

MGM INSTITUTE OF HEALTH SCIENCES

(Deemed to be 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



Amended History

1. Approved as per AC-49/2024 [Resolution No. 3.6], [Resolution No. 3.8], [Resolution No. 3 .10 (ii)] Dated 25/04/2024.



Annexure-6 of AC-49/2024

MGM SCHOOL OF BIOMEDICAL SCIENCES

(A constituent unit of MGM INSTITUTE OF HEALTH SCIENCES)

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

Grade "A⁺⁺" Accredited by NAAC

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CHOICE BASED CREDIT SYSTEM (CBCS)

(Academic Year 2024 - 25)

Curriculum for

M.Sc. Allied Health Sciences

M.Sc. Emergency and Trauma Care Technology

Semester I & II

DIRECTOR'S MESSAGE

Dear Students, Greetings!!!!!

I take this opportunity to welcome you on behalf of MGM family to the Masters Degree at MGM School of Biomedical Sciences.(MGMSBS)

MGM School of Biomedical Sciences (MGM SBS) established in the year 2007, the MGM School of Biomedical Sciences envisaged building a progressive learning community and is committed to pursuit of excellence in higher education, total development of personality and shaping the students into sensitive, self-reliant citizens of the country imbued with the ideals of secularism and a scientific aptitude. We setglobal standards to make our students scientifically as well as ethically stronger. The college adopts the national qualification frame work for the post-graduate programs which has adopted Credit Base Choice System (CBCS) so that, we construct a value based system of education that encourages critical thinking and creativity, are search platformas opposed to rotelearning. TheP.G(M.Sc.)coursesofferedare;MedicalAnatomy,MedicalPhysiology,MedicalBiochemistry,MedicalMicrobiology MedicalPharmacology Biotechnology Genetics Molecular Biology Masters in Hospital administration and

,MedicalPharmacology,Biotechnology,Genetics,Molecular Biology, Masters in Hospital administration and Biostatistics, M.Sc. Cardiac Care Technology, M.Sc. Medical Radiology and Imaging Technology, M. Optometry, M.Sc. Medical Dialysis Technology. Over time, the program has evolved, to meet the challenges of the ever changing field of biomedical education system.

With Best Wishes,

Director MGM School of Biomedical Sciences

ABOUT MGM SCHOOL OF BIOMEDICAL SCIENCES

Mission

To improve the quality of life, both at individual and community levels by imparting quality medical education to tomorrow's doctors and medical scientists and by advancing knowledge in all fields of health sciences though meaningful and ethical research.

Vision

Bytheyear2022,MGM Institute of Health Sciencesaims to betop-ranking Centre of Excellence in Medical Education and Research. Students graduating from the Institute will have the required skills to deliver quality health care to all sections of the society with compassion and benevolence, without prejudice or discrimination, at an affordable cost. As a research Centre, it shall focus on finding better, safer and affordable ways of diagnosing, treating and preventing diseases. In doing so, it will maintain the highest ethical standards.

About–School of Biomedical Sciences

MGM School of Biomedical Sciences is formed under the aegis of MGM IHS with the vision of offering basic Allied Science and Medical courses for students who aspire to pursue their career in the Allied Health Sciences, teaching as well as research.

School of Biomedical Sciences is dedicated to the providing the highest quality education in basic medical sciences by offering a dynamic study environment with well equipped labs. The school encompasses 21 courses each with its own distinct, specialized body of knowledge and skill. This includes 7 UG coursesand14PGcourses. The college at its growing years started with mere 100 students has recorded exponential growth and is now a full-fledged educational and research institution with the student strength reaching approximately 581at present.

Our consistent theme throughout is to encourage students to become engaged, be active learners and to promote medical research so that ultimately they acquire knowledge, skills, and understanding so as to provide well qualified and trained professionals in Allied Health Sciences to improve the quality of life.

As there is increased need to deliver high quality, timely and easily accessible patient care system the collaborative efforts among physicians, nurses and allied health providers become ever more essential for an effective patient care. Thus the role of allied health professionals in ever-evolving medical system is very important in providing high-quality patient care.

Last but by no means least, School of Biomedical Sciences envisions to continuously grow and reform. Reformations are essential to any growing institution as it fulfills our bold aspirations of providing the best for the students, for us to serve long into the future and to get our selves up dated to changing and evolving trends in the health care systems.

Resolution No. 3.6 of Academic Council (AC-49/2024):

Resolved to approve the syllabus of M.Sc. Emergency and Trauma Care Technology (Semester I & II) at MGM School of Biomedical Sciences, Kamothe, Navi Mumbai from batch admitted in Academic Year 2024-25 onwards with an intake capacity of 03 students and Annual Tuition Fees of Rs. 1,05,000/-per annum [ANNEXURE-6].

Name of the Degree: M. Sc. Emergency & Trauma Care Technology

Duration of Study:

The duration of the study for M.Sc. Emergency & Trauma Care Technology will be of 2years.

Eligibility Criteria:

Candidate should have passed the Bachelors Degree in Emergency Medicine, Respiratory Therapy, Physician Assistant, Anesthesiology Technology or its equivalent qualification from a recognized institution/University.

Medium of Instruction:

English shall be the Medium of Instruction for all the Subjects of study and for examinations.

For any query visit the website: www.mgmsbsnm.edu.in

Course Outcome:

• The course aims to provide students with the requisite clinical assessment, decision-making skills and management for arrange of Emergency conditions and including pharmacological and non-pharmacological the rapeutic interventions.

Programme Specific Outcome:

- Student should be able to demonstrate comprehensive knowledge of managing all types of emergencies including trauma.
- Students should be able integrate knowledge with practice in handling and maintaining various equipments in ED.
- The student must well versed with infection control and Biomedical waste management.
- Student must be capable of ED management, medical record, consent and accredition & management policies implementation.
- Students should be able to assist advanced care during Pre hospital transport and ED.
- Should be able to function as a part of a team, develop an attitude of cooperation with colleagues, and interact with the patients and the clinician or other colleagues to provide the best possible management.
- Always adopt ethical principle and maintain proper etiquette in dealing with patients, relatives and other health care personnel and to respect the rights of the including the right to information ,privacy and second opinion.
- Students should have ability to work independently and take responsibility for his own work, collaborating in activities of clinical research, training ethical and evidence –based practices.

			OU	JTLINE	OF COUF	RSE CUF	RICUL	UM							
	M.Sc. Emergemcy and Trauma Care Technology														
					Seme	ster I									
			C	redits/We	ek			H	Irs/Semeste	er			Marks		
Code No.	Core Course	Lecture (L)	Tutorial (T)	Practical (P)	Clinical Posing/ Rotation (CP)	Total Credits (C)	Lecture (L)	Tutorial (T)	Practical (P)	Clinical Posing/ Rotation (CP)	Total (hrs.)	Internal Assement (IA)	Semester End Exam (SEE)	Total	
	Discipline Specific Core Theory														
MET 101 L	Trauma and Critical Care I	4	-	-	-	4	60	-	-	-	60	20	80	100	
MET 102 L	Trauma and Critical Care II	4	-	-	-	4	60		-	-	60	20	80	100	
CC 001 L	Research Methodology & Biostatics (Core Course)	3	-	-	-	3	45	-	-	-	45	20	80	100	
MET 103 CP	MET Directed Clinical Education-I	-	-	-	18	6	-	-	-	270	270	-	50	50	
				Discipl	ine Specifi	ic Core Pi	ractical								
MET 101 P	Trauma and Critical Care I	-	-	4	-	2	-	-	60	-	60	10	40	50	
MET 102 P	Trauma and Critical Care II	-	-	4	-	2	-	-	60	-	60	10	40	50	
CC 001 P	Research Methodology & Biostatics (Core Course)	-	-	4	-	2	-	-	60	-	60	10	40	50	
	Total	11	0	12	18	23	165	0	180	270	615	90	410	500	

	OUTLINE OF COURSE CURRICULUM													
			M.Sc	. Emerg	emcy and	Traum	ia Care	Techno	ology					
					Sen	iester I	I							
			Cr	edits/Wee	k			Hrs/Semester					Marks	
Code No.	Core Course	Lecture (L)	Tutorial (T)	Practical (P)	Clinical Posing/ Rotation (CP)	Total Credits (C)	Lecture (L)	Tutorial (T)	Practical (P)	Clinical Posing/ Rotation (CP)	Total (hrs.)	Internal Assement (IA)	Semester End Exam (SEE)	Total
				Di	iscipline Sp	ecific Co	re Theory	Y						
MET 104 L	Advance Critical Care and Management I	3	-	-	-	3	45	-	-	-	45	20	80	100
MET 105 L	Advance Critical Care and Management II	4	-	-	-	4	60	-	-	-	60	20	80	100
MET 106 CP	MET Directed Clinical Education-II	-	-	-	27	9	-	-	-	405	405	-	50	50
	·			Dis	scipline Spe	cific Cor	e Practic	al						
MET 104 P	Advance Critical Care and Management I	-	-	4	-	2	-	-	60	-	60	10	40	50
	·				Skill Enhar	icement	Course							
SEC 001 L	Innovation and Entrepreneurship	3	-	-	-	3	45	-	-	-	45	20	80	100
SEC 002 L	One Health (NPTEL)													
	Total	10	0	4	27	21	150	0	60	405	615	70	330	400

FIRST YEAR

M.Sc. Emergency & Trauma Care Technology

CODE NO.	CORE SUBJECT			
Discipline Specific Core Theory				
MET 101 L	Trauma And Critical Care I			
MET 102 L	Trauma And Critical Care II			
CC 001 L	Research Methodology & Biostatistics (Core Course)			
MET 103 CP	MET Directed Clinical Education I			
Discipline Specific Core Practical				
MET 101 P	Trauma And Critical Care I			
MET 102 P	Trauma And Critical Care II			
CC 001 P	Research Methodology & Biostatistics (Core Course)			

SEMESTER-I

Name of the Programme	M.Sc. Emergency & Trauma Care Technology
Name of the Subject	Trauma And Critical Care I
Course Code	MET 101 L

Teaching Objectives	• To understand the advance trauma and critical care .
Learning Outcomes	• Students should be able to do every emergency procedure and handling all instruments during emergency.

Sr. No.	Topics	No. of Hrs.
1	Vitals –Blood Pressure, Pulse, Respiratory Rate, Temperature,	6
2	Systemic Physical Examinations	6
3	Hemodynamic-Arterial, Central Venous, PAC	6
4	Arterial Blood Gas Analysis in detail	6
5	ECG, Cardiac Rhythm and Arrhythmias	6
6	Oxygen delivery devices	6
7	Ventilation-Invasive and Non Invasive	6
8	Endotracheal Intubation-Anatomical landmark, Procedure, Indications, After care	6
9	Percutaneous Tracheostomy Anatomical landmark ,Procedure, Indications, After care	6
10	Chest Tube Insertion Anatomical landmark ,Procedure, Indications, After care	6
	Total	60 hrs

Sr. No.	Topics				
1	ECG Interpretation	10			
2	Instruments Handling	10			
3	Ventilator Settings	10			
4	Airway and breathing skills (Intubation, LMA, Bag Mask Ventilation, Oral Airway, Needle Thoracocentesis, Upper Airway Obstruction, Chocking Management)	10			
5	Skills related circulation (Peripheral Venous Access, Central Venous Access, Intraosseous Access)	10			
6	Arrhythmias recognition and management (Defibrillation and Cardioversion)	10			
	Total	60 hrs			

MET 101 P: Trauma And Critical Care I

Name of the Programme	M.Sc. Emergency & Trauma Care Technology
Name of the Course	Trauma And Critical Care II
Course Code	MET 102 L

Teaching Objectives	• To understand the advance trauma and critical care.
Learning Outcomes	• Students should be able to do every emergency procedure and handling all instruments during emergency, and critical care management

Sr. No.	Topics	No. of Hrs.
1	Paracentesis-Diagnosis and therapeutic	6
2	Pericardiocentesis & Pacemaker Insertion	6
3	Bronchoscopy, Lumbar Puncture	6
4	Cardioversion and Defibrillation	6
5	Nutrition in the ICU-aspects of total Parenteral Nutrition(TPN), Ryles Tube insertion and feeding	6
6	Imaging in relation to Critical Care-X-ray, Ultrasound, ECHO, CT, MRI	6
7	Patients Safety in the ICU, Bed Utilisation and staffing models	6
8	Trauma in special population	6
9	Mechanism of Trauma, Triage in Trauma	6
10	Rehabilitation and Trauma	6
	Total	60 hrs

Sr. No.	Topics	No. of Hrs.
1	Pre Hospital Trauma Care	20
2	Hands on demonstration related to trauma and critical care	20
3	OSCEs(objective structured clinical examination)	20
	Total	60 hrs

MET 102 P: Trauma and Critical Care II

Name of the Programme	M.Sc. Emergency And Trauma Care Technology
Name of the Course	Research Methodology & Biostatistics (Core Course)
Course Code	CC 001 L

Teaching Objective	• The course is intended to give an overview of research and statistical models commonly used in medical and bio-medical sciences. The goal is to impart an intuitive, understanding and working knowledge of research designs and statistical analysis. The strategy would be to simplify, analyse the treatment of statistical inference and to focus primarily on how to specify and interpret the outcome of research.
Learning Outcomes	• Student will be able to understand develop statistical models, research designs with the understating of background theory of various commonly used statistical techniques as well as analysis, interpretation & reporting of results and use of statistical software.

Sr. No	Торіс	No. of Hrs.
Α	Research Methodology:	23
1	Scientific Methods of Research: Definition of Research, Assumptions, Operations and Aims of Scientific Research. Research Process, Significance and Criteria of Good Research, Research Methods versus Methodology	4
2	Research Designs: Observational Studies: Descriptive, explanatory, and exploratory, Experimental Studies: Pre-test design, post-test design, Follow-up or longitudinal design, Cohort Studies, Case – Control Studies, Cross-sectional studies, Intervention studies, Panel Studies.	5
3	Sampling Designs: Census and Sample Survey, Need and importance for Sampling, Implications of a Sample Design, Different Types of Sample Designs (Probability sampling and non probability sampling),How to Select a Random Sample?, Systematic sampling, Stratified sampling, Cluster sampling, Area sampling, Multi-stage sampling, Sampling with probability proportional to size, Sequential sampling.	5
4	Measurement in research: Measurement Scales, Sources of Error in Measurement, Tests of Sound Measurement	3
5	Methods of Data Collection: Types of data, Collection of Primary Data, Observation Method, Interview Method, Collection of Primary Data	4
6	Ethics and Ethical practice in research and plagiarism	2
В	Biostatistics	22
	Data Presentation: Types of numerical data: Nominal, Ordinal, Ranked, Discrete and continuous. Tables: Frequency distributions, Relative frequency, Graph: Barcharts, Histogra	

7	ms,Frequencypolygons,onewayscatterplots,Box plots, two way scatter plots, line graphs	3
8	Measures of Central Tendency and Dispersion: Mean, Median, Mode, Range, Inter quartile range, variance and Standard Deviation, Coefficient of variation, grouped mean and grouped standard deviation (including merits and demerits).	3
9	Testing of Hypotheses: Definition, Basic Concepts, Procedure for Hypothesis Testing, Measuring the Power of a Hypothesis Test, Normal distribution, Important Parametric Tests including Z-test, t-test, and ANOVA	4
10	Chi-square Test: Chi- squareasa Nonparametric Test, Conditions for the Application Chi- square test, Steps Involved in Applying Chi-square Test, Alternative Formula, Yates' Correction, and Coefficient by Contingency.	2
11	Measures of Relationship: Need and meaning, Correlation and Simple Regression Analysis	3
12	Non parametricor Distribution free Tests: Important Non parametricor Distribution-free Test Signtest, Wilcoxon signed-Rank Test, Wilcoxon Rank Sum Test: Mann-Whitney U test, Kruskal Walli's test, Friedman's test, and Spearman Correlation test.	3
13	Vital Health Statistics: Measurement of Population: rate, cruderate, specificrate, Measurement of fertility: specific fertility rate, Total fertility rate, Reproduction rate, Gross Reproduction Rate, Net Reproduction Rate, Measures related to mortality: Crude Death Rate (CDR), Age-specific death Rate, Infant and child mortality rate, Measures related to morbidity.	4
Total		45 Hrs

CC 001 P: Research Methodology & Biostatistics

Sr.	Topics	No. of
No.		Hrs
Α	Research Methodology	
1	Research Article Presentation (Seminar)	5
В	Biostatistics	
2	Data Presentation	4
3	Measures of Central Tendency and Dispersion	6
4	Testing of Hypotheses	16
5	Chi-square Test	4
6	Measures of Relationship	6
7	Analysis of Variance	5
8	Non parametric or Distribution-free Tests	8
9	Computer Application Using Statistical Software including SPSS	6
	Total	60 hrs

Course code- MET 103 CP: MET Directed Clinical Education – I

Students will gain additional skills in interventional & advance procedure Students apply knowledge from previous clinical learning experience under the supervision of a senior technologist. (Total- 270 hrs)

COMPETENCIES (Semester I)

Assessment, inform and manage the hemodynamic abnormalities of patients of emergency & Trauma in resuscitation, Intensive Care & observation ward under supervision of Emergency residential medical officer.

- Use of invasive and noninvasive technology and interventions to assess, monitor and promote physiological stability.
- To collaborate with other healthcare team members as a part of multidisciplinary approach.
- Perform the physical examination according to patients history under supervision of register medical officer.
- Perform independently Phlebotomy with Blood collection, Foleys Catheterization, Ryles tube insertion, Arterial Blood Gas.
- Perform, Analysis and inform the procedure like Arterial blood gas, Electrocardiogram, X ray etc. under supervision of Emergency residential medical officer.
- Observed, Assist & Perform advanced procedure under supervision of Emergency residential medical officer.
 - 1) Endotracheal Intubation
 - 2) Central Venous Catheterization
 - 3) Tracheostomy
 - 4) Pacemaker Insertion
 - 5) Lumbar Puncture
 - 6) Bronchoscopy
 - 7) Cardioversion & Defibrillation
 - 8) Ascitic Tapping
 - 9) Pleural Tapping
 - 10) Chest Tube Insertion
- They should able to develop interpersonal communication skills and counseling.

FIRST YEAR

M. Sc. Emergency & Trauma Care Technology

SEMESTER-II

CODE NO	CORE SUBJECT	
	Discipline Specific Core Theory	
MET 104 L	Advance Critical Care and Management I	
MET 105 L	Advance Critical Care and Management II	
MET 106 CP	MET Directed Clinical Education-II	
Discipline Specific Core Practical		
MET 104 P	Advance critical care and management I	
Skill Enhancement Course		
SEC 001 L	Innovation and Entrepreneurship	
SEC 002 L	One Health (NPTEL)	

Name of the Programme	M.Sc. Emergency & Trauma Care Technology
Name of the Course	Advance Critical Care And Management I
Course Code	MET 104 L

Teaching Objectives	• To understand the advance management in emergency .
Learning Outcomes	• Students should be able to do every advance emergency procedure and mange critically ill patients.

Sr. No.	Topics	No. of Hrs.
1	Cardiac Arrest Management, Post Cardiac Arrest Care	4
2	Management of Respiratory Disorders, Mechanical Ventilation, Nervous and chemical control of respiration including hypoxic drive and the role of CO2	4
3	Mechanism of Cardiovascular system, cardiac cycle, Normal Sinus rhythm, chemical and nervous control of the cardiovascular system, shock, arrhythmias, left ventricular failure, angina	4
4	Shock-Types & Management	5
5	Venous Thromboembolism	4
6	Management of Electrolytes disturbances, Acid Base disorders	4
7	Management of Endocrine and oncological Emergencies	4
8	Toxicology in ICU	4
9	DKA, Hyperos molar coma, Hypoglycemic syndrome	4
10	Management of Renal Disorders, Renal Replacement Therapy	4
11	Gastrointestinal and hepatic disorders, Esophageal foregion bodies, Nasogastric and feeding tube placement, Decontamination of the poisoned patient	4
	Total	45 hrs

Sr. No.	Topics	No. of Hrs.
1	ICU Therapy	20
2	Hands on demonstration related critical care	20
3	OSCEs (objective structured clinical examination)	20
Total		60 hrs

MET 104 P: Advance Critical Care and Management I

Name of the Programme	M.Sc. Emergency & Trauma Care Technology
Name of the Course	Advance Critical Care And Management II
Course Code	MET 105 L

Teaching Objectivess	• To understand the advance management in emergency.
Learning Outcomes	• Students should be able to do every advance emergency procedure and mange critically ill patients.

Sr. No.	Topics	No. of Hrs.
1	Cerebral blood flow to include the circle of willis, Transient ischemic attack, sub arachnoids hemorrhage, Meningitis, Management of neurological disorders	10
2	Management of Hematological Disorders	8
3	Transfusion practices in ICU, Management of transfusion reactions	6
4	Transplant patients Care in ICU	6
5	Anatomical and physiological changes during pregnancy, assessment and examination of pregnant woman, Normal Labor, Abnormalities in pregnancy and labor, resuscitation in pregnancy	10
6	Anatomical and physiological differences between adults and children, pediatrics assessment and examination and recognition of the seriously ill or deteriorating child, management of the sick child and parents, management of cardiac arrest in neonates, infants and children	10
7	Psychological and psychiatric aspects of emergency medical management	10
	Total	60 hrs

Course Code MET 106 CP: MET Directed Clinical Education – II

Students will gain additional skills in interventional & advance procedure. Students apply knowledge from previous clinical learning experience under the supervision of a senior technologist.

(Total- 405 hrs)

SKILL ENHANCEMENT COURSE

Name of the Programme	M.Sc. Emergency And Trauma Care Technology	
Name of the Course	Innovation and Entrepreneurship	
Course Code	SEC 001 L	

Course Outcome	• Students will grasp the concepts of innovation, its ecosystem, and the role of various stakeholders such as government policies, startups, and innovation hubs.
	• Cultivating an entrepreneurial mindset and leadership qualities necessary for
	driving innovation and leading ventures.
	• Understanding the intersection of technology and innovation and leveraging
	emerging technologies for entrepreneurial ventures.

Sr. No.	Topics	No. of Hrs.
1	Innovation and Innovation Eco-System, The Policy Framework, Startup	15
	Innovation with Intellectual Property Rights, Raising Finance for Startups in India, Innovation	
2	Creativity and Research, Converting Researches to Innovation: Innovation Types and Models, Product Development, IPR and its Commercialisation, Support System to	15
	Develop Culture of Research and Innovation, Commercialisation of research and innovation, Fund raising – Research and Innovation, Envisioning Innovation and Scenario Building	
3	Introduction to Innovation in Entrepreneurship, Idea Generation and Validation, Design Thinking in Entrepreneurship, Business Model Innovation, Technology and Innovation, Funding Innovation, Entrepreneurial Mindset, Leadership & Amp; Intellectual	15
	Property, Scaling and Growth Strategies, sustainability & amp; Social Innovation	
	Total	45 hrs

Name of the Programme	M.Sc. Emergency And Trauma Care Technology	
Name of the Course	One Health (NPTEL)	
Course Code	SEC 002 L	

	• A comprehensive understanding of One Health's role in global health
Course Outcomes	challenges, emphasizing interconnectedness among human, animal, and environmental health.
Course Outcomes	• Topics include research ethics, disease surveillance, and successes in controlling emerging infectious diseases.
	• Students explore disease emergence, transmission, antimicrobial resistance, and food safety, gaining insights into effective public health
	strategies.

Sr. No.	Topics	No. of Hrs.
1	 Introduction to One Health : Introduction to the One Health One Medicine Concept and National & International health/public health agencies Global Health vs One Health Basics of Research Ethics Integrated human and animal disease surveillance systems Recent success of One Health in control of emerging infectious diseases and the application of One Health in the control of endemic zoonoses in resource-poor communities 	5
2	 Emerging Infectious Diseases and Antimicrobial Resistance: Emerging infectious diseases Process of disease emergence and assessment of the risk factors Mechanisms of pathogen cross over across species boundaries and emerging infectious disease transmission, and its relevance in the 21st century Importance of disease detection, Identification and monitoring in public health and the gaps in current health systems approaches and importance of Genome Sequencing Introduction to disease vectors and basics of Medical Entomology The factors influencing an emerging disease (whether is controlled or becomes endemic/epidemic as illustrated by different emerging diseases -STDs, HIV/AIDS, avian influenza, SARS, Ebola) Antimicrobial resistance a global threat and Importance of antibiotic stewardship program Introduction of Food Safety and Food Borne Diseases 	10
3	 One Health Application in Management of Zoonotic Diseases: What are zoonotic diseases & its role in our changing world Understanding of bacterial, viral and parasitic zoonotic diseases; critical evaluation of its control measures, awareness of local, national and global factors and Influences Biogeography of zoonosis 	10

M.Sc. Emergency & Trauma Care Technology

	Total	45 hrs
6	 Media & Community engagement for One Health: Risk Communication and Pandemic Preparedness How ICMR and other Public Health Institutes tackled and managed pandemic situation in the country Role of community in disease control & ways for community engagement Uses of different types of media for communication and impact of the media on public attitudes to disease 	10
5	 One Health and Health Policy: Introduction to health policy Political and institutional challenges in implementing One Health and the importance of a unified policy to address the shared health threats of humans and animals 	5
4	 through One Health Applied Epidemiology & Public Health in One Health Research: Basics of Epidemiological Studies Rapid Response system, Disaster Management and Outbreak Investigation Plans Basic statistical methods and their application and the measurement of disease frequency Principles of survey design and the concepts of sampling Mixed method research 	5
	 The integration of human, animal and ecosystem health in the control and prevention of these diseases Community engagement for zoonotic disease control in humans and animals 	

COMPETENCIES (Semester II)

- Assessment, inform and manage the hemodynamic abnormalities of patients of emergency & Trauma in resuscitation, Intensive Care & observation ward under supervision of Emergency residential medical officer.
- Use of invasive and noninvasive technology and interventions to assess, monitor and promote physiological stability.
- To collaborate with other healthcare team members as a part of multidisciplinary approach.
- Perform the physical examination according to patients history under supervision of register medical officer.
- Perform independently Phlebotomy with Blood collection, Foleys Catheterization, Ryles tube insertion, Arterial Blood Gas.
- Perform, Analysis and inform the procedure like Arterial blood gas, Electrocardiogram, X ray etc. under supervision of Emergency residential medical officer.
- Observed, Assist & Perform advanced procedure under supervision of Emergency residential medical officer.
 - 1) Endotracheal Intubation
 - 2) Central Venous Catheterization
 - 3) Tracheostomy
 - 4) Pacemaker Insertion
 - 5) Lumbar Puncture
 - 6) Bronchoscopy
 - 7) Cardioversion & Defibrillation
 - 8) Ascitic Tapping
 - 9) Pleural Tapping
 - 10) Chest Tube Insertion
- They should able to develop interpersonal communication skills and counseling.
- In addition to the above competencies in first semester should have knowledge in assessment, diagnosis and management of the conditions which are included in second semester under supervision of Emergency residential medical officer.

Scheme of University Examination Theory for PG Program

General structure/patterns for setting up question papers for Theory / Practical courses, their evaluation weights for PG programs of MGMSBS are given in the following tables

2.2 a: Marks scheme for the University exam:

Final theory marks will be 100 marks (80 marks University Theory exam + 20 Marks for Internal assessment).

Question	Туре	Marks	Marks allotted	Marks
		distribution	per section	
Sec: A	MCQ	10 x 1 M = 10	10	10
Sec: B	SAQ	3/4x 5 M = 15	15	
Sec: B	LAQ	2/3 x 10 M = 10	20	35
Sec: C	SAQ	2/3 x 10 M = 10	15	35
Sec: C	LAQ	2/3x 10 M = 10	20	
				Total = 80 M

2.2 b: Practical exam pattern: Total 40 marks with following breakup :

Exercise	Description	Marks
Q No 1	Practical exercise - 1	1 x20=20 M
Q No 2	Station exercise	2x5M=10 M
Q No 3	VIVA	10 M
Q No 4	Journal	NIL
		Total = 40 M

2.2 c: Practical to be conducted at respective departments and marks submitted jointly by the parent department to the university.

2.2 d: Breakup of theory IA calculation for 20 marks

Internal exam (at department)	15 marks
Seminar	5 marks
	Total = 20 M

Breakup of practical IA calculation:

Internal exam (at department)	10 marks
Viva	5 marks
Journal	5 marks
	Total = 20 M

Note -20 marks to be converted to 10 marks weightage for submission to the university.

Model Checklist for Evaluation of the Clinical Directed Posting (PG)

Name of the student:	Date:	

Program:_____

 Semester:

 Name of the Internal faculty/Observer:

Name of the External Faculty/Observer:_____

Core Competencies		
	Marks allotted	Marks obtained
Students will begin to develop critical thinking abilities utilizing the allied health personnel roles of communicator and caregiver. Students will learn principles of professional allied health personnel practice and provide direct care to individuals within a medical surgical setting while recognizing the diverse uniqueness of individuals with health alterations.		
Clinical Teaching		
a. Demonstrate beginning competency in technical skills.	10	
Independent Work by Student guided by faculty		
a. Develop effective communication skills (verbally and through charting) with patients, team members, and family	2.5	
b. Identify intra and inter-professional team member roles and scopes of practice. Establish appropriate relationships with team members.	2.5	
Hands on practical work by students		
a. Protect confidentiality of electronic/manual health records data, information, and knowledge of technology in an ethical manner	05	
Independent work by student		
a. Demonstrate expected behaviors and complete tasks in a timely manner. Arrive to clinical experiences at assigned times. Maintain professional behavior and appearance.	05	
Log book	10	
Viva	10	
Attendance	05	
Total	50 Marks	
Sign of Internal Examiner:	1	

Sign of External Examiner:_____

Resolution No. 3.8 of Academic Council (AC-49/2024):

Resolved to approve the proposal to initiate MOOC programs as an elective in M.Sc. Clinical Nutrition, M.Sc. OT&AT and M.Sc. Emergency & Trauma Care as a pilot study (for including in the marksheet) from batch admitted in Academic Year 2024-25 onwards.

Resolution No. 3.10 of Academic Council (AC-49/2024):

(ii) Resolved and approved to collect the Dissertations/Projects 60 days before the University examination for all 2-year M.Sc. programs under MGM School of Biomedical Sciences to fulfil the credit allotted for project work, to be effective from batch 2023-24 onwards.



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