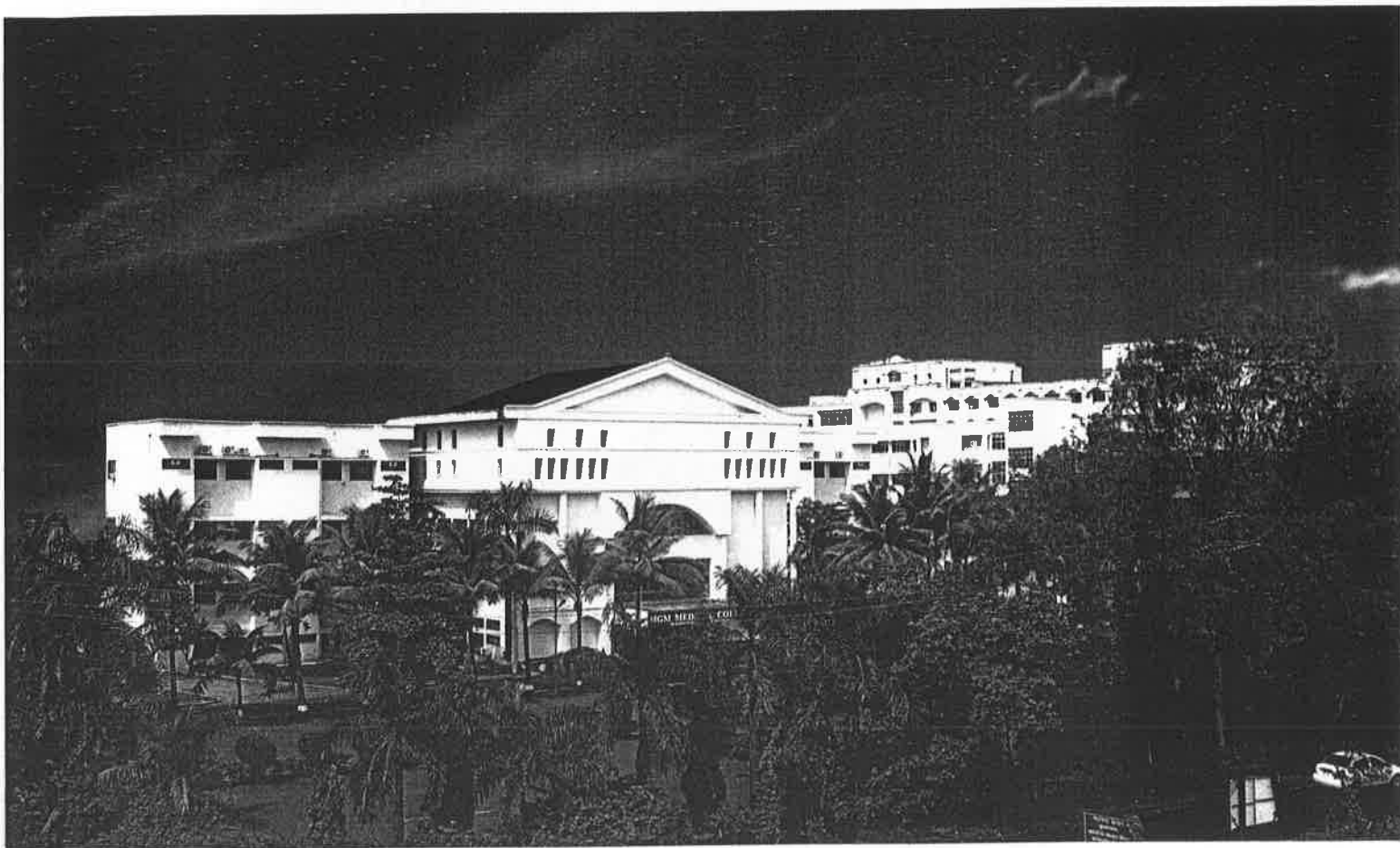


# Curriculum for MD Degree in Pharmacology



**IN PURSUIT OF EXCELLENCE**



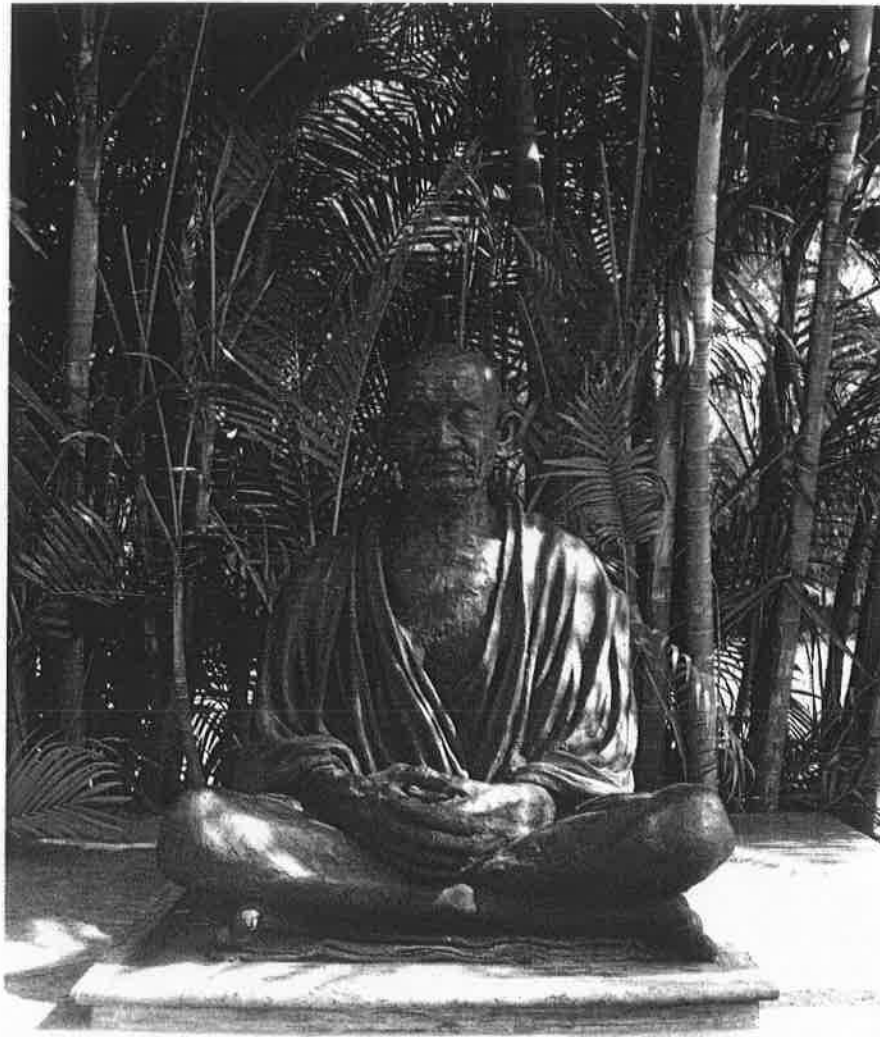
**MGM INSTITUTE OF HEALTH SCIENCES**

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

Navi Mumbai - 410 209

  
[www. mgmuhs.com](http://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 21<sup>st</sup> 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)

The overall goal of the course is to develop expertise in the field of Pharmacology. A process of rational thinking and cogent action will be inculcated in an individual so that he/ she shall be competent to pursue various activities as demanded by the profession as Pharmacologist

**Goals:**

- 1) To understand pharmacology in depth with understanding of the rational use of drugs, clinical pharmacology and to prepare good quality teachers.
- 2) Introducing students to advances in teaching technology ,Computer Aided Learning, internet, patent laws and procedures etc.
- 3) To orient students for research & developments.

**Objectives:** To achieve this goal, the following objectives must be fulfilled. At the end of course in Pharmacology and Therapeutics, the trained specialist shall be able to

Cognitive domain:

- 1) Apply basic principles of pharmacology and therapeutics to practice rational use of existing drugs and evaluation of new drugs.
- 2) Collect and analyse experimental and clinical data related to drug kinetics or dynamics
- 3) Interpret the analyzed data with reasonable accuracy and derive logical conclusions.
- 4) Provide appropriate advice related to selection of drug, drug usage( desirable and undesirable effects, Kinetics, interactions), Precautions and measures to be taken during administration of drug and treating the ADRs in a given patient taking into consideration physiological, psychological & Pathological features
- 5) Audit drug utilization and drug related adverse events
- 6) Assess emergency situations while carrying out drug trials and institute emergency management till appropriate assistance from clinical side is available.
- 7) Develop the ability for continued self learning so as to update the knowledge of recent advances in the field of Pharmacology and allied fields
- 8) Be competent to teach and train undergraduate and future postgraduate medical students and junior doctors in Pharmacology and Therapeutics as well as nurses and paramedical staff in Medical Colleges, Institutions and other Hospitals.
- 9) Plan and carry out both laboratory and clinical research with adherence to scientific methodology and GLP/GCP guidelines
- 10) Be aware of legal and ethical aspects of drug evaluation.
- 11) Communicate the findings, results and conclusions of scientific research, both verbally and in writings
- 12) Be aware of regulatory procedures needed to be carried out prior to the marketing of a new drug in India.

### **Psychomotor domain :**

- 1) Perform common experimental techniques required for evaluation of new drug with competence
- 2) Perform common clinical procedures required for evaluation of drug in normal volunteers and patients with competence
- 3) Organize and manage administrative responsibilities for routine day to day work as well as new situations
- 4) Carry out necessary resuscitative measures in emergency situations arising during drug evaluation
- 5) Use teaching-learning media effectively.

### **Affective domain :**

- 1) Appreciate socio-psychological, cultural and environmental factors affecting health and drug usage.
- 2) Appreciate the importance and implementation of National health programmes in context to rational drug utilization
- 3) Be aware of the importance of cost-effectiveness in patient management
- 4) Be aware of service activities which a pharmacologist can undertake viz. therapeutic drug monitoring, ADR monitoring, drug information services, poison control centre, drug auditing etc.
- 5) Adopt ethical principles while conducting experimental and human research
- 6) Develop communication skills to interact with patients, peers and paramedical staff
- 7) Realize the importance of team work
- 8) Develop attitudes required for professional responsibilities.

### **COURSE DETAILS**

Duration of the course -36 months [6 semesters]

#### **First year**

1. Introduction to pharmacology and its branches.
2. Selection of dissertation topic
3. Rotation in labs
4. Teaching duties

#### **Second year**

1. Teaching duties
2. Extra mural posting like clinical posting
3. Dissertation work
4. Rotation in labs

#### **Third year**

1. Dissertation completion
2. Teaching duties
3. Rotation in labs

For this following topics could be included in theory /practicals of MD (pharmacology)

## TEACHING LEARNING OPPORTUNITIES

Learning and teaching opportunities will essentially be self directed and will involve

### **1. Experimental Pharmacology**

- Animal experiments-ethics,limits, research insights, animal house.
- Screening methods for drug evaluations and experimental models-general and specific screening
- Drug assays
- Methods of assays
- Toxicological screening
- Pharmacokinetics experiments
- Biostatistics
- Principles of analytical instrumentation
- Basics of Computers in pharmacology, data base creation

### **2. Clinical Pharmacology:**

- Would include all aspects related with drug trials....ICH –GCP guidelines ,ICMR guidelines ,
- Role of DCI/DCGI,
- protocol designing ,
- basic statistics,
- laws related to drug research including ayurvedic /herbal drugs,
- Taking informed consent etc.
- Ethics
- ADR Monitor
- Therapeutic Drug monitoring
- Pharmacoepidemiology, utilization studies
- Drug estimations in biological fluids
- Sources of drug information, DATA INTERPRETATIONS
- Advances in clinical pharmacology
- Essential drug listing

### **3. Drug store management**

- Functions of drug store,
- Role of pharmacist in drug store ,
- ABC/VED classification of drugs,
- Use of computers in drug store, routine administration,

#### 4. Teaching/Academics/personality development related topics:

- Microteaching/ TOS ( teachers oriented sessions)  
Teaching experiences: The candidate will be regularly involved in the teaching of undergraduate medical and nursing students
- Conducting mock workshop/s and conference/s.
- Presentation skills /group discussions.
- Knowledge about patents , IPRS etc
- Computer aided learning ( CAL) .
- Web searching for medical literature.
- Scientific paper writing etc.

#### 5. Clinical case discussions:

Post diagnosis discussions on 5cases from clinical side.  
Documentation of these cases in logbook.

#### 6. Computer simulated dog BP exercise:

Identification of unknown drug on Computer simulated dog BP exercise.

#### 7. Log book write-ups: ( To be filled by student as provided in the format )

- Main purpose of the log book should be to document the work done (Experimentations, journals, thesis work, seminars, workshops etc..).
- The content of the log book work to be signed **ONLY** by the Guide/ PG teaching in charge /HOD.
- *Journal/ seminar presentations in department :*  
It should be taken care that each student presents 10 -12 seminars during the entire tenure and topics could be divided as per the following format

Year	Topics
1 <sup>st</sup>	General pharmacology (2) Systemic pharmacology (2)
2nd	Systemic/clinical /experimental pharmacology (4)
3 rd	Recent pharmacology (4)

- *Evaluation of the journal /seminar* should be done by teachers on 5 points



Eg presentation, completeness, A-V aids use, understanding, overall performance.

The purpose of this exercise should be to make the student aware of his progress.

- Experimental evaluation system ( to be evaluated by guide , signed and pasted in the log book )

Example of evaluation sheet format given below.

Headings	Comments			
Assembly				
cleanliness				
Instruments used				
Technique				
Results/interpretation				
Discussion: Theory				
Discussion: Practical				
Overall remarks	Excellent	Good	Fair	Poor

## Desirables:

### 1) Drug level monitoring

Hands on experience with HPLC, HPTLC , spectrophotometry .

- 2) **CRO visits:** to be done by the student in fourth term for 1-2 months in reputed CRO (short listed by university / department) to make the students to have hands on experience in pharmaceutical industry work.

Incase this is not possible then **10 -15 days workshop on clinical pharmacology** in reputed institutes would be desirable.

- 3) **Inclusion of topics** like pharmacoconomics , pharmacovigilance, Pharmacogenetics. pharmacoepidemiology. National health programmes and chronopharmacology would be desirable.

## Dissertation Objectives:

1. To make aware the post graduate student about every aspect of research this involves finding research topic, searching literature, research methodology, Statistics, analysis, scientific writing and many other aspects involved.

2. The topic or project taken need not necessarily bring out /explore something very novel, very big or breakthrough in medical science. the main aim is to train post graduate students for taking up such challenges in the future and learn maximum about the research development during their curriculum.

Dissertation topic along with plan of work is to be allotted by the guide within one year. The study could be prospective or retrospective and to be cleared by appropriate ethic committee.[Topics not be repeated for three years]. The subject of dissertation countered by the postgraduate student and head of the dept of the institute should be submitted to the university within one year of registration. If the topic is changed, it should be communicated to university within one and half year of registration. Dissertation presentation would be done two *times*, first presentation before protocol submission and last before final submission.

Four Copies of completed dissertation with appropriate certificates should be submitted at the end of fifth semester.

Four examiners will examine these dissertations and report acceptance or otherwise. [three out of four have to accept the dissertation for its final acceptance by the university]. If two examiners accept the dissertation, Chairman BOS will take final decision. Non acceptance should be justified with reasons thereof.

# Examination Pattern:

(As per Direction No. 01/2008 dtd. 26/05/2008)

## RECOMMENDED READING

### Journals

Annual review in Pharmacology Annual Review in Medicine

British Journal of Clinical Pharmacology

British Journal of Pharmacology

Clinical Pharmacology & Therapeutics

Drugs

ICMR bulletin

Indian Journal of Experimental Biology

Indian Journal of Medical research

Indian Journal of Pharmacology

Lancet

New England Journal of Medicine

Pharmacological Reviews

Trends in Pharmacological Sciences

WHO Reports & Bulletin

### Books

1. Goodman & Gilman's The Pharmacological Basis of Therapeutics. Hardman JG & Limbird LE(Ed), Publisher: McGraw-Hill, New York.
2. Basic & Clinical Pharmacology. Katzung BG (Ed), Publisher: Prentice hall International Ltd., London.
3. Avery's Drug Treatment. TM Speight & NHG Holford (Eds), Adis International.
4. Principles of Drug Action. The Basis of Pharmacology. WB Pratt & P Taylor (Eds). Churchill Livingstone, Edinburgh.
5. Pharmacology & Pharmcotherapeutics. Satoskar RS, Bhandarkar SD(Ed), Publisher: Popular Prakashan, Bombay.
6. Essentials of Medical Pharmacology. Tripathi KD (Ed), Jaypee Brothers, Publisher: Medical Publishers (P) Ltd.
7. Clinical Pharmacology. Laurence DR, Bennet PN, Brown MJ (Ed). Publisher: Churchill Livingstone
8. A Textbook of Clinical Pharmacology. Roger HJ, Spector RG, Trounce JR (Ed), Publisher : Hodder and Stoughton Publishers.
9. Harrison's Principles of Internal Medicine. AS Fauci, JB Martin, E Braunwald, DL Kasper, KJ Isselbacher, SL hauser, JD Wilson, DL Longo(Eds), McGraw Hill, New York.
10. Guide to Good Prescribing. TPGM de vries, RH Henning, HV Hogerzeil, DA Fresle, Who Geneva.
11. Critical appraisal of epidemiological studies and clinical trials- Mark Elwood. Oxford Press.
12. Pharmacology. Rang HP, Dale M. Ritter JM. 4<sup>th</sup> ed. Edinburgh, Chuchill Livingstone. 1999.

Pertaining to Evaluation of Drugs

1. Evaluation of Drug Activities : Pharmacometrics. DR Laurence & AL Bacharach (Eds), Academic Press, London.
2. Selected Topics in Experimental Pharmacology. UK Sheth, NK Dadkar & UG Kamat. Kothari Book Depot, Mumbai.
3. Fundamentals of Experimental Pharmacology. MN Ghosh (Ed), Scientific Book Agency, Calcutta.

Pertaining to Biostatistics

1. Introductory Medical Statistics. Mould RF (Ed), Adam Hilger, Bristol and Philadelphia, 1989.

Sample of Log book format attached.

## 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.D. (PHARMACOLOGY)

Seat No.	1			2			(1+2)
	Long Exercises	Short exercises	Total (1)	Viva voce	Dissertation Viva	Total (2)	Grant Total 400 Marks
	200 marks	100 marks	300	90 marks	10 Marks	100	

NAME OF EXAMINER	COLLEGE	SIGNATURE WITH DATE
<u>1.</u>		
<u>2.</u>		
<u>3.</u>		
<u>4.</u>		

PAPER WISE DISTRIBUTION OF TOPIC IS AS GIVEN BELOW.

1.1. PG COURSES: - M.D.

SN	COURSE TITLE	SUBJECT NAME	PAPER NO. & TOPICS
i)	M.D.	GENERAL MEDICINE	I. Basic Sciences in General Medicine, Genetics, and Nutrition.
			II. Cardio-Vascular system, Respiratory System, Nephrology, Rheumatology, Immunology, Infectious diseases, Dermatology.
			III. Gastroenterology, Nervous system, Psychiatry, Hematology, Oncology, Endocrinology, Miscellaneous.
			IV. Recent Advances in General Medicine.
ii)	M.D.	PATHOLOGY	I. General Pathology including General Neoplasia, Immunopathology and cytopathology.
			II. Systemic Pathology including Systemic Neoplasia.
			III. Haematology, Transfusion medicine, Immunohaematology including Recent Advances.
			IV. Clinical Pathology, Chemical Pathology, Pathology of infectious diseases, Recent Advances.
iii)	M.D.	MICROBIOLOGY	I. General Microbiology & Immunology
			II. Systemic Bacteriology,
			III. Mycology & Virology
			IV. Parasitology & Recent Advances
iv)	M.D.	PHARMACOLOGY	I. Screening and evaluation of drugs (Animal and Clinical), Clinical Pharmacology, General Pharmacology, Biostatistics.
			II. Systemic Pharmacology
			III. Applied Pharmacology including Therapeutics, Miscellaneous topics (GIT, RS. Autocolds, vitamins, skin, ocular Pharmacology, Immunopharmacology, chelating agents, Drugs and Pregnancy)
			IV. Recent Advances in Pharmacology

## 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. Pathrikar 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

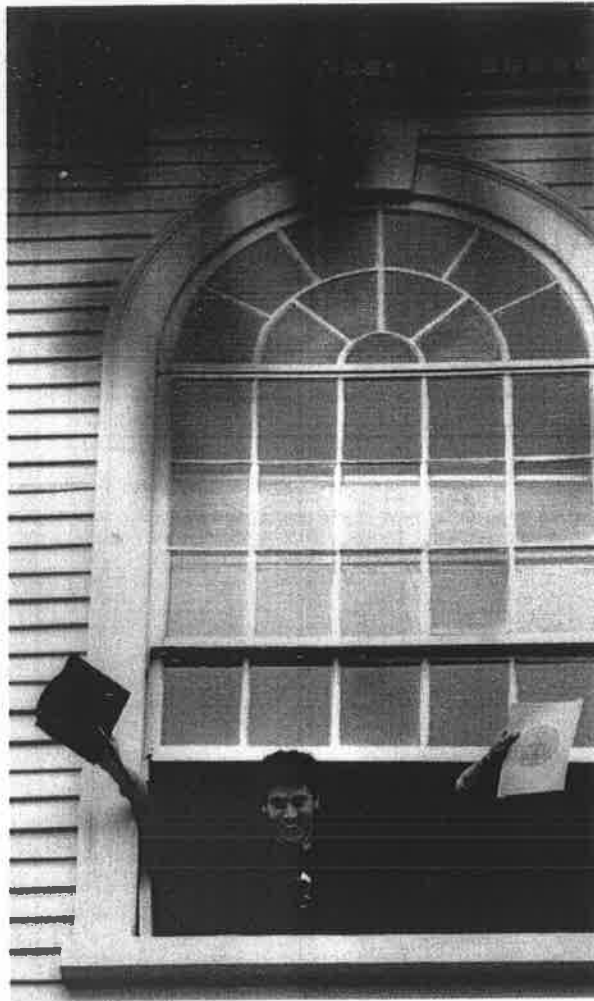
- MGM's College of Engineering
- MGM's College of Fine Arts
- MGM's College of Computer Science
- MGM's College of Journalism & Media Science
- MGM's Centre for Astronomy & Space Tech.
- MGM's College of Library & Information Science

#### 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)



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E-mail : [mgmuniversity@mgmuhs.com](mailto:mgmuniversity@mgmuhs.com)

Website: [www.mgmuhs.com](http://www.mgmuhs.com)



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

- f) MD (Pharmacology): Use of simulation technique for bioassay and other short experiments for PG Students.

**Resolution No. 5.7(j):** Resolved to use simulation technique for bioassay and other short experiments for PG (MD Pharmacology) Students since animal experiments are not permissible by CPCSEA.

**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

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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:

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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:

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**Final Remarks**

**Satisfactory / Average / Unsatisfactory**

Director (Academics)

Dean

Date:

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**Resolution No. 1.3.8.5 of BOM-51/2017:** Resolved to approve subject wise topics for PG teaching (Microbiology, Pathology, Pharmacology, FMT). **[Annexure-V]**  
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47.	Drug resistance minimization	Bioethics
48.	Sterilization Techniques	Bioethics
49.	Biosafety and Biohazard	Bioethics
50.	Environmental ethics	Bioethics

List of Topics for PG Teaching (Pharmacology)

1- Recent advances in treatment of hypertension	2hrs
2- Recent advances in treatment of Congestive Cardiac Failure	2hrs
3- Newer trend in Pharmacotherapy of Angina Pectoris	2hrs
4- Treatment of Arrhythmias	2hrs
5- Drug affecting blood coagulation	2hrs
6- Advances in Treatment of Shock	2hrs
7- Central neurotransmitters	1hr
8- Treatment of Parkinsonian disease	2hrs
9- Pharmacotherapy of Alzheimer's disease	2hrs
T/T of convulsive disorders	2hrs
10- Newer antidepressants	1hrs
11- Pharmacotherapy of pain	2hrs
12- Pharmacotherapy of Migraine	1 hr
13- T/T of skeletal muscle dysfunction	2hrs
14- Advances in Insulin	1hrs
15- Recent advances in Pharmacotherapy of diabetes mellitus	2hrs
16- oral contraceptives	2hrs
17- Corticosteroids	2hrs
18- Advances in treatment of Osteoporosis	2hrs
19- Drugs acting on Uterus	2hrs
20- Advances in treatment of bronchial asthma	2hrs
21- Ocular Pharmacology	2hrs
22- Pharmacotherapy of peptic ulcer	2hrs
23- Pharmacology of antiemetic drugs	1hr
24- Immunomodulators	2hrs

22/2/17

**Resolution No. 1.3.8.7 of BOM-51/2017:** Resolved that Part of the assessment may be based on computer aided Learning (CAL) software in MD Pharmacology Examination wherever animal experiments are not possible/feasible/permitted.

Resolution No. 1.3.8.11 of BOM-51/2017: Resolved to approve the topics to be included under Bioethics in UG. Annexure-IX

## Bioethics Topics for UG/PG

### Topics for MD pharmacology syllabus

- Rational drug prescribing
- Ethics in experimental pharmacology
- Bioethics in clinical trials
- Risk minimization
- Drug information services
- Polypharmacy

**Resolution No. 1.3.8.10 of BOM-51/2017:** Resolved to introduce research protocol writing and criticism of research paper under the subhead of clinical pharmacology in MD Pharmacology Practical examination from May/June 2018 examination onwards. **[Annexure VIII]**

**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-XLIV]



**MGM INSTITUTE OF HEALTH SCIENCES**  
Navi Mumbai

**Induction Program for newly admitted Postgraduate students**

Day 1	<ul style="list-style-type: none"><li>• Address by Dean, Medical Suptd, Director (Academics)</li><li>• Pre-test</li><li>• Communication Skills</li><li>• Universal Safety Precautions</li><li>• Biomedical Waste Management</li><li>• Infection Control Policy</li></ul>
Day 2	<ul style="list-style-type: none"><li>• Emergency services</li><li>• Laboratory services</li><li>• Blood Bank services</li><li>• Medicolegal issues</li><li>• Prescription writing</li><li>• Adverse Drug Reaction</li><li>• Handling surgical specimens</li></ul>
Day 3	<ul style="list-style-type: none"><li>• Principles of Ethics</li><li>• Professionalism</li><li>• Research Ethics</li><li>• Informed Consent</li><li>• Confidentiality</li><li>• Doctor-Patient relationship</li></ul>
Day 4	<ul style="list-style-type: none"><li>• Research Methodology</li></ul>
Day 5	<ul style="list-style-type: none"><li>• Synopsis writing</li></ul>
Day 6	<ul style="list-style-type: none"><li>• Dissertation writing</li><li>• Statistics</li></ul>
Day 7	<ul style="list-style-type: none"><li>• ATLS</li><li>• Post-test</li></ul>

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. 3.6.6 of BOM-52/2018: Resolved to accept posting schedule of MD students in allied department [Annexure-VII]

## Schedule of Allied Posting for Post graduates

### Pharmacology

Sr no.	Mandatory Posting	Duration
1.	Medicine	2 months
2.	Pediatrics	15 days
3.	Dermatology	15 days
4.	Psychiatry	15 days
5.	Central Research/Biochemical laboratory	15 days
	<b>TOTAL</b>	<b>4 months</b>
	<b>Elective Posting</b>	<b>Duration</b>
1	Elective training in Pharma Industry/CRO/Research Institutes	1 Month



**Resolution No. 3.6.5 of BOM-52/2018:** Resolved to permit 2nd year MD-Pharmacology students elective visit to Pharma Industries/CRO/Research Organizations for training. Further memorandum of understanding, project report format is approved. [Annexure-VI] ✓

Annexure 7

Annexure-VI

**Report on participation in the Pharmaceutical Industry /CRO/Research  
Organization Training**

**1. Name and designation of Student :**

**2. Address :**

**3. Name & address of Faculty Incharge of Pharmaceutical Industry/CRO/ Research  
Organization:**

**4. Duration of Training :**

**5. Highlights of work conducted :**

i) **Technique/expertise acquired**

ii) **Research/Training summary**

iii) **Proposed utilization of the experience in Mahatma Gandhi Institute of Health  
Sciences, Navi Mumbai**

**Signature  
of Student**

**Signature of Faculty Incharge  
of Pharmaceutical Industry/CRO/Research Organization**

(81)

Annexure 7

**MEMORANDUM OF UNDERSTANDING**

**BETWEEN**

**MGM Institute of Health Sciences,**  
Sector 1, Sion – Panvel Express Highway,  
Kamothe, Navi Mumbai.

**AND**

This Agreement made and entered into on this \_\_\_\_\_ day of \_\_\_\_\_ between MGM Institute of Health Sciences, Navi and Mumbai (hereinafter called MGMIHS) situated at Sector 1, Kamothe, Navi Mumbai 410209 and \_\_\_\_\_, duly registered as public/private company under Companies act 1956. (Hereinafter called "COMPANY" which expression shall include its successors and permitted assignees) with its registered office at \_\_\_\_\_.

**1. OBJECTIVES OF THE MOU**

The objectives of this Memorandum of Understanding are:

- a. To promote interaction between MGMIHS, \_\_\_\_\_ in mutually beneficial areas through collaborative research projects.
- b. To provide a formal basis for initiating interaction between MGMIHS, \_\_\_\_\_ by way of execution of Research Projects

**2. PROPOSED MODES OF COLLABORATION**

MGMIHS and \_\_\_\_\_ propose to collaborate through

- a. Appropriate mode of interaction agreed upon between MGMIHS and \_\_\_\_\_ Labs/company/Institution
- b. The projects undertaken will be for design, production for specific clinical application.

Each of the above modes of interaction will be initiated under the M.O.U

**FORMS OF RESEARCH AND DEVELOPMENT PROGRAMS**

The form of any of the said Research and Development Program (hereinafter referred to as "Research Program") will be conducted in their own existing facilities - The performance of research individually by each Party or concurrently by

both Parties in mixed groups at their own facilities with regular exchanges of results.

### **3. ACTIVITIES TO BE CARRIED OUT UNDER THE PROJECT.**

*Scope of Work*

*Responsibilities of MGMIHS*

*Responsibilities of \_\_\_\_\_*

### **4. AGREEMENTS FOR RESEARCH COLLABORATION**

Each research collaboration undertaken by the parties here under shall be initiated by the signing of a separate research agreement between the parties, which will describe in detail:

- a. The nature, scope and schedule of the research collaboration.
- b. The form of the research collaboration.
- c. The estimated cost of the research collaboration together with the source amount of funding, if any, to be received from third parties.
- d. The treatment of intellectual property and data rights, including patents, industrial design registration, copyrights and all other proprietary information (including innovations not patented, designs not registered etc.) which result from the research collaboration or which belong to a party and are used in research collaboration.
- e. other provisions as may be mutually agreed upon, including provisions covering the consequences of default or termination by a participant, term, arbitration of disputes and applicable law.

### **5. CONFIDENTIALITY**

- a. During and for a period of 3 years from the date of disclosure, each party agrees to consider as confidential all information disclosed by the other party in written or tangible form or, if orally disclosed confirmed in writing within thirty days of disclosure and identified as confidential by the disclosing party.
- b. The obligations above shall not extend to any confidential information for which the receiving party can prove that this information:

- Is in the public domain at the time of disclosure or comes within the public domain without fault of the receiving party.
- Is already known or become known to the receiving party
- Is received from a third party having no obligations of confidentiality to the disclosing party,
- Is independently developed by the receiving party; or
- Is required to be disclosed by Indian law or court order.

## 6. NON-EXCLUSIVITY

The relationship of the parties under this MOU shall be nonexclusive and both parties, including their affiliates, subsidiaries and divisions, are free to pursue other agreements or collaborations of any kind. However, when entering into a particular research agreement, the participants may agree to limit each party's right to collaborate with others on that subject.

## 7. ARBITRATION & DISPUTE SETTLEMENT

If any dispute arises between the two parties of the MoU regarding implementation of the terms of the MoU or any other matter incidental to or connected with the subject matter of the MoU, such dispute shall be resolved as far as possible amicably by mutual consultations, using the good offices of \_\_\_\_\_ or their respective nominees, and in case such disputes are not possible to be resolved amicably, then the entire matter so involves may be referred by any of the parties to this MoU to two arbitrators one each to be nominated by the Vice-Chancellor MGMIHS and by the Director, \_\_\_\_\_. Both such Arbitrators shall be entitled to select a third Arbitrator (i.e. Umpire) in accordance with the Law, and the decision taken by such Arbitrators shall be binding on the parties of this MoU. The provisions of Indian Arbitrators and Conciliation Act 1996, as modified from time to time shall apply to such arbitration proceedings."

## 8. RELATIONSHIP

Nothing in this MOU shall be construed to make party a partner, an agent or legal representative of the other for any purpose.

## 9. ASSIGNMENT

It is understood by the Parties herein this MOU is based on the professional competence and expertise of each party and hence neither Party shall transfer or assign this Agreement, or rights or obligations arising hereunder, either wholly or in part, to any third party.

**10. LEAVE**

The training period will be counted as part of course

**11. COSTS OF THE MOU**

Each Party shall bear the respective costs of carrying out the obligations under this MOU.

**12. SIGNED IN DUPLICATE**

This MOU is executed in duplicate with each copy being an official version of the Agreement and having equal legal validity.

BY SIGNING BELOW, the parties, acting by their duly authorized officers, have caused this Memorandum of Understanding to be executed, effective as of the day and year first above written.

On behalf of

on behalf of

By :

By :

Name :

Name :

Title :

Title :

Date :

Date :

Witness:

Witness:

1.

1.

## Board of Studies (Para-Clinical)

**Item Number :- 8**

**Item :** Proposal to permit 2<sup>nd</sup> year MD Pharmacology students elective visit to Pharma

Industries/CRO/Research Organizations for training (Item No: 1.3.5.6 of BOM-51/2017)

**Resolution** 1.3.5.6 of BOM-51/2017. Resolved to refer the matter back to Board of Studies at its next meeting.

### ***Pharmaceutical Industries Offering Summer training in Mumbai:***

1. **Glaxo Smith Kline (GSK)**, 23rd Road, Andheri East, Mumbai, Maharashtra
2. **Wockhardt**, Towers Bandra Kurla Complex, Bandra (East), Mumbai, Maharashtra 400051
3. **Cipla**, Cipla House, Peninsula Business Park, Ganpatrao Kadam Marg, Lower Parel, Mumbai-400013
4. **Ambernath Organics**, 307-314, Creative Industries Premises, Road No. 2, Sunder Nagar, Kalina, Mumbai, Maharashtra 400098
5. **Tata Consultancy Services(TCS)**, Banyan Park, Suren Road, Andheri East, Mumbai, Maharashtra 400093
6. **Rubicon**, 221, Annexe Building, Goregaon Mulund Link Road, Bhandup West, Bhandup West, Mumbai, Maharashtra 400078
7. **Panacea Biotec Ltd**, 705-A, 7th Floor, Sagar Tech Plaza, Andheri-Kurla Link Road, Sakinaka,, Andheri (E), Safed Pool, Saki Naka, Mumbai, Maharashtra 400072
8. **E-Merck**, Godrej One, 8th floor, Pirojsha Nagar,, Eastern Express Highway,, Vikroli East, Mumbai, Maharashtra 400079
9. **MSD**, Platina, 8th Floor, C.59, G Block BKC, Bandra Kurla Complex, Bandra East, Mumbai, Maharashtra 400051
10. **Pfizer**, Thane Belapur Road, K.U. Bazar Post, Turbhe, Navi Mumbai, 400075

MGM Institute Of Health Sciences  
BOARD NO. 11441  
DATE: 15/12/17  
REF: TG.

## Rules and Regulations

- Students must apply to a pharmaceutical company for summer training after careful consideration. Strict action will be taken against students who negatively impact the reputation of the College by their actions or inaction while interacting with the corporate world in pharmaceutical company.
- For students on training, daily attendance through signature or biometrics is mandatory. 100 % attendance is mandatory during the training period in the pharma company.
- Students not abiding or absent for long duration during the training period will face disciplinary action.
- MOU needs to be signed between MGM Medical College and the pharmaceutical company if selected for the summer fellowship
- After training a project report on the nature and aspects of training has to be submitted in the prescribed format
- PG student will abide by the rules and regulations that will be provided by company HR/Manager
- PG student should be ready to travel outstation if demanded by the nature of training in Pharmaceutical company

Prof. Dr. Jay  
15/12/17  
CDR Ipsita Jay  
BOS (Chairperson)  
Para Clinical,  
Kamathe, Navi Mumbai

Kamathe, Navi Mumbai



**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.

**Resolution No. 4.13 of BOM-55/2018: Resolved as follows:-**

- (i) Slow learners must be re-designated as potential learners.
- (ii) Students scoring less than 35% marks in a particular subjects/course in the 1<sup>st</sup> formative exam are to be listed as potential learners. These learners must be constantly encouraged to perform better with the help of various remedial measures.
- (iii) Students scoring more than 75% marks in a particular subjects/course in the 1<sup>st</sup> formative exam are to be listed as advanced learners. These learners must be constantly encouraged to participate in various scholarly activities.

**Resolution No. 3.1.4.2 of BOM-57/2019:**

- i.** Resolved to include “Gender Sensitization” into UG (from new batch 2019-2020) and PG (from existing batches) curricula. [**Annexure-21**]
- ii.** Resolved to align the module of “Gender Sensitization” with MCI CBME pattern for MBBS students.
- iii.** Resolved that Dr. Swati Shiradkar, Prof., Dept. of OBGY., MGM Medical College, Aurangabad will coordinate this activity at both campuses.

## **Annexure - 21**

**Gender sensitization for UG (2<sup>nd</sup> , 3<sup>rd</sup> , 8<sup>th</sup> semesters) and PG (3 hours)**

### **INCLUSION OF “ GENDER SENSATIZATION” IN CURRICULUM**

#### **Introduction :**

The health care provider should have a healthy gender attitude, so that discrimination, stigmatization, bias while providing health care will be avoided. The health care provider should also be aware of certain medico legal issues related with sex & gender.

Society particularly youth & adolescents need medically accurate, culturally & agewise appropriate knowledge about sex, gender & sexuality. So we can train the trainers for the same. It is need of the hour to prevent sexual harassment & abuse .

To fulfill these objectives, some suggestions are there for approval of BOS.

#### **Outline**

- 1)For undergraduates :- Three sessions of two hours each, one in 2<sup>nd</sup> term, one in 3<sup>rd</sup> term & one in 8<sup>th</sup> term.
- 2)For Faculties and postgraduates :- One session of two hrs .
- 3)For those want to be trainers or interested for their ownself, value added course, which is optional about sex, gender, sexuality & related issues.

### **Responsibility**

ICC of MGM, MCHA , with necessary support from IQAC & respective departments.

### **Details of undergraduate sessions**

#### **1)First session in 2<sup>nd</sup> term**

**Aim** – To make Students aware about the concept of sexuality & gender.

To check accuracy of knowledge they have,

To make them comfortable with their own gender identify & related issues.

To make them aware about ICC & it is functioning.

**Mode** – Brain storming , Interactive power point presentation experience sharing.

**Duration** – Around two hours

**Evaluation** – Feedback from participants.

#### **2)Second session in 3<sup>rd</sup> / 4<sup>th</sup> term**

**Aim** – To ensure healthy gender attitude in these students as now they start interacting with patients.

To ensure that the maintain dignity privacy while interacting with patients and relatives, particularly gender related.

To make them aware about importance of confidentiality related with gender issues.

To encourage them to note gender related issues affecting health care & seek solutions.

Mode – focused group discussions on case studies, Role plays & discussion.

--3--

Duration – Around two hours.

Evaluation – Feedback from participants.

Third session in 8<sup>th</sup> term.

**Aim** – To understand effect of gender attitudes on health care in various subjects.

To develop healthy gender attitude while dealing with these issues.

**Mode** – Suggested PBL by departments individually. ( In collaboration with ICC till faculty sensitization is complete)

**Evaluation** – Feedback

\*\*\*\*

**FOR POSTGRADUATES**

Session of 2-3 hrs preferably in induction program.

**Aim** – To introduce medically accurate concept of gender, sex, gender role & sex role.

To ensure healthy gender attitude at workplace.

To understand gender associated concepts on health related issues & avoid such bias while providing health care.

To make them aware about ICC & its functioning.

**Mode** – Interactive PPT

Role plays & discussion

**Duration** – 2 to 3 hrs

**Evaluation** – Feedback.

**FOR FACULTIES**

Session of 2 hours may be during combined activities.

**Aim** – To ensure clarity of concept about gender & sex.

To discuss effect of these concepts on health related issues.

To identify such gender & sex related issues in individual subject specialties.

To discuss methodology like PBL for undergraduate students when they are in 7<sup>th</sup>-8<sup>th</sup> semester.

**Mode** – Role play

    Focused group discussion

    Case studies

**Evaluation** – Feedback.

\*\*\*\*\*



Sdp-Pimple/joshi-obgy