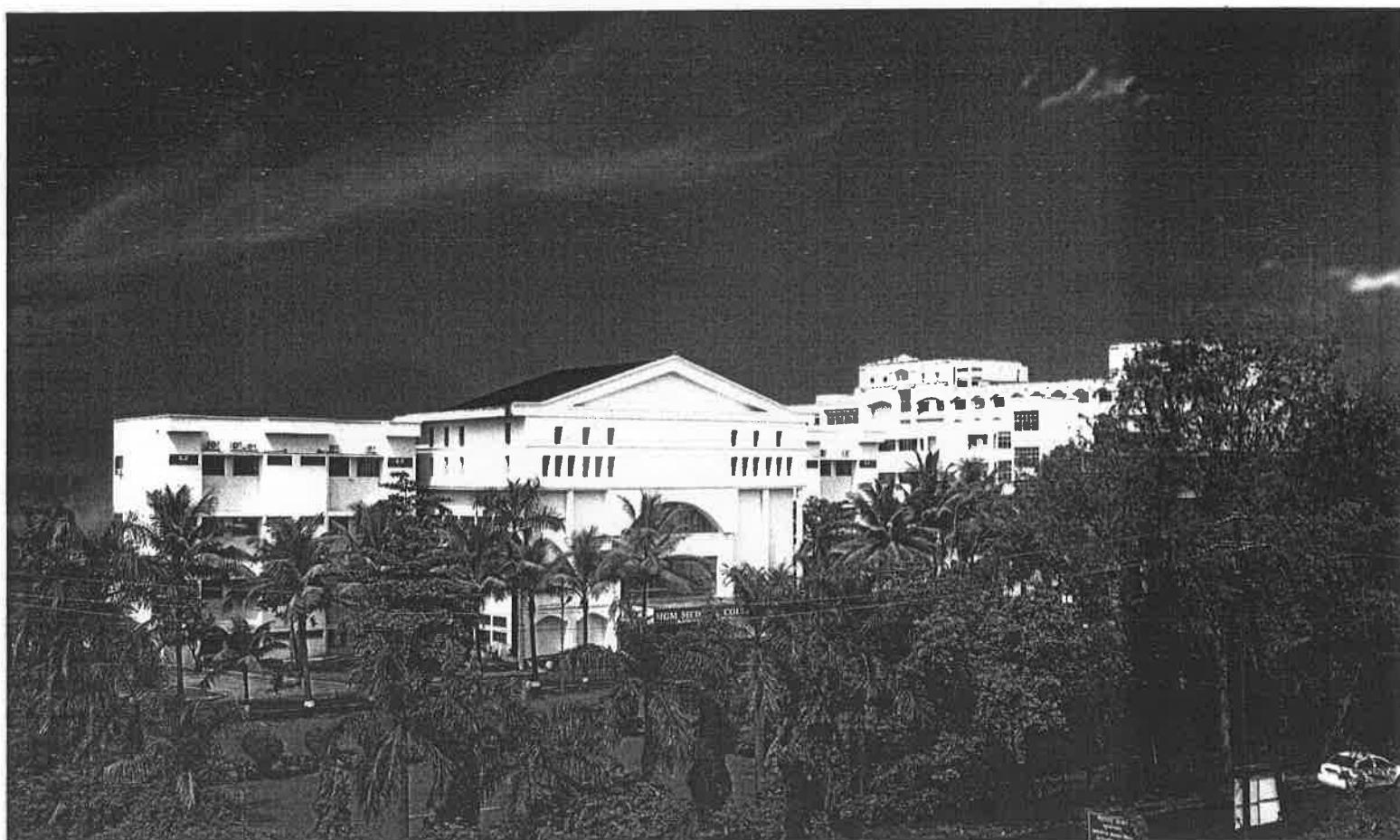


Curriculum for MS Degree in Orthopaedics



IN PURSUIT OF EXCELLENCE

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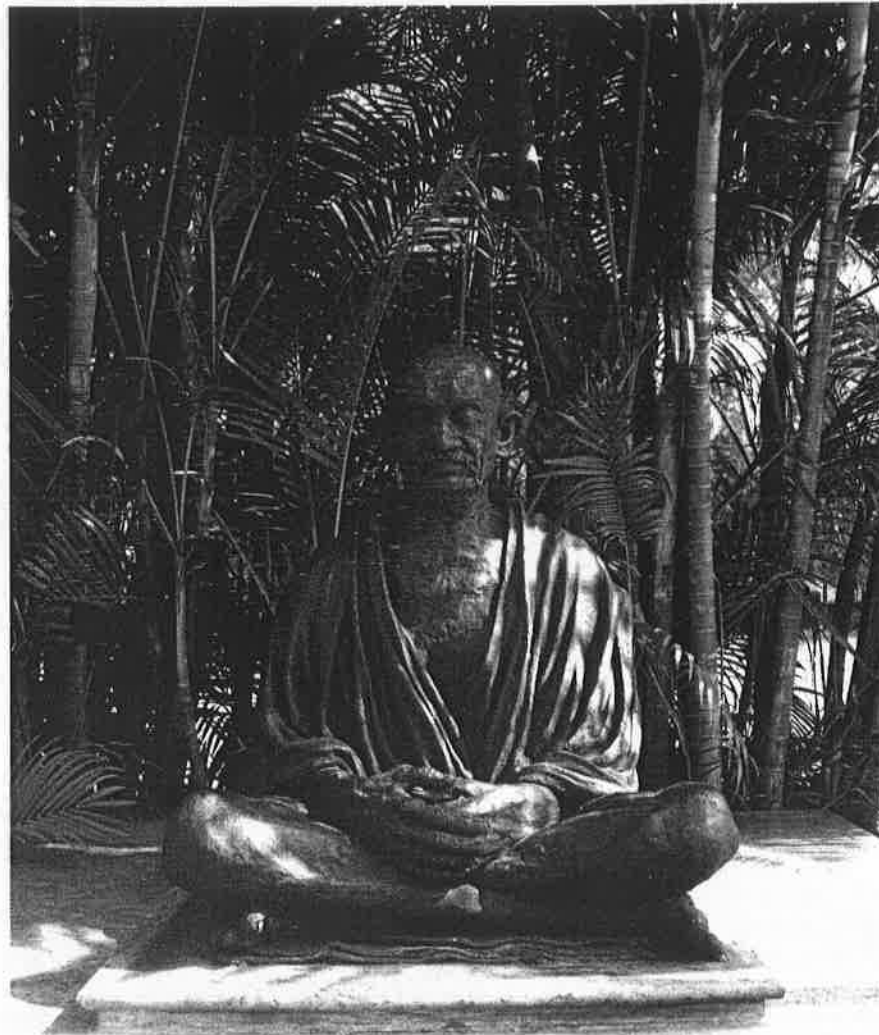
MGM INSTITUTE OF HEALTH SCIENCES

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

Navi Mumbai - 410 209


www.mgmuhs.com

INSPIRING MINDS



Mission

To improve quality of the life for individuals and community by promoting health, preventing and curing disease, advancing biomedical and clinical research and educating tomorrow's Physicians and Scientists.

Vision

By 2020 the MGM University of Health Sciences will rank one of the top private Medical Institution. This will be achieved through ground breaking **discoveries in basic sciences and clinical research** targeted to prevent and relieve human suffering, **excellence in Medical Education** of the next generation of academic clinicians and intrinsic scientists.

MGM University of Health Sciences will transform the **Education of tomorrow's Physicians and Scientists** conducting **Medical Research** to advance health and improving lives by providing world-class patient care.

Many see the 21st Century as the golden age of biomedical research. The MGM University of Health Sciences will position for leadership at the horizon of this new era to promote and stabilise stand human health with a standard of excellence.

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Chancellor's Message

It is my pleasure to welcome you to join constituent colleges of Mahatma Gandhi Misson's (MGM) University of Health Sciences, Navi Mumbai. I wish to avail this opportunity to apprise you and your parents about the academic excellence of the deemed university.

The MGM University of Health Sciences was established u/s 3 of UGC Act, 1956 vide HRD Notification No.F.9-21/2005-U.3(A) dated 30-8-2006. The MGM University is an outcome of untiring efforts of our educationists, professionals, social activists, technocrat, students and parents. The Mahatma Gandhi Mission Trust that manages the University of Health Sciences and over 40 institutions in Navi Mumbai, Aurangabad, Nanded, and Noida has the vision to empower the masses with the availability of state-of-the-art education. Most of our institutions have ISO certifications that further endorse our commitment to stringent quality standards. I am proud to state that we have succeeded in these accomplishments during our journey of the past 25 years.

I recollect the memories of struggle and determination when the MGM Trust established its two medical colleges, one each at Navi Mumbai and Aurangabad some twenty years ago. Both the medical colleges have grown into institutions imparting both undergraduate and postgraduate courses, and delivering quality health care to communities in their respective areas. While both colleges are engaged in their primary functions of teaching, patient care and research, they have

also excelled in their pursuit for advancement of science and in taking health services to communities through extension programmes. A shining example is the establishment of the Department of Infectious Diseases in 1993 in collaboration with the University of Texas-Houston, USA. This department has established the state-of-the-art clinical services and laboratories for research and care of infectious diseases and received the acclaim of Director General of ICMR when he stated "MGM is the first medical college in India to establish a separate department of infectious diseases. This is the need of the hour." The department has undertaken path-breaking research and shaped the course of our national control programmes on HIV/AIDS and tuberculosis. The original research of the constituent colleges has been acclaimed among the scientific world globally.

In an era of economic liberalization and the competition among varsities, both in and out of India, the task of grooming professionals who will compete with the best in the world, is tough. To aid our efforts to excel, MGM University of Health Sciences has the latest research facilities, a dedicated research faculty, as well as an array of distinguished visiting faculty members. The quiet ambience of our campuses, the well filled library with subscriptions to international and national journals, and the lush-green gardens add to our accomplishments.

Considering the manpower needs of

educational, industrial agricultural, and health sector to maintain their steady growth, several fresh M.Sc. courses have been launched. M.Sc. courses introduced at the

University from the current academic year shall provide knowledge, skills and subsequent employability that are at par with the counterparts in India and abroad. The curricula of the courses have been designed by experts and peer-reviewed with an emphasis on the job requirements of educational institutions, industries, health care, and research institutions. These courses will empower the students to choose a career in a classroom, a research laboratory or an industry. I am happy that the university is ticking towards the pinnacle with the introduction of these value-added postgraduate courses in medical biotechnology, medical genetics and other basic sciences.

Finally, I wish to place on record my gratitude to the founder members, stake-holders, faculty, staff, students and their parents for providing the MGM Trust with your advice and support.

Once again, it is my pleasure to welcome you to join constituent colleges of MGM University of Health Sciences' at Navi Mumbai and Aurangabad.

Kamal Kishore Kadam
Chancellor



Dr R.D.Bapat
Vice Chancellor



Dr S.N.Kadam
Pro Vice Chancellor



Dr N.N.Kadam
Director (Examination)



Dr Ajit shroff
Dean (Aurangabad Campus)



Dr Z.G. Badade
Registrar



Dr G.S.Narshetty
Dean (Navi Mumbai Campus)

Syllabus for M.S. (Orth.)

Syllabus :

- 1) Basic Sciences Related to Locomotor system.
 - 1) Development, histology of bone, cartilage, collagen, muscles and nerve.
 - 2) Physiology of bone, cartilage, muscle & nerve.
- 2) Surgical pathology related to bones, cartilage, muscle, collagen & nerve in various congenital affections, infections, Tumours and tumorous conditions and metabolic affections.
- 3) Orthopaedic diseases
 - Metabolic bone disease
 - Bone infections – Acute and Chronic
 - Congenital deformities and development conditions of upper extremity, lower extremity, spine general defects.
 - Diseases of joints
 - Tumours of Bones
 - Orthopaedic Neurology including spine bifida, Poliomyelitis and cerebral palsy.
 - Diseases of muscle, fibrous tissue and vessels
 - Regional orthopaedic conditions related to neck, shoulder, elbow, wrist, hand, hip, knee, ankle, foot, back and pelvis.
 - Special subject – Orthopaedic Radiology Amputation and disarticulation physiotherapy and rehabilitation

Recent advances in orthopaedic diseases.

- 4) General principles of Surgery and Traumatology.
 - Wound healing
 - Fracture healing
 - Rehabilitation after bone and joint injuries
 - Systematic response to injury
 - Acute trauma care and early management of injured
 - Injury to head, face, chest, abdomen, vessels & nerves.
 - Polytrauma
 - Fracture & dislocations in all bones and joints including diagnosis, classifications, various modalities of investigation and operative non-operative treatment including complications.
 - Fractures in children
 - Pathological fractures
 - Recent Advance in various fractures and complications management.

- 5) Exposure to surgical techniques & surgical approaches to various regions to manage common infection, tumor, joint diseases, different type of trauma, congenital, neurological and miscellaneous conditions.
- 6) Principles of Arthroscopy microsurgery & Arthroplasty.
- 7) Orthotics & Prosthetics, disability calculation, Bio-mechanics of gait, splints.
- 8) Thesis – Aim is to train the PG student in research work. Topics should be in experimental, clinical, retrospective analysis or combination such that students is encouraged to do exhaustive reference work. Topics should be relevant to subject and region of work. Topics should allotted within first three months of training. The candidate should complete review of literature by end of the first year and submit his completed thesis six months before the final examination. Subject of thesis should be approved by University within first six months.
- 9) Under Graduate teaching in clinical methods.
- 10) Seminar presentation on common topics.
- 11) Journal reading and discussion.
- 12) Case presentation, ward record maintenance.
- 13) Adequate experience in closed reduction of various fractures, asisting major operation, independent operative management of common orthopaedic condition.
- 14) Preparation of paper for presentation in conference.
- 15) Preparation of article for publication.

Provisional Syllabus for Diploma in Orthopaedics

1) Basic Sciences related to Locomotor System

- i) Histology of bone, cartilage, muscles, collagen, Nerves
- ii) Physiology of bone, cartilage, muscles, collagen and Nerves

2) Surgical Pathology related to Bones, cartilage, Muscle, collagen and Nerves in various.

Congenital affection, infections, Tumours and tumours conditions a metabolic affection.

3) General principles of surgery and Traumatology

- i) Wound healing
- ii) Fracture healing
- iii) Rehabilitation after bone and joint injury
- iv) Systemic response to injury
- v) Fracture and dislocation in all bones its management including complications.
- vi) Injury to chest, abdomen and head
- vii) Polytrauma
- viii) Fractures in children

4) Orthopaedics diseases

- i) Metabolic Bone Disease
- ii) Bone infections – Acute and chronic
- iii) Congenital and development Deformities
 - upper extremity
 - Lower extremity
 - Spine
 - General defects
- iv) Disease of joints
- v) Tumours of Bones
- vi) Orthopaedics Neurology – Spina bifida, Polio, Cerebral Palsy
- vii) Disease of muscles, nerves, vessels and fibrous tissues
- viii) Regional Orthopaedics related to spine, shoulder
- ix) Elbow, wrist, hip, knee, ankle and foot.
- x) Special Subjects
 - Orthopaedics Radiology
 - Amputation
 - Physiotherapy
 - ALTS
 - First Aid

Examination Scheme for D. (Ortho)

Theory Exam. Total three papers, each of three hours duration and carrying 80 marks each. Total = 240 Marks.

- Paper I - Anatomy, Physiology and Pathology as applicable to Orthopaedics.
Paper II - Traumatology and general Surgery,
Paper III - General Orthopaedics
Each paper will have four questions of 25 marks each.

Practical Exam.

Total Marks	=	300
Long Case 1	=	100
Short Case 2	50 X 2 =	100

Tables : 100		
1) Instruments	=	20
2) X-rays	=	20
3) Specimen	=	20
& Bones and splints		
4) Ward round	=	20
5) Operation	=	20

Internal Exam.

Total Marks	=	100
Theory	=	50
Practical	=	50

For further examination the internal assessment marks should be calculated based on periodical tests in theory and practical at every term i.e. 4 tests for D. (Ortho)

Passing will be 50% of the marks in each head separately i.e. Theory, Practical and internal examination. Total marks should be 50% of the total marks for passing

MGM INSTITUTE OF HEALTH SCIENCES, NAVI MUMBAI

MARKLIST FOR PRACTICAL AND VIVA-VOCE EXAMINATION

EXAM CENTRE: _____ COURSE / EXAM : PG –

DATE OF EXAMINATION: _____ EXAMINATION FOR: M.S. (ORTHOPAEDICS)

Seat No	PRACTICAL					TABLES & VIVA-VOCE					Total	Grand Total (1+2) 400 Marks
	Long Case 1	Short Case 1	Short Case 2	Short Case 3	Total	Pathology specimens & X-rays	Bones	Implants & Instruments	Orthosis & Prosthesis	Dissertation Viva		
	150	50	50	50	300	22.5	22.5	22.5	22.5	10	100	

NAME OF EXAMINER	COLLEGE	SIGNATURE WITH DATE
1.		
2.		
3.		
4.		

1.2. PG COURSES: - M.S.

Sr. No	COURSE	SUBJECT NAME	PAPER NO. & TOPICS
i)	M.S.	GENERAL SURGERY	I. Basic Sciences II. General Surgery Including Clinical Surgery III. General Surgery Including Subspecialties IV. Recent Advances
ii)	M.S.	OPHTHALMOLOGY	I. Anatomy, Physiology and optics of the eye. II. Ophthalmic Medicine and Surgery. III. Ophthalmology in relation to medicine IV. Newer Techniques and innovations in Ophthalmology.
iii)	M.S.	ORTHOPAEDICS	I. Basic and Applied Sciences as related to Orthopaedics II. Orthopaedics Traumatology III. Orthopaedic Diseases IV. Recent Advances
iv)	M.S.	OBSTETRICS AND GYNAECOLOGY	Basic Sciences in Obstetrics and Gynaecology including the diseases of the newborn. I. Clinical Obstetrics includes newborn. III. Clinical Gynaecology. IV. Recent Advances in Ob/Gy.

I	MD Emergency Medicine	I) Basic Sciences as relevant to Emergency Medicine (Applied Anatomy, Clinical Physiology, Clinical Biochemistry, Clinical Pharmacology, Clinical Microbiology, Clinical Pathology, Research Methodology, Biostatistics) II) Emergency Medicine (Medicine, Dermatology, Psychiatry) III) Emergency Medicine (Surgery Trauma, Orthopedics, Obstetrics, Anesthesia, Eye, ENT, Dental, Radiology) IV) Emergency Medicine including recent advances (Pediatrics, Principles of Pre hospital Care, Disaster Medicine, Forensic Medicine)
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IN PURSUIT OF EXCELLENCE

MGM DEEMED UNIVERSITY OF HEALTH SCIENCES

Constituent Colleges

Navi Mumbai

M.G.M. Medical College
M.G.M School of Biomedical Science
M.G.M School of Physiotherapy
M.G.M New Bombay College of Nursing
M.G.M College of Nursing

Aurangabad

M.G.M. Medical College
M.G.M School of Biomedical Science
M.G.M School of Physiotherapy
M.G.M College of Nursing



MAHATMA GANDHI MISSION

AURANGABAD

- MGM's Jawaharlal Nehru Engineering College
- MGM's Institute of Management
- MGM's Mother Teresa College of Nursing
- MGM's Mother Teresa Institute of Nursing Education
- MGM's College of Journalism & Media Science
- MGM's Medical Center & Research Institute
- MGM's College of Fine Arts
- MGM's Dr. D. Y. Pathnikar College of Comp. Sc. & Tech.
- MGM's Hospital & Research Center
- MGM's College of Agricultural Bio-Technology
- MGM's Dept. of Bio-Technology & Bio-informatics
- MGM's Inst. of Hotel Management & Catering Tech.
- MGM's Institute of Indian & Foreign Languages & Comm.
- MGM's College of Physiotherapy
- MGM's Hospital, Ajabnagar
- MGM's Sangeet Academy (Mahagami)
- MGM's Institute Naturopathy & Yoga
- MGM's Sports Club & Stadium
- MGM's Institute of Vocational Courses
- MGM's Horticulture
- MGM's Health Care Management
- MGM's Junior College of Education (Eng. & Mar.)
- MGM's Sanskar Vidyalaya (Pri. & Sec. - Mar.)
- MGM's Clover Dale School (Pri. & Sec. - Eng.)
- MGM's First Steps School (Pre-Primary - English)
- MGM's Sanskar Vidyalaya (Pre-Primary - Marathi)
- MGM's School of Biomedical Sciences

NAVI MUMBAI

- MGM's College of Engineering & Technology
- MGM's Institute of Management Studies & Research
- MGM's Dental College & Hospital
- MGM's College of Physiotherapy
- MGM's College of Media Science
- MGM's Institute of Research
- MGM's New Bombay Hospital, Vashi
- MGM's Hospital, CBD
- MGM's Hospital, Kamothe
- MGM's Hospital, Kalamboli
- MGM's Infotech & Research Centre
- MGM's Pre-Primary School (English & Marathi)
- MGM's Primary & Secondary School (Eng. & Mar.)
- MGM's Junior College Science
- MGM's Junior College of Vocational Courses
- MGM's Florence Nightingale Inst. Nursing Edu.
- MGM's College of Nursing
- MGM's College of Law

NANDED

- MGM's College of Engineering
- MGM's College of Fine Arts
- MGM's College of Computer Science
- MGM's College of Journalism & Media Science
- MGM's Centre for Astronomy & Space Tech.
- MGM's College of Library & Information Science

PARBHANI

- MGM's College of Computer Science

NOIDA (U.P.)

- MGM's College of Engineering & Technology



MGM University of Health Sciences
(Education - Health Services - Research)
A Mission started, nurtured and Managed
by Professional Doctors, Scientists Engineers...



MGM INSTITUTE OF HEALTH SCIENCES

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



Post Box -6, MGM Educational Complex, Sector-18,
Kamothe, Navi Mumbai - 410209

Ph : - 022-27422471, 65168127, 65138121 Fax : 022-27420320

E-mail : mgmuniversity@mgmuhs.com

Website: www.mgmuhs.com

ms orthopaedics

Resolution No. 1.3.10.11 of BOM-51/2017: Resolved to have 50 hours of mandatory teaching per year for PG students. **Annexure-XVIII**



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

Date: 18.07.2016

DEPARTMENT OF ORTHOPAEDICS

50 HOURS LECTURE SCHEDULE FOR PG STUDENTS

Sr.No	Topic	Hours
		2
1.	Examination of Hip Joint	1
2.	Examination of Knee joint	1
3.	Examination of Shoulder joint	1
4.	Examination of Elbow joint	2
5.	Examination of spine	1
6.	Xrays in Orthopaedics	4
7.	MRI in Orthopaedics - Knee MRI (1), Spine MRI (1), Shoulder MRI (1), Other joints, Tumor MRI	2
8.	Fracture fixation and its principles - Internal & External	1
9.	Bone healing	1
10.	Structure of bone, cartilage & ossification	3
11.	Infections in orthopaedics	1
12.	Amputation and Rehabilitation	1
13.	Nutritional Rickets	2
14.	Polytrauma and its management	1
15.	Metallurgy	2
16.	Bone tumors	1
17.	Paediatric orthopaedics DDH and CDK	1
18.	Paediatric orthopaedics CTEV	1
19.	Paediatric orthopaedics Perthes Disease	1
20.	Paediatric orthopaedics Injuries around elbow	1
21.	Osteoporosis and its management - osteoporotic fractures	1
22.	Rheumatoid arthritis and its management	1

23.	Prolapse intervertebral disc	1
24.	Osteoarthritis of Hip and Knee	1
25.	Bone bank and bone substitutes	1
26.	Burst fracture of spine	1
27.	cervical spine injuries	1
28.	Nonunion	1
29.	Scoliosis	1
30.	Planning of THR and TKR	1
31.	Splints in orthopaedics	1
32.	Plantar fasciitis and Retro calcaeneal bursitis	1
33.	Sprengel Shoulder	1
34.	Achondroplasia	1
35.	Osteotomies around the Hip	1
36.	Congenital pseudoarthrosis of tibia (CPT) & Proximal femoral focal deficit (PFFD)	1
37.	Renal rickets	1
38.	Bearing surfaces in arthroplasty	1
39.	Advances in orthopaedics - Stem cell, Biologics, Plates , Teraperatide	2
40.	Ethics in orthopaedics	1
41.	DD for short stature	1
42.	DD for painful limb	1
43.	Peripheral nerve injuries	1


 DR. ALVEEN VIEIRA
 PROFESSOR AND HOD.
 DEPARTMENT OF ORTHOPAEDICS,
 MGM MEDICAL COLLEGE,
 KAMOTHE, NAVI MUMBAI

Resolution No. 1.3.7.11 (i) of BOM-51/2017: Resolved that the following Bioethics topics in PG Curriculum are to be included for PG students of all specialization and a sensitization of these topics can be done during PG Induction programme:

- Concept of Autonomy
- Informed Consent
- Confidentiality
- Communication Skills
- Patient rights
- Withholding / Withdrawing life-saving treatment
- Palliative Care
- Issues related to Organ Transplantation
- Surgical Research and Surgical Innovation
- Hospital Ethics Committee
- Doctor-Patient relationship

All PG.

30 copies

Resolution No. 1.3.23 of BOM-51/2017: Resolved to implement a Structured Induction programme (07 days) for PG students. [Annexure-XI IV]



MGM INSTITUTE OF HEALTH SCIENCES
Navi Mumbai

Induction Program for newly admitted Postgraduate students

Day 1	• Address by Dean, Medical Suptd, Director (Academics) • Pre-test • Communication Skills • Universal Safety Precautions • Biomedical Waste Management • Infection Control Policy
Day 2	• Emergency services • Laboratory services • Blood Bank services • Medicolegal issues • Prescription writing • Adverse Drug Reaction • Handling surgical specimens
Day 3	• Principles of Ethics • Professionalism • Research Ethics • Informed Consent • Confidentiality • Doctor-Patient relationship
Day 4	• Research Methodology • Synopsis writing • Dissertation writing • Statistics
Day 5	
Day 6	
Day 7	• ATLS • Post-test

The Induction Program will be conducted in the first week of June.
Timing: 9.30 am to 3.30 pm

(Prof. Dr. Siddharth P. Dubhashi)
Director (Academics)

Resolution No. 3.8.2 of BOM-52/2018: It was resolved to have the following Allied posting for PG students:

c) Orthopaedics:

Mandatory postings:

- | | | |
|------|--------------------|---------|
| I. | Surgery | 60 days |
| II. | SICU | 60 days |
| III. | Emergency Medicine | 60 days |

Resolution passed in BOM – 48/2017, dated 24/01/2017

Resolution No. 5.25: Resolved to institute 6 monthly progress Report for PG Students of all Courses from the batches admitted in 2016-17. [Annexure-XVII of BOM-48/2017]



**Mahatma Gandhi Mission's Medical College and Hospital
Navi Mumbai**

Six monthly Progress Report for Postgraduate Students

PART A

Name of the PG student: _____

Department: _____

Admitted in (Month and Year): _____

Name of the PG guide: _____

Report for the period: _____ to _____

Attendance: _____ days (_____ %)

PART B

Grading as per performance

Grade	Percentage
A	80% and above
B	65% to 79%
C	50% to 64%
D	Below 50%

1. OPD work:
2. Ward work:
3. Lab work:
4. OT work:
5. ICU work:
6. Teaching assignments:

PART C

Progress of Thesis

PART D

Activities from serial No. 1 to 5 should be rated on a scale of 0 to 10.

1. Case Presentations

Sr. No.	Topic	Date	Guide	Marks

2. Microteaching

Sr. No.	Topic	Date	Guide	Marks

3. Recent Advances

Sr. No.	Topic	Date	Guide	Marks

4. Seminars

Sr. No.	Topic	Date	Guide	Marks

5. Journal Clubs

Sr. No.	Journal	Title of Paper	Date	Guide	Marks

6. Marks obtained in tests

Sr. No.	Date	Theory / Practical	Marks obtained

7. Any other academic activity conducted:

PART E

1. Papers presented

Sr. No.	Title of Paper	Authors	Event	Date

2. Posters presented

Sr. No.	Title of Poster	Authors	Event	Date

3. Publications

(Note: Mention only those publications that are published or are accepted for publication during the said period only)

Sr. No.	Title of Paper	Authors	Journal	Year/Vol/ Issue	Page Nos	Indexed/ Non-Indexed	Status

Certificate by the PG Guide

This is to certify that Dr. _____, has an attendance of _____% , during the period _____ to _____. His /Her performance during the said period has been **satisfactory/ average / unsatisfactory.**

Overall Grading: _____

Date: _____

Name and Signature of PG guide:

Certificate by the Head of Department

This is to certify that the performance of Dr. _____, during the period _____ to _____, has been **satisfactory/ average / unsatisfactory.**

Overall Grading: _____

Date: _____

Name and Signature of HOD:

Final Remarks

Satisfactory / Average / Unsatisfactory

Director (Academics)

Dean

Date:

Resolution No. 4.5.4.2 of BOM-55/2018: Resolved to have 10 short notes out of 11 (10 marks each) in all the papers in university examination for PG courses including superspeciality. To be implemented from batch appearing in April/May 2019 examination onwards for MD/MS/Diploma and August/September 2019 examination onwards for superspeciality.