PROGRAM OUTCOME (POs)	
Course Code	**M.Sc. EMERGENCY & TRAUMA CARE TECHNOLOGY**
PO1	**Advanced Knowledge and Skills in Emergency and Trauma Care:** In-depth understanding of emergency and trauma management in healthcare system.Proficiency in trauma diagnostics, patient assessment, and emergency protocols.
PO2	**Clinical Competency:**Develop clinical skills for managing trauma patients, including handling life-threatening situations such as cardiac arrest, severe injuries, or other medical emergencies.They will be trained to make critical decisions in high-pressure situations.
PO3	**Technological Proficience:** Strong understanding of advance technology used in emergency and trauma care, including diagnostic tools, monitoring systems, and life-support equipment.Efficiency in application of medical devices such as ventilators, defibrillators, and other advanced technology in trauma care.
PO4	**Leadership and Management**: Learn how to manage emergency healthcare teams, especially in high-stress environments like trauma units and emergency departments. Building leadership and communication skills essential for coordinating with healthcare professionals and patients during critical situations.
PO5	**Crisis Management and Decision-Making:** Acquire strong decision-making skills in crisis situations, understanding how to prioritize patient care and manage resources effectively.
PO6	**Effective Communication –** Communicate effectively with patients, families, and healthcare teams, ensuring clarity in emergency interventions, patient education, and crisis management.
PO 7	**Interdisciplinary Healthcare Collaboration:** Ability to work in multidisciplinary teams, collaborating with physicians, nurses, paramedics, and other healthcare professionals to deliver comprehensive care.
PO8	**Research and Evidence-Based Practice:**Develop the ability to critically evaluate and integrate research findings into clinical practice, ensuring that trauma care and emergency interventions are based on the best available evidence. Contribute to the advancement of knowledge and best practices in emergency and trauma care through research and innovation..
COURSE OUTCOMES (COs)	
Course Code	**M.Sc. EMERGENCY & TRAUMA CARE TECHNOLOGY**
SEMESTER I	
MET 101 T	**Trauma And Critical Care I**
CO1	Develop an in-depth understanding of trauma pathophysiology and the critical care needs of trauma patients.
CO2	Demonstrate proficiency in trauma assessment, diagnostics, and intervention protocols in critical care settings.
CO3	Analyze and apply trauma care techniques for life-threatening conditions, including respiratory failure, shock, and severe hemorrhage.
CO4	Understand and manage multi-organ failure and support critical care systems in the trauma patient.
CO5	Develop skills in managing trauma in the emergency department (ED) setting, including the integration of emergency medical services (EMS) and trauma teams.
MET 102 T	**Trauma And Critical Care II**
CO1	Demonstrate advanced clinical competencies in managing complex trauma cases, including severe head injuries, abdominal trauma, and spinal cord injuries.
CO2	Apply evidence-based trauma care protocols for multi-organ failure and life-threatening conditions in the ICU.
CO3	Integrate advanced monitoring techniques and critical care technologies in the management of trauma patients.
CC 001 T	**Research Methodology & Biostatistics**
CO1	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.
MET 103 P	**Trauma And Critical Care I**
CO1	Develop an in-depth understanding of trauma pathophysiology and the critical care needs of trauma patients.
CO2	Demonstrate proficiency in trauma assessment, diagnostics, and intervention protocols in critical care settings.

CO3	Analyze and apply trauma care techniques for life-threatening conditions, including respiratory failure, shock, and severe hemorrhage.
CO4	Understand and manage multi-organ failure and support critical care systems in the trauma patient.
CO5	Develop skills in managing trauma in the emergency department (ED) setting, including the integration of emergency medical services (EMS) and trauma teams.
MET 104 P	**Trauma And Critical Care II**
CO1	Demonstrate advanced clinical competencies in managing complex trauma cases, including severe head injuries, abdominal trauma, and spinal cord injuries.
CO2	Apply evidence-based trauma care protocols for multi-organ failure and life-threatening conditions in the ICU.
CO3	Integrate advanced monitoring techniques and critical care technologies in the management of trauma patients.
MET 105 CP	**MET Directed Clinical Education – I**
CO1	Build a robust theoretical foundation, enabling students to understand healthcare practices, disease management, and patient care, thereby empowering them to make informed decisions and adapt to evolving medicaltechnologies.
CO2	Emphasize hands-on training, ensuring proficiency in clinical procedures, diagnostic techniques, and the use of advanced medical equipment.This practical exposure will bridge the gap between theory and practice, enhancing students; confidence and competence in delivering quality patient care.
CO3	Focus on developing professionalism, empathy, ethical conduct, teamwork, and communication skills-key traits for holistic patient care and effective collaboration in interdisciplinary healthcare teams.
SEMESTER II	
MET 106 T	**Advance Critical Care and Management I**
CO1	Master the management of critical conditions such as respiratory failure, cardiac arrest, and septic shock in trauma patients.
CO2	Utilize advanced pharmacological agents and life-support systems to stabilize trauma patients in the ICU.
CO3	Develop proficiency in managing complex trauma patients with multisystem involvement, including monitoring and decision-making in the ICU.
MET 107 T	**Advance Critical Care and Management II**
CO1	Apply advanced techniques in the management of post-surgical trauma patients, including pain management, nutrition, and wound care.
CO2	Develop proficiency in managing trauma-induced acute kidney injury, respiratory failure, and other complications in critical care.
CO3	Analyze and integrate new research findings into clinical practice to improve outcomes in critical trauma care.
MET 108 P	**Advance Critical Care and Management I**
CO1	Master the management of critical conditions such as respiratory failure, cardiac arrest, and septic shock in trauma patients.
CO2	Utilize advanced pharmacological agents and life-support systems to stabilize trauma patients in the ICU.
CO3	Develop proficiency in managing complex trauma patients with multisystem involvement, including monitoring and decision-making in the ICU.
MET 109 CP	**MET Directed Clinical Education – II**
CO1	Build a robust theoretical foundation, enabling students to understand healthcare practices, disease management, and patient care, thereby empowering them to make informed decisions and adapt to evolving medicaltechnologies.
CO2	Emphasize hands-on training, ensuring proficiency in clinical procedures, diagnostic techniques, and the use of advanced medical equipment.This practical exposure will bridge the gap between theory and practice, enhancing students; confidence and competence in delivering quality patient care.
CO3	Focus on developing professionalism, empathy, ethical conduct, teamwork, and communication skills-key traits for holistic patient care and effective collaboration in interdisciplinary healthcare teams.

SKILL EHANCEMENT COURESES	
SEC 001 T	**Innovation and Entrepreneurship**
CO1	Understand the principles of innovation in the healthcare sector, especially in trauma and emergency care technology.
CO2	Develop entrepreneurial skills to create solutions that improve the delivery of emergency and trauma care in resource-limited settings.
CO3	Analyze business models and strategies to launch healthcare-related startups focused on trauma care technology.
SEC 002 T	**One Health (NPTEL)**
CO1	Understand the OneHealth approach to integrating human, animal, and environmental health in the context of emergency and trauma care.
CO2	Analyze how environmental factors, zoonotic diseases, and global health issues impact trauma care systems.
CO3	Develop strategies to address the interconnections between human health, animal health, and ecosystem health to enhance trauma care management.

MGM SCHOOL OF BIOMEDICAL SCIENCES, NAVI MUMBAI
(A constituent unit of MGM INSTITUTE OF HEALTH SCIENCES)
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CO PO Mapping
Programe - M.Sc. Emergency and Trauma Care Technology
Semester I and II

PO1	**Advanced Knowledge and Skills in Emergency and Trauma Care:** In-depth understanding of emergency and trauma management in healthcare system.Proficiency in trauma diagnostics, patient assessment, and emergency protocols.
PO2	**Clinical Competency:**Develop clinical skills for managing trauma patients, including handling life-threatening situations such as cardiac arrest, severe injuries, or other medical emergencies.They will be trained to make critical decisions in high-pressure situations.
PO3	**Technological Proficience:** Strong understanding of advance technology used in emergency and trauma care, including diagnostic tools, monitoring systems, and life-support equipment.Efficiency in application of medical devices such as ventilators, defibrillators, and other advanced technology in trauma care.
PO4	**Leadership and Management**: Learn how to manage emergency healthcare teams, especially in high-stress environments like trauma units and emergency departments. Building leadership and communication skills essential for coordinating with healthcare professionals and patients during critical situations.
PO5	**Crisis Management and Decision-Making:** Acquire strong decision-making skills in crisis situations, understanding how to prioritize patient care and manage resources effectively.
PO6	**Effective Communication –** Communicate effectively with patients, families, and healthcare teams, ensuring clarity in emergency interventions, patient education, and crisis management.
PO7	**Interdisciplinary Healthcare Collaboration:** Ability to work in multidisciplinary teams, collaborating with physicians, nurses, paramedics, and other healthcare professionals to deliver comprehensive care.
PO8	**Research and Evidence-Based Practice:**Develop the ability to critically evaluate and integrate research findings into clinical practice, ensuring that trauma care and emergency interventions are based on the best available evidence. Contribute to the advancement of knowledge and best practices in emergency and trauma care through research and innovation..

PO Mapping same with correlation level 3,2,1 The notation of 1 - low, 2 - moderate , 3 - high

Semester	Course / Course Code	Course Outcome	Course Outcome	Advanced Knowledge and Skills in Emergency and Trauma Care	Clinical Competency	Technological Proficiency	Leadership and Management	Crisis Management and Decision	Effective Communication	Interdisciplinary Healthcare Collabration	Research and Evidence-Based Practice	Average
				PO1	P02	PO3	PO4	PO5	PO6	PO7	PO8	
Semester I	Trauma And Critical Care I (MET 101 T)	CO1	Develop an in-depth understanding of trauma pathophysiology and the critical care needs of trauma patients.	3	3	2	2	2	1	2	0	1.9
		CO2	Demonstrate proficiency in trauma assessment, diagnostics, and intervention protocols in critical care settings.	3	3	2	1	3	2	2	0	2.0
		CO3	Analyze and apply trauma care techniques for life-threatening conditions, including respiratory failure, shock, and severe hemorrhage.	3	3	3	2	3	2	1	0	2.1
		CO4	Understand and manage multi-organ failure and support critical care systems in the trauma patient.	3	3	3	1	3	2	2	0	2.1
		CO5	Develop skills in managing trauma in the emergency department (ED) setting, including the integration of emergency medical services (EMS) and trauma teams.	3	3	3	2	2	1	2	0	2.0
		Average		3.0	3.0	2.6	1.6	2.6	1.6	1.8	0.0	2.0
	Trauma And Critical Care II (MET 102 T)	CO1	Demonstrate advanced clinical competencies in managing complex trauma cases, including severe head injuries, abdominal trauma, and spinal cord injuries.	3	3	2	2	3	2	1	0	2
		CO2	Apply evidence-based trauma care protocols for multi-organ failure and life-threatening conditions in the ICU.	3	3	2	1	3	2	2	0	2
		CO3	Integrate advanced monitoring techniques and critical care technologies in the management of trauma patients.	3	3	3	2	3	2	2	0	2.25
		Average		3.0	3.0	2.3	1.7	3.0	2.0	1.7	0.0	2.1
	Research Methodology & Biostatistics (Core Course) CC 001 T	CO1	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.	0	0	3	1	0	0	0	3	0.875
		CO2	Apply statistical tools and biostatistics methods to interpret clinical data and research outcomes.	0	0	3	2	0	0	0	3	1
		CO3	Critically evaluate research literature, with a focus on advancing trauma and critical care practices through evidence-based methodologies.	0	0	3	2	0	0	0	3	1
		Average		0.0	0.0	3.0	1.7	0.0	0.0	0.0	3.0	1.0
		CO1	Develop an in-depth understanding of trauma pathophysiology and the critical care needs of trauma patients.	3	3	2	2	2	1	2	0	1.9

	Trauma And Critical Care I (MET 103 P)	CO2	Demonstrate proficiency in trauma assessment, diagnostics, and intervention protocols in critical care settings.	3	3	2	1	3	2	2	0	2.0
		CO3	Analyze and apply trauma care techniques for life-threatening conditions, including respiratory failure, shock, and severe hemorrhage.	3	3	3	2	3	2	1	0	2.1
		CO4	Understand and manage multi-organ failure and support critical care systems in the trauma patient.	3	3	3	1	3	2	2	0	2.1
		CO5	Develop skills in managing trauma in the emergency department (ED) setting, including the integration of emergency medical services (EMS) and trauma teams.	3	3	3	2	2	1	2	0	2.0
		Average		3.0	3.0	2.6	1.6	2.6	1.6	1.8	0.0	2.0
	Trauma and Critical Care II (MET 104 P)	CO1	Demonstrate advanced clinical competencies in managing complex trauma cases, including severe head injuries, abdominal trauma, and spinal cord injuries.	3	3	2	2	3	2	1	0	2
		CO2	Apply evidence-based trauma care protocols for multi-organ failure and life-threatening conditions in the ICU.	3	3	2	1	3	2	2	0	2
		CO3	Integrate advanced monitoring techniques and critical care technologies in the management of trauma patients.	3	3	3	2	3	2	2	0	2.25
		Average		3.0	3.0	2.3	1.7	3.0	2.0	1.7	0.0	2.1
	MET Directed Clinical Education – I (MET 105 CP)	CO1	Build a robust theoretical foundation, enabling students to understand healthcare practices, disease management, and patient care, thereby empowering them to make informed decisions and adapt to evolving medicaltechnologies.	3	3	3	3	3	3	3	0	2.625
		CO2	Emphasize hands-on training, ensuring proficiency in clinical procedures, diagnostic techniques, and the use of advanced medical equipment.This practical exposure will bridge the gap between theory and practice, enhancing students; confidence and competence in delivering quality patient care.	3	3	3	3	3	3	3	0	2.625
		CO3	Focus on developing professionalism, empathy, ethical conduct, teamwork, and communication skills-key traits for holistic patient care and effective collaboration in interdisciplinary healthcare teams.	3	3	3	3	3	3	3	2	2.875
		Average		3.0	3.0	3.0	3.0	3.0	3.0	3.0	0.7	2.7
	Research Methodology & Biostatistics (CC 001 P)	CO1	Develop the ability to design, conduct, and analyze clinical research studies in the field of trauma and emergency care.	0	0	3	1	0	0	0	3	0.875
		CO2	Apply statistical tools and biostatistics methods to interpret clinical data and research outcomes.	0	0	3	2	0	0	0	3	1
		CO3	Critically evaluate research literature, with a focus on advancing trauma and critical care practices through evidence-based methodologies.	0	0	3	2	0	0	0	3	1
		Average		0.0	0.0	3.0	1.7	0.0	0.0	0.0	3.0	1.0
Semester II	**Advance Critical Care and Management I (MET 106 T)**	CO1	Master the management of critical conditions such as respiratory failure, cardiac arrest, and septic shock in trauma patients.	3	3	2	2	2	1	2	0	1.875
		CO2	Utilize advanced pharmacological agents and life-support systems to stabilize trauma patients in the ICU.	3	3	2	1	3	2	2	0	2
		CO3	Develop proficiency in managing complex trauma patients with multisystem involvement, including monitoring and decision-making in the ICU.	3	3	3	2	3	2	1	0	2.125
		Average		3	3	2.3	1.7	2.7	1.7	1.7	0	2
	Advance Critical Care and Management II(MET 107 T)	CO1	Apply advanced techniques in the management of post-surgical trauma patients, including pain management, nutrition, and wound care.	3	3	2	2	2	1	2	0	1.875
		CO2	Develop proficiency in managing trauma-induced acute kidney injury, respiratory failure, and other complications in critical care.	3	3	2	1	3	2	2	0	2
		CO3	Analyze and integrate new research findings into clinical practice to improve outcomes in critical trauma care.	3	3	3	2	3	2	1	0	2.125
		Average		3	3	2.3	1.7	2.7	1.7	1.7	0	2
	Advance Critical Care and Management I (MET 108 P)	CO1	Master the management of critical conditions such as respiratory failure, cardiac arrest, and septic shock in trauma patients.	3	3	2	2	2	1	2	0	1.875
		CO2	Utilize advanced pharmacological agents and life-support systems to stabilize trauma patients in the ICU.	3	3	2	1	3	2	2	0	2
		CO3	Develop proficiency in managing complex trauma patients with multisystem involvement, including monitoring and decision-making in the ICU.	3	3	3	2	3	2	1	0	2.125
		Average		3	3	2.3	1.7	2.7	1.7	1.7	0	2

	MET Directed Clinical Education – II (MET 109 CP)	CO1	Build a robust theoretical foundation, enabling students to understand healthcare practices, disease management, and patient care, thereby empowering them to make informed decisions and adapt to evolving medicaltechnologies.	3	3	3	3	3	3	3	0	2.625
		CO2	Emphasize hands-on training, ensuring proficiency in clinical procedures, diagnostic techniques, and the use of advanced medical equipment.This practical exposure will bridge the gap between theory and practice, enhancing students; confidence and competence in delivering quality patient care.	3	3	3	3	3	3	3	0	2.625
		CO3	Focus on developing professionalism, empathy, ethical conduct, teamwork, and communication skills-key traits for holistic patient care and effective collaboration in interdisciplinary healthcare teams.	3	3	3	3	3	3	3	2	2.875
		Average		3.0	3.0	3.0	3.0	3.0	3.0	3.0	0.7	2.7
	Innovation and Entrepreneurship (SEC 001 T)	CO1	Understand the principles of innovation in the healthcare sector, especially in trauma and emergency care technology.	2	1	3	2	2	2	3	3	2.25
		CO2	Develop entrepreneurial skills to create solutions that improve the delivery of emergency and trauma care in resource-limited settings.	2	1	3	3	1	2	3	3	2.25
		CO3	Analyze business models and strategies to launch healthcare-related startups focused on trauma care technology.	2	1	3	3	2	1	3	3	2.25
		Average		2	1	3	2.7	1.7	1.7	3	3	2.25
	One Health (NPTEL) (SEC 002 T)	CO1	Understand the OneHealth approach to integrating human, animal, and environmental health in the context of emergency and trauma care.	2	1	3	2	2	2	3	3	2.25
		CO2	Analyze how environmental factors, zoonotic diseases, and global health issues impact trauma care systems.	2	1	3	3	1	2	3	3	2.25
		CO3	Develop strategies to address the interconnections between human health, animal health, and ecosystem health to enhance trauma care management.	2	1	3	3	2	1	3	3	2.25
		Average		2	1	3	2.7	1.7	1.7	3	3	2.25

PROGRAM OUTCOME	
Course Code	**M.Sc.Emergency and Trauma Care Technology**
PO1	**Advanced Knowledge and Skills in Emergency and Trauma Care:** In-depth understanding of emergency and trauma management in healthcare system.Proficiency in trauma diagnostics, patient assessment, and emergency protocols.
PO2	**Clinical Competency**:Develop clinical skills for managing trauma patients, including handling life-threatening situations such as cardiac arrest, severe injuries, or other medical emergencies.They will be trained to make critical decisions in high-pressure situations.
PO3	**Technological Proficience:** Strong understanding of advance technology used in emergency and trauma care, including diagnostic tools, monitoring systems, and life-support equipment.Efficiency in application of medical devices such as ventilators, defibrillators, and other advanced technology in trauma care.
PO4	**Leadership and Management:** Learn how to manage emergency healthcare teams, especially in high-stress environments like trauma units and emergency departments. Building leadership and communication skills essential for coordinating with healthcare professionals and patients during critical situations.
PO5	**Crisis Management and Decision-Making**: Acquire strong decision-making skills in crisis situations, understanding how to prioritize patient care and manage resources effectively.
PO6	**Effective Communication** – Communicate effectively with patients, families, and healthcare teams, ensuring clarity in emergency interventions, patient education, and crisis management.
PO 7	**Interdisciplinary Healthcare Collaboration:** Ability to work in multidisciplinary teams, collaborating with physicians, nurses, paramedics, and other healthcare professionals to deliver comprehensive care.
PO 8	**Research and Evidence-Based Practice:**Develop the ability to critically evaluate and integrate research findings into clinical practice, ensuring that trauma care and emergency interventions are based on the best available evidence. Contribute to the advancement of knowledge and best practices in emergency and trauma care through research and innovation..
Course Outcomes (COs)	
Course Code	**M.Sc.Emergency and Trauma Care Technology**
SEMESTER III	
MET 110 T	**Advanced Trauma Care and Management I**
CO1	Apply advanced knowledge and clinical skills to assess, stabilize, and manage trauma patients using the ABCDE approach and evidence-based protocols from pre-hospital settings to ICU care.
CO2	Demonstrate proficiency in injury-specific management including wound care, fracture stabilization, and targeted interventions for head, neck, spinal, thoracic, abdominal, pelvic, extremity, ocular, and ENT trauma.
CO3	Utilize advanced diagnostic tools, monitoring systems, and life-support equipment efficiently in trauma care, ensuring timely interventions and optimal use of technology in critical situations
CO4	Exhibit leadership, communication, and teamwork skills to coordinate multidisciplinary trauma teams effectively in disaster situations, mass casualty incidents, and post-trauma ICU management
MET 111 T	**Advanced Trauma Care and Management II**
CO1	Apply advanced knowledge and evidence-based protocols to assess and manage trauma in special populations, including pediatric, geriatric, and pregnant patients, adapting care to their unique physiological needs
CO2	Demonstrate clinical competency in managing burns, crush injuries, and post-trauma surgical cases, including preoperative preparation, transfusion protocols, and prevention of complications
CO3	Utilize advanced technology and equipment for diagnosis, monitoring, and life-support in military, humanitarian, and mass casualty trauma scenarios, ensuring effective crisis response
CO4	Exhibit leadership, ethical practice, and communication skills in coordinating multidisciplinary trauma teams, managing medico-legal aspects, and delivering patient-centered care in high-pressure environments.
MET 112	**Research Project/Dissertation**
CO1	Formulate a research hypothesis relevant to Emergency & Trauma

CO2	Analyze clinical data and present findings
CO3	Demonstration academic writing and presentation skills
CO4	Demonstrate critical thinking and problem-solving skills by defending the research findings during viva voce or presentation sessions.
CO5	Contribute to the scientific community by producing research work that may lead to publication, presentation at conferences, or implementation in clinical practice.
MET 113 P	**Advanced Trauma Care and Management II**
CO1	Apply advanced life support protocols including Pediatric Advanced Life Support (PALS), Advanced Trauma Life Support (ATLS), Advanced Cardiac Life Support (ACLS), and Pre-Hospital Trauma Life Support (PHTLS) to manage critically ill and injured patients across age groups
CO2	Demonstrate clinical proficiency in rapid patient assessment, airway management, cardiac resuscitation, trauma stabilization, and pre-hospital interventions using evidence-based guidelines
CO3	Utilize advanced medical technologies such as defibrillators, ventilators, and monitoring systems efficiently during high-pressure trauma and cardiac emergency situations
CO4	Exhibit leadership, decision-making, and teamwork skills to coordinate multidisciplinary healthcare teams during pre-hospital, in-hospital, and critical care trauma scenarios
MET 114 CP	**MET Directed Clinical Education III**
CO1	Integrate advanced clinical knowledge and practical skills in real-world emergency and trauma care settings, demonstrating proficiency in patient assessment, diagnostics, and implementation of emergency protocols
CO2	Operate and apply advanced medical technologies such as ventilators, defibrillators, and monitoring systems effectively in the management of critically ill or trauma patients
CO3	Demonstrate leadership and teamwork in high-stress clinical environments by coordinating with multidisciplinary healthcare teams to deliver timely, efficient, and patient-centered care
CO4	Apply evidence-based clinical decision-making during emergencies, ensuring that interventions are guided by current research, best practices, and medico-legal standards
SEMESTER IV	
MET 115 T	**Disaster Management and Mitigation Resources**
CO1	Knowledge and understanding of the disaster phenomenon, its different contextual aspects, impacts and public health consequences.
CO2	Knowledge and understanding of the International Strategy for Disaster Reduction (UNISDR) and to increase skills and abilities for implementing the Disaster Risk Reduction (DRR) Strategy.
CO3	Ensure skills and abilities to analyze potential effects of disasters and of the strategies and methods to deliver public health response to avert these effects.
MET 116 CP	**MET Directed Clinical Education IV**
CO1	Integrate advanced clinical knowledge and practical skills in real-world emergency and trauma care settings, demonstrating proficiency in patient assessment, diagnostics, and implementation of emergency protocols
CO2	Operate and apply advanced medical technologies such as ventilators, defibrillators, and monitoring systems effectively in the management of critically ill or trauma patients
CO3	Demonstrate leadership and teamwork in high-stress clinical environments by coordinating with multidisciplinary healthcare teams to deliver timely, efficient, and patient-centered care
CO4	Apply evidence-based clinical decision-making during emergencies, ensuring that interventions are guided by current research, best practices, and medico-legal standards
MET 112	**Research Project/Dissertation**
CO1	Formulate a research hypothesis relevant to Emergency & Trauma
CO2	Analyze clinical data and present findings
CO3	Demonstration academic writing and presentation skills
CO4	Demonstrate critical thinking and problem-solving skills by defending the research findings during viva voce or presentation sessions.
CO5	Contribute to the scientific community by producing research work that may lead to publication, presentation at conferences, or implementation in clinical practice.

Annexure-18J of AC-52/2025

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CO PO Mapping
Programe - M.Sc. Emergency and Trauma Care Technology
Semester I ,II ,III, & IV

PO1. **Advanced Knowledge and Skills in Emergency and Trauma Care:** In-depth understanding of emergency and trauma management in healthcare system.Proficiency in trauma diagnostics, patient assessment, and emergency protocols.

PO2. **Clinical Competency:**Develop clinical skills for managing trauma patients, including handling life-threatening situations such as cardiac arrest, severe injuries, or other medical emergencies.They will be trained to make critical decisions in high-pressure situations.

PO3. **Technological Proficience:** Strong understanding of advance technology used in emergency and trauma care, including diagnostic tools, monitoring systems, and life-support equipment.Efficiency in application of medical devices such as ventilators, defibrillators, and other advanced technology in trauma care.

PO4. **Leadership and Management**: Learn how to manage emergency healthcare teams, especially in high-stress environments like trauma units and emergency departments. Building leadership and communication skills essential for coordinating with healthcare professionals and patients during critical situations.

PO5. **Crisis Management and Decision-Making:** Acquire strong decision-making skills in crisis situations, understanding how to prioritize patient care and manage resources

PO6. **Effective Communication –** Communicate effectively with patients, families, and healthcare teams, ensuring clarity in emergency interventions, patient education, and crisis

PO7. **Interdisciplinary Healthcare Collaboration:** Ability to work in multidisciplinary teams, collaborating with physicians, nurses, paramedics, and other healthcare professionals to deliver comprehensive care.

PO8. **Research and Evidence-Based Practice:**Develop the ability to critically evaluate and integrate research findings into clinical practice, ensuring that trauma care and emergency interventions are based on the best available evidence. Contribute to the advancement of knowledge and best practices in emergency and trauma care through research and innovation..

PO Mapping same with correlation level 3,2,1 The notation of 1 - low, 2 - moderate , 3 - high

Semester	Course / Course Code	Course Outcome	Course Outcome	Advanced Knowledge and skills in Emergency and trauma care	Clinical Competency	Technological Proficiency	Leadership and Management	Crisis Management and Decision	Effective Communication	Interdisciplinary Healthcare Collabration	Research and Evidence-Based Practice	Average
				PO1	P02	PO3	PO4	PO5	PO6	PO7	PO8	
Semester III	**Advanced Trauma Care and Management I (MET 110 T)**	CO1	Apply advanced knowledge and clinical skills to assess, stabilize, and manage trauma patients using the ABCDE approach and evidence-based protocols from pre-hospital settings to ICU care.	3	3	2	3	3	2	2	0	2.25
		CO2	Demonstrate proficiency in injury-specific management including wound care, fracture stabilization, and targeted interventions for head, neck, spinal, thoracic, abdominal, pelvic, extremity, ocular, and ENT trauma.	3	3	2	3	3	2	2	0	2.25
		CO3	Utilize advanced diagnostic tools, monitoring systems, and life-support equipment efficiently in trauma care, ensuring timely interventions and optimal use of technology in critical situations	3	3	2	3	3	2	2	0	2.25
		CO4	Exhibit leadership, communication, and teamwork skills to coordinate multidisciplinary trauma teams effectively in disaster situations, mass casualty incidents, and post-trauma ICU management	2	2	2	3	3	3	2	0	2.12
		Average		2.75	2.75	2	3.0	3.0	2.3	2	0	2.21
		CO1	Apply advanced knowledge and evidence-based protocols to assess and manage trauma in special populations, including pediatric, geriatric, and pregnant patients, adapting care to their unique physiological needs	3	3	2	3	3	2	2	0	2.25

Advanced Trauma Care and Management II (MET 111 T)	CO2	Demonstrate clinical competency in managing burns, crush injuries, and post-trauma surgical cases, including preoperative preparation, transfusion protocols, and prevention of complications	3	3	2	3	3	2	2	0	2.25
	CO3	Utilize advanced technology and equipment for diagnosis, monitoring, and life-support in military, humanitarian, and mass casualty trauma scenarios, ensuring effective crisis response	3	3	2	3	3	2	2	0	2.25
	CO4	Exhibit leadership, ethical practice, and communication skills in coordinating multidisciplinary trauma teams, managing medico-legal aspects, and delivering patient-centered care in high-pressure environments.	2	2	2	3	3	3	2	0	2.12
	Average		2.75	2.75	2	3.0	3.0	2.3	2	0	2.21
Research Project / Dissertation (MET 112)	CO1	Formulate a research hypothesis relevant to Emergency & Trauma	2	2	0	2	0	1	1	3	1.62
	CO2	Analyze clinical data and present findings	0	0	0	2	0	1	1	3	0.875
	CO3	Demonstration academic writing and presentation skills	2	2	0	0	0	1	1	3	1
	CO4	Demonstrate critical thinking and problem-solving skills by defending the research findings during viva voce or presentation sessions.	2	2	0	0	0	3	1	3	1.375
	CO5	Contribute to the scientific community by producing research work that may lead to publication, presentation at conferences, or implementation in clinical practice.	0	0	0	0	0	1	1	3	0.625
	Average		1.2	1.2	0	0.5	0.0	0.9	0.625	3	1.099
Advanced Trauma Care and Management II (MET 113 P)	CO1	Apply advanced life support protocols including Pediatric Advanced Life Support (PALS), Advanced Trauma Life Support (ATLS), Advanced Cardiac Life Support (ACLS), and Pre-Hospital Trauma Life Support (PHTLS) to manage critically ill and injured patients across age groups	3	3	2	3	3	2	2	0	2.25
	CO2	Demonstrate clinical proficiency in rapid patient assessment, airway management, cardiac resuscitation, trauma stabilization, and pre-hospital interventions using evidence-based guidelines	3	3	2	3	3	2	2	0	2.25
	CO3	Utilize advanced medical technologies such as defibrillators, ventilators, and monitoring systems efficiently during high-pressure trauma and cardiac emergency situations	3	3	2	3	3	2	2	0	2.25
	CO4	Exhibit leadership, decision-making, and teamwork skills to coordinate multidisciplinary healthcare teams during pre-hospital, in-hospital, and critical care trauma scenarios	2	2	2	3	3	3	2	0	2.12
	Average		1.2	1.2	0	0.5	0.0	0.9	0.625	3	1.099
	CO1	Integrate advanced clinical knowledge and practical skills in real-world emergency and trauma care settings, demonstrating proficiency in patient assessment, diagnostics, and implementation of emergency protocols	3	3	2	3	3	2	2	0	2.25

	MET Directed Clinical Education III (MET 114 CP)	CO2	Operate and apply advanced medical technologies such as ventilators, defibrillators, and monitoring systems effectively in the management of critically ill or trauma patients	3	3	2	3	3	2	2	0	2.25
		CO3	Demonstrate leadership and teamwork in high-stress clinical environments by coordinating with multidisciplinary healthcare teams to deliver timely, efficient, and patient-centered care	3	3	2	3	3	2	2	0	2.25
		CO4	Apply evidence-based clinical decision-making during emergencies, ensuring that interventions are guided by current research, best practices, and medico-legal standards	2	2	2	3	3	3	2	0	2.12
		Average		2.75	2.75	2	3.0	3.0	2.3	2	0	2.21
Semester IV	**Disaster Management and Mitigation Resources (MET 115 T)**	CO1	Knowledge and understanding of the disaster phenomenon, its different contextual aspects, impacts and public health consequences.	3	1	1	2	2	1	2	1	1.62
		CO2	Knowledge and understanding of the International Strategy for Disaster Reduction (UNISDR) and to increase skills and abilities for implementing the Disaster Risk Reduction (DRR) Strategy.	3	1	1	2	2	1	2	1	1.62
		CO3	Ensure skills and abilities to analyze potential effects of disasters and of the strategies and methods to deliver public health response to avert these effects.	3	1	1	2	2	1	2	1	1.62
		Average		3	1	1	2.0	2.0	1.0	2	1	1.62
	MET Directed Clinical Education IV (MET 116 CP)	CO1	Integrate advanced clinical knowledge and practical skills in real-world emergency and trauma care settings, demonstrating proficiency in patient assessment, diagnostics, and implementation of emergency protocols	3	3	2	3	3	2	2	0	2.25
		CO2	Operate and apply advanced medical technologies such as ventilators, defibrillators, and monitoring systems effectively in the management of critically ill or trauma patients	3	3	2	3	3	2	2	0	2.25
		CO3	Demonstrate leadership and teamwork in high-stress clinical environments by coordinating with multidisciplinary healthcare teams to deliver timely, efficient, and patient-centered care	3	3	2	3	3	2	2	0	2.25
		CO4	Apply evidence-based clinical decision-making during emergencies, ensuring that interventions are guided by current research, best practices, and medico-legal standards	2	2	2	3	3	3	2	0	2.12
		Average		2.75	2.75	2	3.0	3.0	2.3	2	0	2.21
	Research Project / Dissertation (MET 112)	CO1	Formulate a research hypothesis relevant to Emergency & Trauma	2	2	0	2	0	1	1	3	1.62
		CO2	Analyze clinical data and present findings	0	0	0	2	0	1	1	3	0.875
		CO3	Demonstration academic writing and presentation skills	2	2	0	0	0	1	1	3	1
		CO4	Demonstrate critical thinking and problem-solving skills by defending the research findings during viva voce or presentation sessions.	2	2	0	0	0	3	1	3	1.375
		CO5	Contribute to the scientific community by producing research work that may lead to publication, presentation at conferences, or implementation in clinical practice.	0	0	0	0	0	1	1	3	0.625

		Average		1.2	1.2	0	0.5	0.0	0.9	0.625	3	1.099