactory the examiners will provide written feedback to the trainee giving reasons and suggesting measures to improve the portfolio to reach the standard required for board certification.

The trainee should resubmit the portfolio within a period of three (3) months and face another oral examination based on the re-submitted portfolio. If the trainee is successful at the 2nd oral examination, the date of board certification will be backdated to the relevant batch with no lapse, as done routinely.

If unsuccessful again, the date of board certification will be the date of passing the subsequent PBCA following further training for a minimum period of six (6) months in a unit selected by the specialty board of study in Orthopaedics.

16. Recommended reading

- Apley's Systems of Orthopaedics and Fractures
- AO/ASIF Principles of fracture management
- AAOS Comprehensive Orthoapedic Review- Volume I & II
- The Rationale of Operative fracture care - Joseph Schatzker and Marwin Tile
- Campbell's Operative Orthopaedics-Volume I-IV
- Clinical Orthopaedic Examination, Ronald McRae
- Rockwood and Wilkin's Fractures in Children
- Rockwood and Green Fractures in Adult
- The Bone and Joint Journal
- The Journal of Bone and joint Surgery

17. Prospectus revision committee

- Dr.Marius De Almeida, Consultant Orthopaedic Surgeon, Colombo South Teaching Hospital
- Dr.KURA Banagala, Consultant Orthopaedic Surgeon, The National Hospital of Sri Lanka
- Dr.Ananda Perera, Consultant Orthopaedic Surgeon, Sri Jayawardenapura Teaching Hospital
- Dr.MV Perera, Consultant Orthopaedic Surgeon, The National Hospital of Sri Lanka
- Dr.Narendra Pinto, Consultant Orthopaedic Surgeon, The National Hospital of Sri Lanka
- Dr.GL Punchihewa, Consultant orthopaedic Surgeon, The National Hospital of Sri Lanka
- Dr.S.Sritharan, Consultant orthopaedic Surgeon
- Dr.R.Sooriyarachchi, Consultant orthopaedic Surgeon, The National Hospital of Sri Lanka
- Dr.Sunanda Udagedara, Consultant orthopaedic Surgeon, Teaching Hospital, Kandy
- Dr.K.Umapathy, Consultant orthopaedic Surgeon, Teaching hospital, Galle
- Dr.Sunil Wijayasinghe, Consultant Orthopaedic Surgeon, The Lady Ridgeway Hospital

ANNEXURE I. Theory /Oral / Clinical examination guidelines for a closed marking system

Mark	Grade	General description	Specific description
7	**Bad Failure** (Major deficiencies/ unsafe to practice independently)	*Major deficiency in knowledge *Application of knowledge and practical aspects have the potential to cause serious morbidity / mortality to patients	**Patient care-** incompetence in clinical diagnosis and management **Knowledge and judgement-** Poor basic knowledge and judgement / understanding to a level of concern **Quality of response-** Disorganised and confused, prompts don't work
8	**Borderline fail** (Major deficiencies/ causes morbidity but not mortality)	*Minor deficiency of knowledge *Application of knowledge and practical aspects may cause morbidity, but not sufficient to cause significant morbidity *At least two areas that the examiners consider weak and overall ability (knowledge / application of knowledge) not up to the mark	**Patient care-** failed to demonstrate competence in the diagnosis in some areas and clinical management **Knowledge and judgement-** Gaps in knowledge , difficulty in prioritizing/ struggling to apply knowledge **Quality of response-** hesitant and indecisive answer; frequent prompting
9	**Pass** (Deficiencies can be self - corrected)	*No obvious knowledge deficiency *Application of knowledge and practical aspects are acceptable *Deficiencies are such that the examiner could reasonably conclude that the candidate can self- correct with time	**Patient care-** demonstrated competence in diagnosis & clinical management **Knowledge and judgement-** Good knowledge and judgement of common problems/ ability to prioritize **Quality of response-** methodical approach to answering, minimal prompting
10	**Good Pass** (No deficiency, suitable for independent practice)	*Knowledge definitely sufficient to be successful *Confident, safe in the application of the knowledge and in practical aspects *Considered safe to allow unsupervised practice	**Patient care-** demonstrated competence and confidence in diagnosis & clinical management. **Knowledge and judgement-** coped with difficult problems/ strong interpretation and judgement **Quality of response-** Logical answer with supporting evidence; prompting limited to aspects related to literature

11	**Excellent pass** (Shows extra ability)	*Above average *Shows some extra ability in knowledge, application of knowledge and in practical aspects *Outstanding ability to clearly vocalize thought process	**Patient care-** demonstrated confidence and competence in the diagnosis and clinical management to a level which would inspire confidence in the patient care **Knowledge and judgement-** flawless knowledge, insight and judgement/ understanding of breadth and depth of a topic and quoted from the literature **Quality of response-** Confident, clear, logical and focused answers; no prompting necessary

ANNEXURE II. Marking Scheme for Assessment of the Pre MD (Orthopaedics) Portfolio

Name of trainee:
Training Centre:
Supervisor:
Period of Training:

	Reflective ability	**Marks**
Fail	Has not completed reflective cycle	7
Borderline	Has only described the learning experience	8
Pass	Analysed the reasons for the experience & the reasons for outcome	9
Good Pass	Evaluated how the outcome could have been different if a different course of action was taken	10
Excellent Pass	Provided high quality evidence for implementing changes	11

Mark of Examiner 1 =

Mark of Examiner 2 =

Signature of Examiner 1: ……..

Signature of Examiner 2: ……..

Date: ……/……/……

ANNEXURE III. RITA assessment

RITA forms used by the Board of Study in Surgery and Specialty Board in Orthopaedics

Postgraduate Institute of Medicine
University of Colombo
Board of Study in Surgery

Pre Appraisal Self Assessment Form

To be filled by the trainee

(1) Before Commencement of Training Post
(2) Before appraisal

(1) Name :-

(2) Post :- Registrar / Senior Registrar

(3) Specility :-

(4) Supervisor :-

(5) Date of Commencement :-

(6) Date / Time of Appraisal :-

A - Confident/Good

B - Confident but more experience is needed

C - Satisfactory/ Lacking confidence

D - Not confident/ Poor

(A) Clinical

(1) History Taking
(2) Examination
(3) Clinical judgment.
(4) Decision Making
(5) Basic Life Support
(6) Basic Surgical Skills

(B) Knowledge

(1)Basic Science
(2) Core Knowledge - Surgery

(c) Postgraduate Activity

(1) Teaching undergraduates
(2) Case Presentation
(3) Research
(4) Audit

(D) Attitudes

(1) Time Management
(2) Self Motivation
(3) Leadership
(4) Team Work

(E) Administration

(1) Record Keeping
(2) Leave / Disability Assessment
(3) Ward organization.

(F) Communication

(1) Breaking bad News to patients and family
(2) Informed Consent

(G) Relationship

(1) Colleagues
(2) Patients
(3) Other Staff
(4) Administration

…….. ……..

Signature of the trainee **Date/Time**

Postgraduate Institute of Medicine
University of Colombo
Board of Study in Surgery

Trainee Assessment Form (Appraisal Form)

To be filled by the Trainer/Appraiser

1. In One Month
2. In Three Months
3. In Six Months

TRAINEE:			TRAINER:			
CRITERIA	**Poor 7**	**Deficient 8**	**Satisfactory 9**	**Good 10**	**Excellent 11**	**Comments**
A. Electictive/Emergency						
History Taking						
Physical Examination						
Clinical Judgment						
Diagnosis						
Patient preparation / theatre						
Operative Skill						
After care / late night rounds						
Basic Life Support						
B. Knowledge						
Basic Surgical Knowledge.						
Evidence based practice.						
C. Postgraduate Activities						
Teaching undergraduates						
Clinical meetings/Clubs						
Case Presentation skills						
Presentations in sessions						
Publications						
Research						
Audit						
D. Attitudes						
Reliability						
Self Motivation						
Attitude to patients / work						

	Poor 7	Deficient 8	Satisfactory 9	Good 10	Excellent 11	Comments
E. Administration						
Clinic organization						
Ward staff problems						
Resource organization						
Bed management						
Patient transfers						
Conflict resolution						
Leadership						
F. Relationships						
Assertiveness						
General sensitivity						
Relationship with Colleagues						
Ward staff						
Other consultants						
G. Communication						
Language skills						
Contactability						
Communication with consultant						
With ward staff						
With other units/hospitals						
Patients/Consent etc						
Breaking bad News- Patient & Family.						

…… ……..

Trainee Signature Appraiser Signature & Name.

…… ……

Date/Time Date/Time:

Form edited 2012.

Postgraduate Institute of Medicine
University of Colombo
Board of Study in Surgery

External Assessment Form

Records of In Service Training Assessment (RITA)

(1) Name of Trainee :-

(2) Name of the Trainer(observer) :-

(3) Specialty :-

(4) Name of external Assessor & Signature :-

(5) Date :-

(6) Time :-

(7) Centre :-

(8) **Assessment** (Grade as ; A – Good, B – Satisfactory, C – Poor.) **GRADE**
Based on a single selected clinical scenario, one theatre session and one portfolio based viva.

(1) Clinical skills (Patient based, with assessor)

(2) Operative Skills (Observation by or Assisting assessor)

Minor operations.

Major operations.

(3) Record Keeping (Ward note or op note inspection)

(4) Communication (during assessment)

(5) Knowledge (Based on clinical viva and theatre session)

(6) Postgraduate activity (Portfolio based)

(7) Audit (Portfolio based)

(8) Research (Portfolio based)

ANNEXURE IV. Reflective practice documentation (Guideline to trainee)

Describe the management of the selected case. Comment on the following:

What problems did you observe?

What action did you take?

Justification for your actions.

What did you learn from this experience?

What is done differently in other clinical units: local and foreign?

What would you do differently next time?

What evidence influenced you to suggest these changes?

Has this experience highlighted any deficiencies in your training?

What learning needs did you identify from above?

Have you addressed these learning needs? If so how?

Summary of discussion with Trainer:

Comments of the trainer :

Comments of the trainee:

Signature of Trainer: Signature of Trainee:

Date:

Comments of the External Assessors:

Date:

ANNEXURE V. Operative Skills / Procedures for the MD II - Orthopaedic Surgery

		Procedures for 1st six months-Registrar	Number	Procedures for 2nd six months-Registrar	Number
1		**Injection of**	5		
	1	Tennis elbow	5		
	2	Golfers' elbow	5		
	3	Shoulder	5		
	4	DeQuervain's	5		
	5	Trigger finger	5		
	6	Trigger thumb	5		
	7	Plantar fasciitis	5		
2		**Manipulation / +/- Application of plaster cast/ Traction**			
	1	Anterior dislocation of shoulder	+		10
	2	Fracture humerus	+		10
	3	Supracondylar factures of humerus	+		25
	4	Elbow dislocation	+		10
	5	Distal radius- Colles, Smith's	+		25
	6	Metacarpal fractures& Bennett's	+		5
	7	Phalyngeal fractures	+		5
	8	Dislocation of the hip	+		5
	9	Fractures of the tibia & fibula	+		20
	10	Bimalleolar fractures	+		20
3		**Arthrocentesis of Knee**			5
4		**Arthrotomy**			
	1	Knee	+		5
	2	Hip	+		2
5		**Soft tissue operations**			
	1	CTD			
	2	Trigger finger release	+		20
	3	De Quervain's release	+		5
	4	Excision of Ganglion	+		5
	5	Repair of TeodoAchilles rupture	+		2
					5
		Operative skills- 1st Six months		**2nd Six months**	
6		**Open reduction & internal fixation**			
	1	Olecranon (TBW)	5	OR&IF Humerus	5
	2	Patella(TBW) / Patellectomy	5	Plating of femur	5
	3	Kuntcher nailing of femur	10	Plating of tibia	5

	4	Radius & Ulna	10	OR& IF & BG of long bones	10
	5	Bimalleolar fractures	10	OR& IF of Distal femur	5
	6	Proximal femur		Interlocking nailing	10
		a) Lag screw	2	Intra-articular fractures	2
		b) DHS	10	of Knee	
		c) DCS	2	Barton's fractures	2
		d) AMH	10		
	7	Monteggia/ Galeazzi fracture IF	2		
7		**External fixation for Open fractures**		**External fixation**	
	1	Tibia	10	Ex-Fix Femur	2
				Ex-Fix Humerus	2
8		**Harvesting Bone graft**	5		
9		**Amputation**			
	1	BK	5		
	2	AK	2		
	3	Syms / Foot amputations	2		
	4	Finger toe amputations	5		
10		**Skull calliper application**	5		
11		**Implant removal**	5		
12		**Special procedures**		**Special procedures**	
	1	Ponsetti method	5	Hip spica application	1
				Spine – corset	5

Operative log book for the Higher Orthopaedic Training

	Procedures for the 1st six months of Higher Orthopaedic Training	Number		**2nd six months of Higher Orthopaedic Training**	Number
1	OR & IF Tibial Plateau	5	1	OR & IF of acetabular fractures	2
2	OR & IF Fracture neck of Talus	2	2	OR & IF of proximal humerus fractures	2
3	OR & IF Pilon fractures	2	3	OR of old hip dislocation	1
4	Pedicle screw fixation for spinal trauma	10	4	Standard THR	5
5	Disectomy / Decompression	5	5	Standard TKR	5

6	OR of old elbow dislocation	2	6	Deformity correction of • Genu Varus • Genu Valgus • Rotational deformity	 5 5 5
7	OR of old dislocated shoulder	1	7	Surgical correction for recurrent dislocation of shoulder	2
8	ETA	5	8	Therapeutic arthroscopy of the knee	5
9	Application of bone transport	5	9	ACL Reconstruction	2
10	Management of Non-union/ Mal-union	10	10	Quadriceps plasty	2
11	Diagnostic arthroscopy of the knee	10			
	Consultants				
1	Pelvic fractures				
2	Scoliosis				
3	Spondylolysthesis reduction				
4	Revision THR				
5	Revision TKR				
6	Pelvic Osteotomies				
7	Recurrent dislocation of Patella				
8	OR of CDH				
9	Surgical correction of CTEV				

ANNEXURE VI. Format for writing a research proposal

The aim of the research component is to plan and complete a scientific research project, with due appreciation of the need for scientific validity and ethical principles, within organizational and financial constraints. The choice of the research project will be primarily that of the trainee, but this should be discussed with and approved by the supervisor. The trainee should prepare a research proposal which will be submitted to the BoS for approval prior to commencement of the study.

Time frame: the research proposal should be approved within the time period stipulated by the BoS.

Format: In general, the research proposal should be limited to 3000 words. The following structure is suggested:

- Title of the study
- List of investigators
- Collaborating institutions
- Background/introduction: this should include an overview of the subject related to the research project, with a relevant review of the literature.
- Justification: This section should provide a brief justification of the importance and relevance of the study proposed, including the feasibility of the study.
- Objectives: general and specific objectives of the study should be clearly defined.
- Methods: The methodology to be adopted to achieve the listed objectives should be given in detail. The following sub-sections are suggested as a guide:
    - Study design
    - Study period
    - Study population
    - Sample size calculation
    - Sampling technique
    - Study instruments
    - Data collection
    - Proposed statistically analysis
    - Ethic clearance and consent, and confidentiality of data
    - Proposed methods for dissemination of findings
- Annexes: the following annexes should be provided:
    - Data proforma/s
    - Consent forms, where relevant in all three languages
    - Other relevant supporting documents

The trainees are advised to use Microsoft Word® for formatting documents. The software Endnote®, Reference Manager® or Mendelay® should be used, if possible, for citations. The reference format should follow the Vancouver® Style.

Both soft and hard copies of the documents should be submitted to the BoS, through the supervisor.

ANNEXURE VII. Format for reviewers to report on research proposals

The reviewers of the research project should rate the research proposal as satisfactory or unsatisfactory. The main sections should be rated as satisfactory or unsatisfactory, and, if rated as unsatisfactory, specific comments should be provided. General statements should be avoided, and the reviewers should specifically what deficiencies are present and how they could be addressed.

Section	Satisfactory or Unsatisfactory	Remarks
Background		
Justification		
Objectives		
Methods		
Overall		

Recommendation: Accept / Revise and resubmit / reject

If a proposal is rejected altogether, the trainee will be expected to submit a new proposal.

ANNEXURE VIII. Guidance to supervisors

1. The supervisor should guide the trainee in planning, carrying out research methodology and in presentation of the work, including the writing of the dissertation.
2. The supervisor should obtain recommendation of the research proposal from a reviewer.
3. The supervisor should forward progress report(s) in the prescribed form at the end of 3 months after the trainee commences work on the research project and 3 months after completing the project work.
4. The objective of the dissertation is to prove the trainee's capability to plan, carry out and present his/her own research. The purpose of this training is to ensure maturity, discipline and scholarship in research.
5. The dissertation should comprise the trainee's own account of his / her research.
6. It should be satisfactory as regards literary presentation.
7. The dissertation should be certified by the supervisor as suitable for submission.
8. General Comments on the contents: The objectives should be clearly stated and should be feasible to achieve within the time frame. Other published work relevant to the problem (both international and local) should be comprehensively covered and critically evaluated. The research methodology should achieve the objectives stated. The results should be presented effectively. The discussion should include comments on the significance of results, how they agree or differ from published work and theoretical / practical applications of the results, if any. The conclusions should be valid and be based on the results obtained on the study.
9. Ethics: The candidate should confirm and document that procedures followed were approved by the Ethical Committee of the institution where the work was carried out and ethical approval is obtained by a recognized Ethics Committee.
10. If at any time the supervisor is not satisfied with the progress of work progress of the trainee, the trainee should be made aware of the deficiencies and corrective measures suggested. This should be conveyed in writing to the trainee with a copy to the BOS. In such instances, a follow-up report should be forwarded within three months or earlier if necessary to the BOS.

ANNEXURE IX. Format for progress reports

The progress reports should have the following components:

- By the trainee: Description of work carried out to date
- By the supervisor:
    - Whether the research project is progressing satisfactorily
    - Constraints
    - Whether the dissertation writing is on schedule
    - Whether overall progress is satisfactory

ANNEXURE X. Format for project reports / dissertations

The following format should be adopted for project reports or dissertations

The preliminaries should precede the text. They should comprise the following:

1. Title page
   <Title of dissertation>
   <Author's name>
   MD (subject)
   Post Graduate Institute of Medicine
   University of Colombo
   <Year of submission>

2. Statement of originality: This is a declaration that the work presented in the dissertation is the candidate's own, and that no part of the dissertation has been submitted earlier or concurrently for any other degree. The statement should be signed by the author, and countersigned by the supervisor.

3. Abstract: This should consist of a brief summary of not more than 350 words describing the objectives of the work, the materials and methods used, the results obtained, and the conclusions drawn. This may be in a structured format if helpful.

4. Table of contents: The table of contents immediately follows the abstract and lists in sequence, with page numbers, all relevant divisions of the dissertation, including the preliminary pages.

5. List of tables: This lists the tables in the order in which they occur in the text, with the page numbers.

6. List of figures: This lists all illustrative material (maps, figures, graphs, photographs etc) in the order in which they occur in the text, with the page numbers.

7. Acknowledgments

Text
The dissertation should be divided into clearly defined sections. Sections may be subdivided.

Introduction: The aim of this section is to state briefly the current position and the reasons for carrying out the present work. Generally, only a few references should be cited here.

Literature Review: This section should be reasonably comprehensive, and most of the references to be quoted normally occur here. The relevant references dealing with the general problems should be reviewed first and this is followed by a detailed review of the specific problem. The review is in many cases approached as a historical record of the development of knowledge of the subject. This chapter should conclude with a brief statement of what you propose to find out.

Materials and Methods: These should be described so that a reader could repeat all the experiments. Where specific details are available in the literature, reference should be made to the original papers, and comments kept to a minimum. If modifications have been made to the published techniques, these should be described in full.

Results: Much of the data should be given in tables and figures and these should be inserted in the text at the appropriate place. The results must be fully described in the text. It is not sufficient to merely present the tables and figures without any comment. The tables and figures should be clear without references to the text, and this requires concise explanations in legends. Where possible, data presented in the text should have already been analyzed and the complete 'raw' figures should not be included in this section but should be contained in tables in the Appendix.

Only data from the present work should be included in this section and in particular no comparison should be made at this stage with results from other workers.

Discussion: The discussion is the most difficult part of the dissertation to write because the author has to compare **critically** the present results with those of other workers and to draw valid conclusions from these studies. Descriptions of other workers findings which already appear in the Literature Review should not be repeated in the Discussion. Instead, refer to the Review.

The limitations of the study and recommendations for future research on the subject should also be included in this chapter.

As your project proceeds, keep notes of your thoughts and discussions relevant to this section.

References

All references should be cited in the text. The Vancouver style should be used for references, and should be listed in the order of citation. Endnote ®, Reference Manager® or Mendelay® referencing software should be used for citations.