REGULATIONS AND CURRICULUM GOVERNING

M.Sc. TRAUMA CARE MANAGEMENT PROGRAM

Implemented Year 2023
Amended upto2025

Name of the Constituent Unit: Yenepoya School of Allied Health Sciences

YENEPOYA
(DEEMED TO BE UNIVERSITY)

Deralakatte, Mangalore, Karnataka.

NOTIFICATION FROM THE UNIVERSITY

SI. No.	ACM with Date	BOM with Date	Decision/Approval
1	47th ACM/ 20.06.2022	58th BOM/ 21.06.2022	Starting the Postgraduate Programme of M.Sc. Trauma Care Management under the Yenepoya School of Allied Health Sciences from 2022-23 onwards
2	51st ACM/ 16.05.2023	62nd BOM/ 14.06.2023	Approval of CBCS regulations: Form CIA 40% and SEE 60% to CIA 50% and SEE 50%. Minimum pass marks for CIA shall be 50% and SEE shall be 50%
3	58th ACM/ 13.08.2024	4th Executive council/ 10.09.2024	Approved the amendment of the dissertation credit distribution from 6 credits to 12 credits.
4	63rd ACM/ 13.05.2025	8th Executive council/ 10.06.2025	Approved the amendment on Structured continuous internal assessment components of PG dissertation

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1. Preamble

Health care sector has become one of the largest employment generation sectors in India and abroad. Rapidly changing and expanding horizon of the health care sector demands formal training programs in all its Allied areas. Postgraduate Program in Allied Health sciences speciality often encompasses a wide range of disciplines. The learning during postgraduation is usually heavily research focused. Professionals in the medical field rely heavily on modern technology to successfully treat, diagnose, and care for patients. By doing postgraduation in Allied health disciplines one will be preparing for a career as an educator, researcher, or technologist. Students may find a variety of options upon completion of post-graduation such as managing the Laboratories, Operation theatres, Radiology suites and Dialysis units. They can also join as teachers in the faculty of Allied and health professionals. They can also do research pursue doctorate in their field of interest. They can also join biomedical equipment manufacturing company and pharmaceutical company as experts in their field.

The postgraduation Trauma Care Management will prepare the candidate for a career as an educator, researcher, or therapist. Students may find a variety of options upon completion of post-graduation such as clinical instructor for Trauma Care Management. Academic and Research pursuit are other areas that offer opportunities for professional growth and development. The scope of growth in the field is tremendous with the improving healthcare system with an increase in Emergency care facilities. To match our education system with the international educational pattern all the postgraduate programs are with Choice Based Credit System.

2. Definition

2.1 Academic Year:

Two consecutive (one odd + one even) semesters constitute one academic year.

2.2 Choice-Based Credit System:

The CBCS provides choice for students to select from the prescribed courses (core, elective or minor or soft skill courses).

2.3Course:

Usually referred to, as ‘papers‟ is a component of a program. The courses shall define learning objectives and learning outcomes. A course shall comprise lectures/tutorials/laboratorywork/fieldwork/outreachactivities/projectwork/vocationaltraining/viva/seminars/termpapers/assignments/presentations/self-study, etc., or a combination of some of these.

2.4Credits:

Credit defines the quantum of contents/syllabus prescribed for a course anddetermines the number of hours of instruction required per week. Thus, normally in each of thecourses, credits will be assigned on the basis of the number of lectures/tutorial laboratory work and other forms of learning required, to complete the course contents minimum of 15-week's schedule: One credit = 1hour of lecture per week/two hours of Laboratory or practical/threehours of clinical rotation, fieldwork/posting. All courses need not carry the same credits.

2.5Programs:

An educational program leading to award of a degree, diploma or certificate.

2.6 Grade Point:

It is a numerical weight allotted to each letter grade on a 10-point scale.

2.7 Credit Point:

It is the product of grade point and number of credits for a course.

2.8 Cumulative Grade Point Average (CGPA):

It is a measure of overall cumulative performanceof a student over all semesters. The CGPA is the ratio of total credit points secured by a studentin various courses in all semesters and the sum of the total credits of all courses in all the semesters. It is expressed up to two decimal places.

2.9 Letter Grade:

It is an index of the performance of students in a said course. Grades are denotedby letters: O+, O, A+, A, B+, P, F.

2.10 Semester Grade Point Average (SGPA):

It is a measure of performance of work done in a semester. It is ratio of total credit points secured by a student in various courses registered in asemester and the total course credits taken during that semester. It shall be expressed up to twodecimal places.

2.11 Transcript or Grade Card or Certificate:

Based on the grades earned, a grade certificate shallbe issued to all the registered students after every semester. The grade certificate will display the course details (code, title, number of credits, grade secured) along with SGPA of that semester.

2.12 Core course:

a course that should compulsorily be studied by a candidate as a corerequirement is termed as a core course. This is the core requirement to complete the M.Sc. Trauma Care Management.

2.13 Skill Enhancement Course:

These courses are aimed at improving practical, professional &procedural knowledge requirement for carrying the highly skilled task related to the field of study.

2.14 Multidisciplinary Elective:

Generally, a course which can be chosen from a pool of coursesand which may be very specific or specialized or advanced or supportive to the discipline/subject of study or which provides an extended scope or which enables an exposureto some other discipline or subject or domain or nurtures the candidate's proficiency skill.

A candidate shall have the freedom to choose Multidisciplinary Elective courses during the academic duration of the particular PG programme offered by Yenepoya (deemed to be) University through the PG departments or SWAYAM/MOOC external online platforms or a mix of courses offered by Yenepoya(deemed to be) University and SWAYAM/MOOC as appropriate.

i. A candidate opting for SWAYAM/MOOC courses shall have the freedom to choose the courses of once own choice and complete such courses before appearing fourth Semester End Examination.

ii. A candidate shall compulsorily submit the pass certificate of each course successfully completed to the controller of examination of Yenepoya (deemed to be) University through theproper channel before appearing the fourth semester end examination.

iii. A candidate opting multidisciplinary elective courses offered by the Yenepoya (deemedto be) University through the PG departments need to take up these courses generally during second and third semesters of the programme.

iv. A candidate shall not take the courses offered by the department in which she/he is enrolled.

v. Registration for the multidisciplinary elective courses offered by the Yenepoya (deemed to be) University shall be at least one week prior to the commencement of the coursewith the CBCS coordinator. The CBCS unit shall notify the list of courses after being approvedby the respective BOS. For SWAYAM/MOOC courses shall be as per the enrollment notification by the respective implementation authorities.

Yenepoya (deemed to be) University shall adapt the regulations of UGC governing SWAYAM/MOOC courses as amended from time to time.

3. Eligibility for Admission

To be eligible for admission a candidate shall have obtained a bachelor degree (B.Sc. Trauma Care Management) from University established under law considered equivalent by theretoby Yenepoya (Deemed to be University). The candidate shall have obtained minimum of 50% aggregate of marks in all the years of University examination of degree course.

In case of SC/ST/OBC candidates the minimum marks shall be 45%.

4. Duration of the Programme

The duration of the programme shall extend over 4 semesters (2 academic years) of 15 weeks or more each with a minimum of 90 actual working days of instructions in each semester and 2 – 3 weeks of examinations. The successful completion will lead to Masters' degree in Trauma Care Management.

Semester

An academic year shall consist of two semesters.

Odd Semester 1st& 3rd	September/October to February/March
Even semester 2nd& 4th	March/April to August/September

5. Maximum period for completion of the program

A Candidate shall complete the four semesters (two years) programme within four years from the date of admission.

6. Aim of the Program

The Trauma Care Management programme aims to train students to deliver timely, safe, and effective pre-hospital and emergency care. The programme focuses on developing strong clinical skills, critical thinking, and decision-making abilities needed to assess, stabilize, and manage patients during medical, trauma, obstetrics, pediatric, neonatal, and disaster emergencies, while promoting teamwork, ethical practice, and effective communication to improve patient outcomes; participate in clinical research and innovation; and assume leadership, teaching, and supervisory roles in emergency medical services and Trauma units, academic institutions, and healthcare organizations

7. Outcomes of the Program

Program Outcomes:

Upon successful completion of the Masters' program, students gain knowledge in

student centered learning methods in providing basic to advances level of knowledge in all disciplines of emergency and trauma care, facilitate practical and clinical exposure for skill training and development key attitude for professional emergency care practice.

In particular they will:

PO 1: Enhance knowledge from clinical experience, interactions and discussions and research to improve the quality of training and education in Prehospital care. (K, C)

PO 2: Explore a specialized field in depth and develop high degree of expertise to contribute to advancement of knowledge in Emergency medicine. (K, A)

PO 3: Develop teaching and presentation skill necessary to become efficient teachers utilizing state-of-the art facilities (K,S,A)

PO 4: Build up leadership qualities in education, practice and administration
Expected skill to be acquired by the end of the programme: (K,S,A)

PO 5: Practice Prehospital management independently. (K,S,A)

PO 6: Become primary prehospital service provider. (K,S)

PO 7: Earn key posts in academic institutions including teaching, research and also in public health service (K,C,A)

1PO 8: At the end of the Program student should be able to demonstrate knowledge about emergency medical care services (K,S,C,A)

Program Structure:

	Broad category of course	Hours/Credits	Course (Title + Course Code)
1.	**Discipline-Specific Courses**		
a)	Theory	**I Semester**	
		45 Hours / 3 Credits	Pre-hospital Care Management
		45 Hours / 3 Credits	Musculoskeletal Trauma
		45 Hours / 3 Credits	Surgical Emergencies
		45 Hours / 3 Credits	Biostatistics & Research Methodology
		II Semester	
		45 Hours / 3 Credits	Essential Pharmacology in Emergency Medicine
		45 Hours / 3 Credits	Toxicology
		45 Hours / 3 Credits	Critical Care Management
		45 Hours / 3 Credits	Bioethics
		III Semester	
		45 Hours / 3 Credits	Obstetrics and Gynecological Emergencies
		45 Hours / 3 Credits	Pediatric Emergencies
		45 Hours / 3 Credits	Medical Emergencies
		45 Hours / 3 Credits	Health Care Management
		IV Semester	
		45 Hours / 3 Credits	Clinical Procedures in Emergency Medicine
		45 Hours / 3 Credits	Disaster Management
b)	Practical (SEC)*	**I Semester**	

		60 Hours / 2 Credits	Pre-hospital Care Management
		60 Hours / 2 Credits	Musculoskeletal Trauma
		60 Hours / 2 Credits	Surgical Emergencies
		II Semester	
		60 Hours / 2 Credits	Essential Pharmacology in Emergency Medicine
		60 Hours / 2 Credits	Toxicology
		60 Hours / 2 Credits	Critical Care Management
		III Semester	
		60 Hours / 2 Credits	Obstetrics and Gynecological Emergencies
		60 Hours / 2 Credits	Pediatric Emergencies
		60 Hours / 2 Credits	Medical Emergencies
		IV Semester	
		60 Hours / 2 Credits	Clinical Procedures in Emergency Medicine
c)	Clinical (SEC)*	90 Hours / 2 Credits	Emergency + ICUs + Ambulance
		90 Hours / 2 Credits	Emergency + ICUs + Ambulance
		90 Hours / 2 Credits	Emergency + ICUs + Ambulance
		180 Hours /4 Credits	Emergency + ICUs + Ambulance
2.	**Curriculum Enrichment Courses**		
a)	Research Project	12 Credits	Dissertation
3.	**Electives**		
a)	Interdisciplinary Courses	90 Hours / 6 Credits per year	Coursera/Swayam/NSS/Red cross
	Total	**90 Credits**	

8. Attendance

Each course (theory, practical, clinical etc.) shall be treated as an independent unit for the purpose of attendance. Candidates having minimum 80% attendance in each of the Courses can only qualify to appear for the Semester End Examination. The Candidates with less than 80% of attendance shall be required to repeat that Course by attending the semester.

There shall be no provision for condonation of shortage of attendance.

For SWAYAM/MOOC/NPTEL it shall be as per the regulations governing the courses of implementing authority.

The HOD/Course Coordinator, through the Dean of Faculties shall announce the names of the candidates who will not be eligible to take the Semester End-Examinations (SEE) in the various courses and send a copy of the same to the Controller of Examinations (COE) Office. Registrations of such candidates for those courses shall be treated as cancelled.

9. Syllabus/Course Contents

Semester – I

Course Title: Pre-hospital Care Management

Course: Core

Credits: 03 **Number of hours: 45**

Course Outcomes:

After Completing the Course:

- The student should able to explain the roles and responsibilities, communication and documentation in o Emergency Medical Services
- They Should also apply their fundamental knowledge to Assess, stabilize and manage the trauma patient

Course Content:

Unit	Hrs	Content	Must Know	Good to Know	Desirable to	Weightage	Type of Questions
Unit-I	5	**Preparatory** 1.1 EMS System 1.1.1 History of EMS 1.1.2 Levels of EMS Education 1.1.3 Roles and Responsibilities of EMS 1.2 Workforce safety and Wellness 1.2.1 Wellbeing of a Paramedic 1.2.2 Lifting and moving of patient	✓ ✓	✓ ✓ ✓		10%	LE, SE
		Patient Assessment 2.1 Primary Survey	✓			10%	LE, SE

Unit-II	4	2.2 History Taking 2.3 Secondary Assessment 2.4 Reassessment					
Unit-III	3	**EMS Communication** 3.1 Responding to Emergency Call 3.2 EMS Communication System	✓			5%	LE, SE
Unit-IV	3	**Documentation** 4.1 Legal Implications of PCR 4.2 Types and Completing of PCR	✓			5%	LE, SE
Unit-V	2	**Mechanism of Injury**	✓			5%	LE, SE
Unit-VI	3	**Head and Maxillofacial Injury**	✓			10%	LE, SE
Unit-VII	3	**Spinal Injury**	✓			10%	LE, SE
Unit - VIII	5	**Chest Injury** 8.1Deadly Dozen	✓			10%	LE, SE
Unit - IX	6	**Abdominal Injury** 9.1 Solid Organ Injury 9.1.1 Liver Injury 9.1.2Splenic Injury 9.1.3 Renal Injury 9.2 Hollow Viscus Injury 9.3 Evisceration	✓			10%	LE, SE
Unit-X	2	**Pelvic Injury**	✓			5%	LE, SE
Unit-XI	2	**Trauma in Pediatric**	✓			5%	LE, SE

Unit-XII	2	**Trauma in Pregnancy**	✓			5%	LE, SE
Unit-XIII	5	**Environmental Trauma** 9.1 Heat Related Injuries 9.2 Cold Injuries 9.3 Lightening Injury 9.4 Drowning 9.5 High-Altitude Illness	✓			10%	LE, SE

Recommended Books:

1. Nancy Caroline's Emergency Care in the Streets, 7th Edition
2. PHTLS Prehospital Trauma Life Support, 8th Edition
3. International Trauma Life Support for Emergency Care Provider, 8th Edition
4. ATLS Advanced Trauma Life Support Course Manual, 10th Edition

Course Title: Prehospital Care Management Practical

Course: Core

Credits: 02 **Number of hours: 60**

Course Outcomes:

After completing the course:

a. Knowledge on the skill in patient assessment and diagnosis of trauma patient
b. To understand clinical decision making and management of prehospital trauma

Course Content:

Unit	Hrs	Content	Must Know	Good to Know	Desirable to Know	Weightage	Type of Question
Unit-I	30	1.1 Primary Assessment 1.2 Secondary Assessment 1.3 Rapid Trauma Survey 1.4 Assessment and Management of Pediatrics trauma 1.5 Assessment and Management of Trauma in Pregnancy 1.6 Log roll 1.7 Spinal Motion Restriction Devices	✓			100%	

Recommend Books:

1. Nancy Caroline's Emergency Care in the Streets, 7th Edition
2. PHTLS Prehospital Trauma Life Support, 8th Edition
3. International Trauma Life Support for Emergency Care Provider, 8th Edition
4. ATLS Advanced Trauma Life Support Course Manual, 10th Edition

Course Title: Musculoskeletal Trauma

Course: Core

Credits: 03 **Number of hours: 45**

Course Outcome:

After Completing the Course:

a. The students should know the different types of musculoskeletal trauma
b. The students should also know how to manage different types of musculoskeletal trauma

Course Content:

Unit	Hrs	Content	Must Know	Good to Know	Desirable to Know	Weightage	Type of Question
Unit -I	4	**Introduction** 1.1 Fracture 1.2 Types of Fracture 1.3 Fracture Healing 1.4 Subluxation and Dislocation 1.5 Complications of Fracture	✓			10 %	LE, SE
Unit -II	5	**Injury Around the Shoulder** 2.1 Fracture of Clavicle 2.2 Injury to Acromioclavicular and Sternoclavicular joint 2.3 Shoulder Dislocation 2.4 Fracture of Scapula 2.5 Proximal Humerus Fracture	✓			10%	LE, SE

Unit -III	3	**Injury of the Arm** 3.1 Shaft of Humerus Fracture 3.2 Distal Humerus Fracture				5%	LE, SE
Unit -IV	5	**Injury Around the Elbow** 4.1 Supracondylar Fracture 4.2 Elbow Dislocation 4.3 Head of Radius Fracture 4.4 Olecranon Fracture	✓			5%	LE, SE
Unit -V	6	**Injury of the forearm** 5.1 Both bone Fracture of Forearm 5.2 Monteggia's Fracture 5.3 Galeazzi's Fracture 5.4 Smith Fracture 5.5 Barton Fracture	✓			10%	LE, SE
Unit -VI	3	**Injury to the Wrist and Hand**	✓			5%	LE, SE
Unit -VII	4	**Dislocation and Fracture Dislocation of Hip** 7.1 Hip Fracture 7.2 Hip Dislocation 7.3 Head of Femur Fracture	✓			10%	LE, SE
Unit - VIII	4	**Fracture Femur** 8.1 Proximal Femur Fracture 8.2 Shaft of Femur Fracture 8.3 Distal Femur/Supracondylar Fracture	✓			10%	LE, SE
Unit -IX	3	**Injury to Knee** 9.1 Patella Fracture	✓			5%	LE, SE

		9.2 Knee Dislocation					
Unit -X	2	**Tibia Fibula** 10.1Facture of Tibia and Fibula 10.2Proximal, Distal and Open Tibia Fracture	✓			10%	LE, SE
Unit -XI	2	**Injury to the Ankle** 11.1 Ankle Injury and Sprain 11.2 Achilles Tendon Injury	✓			10%	LE, SE
Unit -XII	2	**Unit – XII Foot Injury**	✓			5%	LE, SE
Unit - XIII	2	**Unit – XIII Crush Injury and Amputation**	✓			5%	LE, SE

Recommended Books:

1. Text Book of Orthopaedics, 5th Edition, John Ebnezar
2. Apley's System of orthopaedics and Fracture, Louis Solomon
   Nancy Caroline's Emergency Care in Streets, 8th Edition

Course Title: Musculoskeletal Trauma Practical

Course: Core

Credits: 02 **Number of hours: 60**

Course Outcome:

After Completing the course:

a. The students should Know on radiological imaging and their angles in musculoskeletal trauma
b. To Understand clinical decision making and management of orthopedic trauma

Course Content:

Unit	Hrs	Content	Must Know	Good to Know	Desirable to Know	Weightage	Type of Question
Unit-I	30	1.1 Orthopedics X – Rays 1.2 Splints 1.3 Splinting Techniques 1.4 Plaster of Paris 1.5 Pelvic Binder 1.6 Slings 1.7 Bleeding Control	✓			100%	

Recommended Books:

1. Text Book of Orthopaedics, 5th Edition, John Ebnezar
2. Apley's System of orthopaedics and Fracture, Louis Solomon
3. Nancy Caroline's Emergency Care in Streets, 8th Edition

Course Title: Emergency Surgery

Course: Core

Credits: 03 **Number of hours: 45**

Course Outcomes:

After Completing the Course:

a. The student should able to explain the causes, pathophysiology, differential diagnosis and diagnosis of surgical emergencies
b. They Should also apply their fundamental knowledge to Assess, and manage the surgical emergencies

Course Content:

Unit	Hrs	Content	Must Know	Good to Know	Desirable to Know	Weightage	Type of Question
Unit-I	8	**Principles of Anaesthesia** 1.1 Pre-anaesthetic Assessment 1.2 Airway Management 1.3 General Anaesthesia 1.4 Local Anaesthesia 1.5 Regional Anaesthesia	✓			20%	LE, SE
Unit-II	8	**Wounds** 2.1 Types of wounds and Tetanus 2.2 wound management 2.3 Wound healing 2.4 Crush Injury 2.5 Suturing 2.6 Gas gangrene	✓			20%	LE, SE

Unit-III	2	**Burns** 3.1 Types of burns, Degrees of burns, Classification, clinical manifestations andmanagement of burns	✓			10%	LE, SE
Unit-IV	20	**Abdomen and GI Emergencies** 4.1 Acute Abdominal Pain 4.2 Oesophageal Emergencies 4.2.1 Gastro Oesophageal Reflex Disease 4.2.2 Oesophageal obstruction (Fish bone and Button Battery Ingestion) 4.3 GI Bleeding 4.3.1 Upper GI Bleeding 4.3.2 Lower GI Bleeding 4.4 Stomach and duodenum 4.4.1 Peptic ulcer disease 4.4.2 Duodenal ulcer 4.5 Abdominal Aortic Aneurysm 4.6 Appendicitis 4.7 Pancreatitis 4.8 Cholecystitis 4.9 Intestinal obstruction 4.10 Intestinal perforation 4.11 Hernia	✓			30%	LE, SE
	4	**Genitourinary system** 5.1 Renal Colic 5.2 Ureteric colic 5.3 Torsion of testis	✓			10%	LE, SE

Unit-V							
Unit-VI	3	**Anorectal Disorder** 6.1 Rectal Prolapse 6.2 Hemorrhoids	✓			10%	LE, SE

Recommended Books

1. Manipal Manual of Surgery, 5th Edition, K Rajagopal Shenoy
2. SRB Manual of Surgery, 6th Edition, Sriram Bhat M
3. Tintinalli's Emergency Medicine, 8th Edition

Course Title: Emergency Surgery Practical

Course: Core

Credits: 02 **Number of hours: 60**

Course Outcomes:

After completing the course:

a. The students should the indication, contraindications of surgical procedures

b. To understand the clinical importance and complications of surgical procedures during emergency

Course Content:

Unit	Hrs	Content	Must Know	Good to K	Desirable to Know	Weightage	Type of Question
Unit-I	30	1.1 Suturing 1.2 Tracheostomy 1.3 Surgical Cricothyroidotomy 1.4 Needle Cricothyroidotomy 1.5 Needle Thoracocentesis 1.6 Intercoastal Drainage	✓			100%	

Recommended Books

1. Manipal Manual of Surgery, 5th Edition, K Rajagopal Shenoy
2. SRB Manual of Surgery, 6th Edition, Sriram Bhat M
3. Tintinalli's Emergency Medicine, 8th Edition
4. Clinical Procedures in Emergency Medicine, Roberts and Hedges

Course Title: Research Methodology & Biostatistics

Course: Core

Credits: 3 **No. of Hours: 45**

Course Outcome:

At the end of the Course, the students will

a. have knowledge of process involved in Biomedical research from formulation to publication.
b. Be able to draft a research proposal.

Course Content

Unit	Hrs	Content	Must Know	Good to Know	Desirable to Know	Weightage	Type of Question
Unit I	2 hours	**1. Introduction** 1.1 Need for research	✓			10%	SE
		1.2 Types of research	✓				
		1.3 Outlining the research process	✓				
Unit II	2 hours	**2. Review of Literature** 2.1 Importance, sources & steps	✓			10%	SE
		2.2 Critical appraisal of research article	✓				
Unit III	2 hours	**3. Research Design** 3.1 Types of research – Qualitative & Quantitative	✓			10%	LE,SE

		3.2 Experimental & Non Experimental, Survey – advantages & disadvantages	✓				
Unit IV	**2 hours**	**4. Research Process** 4.1 Framing a research question	✓			15%	**LE,SE**
		4.2 Research title	✓				
		4.3 Aim & Objectives, Assumptions, Limitations & Delimitations, Variables	✓				
		4.4 Hypothesis – formation & testing	✓				
Unit V	**2 hours**	**5. Data collection & analysis** 5.1 Data sources, technique of data collection, tools	✓			20%	**LE,SE**
		5.2 Reliability & validity	✓				
		5.3 Process of data collection	✓				
		5.4 Pilot study – method, need	✓				
Unit VI	**2 hours**	6. **Interpretation & presentation of data** 6.1 Qualitative & quantitative analysis	✓			15%	**LE,SE**
		6.2 Graphical representation of data	✓				
		6.3 Conclusion & discussion	✓				

Unit VII	**2 hours**	7. **Discussion, Conclusionand References**	✓			10%	**SE**
Unit VIII	**2 hours**	8. **Essentials of writing a research paper along with process of publication**	✓			10%	**LE**

Biostatistics

Course Outcome:

At the end of the Course, the students will be able to

a. Able to distinguish different data types, variables and scales of measurement
b. Able to organize, tabulate and present data through tables and graphs. Compute and interpret descriptive statistics
c. Able to compute and interpret sensitivity, specificity, PPV, NPV and ROC Analysis.
d. Able to determine sample size and use of random sampling methods.
e. Able to interpret Power of a test, Level of significance, p value and confidence interval. Use of t-test, ANOVA and m3ultiple comparison.
f. To interpret the commonly used parametric and nonparametric tests and how to report the findings.
g. Carryout correlation analysis and interpret the results
h. Perform regression analysis and draw conclusions of the analysis. Use the regression model for predictions.

Course Content:

Unit	Hrs	Content	Must Know	Good to Know	Desirable to Know	Weightage	Type of Question
Unit I	**6 hours**	**1. Introduction** 1.1 Introduction to biostatistics &research methodology, types of variables & scales of measurements, measure of central tendency & dispersion, rate, ratio, proportion, incidence & prevalence	✓			5%	**LE,SE**
Unit II	**3 hours**	2. **Sampling** 2.1 Population & Sample, Sampling and non-sampling errors and methods of minimizing these errors, Random and non-random sampling, different sampling techniques – simple random, stratified, systematic, cluster& multistage.	✓			10%	**LE,SE**

Unit III	**3 hours**	3. **Sampling distributions** 3.1 Parameter and Statistic. Standard error. Basic probability distributions - Normal, poisson, binomial distributions with their applications in biological sciences.	✓			5%	**SE**
Unit IV	**6 hours**	**4. Tests of significance** 4.1 Basics if testing of hypothesis – Null & Alternative hypothesis, type 1 and type II errors, level of significance (parametric) & power of the tests, p value, Confidence interval. Tests of significance – T test (paired &UN paired), Chi square test & Test of proportion, One way analysis of variance. Repeated measures analysis of variance. Tests of significance (non-parametric) – Mann – Whitney U Test, Wilcoxon Test, Kruskal – Wallis Analysis of variance, Friedmann's Analysis of variance	✓			15%	**LE,SE**

Unit V	**3 hours**	**5. Correlation and regression** 5.1 Linear correlation by Karl Pearson and rank order correlation due to Spearman, Testing the significance of correlation co efficient, simple linear regression – estimation & testing, residual plots, multiple linear regression.	✓			15%	**LE**
Unit VI	**2 hours**	**6. Sample size determination** **6.1** General concept. Sample size for estimating means and proportion, testing of difference in means and proportions of two groups.	✓			5%	**SE**
Unit VII	**2 hours**	**7. Study designs** 7.1 Epidemiological methods – case series analysis and prevalence studies. Analytical epidemiological methods – case control and cohort studies. Clinical trials / intervention studies, odds ratio and relative risk, stratified analysis	✓			10%	**SE**

Unit VIII	**2 hours**	**8. Multivariate analysis** 8.1 Concept of multivariate analysis, introduction to logistic regression and survival analysis	✓			15%	**LE,SE**
Unit IX	**1 hours**	**9. Reliability and validity of diagnostic tests** 9.1 Sensitivity, Specificity, Positive Predictive Value (PPV), Negative Predictive Value (NPV), ROC curve.	✓			10%	**LE,SE**
Unit X	**1 hours**	**10. Format of scientific documentations** 10.1 Structure of research protocols, structure of thesis/research report, formats of reporting in scientific journals. Systematic review and meta-analysis.	✓			10%	**LE,SE**

Recommended Books:

- Rao NSN: Applied statistics in health sciences, JP publishers
- Mahajan B.K: Methods of biostatistics, Kothari book depot, A.D Marg, Bombay
- Potti L.R: A text book of statistics, Yamuna publications, Sreekanteshwaram,
- Trivandrum.
- Lancaster H.O: Introduction to medical statistics, Johnwiley & sons, New York.
- Leius A.E: Biostatistics, Reinhold publishing Co, New York.
- Cotton T: Statistics in medicine, Little Brown & Co, Boston.
- Hill A.B: Principles of medical statistics, Oxford University press, New York

II Semester

Course Title: Essential Pharmacology in Emergency Medicine

Course: Core

Credits: 03 **Number of hours: 45**

Course Outcomes:

After Completing the course:

- The students should know the indication, contraindication, pharmacological action,
- Dosage and route of administration of drugs used in emergency situations

Course Content:

Unit	Hrs	Content	Must Know	Good to Know	Desirable to Know	Weightage	Types of questions
Unit-I	3	**Introduction to Pharmacology** 1.1 Routes of Drug Administration 1.2 Pharmacokinetics 1.3 Pharmacodynamics 1.4 Drug Dosage calculation	✓			10%	LE, SE
Unit-II	5	**Drugs Acting on Autonomic Nervous System** 2.1 Sympathomimetics 2.2 Sympatholytic 2.3 Para sympathomimetics 2.4 Parasympatholytic	✓			10%	LE, SE
		Drugs Affecting Cardiovascular Function 3.1 Antihypertensive Drugs				20%	LE, SE

Unit-III	8	3.2 Antianginal Drugs 3.3 Antiarrhythmics Drugs 3.4 Cardiac Glycosides and Drugs for Heart Failure 3.5 Plasma Volume Expanders	✓				
Unit-IV	2	**Drugs Acting on Respiratory System** 4.1 Drugs for Cough and Bronchial Asthma	✓			10%	LE, SE
Unit-V	4	**Drugs Used in the Treatment of Gastrointestinal Disease** 5.1 Drugs for Peptic Ulcer Disease 5.2 Emetics and Anti-Emetics 5.3 Antidiarrheal Drugs	✓			5%	LE, SE
Unit-VI	2	**Drugs acting on Renal System** 6.1 Diuretics and Antidiuretics	✓			5%	LE, SE
Unit-VII	8	**Drugs acting on Central Nervous System** 7.1 General Anesthesia 7.2 Local Anesthesia 7.3 Sedatives and Hypnotics 7.4 Opioid Analgesics 7.5 CNS Stimulants 7.6 Anticonvulsants	✓			15%	LE, SE
Unit-VIII	4	**Autocoids and Related Drugs** 8.1 Histamines and Anti-Histamines 8.2 NSAIDs	✓			5%	LE, SE
Unit-IX	5	**Hormones and Related Drugs**					

		9.1 Insulin, Oral Antihyperglycemic Drugs and Glucagon 9.2 Corticosteroids 9.3 Oxytocin	✓			10%	LE, SE
Unit-X	4	**Antimicrobial Drugs** 10.1Beta-Lactam Antibiotics 10.2Antiviral 10.3Antifungal	✓			10%	LE, SE

Recommended Books:

- Essentials of Medical Pharmacology, K.D. Tripathi – 8th Edition
- Pharmacology for Medical Graduates, Tara V Shanbhag – 4th Edition
- Nancy Caroline's Emergency Care in the Street, 8th Edition

Course Title: Essential Pharmacology in Emergency Medicine Practical

Course: Core

Credits: 02 **Number of hours: 60**

Course Outcomes:

After Completing the course

a. The students should know the indication, contraindication, pharmacological action, dosage and route of administration of drugs used in emergency situations

Course Content:

Unit	Hrs	Content	Must Know	Good to Know	Desirable to Know	Weightage	Types of questions
Unit -I	30	1.1 Identification, Indication, Contraindications, dosage of Emergency Drugs 1.2 Drugs Dosage Calculation	✓			100%	

Recommended Books:

- Essentials of Medical Pharmacology, K.D. Tripathi – 8th Edition
- Pharmacology for Medical Graduates, Tara V Shanbhag – 4th Edition
- Nancy Caroline's Emergency Care in the Street, 8th Edition

Course Title: Toxicology

Course: Core

Credits: 03 **Number of hours: 45**

Course Outcomes:

After Completing the course:

a. The students should know toxidromes and the general management of poisoning patient
b. They should apply the fundamental knowledge to assess and manage the specific toxicities
c. Should gain knowledge on different types of bites and stings and their management

Course Content:

Unit	Hrs	Content	Must Know	Good to	Desirable to Know	Weightage	Types of questions
Unit -I	6	**General Approach to Medical Toxicology** 1.1 Route of Exposure 1.2 Toxidromes 1.3 Initial Evaluation of the patient – Vital Signs 1.4 Principles of Managing Acutely Poisoned or Overdose Patient	✓			10%	LE, SE
Unit -II	4	**Analgesics and Anti-Inflammatory Medication** 2.1 Paracetamol/Acetaminophen 2.2 NSAIDs 2.3 Salicylates	✓			10%	LE, SE
Unit -III	8	**Central Nervous System Medication** 3.1 Opioids 3.2 Benzodiazepines 3.3 Barbiturates	✓			15%	LE, SE

		3.4 Tricyclic Antidepressants 3.5 Cocaine and Amphetamines 3.6 Alcohol					
Unit -IV	4	**Cardiovascular System Toxicity** 4.1 Betablockers 4.2 Calcium Channel Blockers 4.3 Digoxin	✓			10%	LE, SE
Unit -V	8	**Household Toxin** 5.1 Organophosphate 5.2 Hydrocarbon Toxicity 5.3 Disinfectants 5.4 Camphor 5.5 Caustic Substance	✓			15%	LE, SE
Unit -VI	3	**Heavy Metals** 6.1 Iron Toxicity 6.2 Arsenic	✓			10%	LE, SE
Unit -VII	4	**Occupational and Environmental Toxins** 7.1 Carbon monoxide 7.2 Cyanide 7.3 Smoke inhalation	✓			10%	LE, SE
Unit - VIII	8	**Envenomation, Bites and Stings** 8.1 Snake Bite 8.2 Scorpion Sting 8.3 Spider bite 8.4 Bee and Wasp Sting 8.5 Dog Bite 8.6 Human Bite	✓			20%	LE, SE

Recomended Books:

- Gold frank's Toxicologic Emergencies, 9th Edition, Lewis S. Nelson, Neal A. Lewis
- Haddad and Winchester's Clinical Management of Poisoning and Overdose, 4th Edition, Machael W. Shannon
- Text Book of Forensic Medicine and Toxicology, 18th Edition, V.V. Pillay
- Tintinalli's Emergency Medicine, 8th Edition

Course Title: Toxicology Practical

Course: Core

Credits: 02 **Number of hours: 60**

Course Outcomes:

After Completing the course:

a. The students should know toxidromes and the general management of poisoning patient
b. They should apply the fundamental knowledge to assess and manage the specific toxicities
c. Should gain knowledge on different types of bites and stings and their management

Course Content:

Unit	Hrs	Content	Must Know	Good to Know	Desirable to Know	Weigh tage	Types of questions
Unit -I	30	1.1 Identify the toxidromes and class of toxicity 1.2 Management of poisoning and Overdose 1.3 Management Venom bites and stings	✓			100%	

Recommended Books:

- Gold frank's Toxicologic Emergencies, 9th Edition, Lewis S. Nelson, Neal A. Lewis
- Haddad and Winchester's Clinical Management of Poisoning and Overdose, 4th Edition, Machael W. Shannon
- Text Book of Forensic Medicine and Toxicology, 18th Edition, V.V. Pillay
- Tintinalli's Emergency Medicine, 8th Edition

Course Title: Critical Care Management

Course: Core

Credits: 03 **Number of hours: 45**

Course Outcomes:

After Completing the Course:

a. The students should know the basic principles and ethics of critical care
b. They also should know management of critical ill patient in intensive care unit

Course Content:

Unit	Hrs	Content	Must Know	Good to Know	Desirable to Know	Weightage	Types of questions
Unit-I	5	**An Introduction to Critical Care** 1.1 Principles and Ethics of Critical Care 1.2 Critical Care Scorings 1.2.1 Glascow Coma Scale 1.2.2 Trauma Scoring and Revised Trauma Score 1.2.3 CRAMS Score 1.2.4 Injury Severity Score 1.2.5 APACHE II Score 1.2.6 Sequential Organ Failure Assessment 1.2.7 Multi Organ Dysfunction score	✓			20%	LE, SE
Unit-II	5	**Imaging in the Critical Care Unit** 2.1 X – Ray 2.1.1 Chest X – Ray 2.1.2 Abdominal X – Ray 2.2 Neurological Imaging 2.2.1 Computer Tomography 2.2.2 Magnetic Resource Imaging	✓			15%	LE, SE

Unit-III	3	**Mechanical Ventilation in the Critical Care** 3.1 Mechanical Ventilation in CCU 3.2 Weaning from Ventilatory Support	✓			15%	LE, SE
Unit-IV	5	**Pain Management in ICU** 4.1 Pain Management 4.2 Patient Controlled Anaesthesia 4.3 Anaesthesia in ICU 4.4 Sedation for Anxiety and Agitation 4.5 Muscle Relaxant	✓			10%	LE, SE
Unit-V	10	**Electrolyte and Acid Base Disorders** 5.1 Disorder of Sodium Balance 5.2 Disorder of Potassium Balance 5.3 Disorder of Calcium and Phosphorus Balance 5.4 Disorder of Magnesium Balance 5.5 Metabolic Acidosis 5.6 Metabolic Alkalosis 5.7 Respiratory Acidosis 5.8 Respiratory Alkalosis	✓			10%	LE, SE
Unit-VI	2	**Transfusion Therapy** 6.1 Blood Transfusion	✓			10%	LE, SE
Unit-VII	4	**Nutritional Support** 7.1 Nutritional Assessment 7.2 Eternal Nutrition 7.3 Parenteral Nutrition		✓		5%	LE, SE

Unit - VIII	6	**Infectious Disease in Critical Care** 8.1 Methicillin Resistance Staphylococcus Aureus 8.2 Vancomycin Resistance Enterococci Colonization and Infection in ICU 8.3 Evaluation of Fever in ICU 8.4 Ventilator Associated Pneumonia 8.5 Nosocomial Pneumonia 8.6 Urosepsis		✓		10%	LE, SE
Unit -IX	5	**Infection Control in Critical Care** 9.1 Infection Prevention and Control 9.2 Bio Medical Waste Management 9.3 Disinfection 9.4 Sterilization	✓			5%	LE, SE

Recommended Books:

- Marino's The ICU Book, 4th Edition, Paul L. Marino
- Principles of Critical Care, 3rd Edition, Farokh Erach Udwadia
- Text Book of Critical Care, 8th Edition, Jean-Louis Vincent
- Critical Care Medicine the Essentials and More, 5th Edition, John J. Marini

Critical Care Management Practical

Course: Core

Credits: 02 **Number of hours: 60**

Course Outcomes:

After Completing the course:

a. The student should know the basic investigations and their interpretation for intensive care patients
b. The students should know the infection prevention measure in critical care

Course Content:

Unit	Hrs	Content	Must Know	Good to Know	Desirable to Know	Weightage	Types of questions
Unit-I	30	1.1 Arterial Blood Gas Assessment 1.2 Chest and Abdominal X-rays 1.3 Computed Tomography Scan 1.4 Magnetic Resonance Imaging Scan 1.5 Hand Washing Techniques 1.6 Personal Protective Equipment	✓			100%	

Recommended Books:

1. Marino's The ICU Book, 4th Edition, Paul L. Marino
2. Principles of Critical Care, 3rd Edition, Farokh Erach Udwadia
3. Text Book of Critical Care, 8th Edition, Jean-Louis Vincent
4. Critical Care Medicine the Essentials and More, 5th Edition, John J. Marini

Course Title: Bioethics

Course: Core

Credits: 3 **Number of Hours: 45**

Course Outcomes:

a. Locate the importance of bioethics in health care and research
b. Understand the ethical principles and theories
c. Identify ethical issues in healthcare setting and their possible solutions
d. Analyze the ethical issues in specific clinical settings
e. Apply ethical principles in clinical research
f. Locate the importance of healthcare provider- patient relationship

Course Content:

Unit	Hrs	Content	Must Know	Good to Know	Desirable to Know	Weightage	Type of Question
Unit -I	5	**Introduction to bioethics** 1.1 Definition and scope of bioethics 1.2 History of bioethics 1.3 Codes of ethics	✓			10 %	LE, SE
Unit -II	4	**Ethical principles and theories** 2.1 The ethical principles 2.2 Ethical theories and their 2.3 Application of ethical theories and principles in healthcare	✓			30 %	LE, SE
	3	**Ethics in healthcare** 3.1 Consent 3.2 Risk: benefit analysis				20 %	LE, SE

Unit -III		3.3 Distributive justice 3.4 Privacy and confidentiality 3.5 Stigma and discrimination 3.6 Health technology assessment 3.7 Public health ethics	✓				
Unit -IV	15	**Specific ethical issues in healthcare** 4.1 End of life care and euthanasia 4.2 Artificial reproductive techniques 4.3 Medical termination of pregnancy 4.4 Pre-natal sex determination 4.5 Organ donation 4.6 Medical errors and truth telling 4.7 Medical negligence and malpractice	✓			10 %	SE
Unit -V	10	**Research ethics** 5.1 Research ethics principles 5.2 Informed consent 5.3 Vulnerability in research 5.4 Responsible conduct of research 5.5 Publication ethics	✓			30 %	LE, SE

Recommended Books:

- English DC. Bioethics a Clinical Guide for Medical Students.
- Tayaoe M.C.Textbook of Medical Bioethics, Attitude and Communication for Medical Students; 2016 Feb 28
- Princy Louis Palatty. A Textbook of Bioethics for Healthcare Professionals 1st Edition; 2018

III Semester

Course Title: Obstetrics and Gynecological Emergencies

Course: Core Course

Credits: 03 **Number of hours: 45**

Course Outcomes:

After Completing the Course:

a. The student should know to assess, diagnose and manage obstetrical emergencies

Course Content:

Unit	Hrs	Content	Must Know	Good to Know	Desirable to Know	Weightage	Types of questions
Unit-I	3	**General Gynecology** 1.1 Anatomy of female reproductive system 1.2 Fundamentals of reproductions 1.3 Menstrual cycle 1.4 Anatomical and physiological changes during pregnancy	✓			10%	LE, SE
Unit-II	3	**Diagnosis of Pregnancy** 2.1 First Trimester 2.2 Second Trimester 2.3 Third Trimester 2.4 Differential Diagnosis of pregnancy	✓			10%	LE, SE

Unit-III	2	**Antenatal Assessment** 3.1 Antenatal care 3.2 Antenatal assessment of fetal wellbeing	✓			5%	LE, SE
Unit-IV	2	**Vomiting in pregnancy** 4.1 Hyperemesis gravidarum	✓			5%	LE, SE
Unit-V	2	**Haemorrhage in Early Pregnancy** 5.1 Abortion 5.2 Ectopic pregnancy	✓			5%	LE, SE
Unit-VI	5	**Hypertensive Disorders in Pregnancy** 6.1 Gestational hypertension 6.2 Essential hypertension 6.3 Preeclampsia 6.4 Eclampsia	✓			5%	LE, SE
Unit-VII	2	**Antepartum Haemorrhage** 7.1 Placenta Previa 7.2 Abruptio placenta	✓			5%	LE, SE
Unit - VIII	3	**Medical Illness Complicating Pregnancy** 8.1 Anaemia in pregnancy 8.2 Infectious diseases in pregnancy (TORCH INFECTION)		✓		10%	LE, SE
Unit –IX	2	**Normal Labor** 9.1 Stages of Normal Labor 9.2 Mechanism of Normal Labour	✓			10%	LE, SE
Unit-X		**Operative Obstetrics** 10.1 Lower Segment Caesarean Section	✓			5%	LE, SE

	3	10.2 Perimortem Caesarean Section					
Unit-XI	8	**Complicated Pregnancy** 11.1 Malposition and Malpresentation 11.1.1 Breech presentation 11.1.2 Face Presentation 11.1.3 Transverse lie 11.2 Cord Prolapse 11.3 Preterm Labor 11.4 Prolonged Labor 11.5 Obstructed Labor 11.6 Shoulder Dystocia 11.7 Premature Rupture of Membrane	✓			10%	LE, SE
Unit-XII	4	**Complication of Third Stage of Labor** 12.1 Post partum Haemorrhage 12.2 Retained Placenta 12.3 Inversions of the Uterus	✓			5%	LE, SE
Unit-XIII	3	**Resuscitation** 13.1 Trauma in Pregnancy 13.2 Perimortem Cardiac Arrest	✓			10%	LE, SE
Unit XIV	3	**Pharmacotherapeutics in Obstetrics** 14.1 Oxytocin 14.2Drugs used in PPH 14.3 Drugs used in Pre-eclampsia and eclampsia	✓			5%	LE, SE

Recommended Books:

- DC Dutta's Text Book of Obstetrics, 10th Edition

- Mudaliar and Menon's Clinical Obstetrics, 13th Edition
- Tintinalli's Emergency Medicine, 8th Edition

Course Title: Obstetrics and Gynecological Emergencies Practical

Course: Core

Credits: 02 **Number of hours: 60**

Course Outcomes:

After Completing the Course:

a. The student should know to collect history from pregnant women and treat the life-threatening emergencies
b. To know how to conducted normal deliver

Course Content:

Unit	Hrs	Content	Must Know	Good to Know	Desirable to Know	Weightage	Types of questions
Unit-I	30	1.1 History Taking and Assessment of Pregnant Women 1.2 Treating Life Threatening Emergencies during Pregnancy 1.3 Conduction of Normal Delivery	✓			100%	

Recommended Books:

- DC Dutta's Text Book of Obstetrics, 10th Edition
- Mudaliar and Menon's Clinical Obstetrics, 13th Edition
- Tintinalli's Emergency Medicine, 8th Edition

Course Title: Paediatric Emergencies

Course: Core

Credits: 03 **Number of hours: 45**

Course Outcomes:

After Completing the Course:

a. The student must know developmental changes in paediatrics
b. They should know to identify, assess and treat paediatric emergencies
c. Student must know to resuscitate the neonates and paediatrics

Couse Content:

Unit	Hrs	Content	Must Know	Good to Know	Desirable to Know	Weightage	Types of questions
Unit-I	5	**Introduction to Paediatrics** 1.1 Developmental Milestones 1.2 Anthropometry 1.3 Immunization 1.4 Comparative anatomy (difference between paediatric and adult airway)	✓			10%	LE, SE
Unit-II	5	**Birthing Emergencies** 2.1 Asphyxia neonatorum 2.2 Meconium Aspiration Syndrome 2.3 Preterm baby 2.4 Shoulder Dystocia	✓			10%	LE, SE
Unit-III	5	**Respiratory Emergencies** 3.1 Croup 3.2 Asthma 3.3 Pneumonia 3.4 Bronchiolitis	✓			10%	LE, SE

Unit-IV	5	**Infectious Disease** 4.1 Chicken pox 4.2 Measles, Mumps, Rubella 4.3 Diarrhoea 4.4 Fever	✓			10%	LE, SE
Unit-V	2	**Neurological Emergencies** 5.1 Seizures 5.2 Meningitis 5.3 Encephalitis	✓			10%	LE, SE
Unit-VI	3	**Cardiological Emergencies** 6.1 Shock 6.2 Arrythmias	✓			10%	LE, SE
Unit-VII	5	**Fluid and Electrolyte Disturbances** 7.1 Fluid therapy in Paediatrics 7.2 Diabetic Keto Acidosis 7.3 Hypoglycaemia 7.4 Dehydration	✓			10%	LE, SE
Unit - VIII	10	**Special Situations** 8.1 Sudden Infant Death Syndrome 8.2 Apnoea 8.3 Acidosis 8.4 Burns in paediatric 8.5 Drowning 8.6 Hypothermia 8.7 Diaphragmatic Hernia 8.8 Neonatal Jaundice 8.9 Child Abuse	✓			15%	LE, SE
Unit -IX		**Resuscitation**				15%	LE, SE

	5	9.1 Assessment of Neonates and Paediatrics 9.2 Neonatal Resuscitation Program (NRP) 9.3 Paediatric Advanced Life Support (PALS) 9.4 Assessment and Management of Injured Child	✓				

Recommended Book:

- Essential Pediatrics, 9th Edition, O.P Ghai, Vinod K Paul
- IAP Textbook of Pediatrics, 5th Edition, A Parthasarathy
- Text Book of Pediatric Emergency Medicine, 7th Edition, Fleisher and Ludwing
- Tintinalli's emergency Medicine, 8th Edition

Course Title: Paediatric Emergencies Practical

Course: Core

Credits: 02 **Number of hours: 60**

Course Outcomes:

After Completing the Course

a. The student should know to assess and collect history for pediatrics patients

b. To identify, assess and resuscitate the neonates and pediatrics

Course Content:

Unit	Hrs	Content	Must Know	Good to Know	Desirable to Know	Weightage	Types of questions
Unit-I	30	1.1 History taking, Examination and presentation of Pediatric Case 1.2 Pediatric Advance Life Support 1.3 Neonatal Resuscitation 1.4 Management of Trauma in Paediatrics	✓			100%	

Recommended Book:

- Essential Pediatrics, 9th Edition, O.P Ghai, Vinod K Paul
- IAP Textbook of Pediatrics, 5th Edition, A Parthasarathy
- Text Book of Pediatric Emergency Medicine, 7th Edition, Fleisher and Ludwing
- Tintinalli's emergency Medicine, 8th Edition

Course Title: Medical Emergencies

Course: Core

Credits: 03 **Number of hours: 45**

Course Outcomes:

After Completing the course

- The student should know the types of shock and their management
- To know the to identify, assess and manage life-threatening medical emergencies

Course Content:

Unit	Hrs	Content	Must Know	Good to Know	Desirable to Know	Weightage	Types of questions
Unit-I	4	**Shock and Types of shock** 1.1 Hypovolemic Shock 1.2 Cardiogenic Shock 1.3 Obstructive Shock 1.4 Distributive Shock	✓			10%	LE, SE
Unit-II	6	**Respiratory Emergencies** 2.1 Acute Bronchial Asthma 2.2 Chronic Obstructive Pulmonary Disease 2.3 Acute Respiratory Distress Syndrome 2.4 Pneumonia 2.5 Pulmonary Oedema 2.6 Haemoptysis	✓			15%	LE, SE
Unit-III	5	**Cardiovascular Emergencies** 3.1 Acute Coronary Syndrome/Myocardial Infraction 3.2 Hypertensive Disorders 3.3 Heart Failure 3.4 Cardiomyopathies 3.5 Arrhythmias	✓			15%	LE, SE

Unit-IV	5	**Gastrointestinal Emergencies** 4.1 Acute Abdominal Pain 4.2 Peptic Ulcer Disease 4.3 Gastrointestinal Bleeding 4.4 Peritonitis 4.5 Diarrhoea	✓			10%	LE, SE
Unit-V	8	**Neurological Emergencies** 5.1 Seizures/Epilepsy 5.2 Meningitis 5.3 Stroke 5.4 Syncope 5.5 Altered Mental Status / Unconsciousness 5.6 Guillain Barre Syndrome 5.7 Myasthenia Gravis	✓			15%	LE, SE
Unit-VI	4	**Genitourinary Emergencies** 6.1 Renal Failure 6.2 Urinary Tract Infection 6.3 Haematuria	✓			10%	LE, SE
Unit-VII	6	**Infectious Diseases** 7.1 Sepsis 7.2 Toxic shock Syndrome 7.3 Sexually Transmitted Disease 7.4 Malaria 7.5 Typhoid Fever 7.6 Dengue Fever	✓			10%	LE, SE
Unit - VIII	4	**Endocrine Disorders** 8.1 Diabetic Ketoacidosis 8.2 Adrenal Insufficiency 8.3 Thyroid Disorders	✓			10%	LE, SE
Unit -IX	3	**Haematological Disorder** 9.1 Anaemia	✓			5%	LE, SE

		9.2 Clotting Disorder					

Recommended Books:

- Manipal Pre Manual of Medicine, 3rd Edition, Manthappa M
- Tintinalli's Emergency Medicine, 8th Edition
- Davidson's Principles and Practice of Medicine 23rd Edition, Stuart H. Ralston
- Rosen's Emergency Medicine, 10th Edition, Ron m. Walls

Course Title: Medical Emergencies Practical

Course: Core

Credits: 02 **Number of hours: 60**

Course Outcomes:

After Completing the Course:

- The student must know to interpretate the life-threatening changes in electrocardiogram
- They must know the Steps in basic and advanced cardiac life support

Course Content:

Unit	Hrs	Content	Must Know	Good to Know	Desirable to Know	Weightage	Types of questions
Unit-I	30	1.1 Electro Cardiogram 1.2 Basic Life Support 1.3 Advanced Cardiac Life Support	✓			100%	

Recommended Books:

- Manipal Pre Manual of Medicine, 3rd Edition, Manthappa M
- Tintinalli's Emergency Medicine, 8th Edition
- Davidson's Principles and Practice of Medicine 23rd Edition, Stuart H. Ralston
- Rosen's Emergency Medicine, 10th Edition, Ron m. Walls
- Basic Life Support Manual
- Advanced Cardiac Life Support Manual

Course Title: Health Care Management

Course: Core

Credits: 3 **Number of Hours: 45**

Course Outcomes:

a. Concepts of Hospitals – The student will gain knowledge about hospital administration & planning.

b. Workflow in hospitals - Enumerate and identify various Clinical Services like OPD, IPD, ward Management, OT, Emergency, disaster Management and ICU.

c. Organizational Structures - To learn to meet special challenges posed by human behavior in workplace of 21stcentury

d. Quality management - To create awareness about the process of applying for and implementing various accreditation processes in health care facilities.

Course Content:

Unit	Hrs	Content	Must Know	Good to Know	Desirable to Know	Weightage	Types of questions
Unit -I	4	**Hospital Structure** • Introduction to Hospitals, Healthcare &Medical Care, Rationale of Hospital Administration • History of Hospitals, Public Health Delivery system in India, Types of Hospitals, Voluntary Health Organizations	✓			5%	SE
Unit -II	8	**Management of Healthcare Organizations** • Introduction to Management • Evolution & Theories of Management • Management Functions: Planning • Organizing				20%	LE, SE

		• Controlling • Decision Making • Staffing • Techniques in Management	✓				
Unit -III	7	**Organizational Behavior** • The Importance of Interpersonal Skills, Scope & Process of OB Structure &theories • Motivation - Abraham Maslow's hierarchy of needs theory, Theory X & Y. Contemporary theories of motivation. • Foundations of Group Behavior – Formal Vs Informal, Social IdentityTheory • OrganizationalCulture • Communications in anOrganization	✓			15%	LE, SE
Unit -IV	7	**Management and Health Economics** • Demand &Supply • Nature ofCosts • Marginal cost and breakevenanalysis • Market structure: Business & Government, Role of Government	✓			10%	LE, SE
Unit -V	7	**Accounting for Hospital Management** • Budgeting & Budgetary control – Classificationof budget, P & L, BalanceSheets • Types of Accounts, Debit &Credit • Financial Statement Analysis	✓			10%	LE, SE
Unit -VI	7	**Concept of Hospital** • DepartmentationinHospital • Outpatient, InpatientServices • Intensive Care Unit, Emergency Services • Laboratory,Radiology				20%	SE

		• Organizing of support services, Utility Services • Evaluation of Hospital services – HospitalStatistics • Hospital Information Systems - Issues related to Healthcare technology, Planning,Infrastructure	✓				
Unit -VII	5	**Evolution of Quality management** • Quality Management Tools &methods • Quality certification & Accreditation – NABH, NABL	✓			10%	SE

Recommended Books:

- Prasad LM. Principles and practice of management. Sultan Chand & Sons; 2020 Oct 1.
- Sadri J. Organizational Behaviour: Human Behaviour at Work.
- Gohil DP, Gohil K. Public Relations in Hospital Administration and Planning. International Journal of Health Science and Research. 2016(6):2.

IV Semester

Course Title: Emergency Clinical Procedure

Course: Core

Credits: 03 **Number of hours: 45**

Course Outcomes:

After Completing the Course:

a. The student should know the indication, contraindication, complications of emergency clinical procedure

Course Content:

Unit	Hrs	Content	Must Know	Good to Know	Desirable to Know	Weightage	Types of questions
Unit-I	5	**Vital Signs and Patient Monitoring** 1.1 Pulse Oximeter 1.2 Blood Pressure Assessment 1.3 Respiratory Monitoring 1.4 Capnography 1.5 Temperature Assessment	✓			10%	LE, SE
Unit-II	15	**Respiratory Procedures** 2.1 Basic Airway Adjuncts and Oxygen Delivery Devices 2.1.1 OPA, NPA, Suction 2.1.2 Nasal Prongs, Hutson Mask, NRBM, Venturi Mask 2.2 Supraglottic Airway Devices 2.2.3 Combe tube, LMA, Kings Airway 2.3 Endotracheal Intubation 2.4 Cricothyrotomy and Percutaneous Translaryngeal Ventilation 2.5 Tracheostomy	✓			20%	LE, SE

		2.6 Mechanical Ventilation 2.7 Thoracocentesis 2.8 Tube Thoracotomy					
Unit-III	5	**Cardiac Procedures** 3.1 Electrocardiogram 3.2 Cardioversion and Defibrillator 3.3 Cardiac Pacing 3.4 Implantable Cardioverter Defibrillator 3.5 Pericardiocentesis	✓			10%	LE, SE
Unit-IV	5	**Vascular Techniques** 4.1 Peripheral Intravenous Cannulation 4.2 Central Venous Catheterization and Central Venous Pressure Monitoring 4.3 Arterial Puncture and Cannulation 4.4 Intraosseous Access 4.5 Umbilical Vein Catheterization	✓			10%	LE, SE
Unit-V	5	**Gastrointestinal Procedures** 5.1 Nasogastric Tube Insertion 5.2 Gastric Lavage 5.3 Paracentesis 5.4 Peritoneal Dialysis	✓			10%	LE, SE
Unit-VI	2	**Genitourinary Procedures** 6.1 Urethral Catheterization 6.2 Suprapubic Catheterization	✓			10%	LE, SE
Unit-VII	2	**Neurological Procedure** 7.1 Lumbar Puncture	✓			10%	LE, SE
Unit-VIII	3	**Musculoskeletal Procedure** 8.1 Splinting Techniques 8.2 Fasciotomy	✓			10%	LE, SE

Unit -IX	3	**Special Procedures** 9.1 FAST and EFAST 9.2 Restraint (Physical and Chemical)	✓			10%	LE, SE

Recommended Books:

- Clinical Procedures in Emergency Medicine by Robert and Hedges, 6th Edition
- Nancy Caroline's Emergency Care in the Street, 8th Edition

Course Title: Emergency Clinical Procedure Practical

Course: Core

Credits: 02 **Number of hours: 60**

Course Outcomes:

After Completing the Course:

a. The student should know the indication, contraindication, complications of emergency clinical procedure

Course Content:

Unit	Hrs	Content	Must Know	Good to Know	Desirable to	Weightage	Types of questions
Unit-I	30	**Introduction to Disaster** 1.1 Intravenous Cannulation 1.2 IO Access 1.3 Central Line 1.4 Laryngeal Mask Airway 1.5 Combitube 1.6 ET Tube 1.7 Electrical Therapy	✓			100%	

Recommended Books:

1. Clinical Procedures in Emergency Medicine by Robert and Hedges, 6th Edition
2. Nancy Caroline's Emergency Care in the Street, 8th Edition

Course Title: Disaster Management

Course: Core

Credits: 03 **Number of hours: 45**

Course Outcomes:

After Completing the course

- The students should know the different types of disaster and management of disaster
- They should the role of EMS and hospital during disaster

Course Content:

Unit	Hrs	Content	Must Know	Good to K...	Desirable to Know	Weightage	Types of questions
Unit-I	9	**Introduction to Disaster** 1.1 Disaster and Types of Disaster 1.2 Phases of Disaster 1.3 Pre-Disaster and Disaster Paradigm 1.4 Triage 1.5 Role of Emergency Medical Services in Disaster 1.6 Role of Hospitals in Disaster	✓			20%	LE, SE
Unit-II	1	**Public Health and Disaster**	✓			10%	LE, SE
Unit-III	1	**Mass Casualty Incident**	✓			10%	LE, SE
Unit-IV	15	**Natural Disaster** 4.1 Tsunami 4.2 Flood 4.3 Earthquake 4.4 Hurricanes 4.5 Tornados	✓			20%	LE, SE

		4.6 Wild Fire/ Forest Fire 4.7 Heat Related Disaster 4.8 Winter Strom 4.9 Volcanic Eruption					
Unit-V	15	**Man Made Disaster** 5.1 Terrorist Bombing 5.2 Chemical, Biological, Radiational, Nuclear Explosive disaster (CBRNE) 5.3 Mass Shooting 5.4 Air Crash 5.5 Derailment 5.6 Maritime Disaster 5.7 Hazardous Material	✓			15%	LE, SE
Unit-VI	1	**Complex Emergencies**	✓			10%	LE, SE
Unit-VII	1	**Education and Research in Disaster**	✓			5%	LE, SE
Unit -VIII	1	**Communication in Disaster**	✓			5%	LE, SE
Unit -IX	1	**Patient Tracking System in Disaster**	✓			5%	LE, SE

Reference Books:

- Ciottone's Disaster Medicine, 2nd edition, Gregory R. Ciottone
- Disaster Medicine, 2nd Edition, David E. Hogan
- Nancy Caroline Emergency care in the Street, 8th Edition
- Tintinalli's Emergency Medicine, 8th Edition

10. Teaching - Learning methods course-wise

Teaching - Learning method	Courses
Experiential learning	Pre-Hospital Care Management Musculoskeletal Trauma Surgical Emergencies Critical Care Management Obstetrics and Gynecological Emergencies Pediatric emergencies Medical emergencies Clinical Procedures in Emergency Medicine
Integrated/Inter-disciplinary learning	Bioethics Healthcare Management
Participatory learning	Health Care Management Bioethics Disaster Management
Problem-solving methodologies	Pre-Hospital Care Management Musculoskeletal Trauma Biostatistics and Research Methodology Essential Pharmacology in Emergency Medicine Toxicology Obstetrics and Gynecological Emergencies Medical emergencies
Self-directed learning	Coursera/ SWAYAM
Patient-centric and Evidence-based learning	Pre-Hospital Care Management Surgical Emergencies Essential Pharmacology in Emergency Medicine Toxicology

	Critical Care Management Clinical Procedures in Emergency Medicine
The Humanities	Disaster Management Bioethics
Project-based learning	Biostatistics and Research Methodology Dissertation
Team Work	Pre-Hospital Care Management Critical Care Management Clinical Procedures in Emergency Medicine Disaster Management
Role Play	Pre-Hospital Care Management Disaster Management Bioethics
Reflective writing	Musculoskeletal Trauma Biostatistics and Research Methodology Health Care Managemement

11. Scheme of Examination

11.1 Continuous Internal assessment format (distribution of marks)

Continuous Internal assessment components	**Maximum marks**
Average of two IA tests	20
Case Studies/Seminar/Assignments/Quizzes etc.	30
Total marks	50

11.2 Question Paper Pattern

Subjects having maximum marks = 50				Duration
Type of question	Number of questions	Marks for each question	Total	150 min
Long essay type	02	15	30	
Short essay Type	02	10	20	
Total			50	

11.3 Practical Examination

SI.NO	Components	Marks
1	Spotters	10
2	Case Scenario/OSCE/OSPE	20
3	Viva Voce	20
Total Marks		50

11.4 Particulars of practical, viva-voce & dissertation

11.4.1 Practical examination will be aimed at examination of clinical skills and competence of the candidates for undertaking independent work as a specialist.

11.4.2 Viva-Voce examination shall aim at assessing depth of knowledge, logical reasoning, confidence & oral communication skills.

11.4.3 Special emphasis shall be given to dissertation work during the M.Sc. Trauma Care Management 2nd Year examination.

11.4.4 The marks of Viva-Voce examination shall be included in the clinical examination to calculate the percentage and declaration of results.

11.4.5 OSCE/OSPE-shall have minimum of 5 stations.

11.5. Evaluation and Certification of online courses:

11.5.1. Evaluation will be based on predefined norms and parameters and announced in the overview of the Course at the time of offering the course. Formative continuous online assessments and end of course proctored exams shall be completed by the student.

11.5.2. The certificate obtained shall be submitted to the college office which will be communicated to the office of the Controller of Examinations of Yenepoya (Deemed to be University).

11.5.3. The Yenepoya (Deemed to be) University will give the equivalent credit weightage to the students for the credits earned through online learning courses through MOOCS/Coursera as per the credit plan of the program.

11.6. Credit Mobility of Online Courses:

11.6.1. The Yenepoya (Deemed to be University) will give the equivalent credit weightage to the students for the credits earned through online learning courses as per the credit plan of the program.

11.6.2. In case a student fails to complete the online course he/ she may be allowed to complete the course requirements by registering for another online course in subsequent semester or opt for a course offered at Yenepoya (Deemed to be University), provided such a course is offered during that semester.

11.6.3. The elective course offered by the Yenepoya (Deemed to be University) shall be restricted to a maximum of 3 credits.

11.6.4. A candidate shall compulsorily complete total 6 Credits of Multidisciplinary courses.

11.6.5. These courses shall be selected either from the Generic Electives offered by the Yenepoya (Deemed to be) university or from the SWAYAM/Coursera courses. A Candidate shall have freedom to choose the courses of once own choice and learn at their own pace but, require to complete minimum 3 credits before second semester and 6 credits before third semester SEE.

11.6.6. A candidate who wishes to earn additional credits may be permitted to do so during the academic duration.

11.7 Continuous Internal Assessment Components of PG Dissertation

<table>
<tr><th>Sl. No</th><th colspan="2">Parameters</th><th>Marks</th></tr>
<tr><td>1.</td><td colspan="2">Maintaining the timeline</td><td>10</td></tr>
<tr><td rowspan="3">2.</td><td colspan="2">Presentation a Conference /CME/Publication (student can choose any of the criteria to avail 40 marks)</td><td rowspan="3">40</td></tr>
<tr><td>Criteria</td><td>Marks Allocated</td></tr>
<tr><td>Online Oral/Online Poster/Offline Poster presentation/Conference proceeding publications in Scopus/WoS indexed journals/Publication of Copyright</td><td>20</td></tr>
<tr><td></td><td>Offline oral presentation at National/International Conference/Patents/Publication of Review Paper/Pilot Study/Study Protocol in Indexed Journal</td><td>40</td><td></td></tr>
<tr><td>3.</td><td colspan="2">Manuscript submission (Based on the dissertation) to the Indexed journals (SCOPUS/WoS) along with submission of final dissertation</td><td>50</td></tr>
<tr><td></td><td colspan="2">Total</td><td>100</td></tr>
</table>

11.8. Assessment of Research project

A Declaration by the candidate that the work was done by him/her shall be included. The guide, Head of the Department and Head of the Institution shall certify the bonafied of the project

Total 200 marks shall be awarded for the research project and the marks distribution as follows:

- 100 marks – Dissertation evaluation by internal and external examiner
- 100 marks – Continuous Internal Assessment

11.9. Evaluation of Dissertation

11.9.1. Dissertation shall be evaluated by two examiners, one external & one Internal for 100 marks from the panel of examiners approved by the Board of Studies and by the University.

11.9.2. The criteria for the evaluation shall be as prescribed by the Board of Studies.

11.9.3. Acceptance of the dissertation is a pre-requisite for a candidate to be eligible to appear in the final examination.

11.10 Guide:

11.9.1 The academic qualification and teaching experience required for recognition of guide shall beas given under:

11.9.2 DM in Emergency Medicine with 2 years of teaching experience after MD/DM programme or Ph.D in Emergency/Trauma Care Management or M.Sc. Trauma Care Management with teaching experience of four years after the Masters programme.

11.9.3 Student guide ratio: A recognized guide shall supervise dissertation work of not more than fivestudents per academic year. The age of the guide shall not exceed 65 years.

11.9.4 Co-Guide may be included provided the work requires substantial contribution from a sister department, another institution recognized for teaching in Yenepoya (Deemed to be University), or any other State level University.

11.11 Change of Guide:

In the event of registered guide leaving the Institute/ college due to any reason or in the event of death or any other valid reasons, guide can be changed with prior permission from the University only.

12. Eligibility to appear for University Examination

12.1.Each course (theory, practical, clinical etc.) shall be treated as an independent unit for the purpose of attendance. Candidates having minimum 80% attendance in each of the Courses can only qualify to appear for the Semester End Examination. The Candidates with less than 80% of attendance shall be required to repeat that Course by attending the semester. There shall be no provision for condonation of shortage of attendance.

12.2. Evaluation of a course shall be done based on continuous internal assessment (CIA) mode followed by semester end university examination (SEE) for each course.

12.3. The components of CIA (Continuous Internal Assessment) may include sessional tests, Seminar/ Journal Club/ Case Studies /Assignment and other activities as determined by the board of studies in the respective departments.

12.4. The CIA:SEE percentage is 50:50 and minimum marks for CIA shall be 50% and SEE shall be 50%.

12.5. The pass marks per course shall be 50% There shall be examinations at the end of each semester ordinarily during February/March for odd semesters and August/September for even semesters

12.6. The SEE duration shall be two and half hours.

13. Criteria for passing

13.1. The CIA:SEE percentage is 50:50 and minimum marks for CIA shall be 50% and SEE shall be 50%.

13.2. The pass marks per course shall be 50%

13.3. A candidate shall be declared to have passed the PG program if he/she secures atleast CGPA of 5.0 (Course Alpha-Sign Grade P) in the aggregate of both internal assessment and semester end examination marks.

13.4. The candidates who pass all the semester examinations in the first attempts in Two years are eligible for ranks provided they secure at least a CGPA of 8.0 (atleast Alpha-Sign Grade A).

13.5. The results of the candidates who have passed the fourth semester examination but not passed the lower semester examinations shall be declared as NCL (Not Completed Lower semester examinations). Such candidates shall be eligible for the degree only after completion of all the lower semester examinations.

13.6. A candidate who passes the semester examinations in parts is eligible for only CGPA and Alpha-Sign Grade but not for ranking.

13.7. There shall be no minimum marks with respect to internal assessment and viva-voce marks.

13.8. A candidate who fails in any of the project work/project report/dissertation shall reappear for the same and pass the examination subsequently within the nearest semester and examination schedule.

14. Carry over provisions

Carry over shall be allowed to the candidates up to IV semesters.

15. Grading and Classification

The results of successful candidates at the end of each semester shall be declared in terms of Grade Point Average (GPA) and Alpha-Sign Grade. The results at the end of the sixth semester shall be classified on the basis of the Cumulative Grade Point Average (CGPA) obtained in all the four semesters and the corresponding overall alpha sign grade.

a. Letter Grades and Grade Points:

Letter Grade	Grade Point	Range of Marks
O+(Outstanding)	10	90–100
O(Excellent)	9	80–89.99
A+(Very Good)	8	70–79.99
A(Good)	7	60–69.99
B+(Average)	6	55–59.99
P(Pass)	5	50–54.99
F(Fail)	<5	<50

b. Cumulative Grade Point Average(CGPA):

The results at the end of the fourth semester shall be classified on the basis of CGPA obtained in the four semesters and the corresponding overall letter grade. The letter grade as described below shall be adopted.

Letter Grade	CGPA Range
O+(Outstanding)	9.0–10.0
O(Excellent)	8.0–8.99
A+(Very Good)	7.0–7.99
A(Good)	6.0–6.99
B+(Average)	5.5–5.99
P(Pass)	5.0–5.49
F(Fail)	<5.0

16. Journals

List of recommended Journals

a. Journal of Emergency Medical Services
b. Resuscitation
c. Annals of Emergency Medicine
d. Internal and Emergency Medicne
e. American Journal of Emergency Medicine
f. Prehospital Emergency Care
g. BMC Emergency Medine

Annexures:

Annexure I – Question Paper Layout For theory examinations

Annexure II – Logbook template

Annexure III – Journal Club evaluation checklist

Annexure IV – Assignment guideline

Annexure V – Seminar Assessment Rubric Template

Annexure VI – OSPE/OSCE checklist