



MGM INSTITUTE OF HEALTH SCIENCES

(Deemed University u/s 3 of UGC Act, 1956)

Grade 'A' Accredited by NAAC

Sector-01, Kamothe, Navi Mumbai - 410 209

Tel 022-27432471, 022-27432994, Fax 022 - 27431094

E-mail : registrar@mgmuhs.com ; Website : www.mgmuhs.com

Syllabus for MBBS – (Third Year) Part II

Approved as per BOM. 04/2007, dated 14.12.2007, item 4 & amended up to BOM.

43/2015 dated 14.11.2015

Syllabus have been categorized as '**Must know**' (70%), '**Desirable to Know**' (30%) and '**Nice to Know**' (10%) topics.

Inside this booklet, '**Desirable to know**' & '**Nice to Know**' topics are stamped and remaining all unstamped topics belong to '**Must Know**' area.

Prof. Z. G. Badade
Registrar,
MGM Institute of Health Sciences
Kamothe, Navi Mumbai-401209

INDEX

Sr. No	Item	Page No.
1.	General Considerations and Teaching Approach	1 - 3
2.	Objective of Medical Graduate Training Programme	4 - 8
3.	Syllabus of General Medicine	9 - 24
4.	Syllabus of Paediatrics	25 - 70
5.	Syllabus of Psychiatry	34 - 40
6.	Syllabus of Dermatology	41 - 46
7.	Syllabus of Respiratory Medicine	47 - 51
8.	Syllabus of General Surgery	52 - 65
9.	Syllabus of Orthopaedics	66 - 73
10.	Syllabus of Radio-Diagnosis and Radiotherapy	74 - 81
11.	Syllabus of Obstetrics and Gynecology	82 - 90

GENERAL CONSIDERATIONS AND TEACHING APPROACH

- (1) Graduate medical curriculum is oriented towards training students to undertake the responsibilities of a physician of first contact who is capable of looking after the preventive, promotive, curative & rehabilitative aspect of medicine.
- (2) With wide range of career opportunities available today, a graduate has a wide choice of career opportunities. The training, though broad based and flexible should aim to provide an educational experience of the essentials required for health care in our country.

“Training should be able to meet internationally acceptable standards.”

- (3) To undertake the responsibilities of service situations which is a changing condition and of various types, it is essential to provide adequate placement training tailored to the needs of such services as to enable the graduates to become effective instruments of implementation of those requirements. To avail of opportunities and be able to conduct professional requirements, the graduate shall endeavour to have acquired basic training in different aspects of medical care.
- (4) The importance of the community aspects of health care and of rural health care services is to be recognized. This aspect of education & training of graduates should be adequately recognized in the prescribed curriculum. Its importance has been systematically upgraded over the past years and adequate exposure to such experiences should be available throughout all the three phases of education & training. This has to be further emphasized and intensified by providing exposure to field practice areas and training during the internship period. The aim of the period of rural training during internship is to enable the fresh graduates to function efficiently under such settings.
- (5) The educational experience should emphasize health and community orientation instead of only disease and hospital orientation or being concentrated – on - curative - aspects. As such all the basic concepts of modern scientific medical education are to be adequately dealt with.
- (6) There must be enough experiences to be provided for self learning. The methods and techniques that would ensure this must become a part of teaching - learning process.
- (7) The medical graduate of modern scientific medicine shall endeavour to become capable of functioning independently in both urban and rural environment. He/she shall endeavour to give emphasis on fundamental aspects of the subjects taught and on common problems of health and disease avoiding unnecessary details of specialization.
- (8) The importance of social factors in relation to the problem of health and diseases should receive proper emphasis throughout the course and to achieve this purpose, the

educational process should also be community based than only hospital based. The importance of population control and family welfare planning should be emphasized throughout the period of training with the importance of health and development duly emphasized.

- (9) Adequate emphasis is to be placed on cultivating logical and scientific habits of thought, clarity of expression and independence of judgment, ability to collect and analyze information and to correlate them.
- (10) The educational process should be placed in a historic background as an evolving process and not merely as an acquisition of a large number of disjointed facts without a proper perspective. The history of Medicine with reference to the evolution of medical knowledge both in this country and the rest of the world should form a part of this process.
- (11) Lectures alone are generally not adequate as a method of training and are a poor means of transferring/acquiring information and even less effective at skill development and in generating the appropriate attitudes. Every effort should be made to encourage the use of active methods related to demonstration and on firsthand experience. Students will be encouraged to learn in small groups, through peer interactions so as to gain maximal experience through contacts with patients and the communities in which they live. While the curriculum objectives often refer to areas of knowledge or science, they are best taught in a setting of clinical relevance and hands on experience for students who assimilate and make this knowledge a part of their own working skills.
- (12) The graduate medical education in clinical subjects should be based primarily on out-patient teaching, emergency departments and within the community including peripheral health care institutions. The out-patient departments should be suitably planned to provide training to graduates in small groups.
- (13) Clinics should be organized in small groups of preferably not more than 10 students so that a teacher can give personal attention to each student with a view to improve his skill and competence in handling of the patients.
- (14) Proper records of the work should be maintained which will form the basis for the students' internal assessment and should be available to the inspectors at the time of inspection of the college by the Medical Council of India.
- (15) Maximal efforts have to be made to encourage integrated teaching between traditional subject areas using a problem based learning approach starting with clinical or community cases and exploring the relevance of various preclinical disciplines in both understanding and resolution of the problem. Every attempt be made to de-emphasize compartmentalization of disciplines so as to achieve both horizontal and vertical integration in different phases.

- (16) Every attempt is to be made to encourage students to participate in group discussions and seminars to enable them to develop personality, character, expression and other faculties which are necessary for a medical graduate to function either in solo practice or as a team leader when he begins his independent career. A discussion group should not have more than 20 students.
- (17) Faculty member should avail of modern educational technology while teaching the students and to attain this objective, Medical Education Units/ Departments be established in all medical colleges for faculty development and providing learning resource material to teachers.
- (18) To derive maximum advantage out of this revised curriculum, the vacation period to students in one calendar year should not exceed one month, during the 4 ½ years Bachelor of Medicine and Bachelor of Surgery (MBBS) Course.
- (19) In order to implement the revised curriculum in Toto, State Govts. and Institution Bodies must ensure that adequate financial and technical inputs are provided.
- (20) HISTORY OF MEDICINE –The students will be given an outline on “History of Medicine”. This will be taught in an integrated manner by subject specialists and will be coordinated by the Medical Education Unit of the College.
- (21) All medical institutions should have curriculum committee which would plan curricula and instructional method which will be regularly updated.
- (22) Integration of ICT in learning process will be implemented.

OBJECTIVE OF MEDICAL GRADUATE TRAINING PROGRAMME:

- (1) **NATIONAL GOALS :** At the end of undergraduate program, the medical student should be able to :
 - (a) Recognize 'health for all' as a national goal and health right of all citizens and by undergoing training for medical profession fulfill his/her social obligations towards realization of this goal.
 - (b) Learn every aspect of National policies on health and devote himself / herself to its practical implementation.
 - (c) Achieve competence in practice of holistic medicine, encompassing promotive, preventive, curative and rehabilitative aspects of common diseases.
 - (d) Develop scientific temper, acquire educational experience for proficiency in profession and promote healthy living.
 - (e) Become exemplary citizen by observation of medical ethics and fulfilling social and professional obligations, so as to respond to national aspirations.
- (2) **INSTITUTIONAL GOALS:** (1) In consonance with the goals each medical institution should evolve institutional goals to define the manpower (or professionals) they intend to produce. The undergraduate students coming out of a medical institute should:
 - (a) Be competent in diagnosis and management of common health problems of the individual and the community, commensurate with his/her position as a member of the health team at the primary, secondary or tertiary levels, using his/her clinical skills based on history, physical examination and relevant investigations.
 - (b) Be competent to practice preventive, promotive, curative and rehabilitative medicine in respect to the commonly encountered health problems.
 - (c) Appreciate rationale for different therapeutic modalities; be familiar with the administration of the "essential drugs" and their common side effects.
 - (d) Be able to appreciate the socio-psychological, cultural, economic and environmental factors affecting health and develop humane attitude towards the patients in discharging one's professional responsibilities.
 - (e) Possess the attitude for continued self learning and to seek further expertise or to pursue research in any chosen area of medicine, action research and documentation skills.
 - (f) be familiar with the basic factors which are essential for the implementation of the National Health Programmes including practical aspects of the following:-
 - (i) Family Welfare and Material and Child Health(MCH)
 - (ii) Sanitation and water supply

- (iii) Prevention and control of communicable and non-communicable diseases
 - (iv) Immunization
 - (v) Health Education
 - (vi) IPHS standard of health at various level of service delivery, medical waste disposal.
 - (vii) Organizational institutional arrangements.
-
- (g) Acquire basic management skills in the area of human resources, materials and resource management related to health care delivery, General and hospital management, principal inventory skills and counseling
 - (h) Be able to identify community health problems and learn to work to resolve these by designing, instituting corrective steps and evaluating outcome of such measures.
 - (i) Be able to work as a leading partner in health care teams and acquire proficiency in communication skills.
 - (j) Be competent to work in a variety of health care settings.
 - (k) Have personal characteristics and attitudes required for professional life such as personal integrity, sense of responsibility and dependability and ability to relate to or show concern for other individuals.

All efforts must be made to equip the medical graduate to acquire the skills as detailed as under:

A comprehensive list of skills recommended as desirable for Bachelor of Medicine and Bachelor of Surgery (MBBS) Graduate:

1. Clinical Evaluation:

- (a) To be able to take a proper and detailed history.
- (b) To perform a complete and thorough physical examination and elicit clinical signs.
- (c) To be able to properly use the stethoscope, Blood Pressure, Apparatus Auroscope, Thermometer, Nasal Speculum, Tongue Depressor, Weighing Scales, Vaginal Speculum etc.:
- (d) To be able to perform internal examination-Per Rectum (PR), Per Vaginum (PV) etc.
- (e) To arrive at a proper provisional clinical diagnosis.

II. Bed side Diagnostic Tests:

- (a) To do and interpret Haemoglobin (HB), Total Count (TC), Erythrocytic Sedimentation Rate (ESR), Blood smear for parasites, Urine examination /albumin /sugar /ketones /microscopic:
- (b) Stool exam for ova and cysts;
- (c) Gram, staining and Siehl-Nielsen staining for AFB;
- (d) To do skin smear for lepra bacilli
- (e) To do and examine a wet film vaginal smear for Trichomonas
- (f) To do a skin scraping and Potassium Hydroxide (KOH) stain for fungus infections;
- (g) To perform and read Montoux Test.

III. Ability to Carry Out Procedures:

- (a) To conduct CPR (Cardiopulmonary resuscitation) and First aid in newborns, children and adults.
- (b) To give Subcutaneous (SC) /Intramuscular (IM) /Intravenous (IV) injections and start Intravenous (IV) infusions.
- (c) To pass a Nasogastric tube and give gastric leavage.
- (d) To administer oxygen-by masic/catheter
- (e) To administer enema
- (f) To pass a ruinary catheter-male and female
- (g) To insert flatus tube
- (h) To do pleural tap, Ascitic tap & lumbar puncture
- (i) Insert intercostal tube to relieve tension pneumothorax
- (j) To control external Haemorrhage.

IV Anaesthetic Procedure

- (a) Administer local anaesthesia and nerve block

- (b) Be able to secure airway potency, administer Oxygen by Ambu bag.

V Surgical Procedures

- (a) To apply splints, bandages and Plaster of Paris (POP) slabs;
- (b) To do incision and drainage of abscesses;
- (c) To perform the management and suturing of superficial wounds;
- (d) To carry on minor surgical procedures, e.g. excision of small cysts and nodules, circumcision, reduction of paraphimosis, debridement of wounds etc
- (e) To perform vasectomy;
- (f) To manage anal fissures and give injection for piles.

VI Mechanical Procedures

- (a) To perform thorough antenatal examination and identify high risk pregnancies.
- (b) To conduct a normal delivery;
- (c) To apply low forceps and perform and suture episiotomies;
- (d) To insert and remove IUD's and to perform tubectomy

VII Paediatrics

- (a) To assess new borns and recognize abnormalities and I.U. retardation
- (b) To perform Immunization;
- (c) To teach infant feeding to mothers;
- (d) To monitor growth by the use of 'road to health chart' and to recognize development retardation;
- (e) To assess dehydration and prepare and administer Oral Rehydration Therapy (ORT)
- (f) To recognize ARI clinically;

VIII ENT Procedures:

- (a) To be able to remove foreign bodies;
- (b) To perform nasal packing for epistaxis;
- (c) To perform tracheotomy

IX Ophthalmic Procedures:

- (a) To invert eye-lids;
- (b) To give Subconjunctival injection;
- (c) To perform appellation of eye-lashes;
- (d) To measure the refractive error and advise correctional glasses;
- (e) To perform nasolacrimal duct syringing for potency

X. Dental Procedures:

- To perform dental extraction

XI Community Healthy:

- (a) To be able to supervise and motivate, community and para-professionals for corporate efforts for the health care;
- (b) To be able to carry on managerial responsibilities, e.g. Management of stores, indenting and stock keeping and accounting
- (c) Planning and management of health camps;
- (d) Implementation of national health programmes;
- (e) To effect proper sanitation measures in the community, e.g. disposal of infected garbage, chlorination of drinking water;
- (f) To identify and institute and institute control measures for epidemics including its proper data collecting and reporting.

XII Forensic Medicine Including Toxicology

- (a) To be able to carry on proper medico legal examination and documentation of injury and age reports.
- (b) To be able to conduct examination for sexual offences and intoxication;
- (c) To be able to preserve relevant ancillary material for medico legal examination;
- (d) To be able to identify important post-mortem findings in common un-natural deaths.

XIII Management of Emergency

- (a) To manage acute anaphylactic shock;
- (b) To manage peripheral vascular failure and shock;
- (c) To manage acute pulmonary oedema and LVF;
- (d) Emergency management of drowning, poisoning and seizures
- (e) Emergency management of bronchial asthma and status asthmaticus;
- (f) Emergency management of hyperpyrexia;
- (g) Emergency management of comatose patients regarding airways, positioning prevention of aspiration and injuries
- (h) Assess and administer emergency management of burns

Syllabus for ORTHOPAEDICS

INDEX

Sr. No	Item	Page No
1.	Broad Curriculum as per MCI Guidelines for Orthopaedics	68
2.	Syllabus of Orthopaedics	69-73

BROAD CURRICULUM AS PER MCI GUIDELINES (ORTHOPAEDICS)

a. KNOWLEDGE:

The student should be able to:

1. Explain the principles of recognition of bone injuries and dislocation.
2. Apply suitable methods to detect and manage common infections of bones and joints.
3. Identify congenital, skeletal anomalies and their referral for appropriate correction or rehabilitation.
4. Recognize metabolic bone diseases as seen in this country.
5. Explain etiogenesis, manifestations, diagnosis of neoplasm affecting bones.

b. SKILLS

At the end of the course, the student should be able to:

1. Detect sprains and deliver first aid measures for common fractures and sprains and manage uncomplicated fractures of clavicle, Colles's, forearm, phallanges etc.
2. Techniques of splinting, plaster, immobilization etc.
3. Management of common bone infections, learn indications for sequestration, amputations and corrective measures for bone deformities.
4. Aspects of rehabilitation for Polio, Cerebral Palsy and Amputation.

b. APPLICATION:

Be able to perform certain orthopedic skills, provide sound advice of skeletal and related conditions at primary or secondary health care level.

c. INTEGRATION:

Integration with anatomy, surgery, pathology, radiology and Forensic Medicine be done.



MAHATMA GANDHI MISSION
MEDICAL COLLEGE & HOSPITAL
Sector - 18, Kamothe, Navi Mumbai - 410 209

Date:-14/09/2015

DEPARTMENT OF ORTHOPAEDICS

To,
Dr. Z.G. Badade.
Registrar
MGM Institute of Health Science.
3rd floor, MGM Education Campus.
Plot 1 & 2. Sec- 1. Kamothe.
Navi Mumbai - 410209.

Sub:- Revision of syllabus of Orthopaedics for MBBS.

Respected Sir,

I am here by forwarding the corrected Orthopaedic syllabus for MBBS after going through the existing syllabus with a few deletions and additions in the syllabus.

Deletions:- Lecture no. 32, 33, 40 and Madura foot as they have become obsolete in MBBS.

Additions:- Polytrauma and its management in practical and lectures.

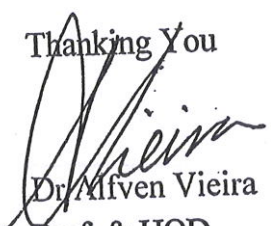
The marks allotted for Orthopaedics in MBBS exam presently is as per Annexure 1 & 2. Kindly make a note of the same and do the needful.

Dear Sir,

Please send the ortho syllabus with the BOS resolutions (concerned) incorporated appropriately in the soft copy of the syllabus.

Any addition/deletion in the syllabus should be put forth before BOS through the chairperson of BOS (Surgery & Allied)

Thanking You


Dr. Mifven Vieira
Prof. & HOD

PROFESSOR & HOD
DEPT OF ORTHOPAEDICS
MGM MEDICAL COLLEGE
KAMOTHE NAVI MUMBAI

MGM Institute Of Health Sciences

INWARD NO. 5402

DATE: 14/9/15

REF: 2701

(B) ORTHOPAEDICS

(A) KNOWLEDGE

The student shall be able to:

1. Explain the principles of recognition of bone injuries and dislocation.
2. Apply suitable methods to detect and manage common infections of bones and joints.
3. Identify congenital, skeletal anomalies and their referral for appropriate correction or rehabilitation.
4. Recognize metabolic bone diseases as seen in this country:
5. Explain etiology, manifestations, and diagnosis of neoplasm affecting bones.

(B) SKILLS:

At the end of the course, the student shall be able to:

1. Detect sprains and deliver first aid measures for common fractures and sprains and manage uncomplicated fractures of clavicle, Colles's forearm, phalanges etc.
2. Use techniques of splinting, plaster, immobilization etc.
3. Manage common bone infections, learn indications for sequestration, amputations and corrective measures for bone deformities;
4. Advise aspects of rehabilitation for Polio, Cerebral Palsy and Amputation.

(C) APPLICATION

Be able to perform certain orthopaedic skills, provide sound advice of skeletal and related conditions at primary or secondary health care level.

(D) INTEGRATION

LEARNING METHODS

Lectures, Tutorials bedside clinics and lecture cum demonstrations

Distribution of Teaching hours -

- ☐ Lectures - 50 hours
- ☐ Tutorials and revision - 50
- ☐ **Clinical postings in Orthopaedics**
Total clinical Posting of 10 weeks of 180 hours
5th Semester - 4 weeks
6th Semester - 4 weeks
9th Semester - 2 weeks

Course contents and suggested lecture program of Orthopaedics (Total 100 hours)

This is suggested programme and can vary at institute
Total 100 hours of teaching has to be done in Orthopaedics including Tutorials
Details of syllabus is given separately below after distribution as per semester

- | | |
|---|---------------------|
| ☐ 6 th Semester | Lectures 1 to 16 |
| ☐ 8 th Semester | Lectures 1 17 to 32 |
| ☐ 8 th Semester | Lectures 2 33 to 48 |

Topic : General Orthopaedics

Lectures

1. Introduction and scope of Orthopaedics Traumatology and Orthopaedic Diseases. Idea about Scheme of Examination.
2. Definition and Classification of Fracture and Dislocation Signs, symptoms and diagnosis of sprain, contusion fracture and dislocation.
3. First aid measures in Poly-trauma patient, spinal cord Injury patients and knowledge about various splints.
4. & 5 Principles of Management of sprain, Fracture and Dislocation with emphasis on various aspects of closed reduction, immobilization including internal fixation and rehabilitation.
- 6,7,8 Complications of fracture and its management with specific reference to malunion Delayed union, Non union, Myositis Ossificans, Sudeck's dystrophy, Volkman's ischaemia, Avascular Necrosis, Fat embolism, secondary Osteoarthritis and injury to Muscles, Tendon, nerve and Blood vessels.
1. Plaster technique, plaster complications and plaster disease.
2. Fracture Healing in cortical and cancellous bones and factors affecting fracture healing.

Topic : Orthopaedic Traumatology

3. Fracture clavicle, scapula, neck humerus and shaft humerus.
4. Supracondylar fracture humerus with complications.
5. Fracture Forearm bones, Monteggia and Galeazzi fracture dislocations, fracture olecranon head and neck radius.
6. Fracture scaphoid, Metacarpals and phalanges. *Desirable To Know*
7. Colles fracture and Complications.
8. Dislocation (Acute and Recurrent) of shoulder and elbow.
9. Fracture of Vertebrae with complications.
10. Fracture of Pelvis with complications.
11. Fracture Neck femur and trochanteric fracture.
12. Fracture shaft femur and fractures around knee.
13. Meniscus and ligaments injury at knee *Desirable To Know*
14. Fracture Tibia-fibula, fracture in tarsals, Metatarsals and phalanges.
15. Fracture dislocation around ankle, *Desirable To Know*
16. Dislocation of Hip, knee, ankle, tarsals and small bones in foot.

Topic : Orthopaedic Diseases

- 25,26 Congenital skeletal anomalies with emphasis on congenital

Talipes Equino varus (CTEV). :-

27. Congenital dislocation of hip (CDH), Osteogenesis Imperfecta, spina
28. Bifida and Torticollis. *Nice To Know*
29. Osteochondritis – various types. *Nice To Know*
30. Post Polio Residual Palsy with stress on preventive and rehabilitation aspect. *Nice To Know*

30. Acute Osteomyelitis.
31. Chronic Osteomyelitis.
32. Pyogenic arthritis of Hip, knee.
- 33,& 34. Osteo-articular Tuberculosis with special reference to
Tuberculous of Hip, knee and elbow.:-
35. Tuberculosis spine and paraplegia.
36. Fungal Infections and leprosy in Orthopaedics. *Nice To Know*
37. Cerebral palsy, Diagnosis and rehabilitation. *Nice To Know*
38. Rheumatoid arthritis. *Desirable To Know*
39. Degenerative arthritis.
40. Nerve injuries and principles of management. *Desirable To Know*
41. Amputation and Disarticulation – Indications methods and complications.
42. Metabolic bone disease : Rickets, Osteomalacia and Osteoporosis.
- 43,& 44 Tumours of bones and its classification. Benign :- Osteochondroma,
Giant cell tumour Unicameral Bone cyst, Aneurysmal cyst.
- 45,46 Malignant- Osteogenic sarcoma, Ewing's tumour,
Fibrosarcoma, Chondrosarcoma, Multiple Myeloma, Secondaries from
Primary Carcinoma (Metastatic tumours)
47. Back ache,
48. Frozen shoulder, Tennis Elbow, Dequervain's disease, Dupuytren's
Contracture Osgood – Schlatter's disease, planter fascitis.

Practical and Lecture cum Demonstration Classes, in MBBS in Orthopaedics

Once a week class for two hours in 8th/9th semester.

Topics of Demonstrations :-

1. Plaster technique and splint applications.
 2. Traction application, Orthopaedic appliances demonstration, Demonstration of
Physiotherapy equipments.
 3. Specimens of sequestrum and Tumours, Madura foot etc.
 4. Common instruments and Implants.
- 5 to 7. Common X-rays of traumatology, bony infection, joint infection and tuberculosis, Malunited Colle's fracture, forearm or Supracondylar Humerus fracture.
- 8 to 10. Chronic osteomyelitis case, knee effusion case, Non union case, Bony tumour case.

Seminar Topics :-

1. Osteomyelitis.
2. Tuberculosis.
3. Bone tumours
4. First aid and Acute trauma Life saving (ATLS) measures.

Tutorial Topics :-

15. Supracondylar fracture Humerus.
16. Colle's fracture.
17. Fracture neck femur.
18. Spine examination, Pott's spine and paraplegia
19. CTEV.
20. Shoulder, Elbow and wrist examination.
21. Hip examination.
22. Knee, ankle foot examination.
23. Nerve examination and nerve injuries.

Internal assessment:

- Two Term ending examination at the end of Posting of 50 marks each
Total 100 out of 450 marks under general surgery.

Approved in Bom 43/2015, Dated - 06/11/2015
Resolution No. - 3.4 (a)

Resolution No. 3.4(a): Resolved that :

- (i) Topic of Polytrauma and its management be included in the Orthopedic UG syllabus in consultation with Surgery Department for the batch of Students entering into 3rd MBBS (Part-II) from February 2016 onwards.
- (ii) Following Topics be excluded from the Orthopedic UG syllabus for the batch of Students entering into 3rd MBBS (Part-II) from February 2016 onwards :
 - a) Acute poliomyelitis
 - b) Fungal infection and Leprosy in orthopedic
 - c) Cerebral Palsy and rehabilitation

Resolution No. 3.8.5 of BOM-52/2018: Resolved to accept the below mentioned topics for integrated teachings in MBBS for Orthopedics, Ophthalmology, Radiology and Anesthesia:

I. Orthopedics:

1. Rickets : Pediatrics
2. Amputations : Surgery
3. Bone Tumors : Surgery
4. Osteomyelitis : Surgery