REGULATIONS AND CURRICULUM GOVERNING

B.Sc. PHYSICIAN ASSOCIATE PROGRAM

Implemented in Academic Year 2020

Revised in 2021

Amended upto 2025

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

RABBI ZIDNI 'ILMA

YENEPOYA

(DEEMED TO BE UNIVERSITY)

Deralakatte, Mangalore, Karnataka.

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NOTIFICATION FROM THE UNIVERSITY

Sl. No	ACM with date	Decisions/Approvals
1.	38-ACM/12(a)/2020, 14.05.2020	Regulation & Syllabus of the B.Sc. Physician Associate course is approved.
2.	44th ACM/ 05.10.2021	Proposal for the Introduction of a Choice-Based Credit System in all the Undergraduate programs offered by the Yenepoya Institute of Allied Health Sciences from the academic year 2021-22.
3.	51st ACM/ 16.05.2023	Introduction of New National Credit Framework (NCRF) for all undergraduate Programme under the faculty of Allied & Healthcare Professions from the academic year 2023-24.
4.	61st ACM/ 13.02.2025	The amendment in the syllabus of the course “Pathology & Microbiology II” of the B.Sc. TechnologyProgram was Approved.
5.	64th ACM/ 14.08.2025	Implementing the Ability Enhancement Course “English and Communication” in all B.Sc. Technology Programs under the Faculty of Allied & Healthcare Professions was approved.

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1. Preamble

Healthcaresectorhasbecomeoneofthelargestemploymentgenerationsectorsin India and abroad. Rapidly changing and expanding horizon of the health care sector demands formal training programs in all its allied areas. Advanced complex instrumentation & equipment require technologists not only to operate but also to care & maintain these instruments and equipment. These technologists should possess a strong scientific foundation to be able to perform these tasks at a much higher level than the traditionally trained technicians of the past used to perform. The students who are trained in the technological aspects of medical carewithagoodscientificfoundationwillbeinapositiontocompetentlyassistthePhysician or Surgeon. Hence, to prepare the students to meet the demands of the healthcare sector& in accordance with the Ministry of Human Resource Development (HRD), Govt. of India, the education system introduced the National Higher Education Quality Framework (NHEQF). The program is designed in a way the curriculum is student-centric, having a flexible choice-based credit system with value value-based, holistic, multidisciplinary approach.

PAs (Physician Associates/Physician Assistants) are medical professionals who diagnose illness,developandmanagetreatmentplans,prescribemedications(underthesupervisionof the specialist doctor), and often serve as a patient's principal healthcare provider. With thousands of hours of medical training, PAs are versatile and collaborative. Physician assistants work in all areas of medicine, including primary care and family medicine, emergency medicine, and psychiatry. Physician assistants, also known as PAs, practice medicine on teams with physicians, surgeons, and other healthcare workers. They examine, diagnose, and treat patients (underthesupervision ofthe specialist doctors). They work with patients of all ages in virtually all specialities and primary care areas, diagnosing and treating common illnesses and assisting with minor and major procedures.

The distinguishing features of CBCS are as follows:

- It permits students to learn at their own pace.

- Choose Electives from a wide range of Elective courses offered by the other departments/university.
- Undergo additional courses and acquire more than the required number of credits.
- Adopt an Interdisciplinary and Intra-disciplinary approach in learning.
- Make best use of the available expertise of the faculty across the departments or disciplines.
- Has an inbuilt evaluation system to assess the analytical and creative skills of students in addition to the conventional domain knowledge assessment pattern.

2. Definitions

2.1Academic Year: Two consecutive (one odd + one even) semesters constitute one academic year.

2.2Semester System / Choice Based Credit System: The semester system accelerates the teaching – learning process. The CBCS provides flexibility in designing curriculum and assigning credits based on the course content and hours of teaching. The choice-based credit system provides a cafeteria type approach in which the students can take courses of their choice, undergo additional courses and acquire more than the required credits, and adopt an interdisciplinary approach to learning.

An academic year shall consist of two semesters:

Odd Semester 1st, 3rd, 5th& 7th	September/October to February/March
Even semester 2nd, 4th, 6th& 8th	March/April to August/September

2.3Course: Usually referred to, as “papers” is a component of a programme. The courses shall define learning objectives and learning outcomes. A course shall comprise lectures/ tutorials/ laboratory work/ field work/ outreach activities/ project work/ vocational training/viva/ seminars/ term

papers/assignments/ presentations/ self-study etc. or a combination of some of these. The courses can be of the following types i.e. Core, Ability Enhancement, Skill enhancement, Value added courses, Multidisciplinary Electives and Internship.

2.4Credits: Credit defines the quantum of contents/syllabus prescribed for a course and determines the number of hours of instruction required per week. Thus, normally in each of the courses, 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 in a 15-20week schedule: One credit =1 hour of lecture per week/ two hours of Laboratory or practical/three hours of clinical rotation, field work/posting. All courses need not carry the same credits.

	Lecture (L)	**Tutorial (T)**	**Practical (P)**	**Clinical Rotation (CR)**
1 Credit	1 Hour	1 Hour	2 Hours	3-5 Hours

Credit Hours for different types of courses: Each course may have only a lecture component or a lecture and tutorial component or a lecture and practicum component or a lecture, tutorial, and practicum component, or only practicum component. For example, a three-credit lecture course in a semester means three one-hour lectures per week with each one-hour lecture counted as one credit. In a semester of 15 weeks duration, a three-credit lecture course is equivalent to 45 hours of teaching.

One credit for tutorial work means one hour of engagement per week. In a semester of 15 weeks duration, a one-credit tutorial in a course is equivalent to 15 hours of engagement.

A one-credit course in practicum or lab work, community engagement and services, and fieldwork in a semester mean two-hour engagement per week. In a semester of 15 weeks duration, a one-credit practicum in a course is equivalent to 30 hours of engagement.

A one-credit of Seminar or Internship or Studio activities or Field practice/projects or Community engagement and service means two-hour engagements per week. Accordingly, in a semester of 15 weeks duration, one credit in these courses is equivalent to 30 hours of engagement.

A course can have a combination of lecture credits, tutorial credits, and practicum credits. For example, a 4–credit course with three credits assigned for lectures and one credit for practicum shall have three 1-hour lectures per week and one 2-hour duration field-based learning/project or lab work, or workshop activities. In a semester of 15 weeks duration, a 4-credit course is equivalent to 45 hours of lectures and 30 hours of practicum. Similarly, a 4 –credit course with 3- credits assigned for lectures and one credit for tutorial shall have three 1-hour lectures per week and one 1-hour tutorial per week. In a semester of 15 weeks duration, a four-credit course is equivalent to 45 hours of lectures and 15 hours of tutorials.

Experiential learning credit is equal to 3-hour duration per week. For example, 1 credit for experiential learning will mean 45 hours of learning. The credits assigned to the course is indicated as L:T:P format. For example, for a 4credit course format could be: 4:0:0 or 1:2:1 or 3:1:0 or 0:0:4etc.

2.5Programme: An educational program leading to award of a degree, diploma or certificate. The following types of courses/activities constitute the programmes of study. Each of them will require a specific number of hours of teaching/guidance and laboratory/studio/workshop activities, field-based learning/projects, internships, and community engagement and service.

a. **Lecture courses:** Courses involving lectures relating to a field or discipline by an expert or qualified personnel in a field of learning, work/vocation, or professional practice.

b. **Tutorial courses:** Courses involving problem-solving and discussions relating to a field or discipline under the guidance of qualified personnel in a field of learning, work/vocation, or professional practice.

c. **Practicum or Laboratory work:** A course requiring students to participate in a project or practical or lab activity that applies previously learned/studied principles/theory related to the chosen field of learning, work/vocation, or professional practice under the supervision of an expert or qualified individual in the field of learning, work/vocation or professional practice.

d. **Seminar:** A course requiring students to participate in structured discussion/conversation or debate focused on assigned tasks/readings, current or historical events, or shared experiences guided or led by an expert or qualified personnel in a field of learning, work/vocation, or professional practice.

e. **Internship:** A course requiring students to participate in a professional activity or work experience, or cooperative education activity with an entity external to the education institution, normally under the supervision of an expert of the given external entity. A key aspect of the internship is induction into actual work situations. Internships involve working with local industry, government or private organizations, business organizations, artists, crafts persons, and similar entities to provide opportunities for students to actively engage in on-site experiential learning.

f. **Studio activities:** Studio activities involve the engagement of students in creative or artistic activities. Every student is engaged in performing a

creative activity to obtain a specific outcome. Studio-based activities involve visual- or aesthetic focused experiential work.

g. **Field practice/projects:** Courses requiring students to participate in field-based learning/projects generally under the supervision of an expert of the given external entity.

h. **Community engagement and service:** Courses requiring students to participate in field-based learning/projects generally under the supervision of an expert of the given external entity. The curricular component of 'community engagement and service' will involve activities that would expose students to the socio-economic issues in society so that the theoretical learnings can be supplemented by actual life experiences to generate solutions to real-life problems.

i. **Experiential learning activities:** Field project work / Day out learning activities etc are considered as experiential activities.

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 Letter Grade: It is an index of the performance of students in a said course. Grades are denoted by letters: O, A+, A, B+, B, C, P, F, AB.

2.9 Cumulative Grade Point Average (CGPA): It is a measure of overall cumulative performance of a student over all semesters. The CGPA is the ratio of total credit points secured by a student in 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.

2.10 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 a semester and the total course credits taken during that semester. It shall be expressed up to two decimal places.

2.11 Transcript or Grade Card or Certificate: Based on the grades earned, a grade certificate shall be 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 Academic Bank Account: Means an individual account with the Academic Bank of Credits opened and operated by a student, to which all academic credits earned by the student from course(s) of study are deposited, recognized, maintained, accumulated, transferred, validated or redeemed for the purposes of the award of degree/diploma/certificates etc. by an awarding institution.

2.13 Academic Bank of Credits: Means the provision for innovative and interchangeable curricular structures to enable creative combinations of Courses or Programmes in Disciplines of study leading to Degree or Diploma or Post Graduate Diploma or Certificate of Study offering multiple entry and multiple exit facilities, while removing rigid curricular boundaries and creating new possibilities of life-long learning.

2.14 Credit Accumulation: Means the facility created by Academic Bank of Credits in the Academic Bank Account opened by students in order to transfer and consolidate the credits earned by them by undergoing Courses.

2.15 Credit Redemption: Means the process of commuting the accrued credits in the Academic Bank Account of the students maintained in ABC for the purpose of fulfilling the credits requirements for the award of Degrees or Diplomas or Certificates or Course work for Ph.D. programme etc., by the registered degree-awarding Higher Educational Institutions.

2.16 Credit Transfer: Means the mechanism by which the Registered Higher Educational Institutions are able to receive or provide prescribed credits to individual Academic Bank Accounts in adherence to the University Grants Commission credit norms for the 'course/s' undertaken by students enrolled in any Registered Higher Education Institution within India.

2.17 Curricular components of the B.Sc. Physician Associate Programme:

Courses in the programme may be of the following types:

a. Core Course
b. Skill Enhancement Courses (SEC)
c. Ability Enhancement Courses (AEC)
d. Value Added Courses (VAC)
e. Multidisciplinary Elective (ME)
f. Internship

a. Core Course (CC): A course, which should compulsorily be studied by a candidate as a core requirement is termed as a Core course. This is the course which is the major disciple/subject having main focus and degree will be awarded in this discipline. This core course provides opportunity for our student to pursue in depth study of a particular subject or discipline hence, it is compulsorily studied by a student as a core requirement to complete the program of study in a said discipline. Every Core course shall be restricted to a minimum of 4 credits.

b. Skill Enhancement Course (SEC): SEC courses are aimed at

imparting practical skills, hands- on training, competencies etc to enhance the skill-based knowledge and thus the employability of the students.

c. **Ability Enhancement Courses (AEC):** These are the courses which aim to provide the students the competency in a modern Indian language (MIL) and in the English language with special emphasis on language and the communication skills. The courses aim at enabling the students to acquire and demonstrate the core linguistic skills, including critical reading and expository and academic skills, that helps students articulate their arguments and present their thinking clearly and coherently and recognize the importance of language as a mediator of knowledge and identity. The courses will also emphasize the development and enhancement of skills such a communication, and the ability to participate/ conduct discussion and debate.

d. **Value Added Courses (VAC):** These are the courses relating to understanding India, environmental science/ education, Health and Wellness etc.

i. **Constitution of India:** The course aims at enabling the students at acquire and demonstrate the knowledge and understanding of contemporary India with its historical perspective, the basic framework of the goals and policies of National development, and the constitutional obligations with special emphasis on constitutional values and fundamental rights and duties.

ii. **Environmental Studies:** The course aims to equip the students with the ability to apply the acquired knowledge, skills, attitudes, and values require to take appropriate actions for mitigating the effects of environmental degradation, climate change, and pollution, effective waste management, conservation of biological diversity, management of biological resources, forest and wild life conservation, and sustainable development and living.

iii. **Human Rights & Gender equity:** TheCourse emphasis understanding social justice issues and roles of human rights in promoting equitable society including international, national perspective, contemporary issues with this holistic coverage and relevance to today's world.

iv. **Medical Ethics:** The course deals with ethics involving fundamental and moral issues related to decision making while performing professional practice. It guides the students in systematic and rational way of working through dilemmas and to determine the best course of action in their field of practice.

e. **Multidisciplinary Electives (ME):** These courses are intended to broaden the intellectual experience and form part of liberal arts and science education. Students are not allowed to choose or repeat courses already undergone at the higher secondary level (Twelfth class). The courses relating to any of the broad discipline given below will come under this category.

i. **Natural and Physical Sciences:** Students can choose basic courses from disciplines such as natural science, for example, Biology, Botany, Zoology, Biotechnology, Biochemistry, Chemistry, Physics, Biophysics, Astronomy and Astrophysics, Earth and Environmental sciences, etc.

ii. **Mathematics, Statistics and computer applications:** Courses under this category will facilitate the students to use and apply tools and techniques in their major and minor disciplines. The course may include training in programming software like python among others and application software like STATA, SPSS, TALLY, etc. Basic courses under this category will be helpful; for science and social science in data analysis and the application of quantitative tools.

iii. **Library, Information, and Media Sciences:** Courses from this category will help the students to understand the recent developments in information and media science (journalism, Mass Media, and Communication)

iv. **Commerce and Management:** Courses include business management, accountancy, financial institutions, Fintech, etc.,

v. **Humanities and Social Sciences:** The courses relating to social sciences, for example, Anthropology, Communication and Media, Economics, History, Linguistics, Political science, Psychology, Social work, Sociology, etc. will enable students to understand the individuals and their social behavior, society and nation. Students be introduced to survey methodology and available large – scale databases for India. The courses under humanities include for example, Archeology, History, Comparative Literature, Arts and Creative Expressions, Creative writing and literature, language(s), philosophy etc., and interdisciplinary courses relating to humanities. The list of courses that can include interdisciplinary subjects such as cognitive science, environmental science, gender studies, global environment and health, international relations, political economy and development, sustainable development, Women's and gender studies, etc. will be useful to understand society.

The Multidisciplinary elective offered by Yenepoya (Deemed to be) University includes:

i. **First Aid and Basic Life Support (BLS):**ThisCourse deals with training the students to be a first responder when there are medical or traumatic emergencies.

ii. **Yoga:**The coursedevelops a comprehensive understanding of yoga, including its history, various schools, practices, and their application in daily life, while also recognizing its potential for personal well-being,

professional growth, and promoting positive health.

iii. **Vermitechnology:** This category of course will help students to gain skills in using worms to convert decomposing food waste into nutrient-rich fertilizer in simple, inexpensive and energy-efficient way.

iv. **Positive Psychology:** The course will enable students to enrich themselves to thrive on the belief that people want to lead meaningful and fulfilling lives, cultivate what is best within them, and enhance their experiences of love, work, and play.

v. **National Service Scheme (NSS):** Students can choose NSS to understand the basic concept of NSS, to identify the needs and problems of the community in which they work and to gain skills in mobilizing community participation.

vi. **Lifestyle Management:** This course will help students to learn to achieve health goals through lifestyle and behavior adjustments by creating healthy habits as well as stress management.

vii. **Youth Red Cross:** The course deals withproviding knowledge on Youth Red Cross volunteer ship and identifying the role of youth in humanitarian service. It also enables youth to promote national and international understanding by using international link of the movement.

viii. **Jeevan Kaushal:** University grant commission identified 4 modules on life skills (Jeevan Kaushal), the skills that required through our life. Jeevan Kaushal courses such as Communication skills, Professional Skills, Leadership and Management skills and Universal Human Values which will help students in developing personal competencies that helps to deal with challenges of life effectively thereby realizing

his/her infinite potential as a human being.

ix. **Self – learning course:** In accordance with the UGC (Credit Framework for Online Learning Courses through SWAYAM) Regulation, 2021, New Delhi, dated 25th March 2021, and reference No.F.1-100/2016 (MOOCs/e-content), students are encouraged to augment their learning experience by opting for Massive Open Online Courses (MOOCs), Study Webs of Active Learning for Young Aspiring Minds (SWAYAM), and Coursera courses as part of the multidisciplinary elective.

Yenepoya (Deemed to be University) will adhere to UGC regulations governing MOOCs/SWAYAM/Coursera courses, incorporating amendments as communicated by UGC over time. To facilitate the seamless completion of chosen courses, the department will appoint a designated course coordinator. The coordinator will guide and support students throughout the duration of the selected online courses.

The evaluation process will adhere to predefined norms and parameters, which will be communicated in the course overview at the time of offering.

In COURSERSA, the assessment are multifaceted and include quizzes or tests at the conclusion of each module, assignments or projects demonstrating the practical application of concepts, active participation in discussion forums, and peer-reviewed assessments. The culmination of each course involves final quizzes or capstone projects tailored to the course's content. Upon successful completion, students receive an online certificate, Yenepoya (Deemed to be University) will integrate the acquired credits into the student's official marks sheet.

In SWAYAM, Assessment will include formative continuous online assessments and end-of-course proctored exams, all of which are mandatory for successful completion by the student. Yenepoya (Deemed to be University) will integrate the marks or grade achieved by the student, conveyed by the Host Institution through the PI of the SWAYAM course,

into the student's official marks sheet. These marks contribute to the final award of the degree conferred by the University.

f. Internship

The internship time period provides the candidate the opportunity to develop confidence and increased skill in simulation and treatment delivery. Candidate will demonstrate competence in basic and intermediate procedures and will observe the advanced and specialized treatment procedures. The candidate will complete the clinical training by practicing all the skills learned in classroom and clinical instruction. The candidate is expected to work for minimum 8 hours per day and this may be more depending on the need and the healthcare setting.

3. Eligibility for Admissions:

To be eligible for admission in B. Sc Physician Associate, a candidate should have passed two-years Pre-University examination/ Pre-Degree examination/ two years after ten years of schooling or its equivalent as recognized by the Yenepoya (Deemed to be) University with Physics, Chemistry and Biology as principal courses of study.

Candidate needs to secure 40% or above marks in the qualifying examination to be eligible for admission. For SC/ST/OBC candidates minimum marks required in the qualifying exam is 35% marks.

4. Duration of the Program

The duration of the programme shall extend over 8 semesters (three academic years with one year internship) each semester comprising minimum of 15 weeks with the minimum of 90 actual working days of instruction in each semester. The successful completion of the Undergraduate program, along with internship as applicable will lead to Bachelor’s degree in Physician Associate (B.Sc. PA)

5. Maximum Period for Completion of Programme:

A candidate shall complete six semesters (Three Years) programme within Six years from the date of admission. Hence, the maximum period for completion of the programme is seven years.

6. Aim of the Program

The aim of the Physician Associate Program is to prepare competent, compassionate, and ethically responsible healthcare professionals who can work collaboratively within multidisciplinary teams to deliver high-quality, patient-centered care. The program seeks to equip students with a strong foundation in medical sciences, clinical reasoning, and hands-on clinical skills, enabling them to support physicians in the diagnosis, management, and follow-up of patients across diverse healthcare settings.

It further aims to foster professionalism, effective communication, evidence-based practice, and lifelong learning, empowering graduates to adapt to the evolving demands of the healthcare system and contribute meaningfully to improving patient outcomes and healthcare delivery.

7. Outcomes of the Program

Program Outcome (PO):(Knowledge – K, Skill – S, Attitude – A, Communication – C)

Upon successful completion of the undergraduate course, students will have developed a broad knowledge in the field of evaluation, diagnosis and management of different conditions of the cardiopulmonary system.

In particular, they will:

- **PO 1.**Gather essential and accurate information about patients through history-

taking,physicalexamination,anddiagnosticstudiestoprovidepatient-centeredcare (KSAC)

- **PO2**. Provide life support and perform emergency evaluation/care and initiate therapeuticproceduresinlife-threateningeventsjointlywithorintheabsenceofa physician or other health professionals.(KSAC)
- **PO3.** Learntodevelopandimplementpatientmanagement plans(KSAC)
- **PO4**.Formulateadifferentialdiagnosisandprepareaproblemlistbasedonthe assessment of the patient(KSAC)
- **PO 5.**Record and present pertinent patient data, including interpretive recommendations,inamannermeaningfultothephysicianandmembersofthe healthcare team(KSAC)

Expectedskillstobeacquiredbytheendofthe programme:

- **PO 6.**Demonstrate the ability to effectively interact with diverse medical practices and healthcare delivery systems.(KSAC)
- **PO 7**.Partner with supervising physicians, health care managers, and other health care providers to assess, coordinate, and improve the delivery and effectiveness of health care and patient outcomes(KSAC)
- **PO 8.**Performmedicalandsurgicalproceduresessentialtotheirareaofpractice.(KSAC)
- **PO 9.**Ordertesttoascertainthenatureandextentofillnessesand injuries.(KSAC)
- **PO 10**.Use information technology to support patient care decisions and patient education.(KSAC)

Program Structure:

	Broad category of course	**Hours / Credits**	**Course (Title)**
1.	**Discipline-Specific Courses**		
a)	Theory	**I Semester**	
		60 Hours / 4 Credits	Human Anatomy & Physiology I

		60 Hours / 4 Credits	Pathology & Microbiology I
		60 Hours / 4 Credits	Biochemistry
		60 Hours / 4 Credits	Basic Patient Care
		II Semester	
		60 Hours / 4 Credits	Human Anatomy & Physiology II
		60 Hours / 4 Credits	Pathology & Microbiology II
		60 Hours / 4 Credits	Basics of Medicine
		III Semester	
		60 Hours / 3 Credits	General Pharmacology
		60 Hours / 3 Credits	Applied Microbiology
		60 Hours / 4 Credits	Systemic Pathology
		60 Hours / 4 Credits	Medicine I
		60 Hours / 4 Credits	Surgery I
		IV Semester	
		60 Hours / 4 Credits	Surgery II
		60 Hours / 4 Credits	Paediatrics & Geriatrics
		60 Hours / 4 Credits	Obstetrics & Gynaecology
		V Semester	

		60 Hours / 4 Credits	Gastroenterology
		60 Hours / 4 Credits	Nephrology & Pulmonology
		60 Hours / 4 Credits	Neurology
		VI Semester	
		60 Hours / 4 Credits	Orthopedics
		60 Hours / 4 Credits	Cardiology & Cardiac Surgery
		60 Hours / 4 Credits	Basic Intensive Care
b)	Practical (SEC)*	**III semester**	
		60 Hours / 4 Credits	Applied microbiology practical
c)	Clinical (SEC)*	**III Semester**	
		120 Hours / 4 Credits	Clinical Medicine I
		IV Semester	
		120 Hours / 4 Credits	Clinical Medicine II
		V Semester	
		120 Hours / 4 Credits	Clinical Medicine III
		VI Semester	
		120 Hours / 4 Credits	Clinical Medicine IV
d)	Simulation-based (SEC)*	-	-
2.	**Curriculum Enrichment Courses**		

a)	Field Visit	-	-
b)	Community Posting	-	-
c)	Industry / Clinical Internship	**VII Semester**	
		42 Hours/week / 20 Credits	Internship I
		VIII Semester	
		42 Hours/week / 20 Credits	Internship II
d)	Research Project	-	-
3.	**Electives**		
a)	Discipline-Specific Electives	-	-
b)	Interdisciplinary Courses	45 Hours / 3 Credits per year	Coursera/Swayam/NSS/Red cross
c)	Ability Enhancement Courses • *Soft skills development* • *Language and communication skill*	**I Semester**	
		45 Hours / 3 Credits	English and Communication I
		30 Hours / 2 Credits	Kannada
		II Semester	
		45 Hours / 3 Credits	English and Communication II
		45 Hours / 3 Credits	Multidisciplinary Elective (National Service Scheme)

	developme nt • *Analytical skill developme nt* • *Personalit y and profession al developme nt* • *Employabi lity skill developme nt*		
d)	Value Added Courses	**II Semester**	
		30 Hours / 2 Credits	Constitution of India
		III Semester	
		30 Hours / 2 Credits	Human Rights & Gender Equity
		IV semester	
		30 Hours / 2 Credits	Environmental Science
		V Semester	
		30 Hours / 2 Credits	Medical Ethics
		30 Hours / 2 Credits	Human Rights & Gender Equity
		VI Semester	
		30 Hours / 2	Biostatistics

		Credits	
	Total	**6,230 Hours / 171 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.
- The HOD/Programme 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. Teaching-Learning Methods Course wise:

Teaching - Learning method	**Courses**
Experiential learning	Surgery – I, Basics of Medicine, Neurology, Obstetrics and Gynaecology, Medicine I, Gastroenterology, Surgery II, Nephrology & Pulmonology, Basic intensive care
Integrated/Inter-disciplinary learning	Orthopaedics, Basics of Medicine, Neurology, Obstetrics and Gynaecology, Medicine I, Gastroenterology, Surgery II, Nephrology & Pulmonology, Basic intensive care

Participatory learning	Orthopaedics, Basics of Medicine, Neurology, Obstetrics and Gynaecology, Medicine I, Gastroenterology, Surgery II, Nephrology & Pulmonology, Basic intensive care
Problem-solving methodologies	Orthopaedics, Neurology, Surgery – I, Obstetrics and Gynaecology, Medicine I, Gastroenterology, Surgery II, Nephrology & Pulmonology, Basic intensive care
Self-directed learning	Basics Of Medicine, Obstetrics and Gynaecology, Medicine I, Gastroenterology, Surgery II, Nephrology & Pulmonology, Basic intensive care
Patient-centric learning	Orthopaedics, Neurology, Surgery – I, Obstetrics and Gynaecology, Medicine I, Gastroenterology, Surgery II, Nephrology & Pulmonology, Basic intensive care
Evidence-based learning	Orthopaedics, Basics of Medicine, Neurology, Obstetrics and Gynaecology, Medicine I, Gastroenterology, Surgery II, Nephrology & Pulmonology, Basic intensive care
The Humanities	Human Rights & Gender Equity
Project-based learning	Obstetrics and Gynaecology, Medicine I, Gastroenterology, Surgery II, Nephrology & Pulmonology, Basic intensive care
Role-play	Surgery – I, Neurology, Obstetrics and Gynaecology, Medicine I, Gastroenterology, Surgery II, Nephrology & Pulmonology
Team-work	Surgery – I, Neurology, Obstetrics and Gynaecology, Medicine I, Gastroenterology, Surgery II, Nephrology & Pulmonology,

	Basic intensive care
Reflective writing	Basics Of Medicine, Neurology, Obstetrics and Gynaecology, Medicine I, Gastroenterology, Surgery II, Nephrology & Pulmonology, Basic intensive care
Any other (Simulation-Based Learning)	Surgery – I, Orthopaedics, Neurology, Obstetrics and Gynaecology, Medicine I, Gastroenterology, Surgery II, Nephrology & Pulmonology, Basic intensive care

10. Scheme of Examination

Evaluation of a course shall be done based on continuous internal assessment (CIA) mode followed by Semester End University Examination (SEE) for each core, SEC, AEC & VAC. The evaluation of Multidisciplinary elective offered by Yenepoya (Deemed to be) University shall be done based on formative assessment.

The components of CIA (Continuous Internal Assessment) may include sessional tests, Seminar, Assignment/ Social involvement and other activities as determined by the respective speciality.

There shall be examinations at the end of each semester ordinarily during February/March for odd semesters and during August/September for even semesters.

The SEE duration shall be 60 minutes for 25 marks paper and 120 minutes for 50 marks paper.

The various Formative assessment method includes Assignments, reports, quizzes…

10.1 Examination Structure

The examination structure shall vary dep ending on the course, however, broadly divided as follows:

Examination / Assessment	**Core / SEC**	**AEC (English, Kannada) / VAC**
Continuous Internal Assessment	50 Marks	25 Marks
Semester End Examination	50 Marks	25 Marks
Total	100 Marks	50 Marks

10.2 Multidisciplinary Elective:

Multidisciplinary elective will be assessed through continuous and comprehensive assessment throughout the Semester (50 Marks)

i. Evaluation and Certification of online courses:

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.

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).

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.

ii. Credit Mobility of Online Courses:

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.

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 this Yenepoya (Deemed to be University).

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

A candidate shall compulsorily complete total 9 Credits of Multidisciplinary courses.

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, 6 credits before fourth semester and 9 credits before sixth semester end examination.

A candidate who is desirous to add more credits shall be permitted to do so during the academic duration. Extra credits earned by a candidate shall be included in the marks card on submission of course completion certificate. However, it shall not be considered for awarding the Grade in the UG programme.

10.3 Parameters for Continuous Internal Assessment (CIA)

Internal Assessment Components	**Core / SEC**	**AEC (English, Kannada) / VAC**
Internal Assessment tests	20	10
Assignment	10	05
Continuous and comprehensive assessment	20	10
Total Marks	**50**	**25**

Assessment Methods:

1	Quiz	6	Role Play
2	Group	7	Peer to

	Discussion		Peer Assessment
3	Open Book Exam	8	Mind Mapping
4	Think-Pair-Share	9	Minute paper
5	Presentations	10	Case Study

10.4 Question Paper Pattern for Core course (Internal Assessment & Semester End Examination)

	MAXIMUM MARKS = 50				**Duration**
Type of question	**Number of questions**	**To be Answered**	**Marks for each question**	**Total**	
LONG ESSAY TYPE	02	01	10	10	120 minutes
SHORT ESSAY TYPE	07	05	04	20	
SHORT ANSWERS	12	10	02	20	
			Total	**50**	

	MAXIMUM MARKS = 50	**Duration**

PART A					
Type of question	**Number of questions**	**To be Answered**	**Marks for each question**	**Total**	
LONG ESSAY TYPE	02	01	10	10	120 Minutes
SHORT ESSAY TYPE	02	01	05	05	
SHORT ANSWERS	06	05	02	10	
PART B					
LONG ESSAY TYPE	02	01	10	10	
SHORT ESSAY TYPE	02	01	05	05	
SHORT ANSWERS	06	05	02	10	
			Total	**50**	

10.5 Question Paper Pattern for Ability Enhancement Compulsory (AEC) Course

	MAXIMUM MARKS = 25				**Duration**
Type of question	**Number of questions**	**To be Answered**	**Marks for each question**	**Total**	
ESSAY	05	03	05	15	60 minutes
SHORT ANSWERS	07	05	02	10	
			Total	**25**	

10.6 Question Paper Pattern for Value Added (VAC) Course

	SUBJECTS HAVING MAXIMUM MARKS = 25				Duration
Type of question	**Number of questions**	**To be Answered**	**Marks for each question**	**Total**	
ESSAY	05	03	05	15	60 minutes
SHORT ANSWERS	07	05	02	10	
			Total	**25**	

10.7 Practical examination (SEC)

SI.NO	Components	Marks
1	Spotters	10
2	Case scenario/Stations	20
3	Viva Voce	20
Total Marks		50

Particulars of Practical, Viva-Voce

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

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

OSCE/OSPE- shall have minimum of 4 stations.

11. Eligibility to appear for University Examination

Each course (theory, practical, clinical etc.) shall be treated as an independent unit for the purpose of attendance. Candidates having a 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 the shortage of attendance.

Evaluation of a course shall be done based on continuous internal assessment (CIA) mode followed by Semester End University Examination (SEE) for each core, SEC, AEC & VAC. The evaluation of the Multidisciplinary elective offered by Yenepoya (Deemed to be) University shall be done based on formative assessment.

The components of CIA (Continuous Internal Assessment) may include sessional tests, seminars, assignments/ Social involvement and other activities as determined by the respective specialty.

The marks for CIA shall be 50% and SEE shall be 50%.

The minimum marks for CIA shall be 40% and SEE shall be 40% for a pass, but the minimum marks for pass per course shall be 50% CIA and SEE added together.

The HOD/Programme 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.

12. Criteria for Passing

The marks for CIA shall be 50% and SEE shall be 50%.

The minimum marks for CIA shall be 40% and SEE shall be 40% for a pass, but the minimum marks for a pass per course shall be 50% CIA and SEE added together.

A candidate shall be declared to have passed the UG programme if he/she secures at least a CGPA of 5.0 (Course Alpha-Sign Grade P) in the aggregate of both Internal Continuous Assessment and Semester End Examination.

The results of the candidates who have passed the sixth 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. Grading and Classifications

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 six semesters and the corresponding overall alpha sign grade.

b. Letter Grades and Grade Points:

i. The Deemed to be University would be following the absolute grading system, where the marks are compounded to grades based on pre-determined class intervals.

ii. The UGC recommended 10-point grading system with the following letter grades are given below:

Letter Grade	**Marks**	**Grade Point**
O (Outstanding)	90-100	10
A+ (Excellent)	80-89	9
A (Very Good)	70-79	8
B+ (Good)	60-69	7
B(Above Average)	55-59	6
P (Pass)	50-55	5
F (Fail)/ RA (Reappear)	Below 50	0
Ab (Absent)		0

*The Marks with 0.5 shall be rounded up to the next whole number.

iii. A student obtaining Grade RA/ Ab shall be considered failed and will be required to reappear in the end semester examination.

c. The Semester Grade Point Average (SGPA)

The performance of a student in a semester is indicated by a number called 'Semester Grade Point Average' (SGPA). The SGPA is the weighted average of the grade points obtained in all the courses by the student during the semester.

For example, if a student takes five (Theory/Practical) in a semester with credits C1, C2, C3, C4 and C5, and the student's grade points in these courses are G1, G2, G3, G4 and G5, respectively, then the student's SGPA is equal to:

$$SGPA = \frac{C1G1 + C2G2 + C3G3 + C4G4 + C5G5}{C1 + C2 + C3 + C4 + C5}$$

The SGPA is calculated to two decimal points. It should be noted that, the SGPA for any semester shall take into consideration the F and ABS grade awarded in that semester. For example if a student has a F or ABS grade in program 4, the SGPA shall then be computed as:

$$SGPA = \frac{C1G1 + C2G2 + C3G3 + C4* ZERO + C5G5}{C1 + C2 + C3 + C4 + C5}$$

d. Cumulative Grade Point Average (CGPA)

The CGPA is calculated with the SGPA of all the VI semesters to two decimal points and is indicated in final grade report card/final transcript showing the grades of all VI semesters and their courses. The CGPA shall reflect the failed status in case of F grade(s), till the course(s) is/are passed. When the program(s) is/are passed by obtaining a pass grade on subsequent examination(s) the CGPA shall only reflect the new grade and not the failed grades earned earlier. The CGPA is calculated as:

$$C1S1+C2S2+C3S3+C4S4+C5S5+C6S6$$

CGPA= $\frac{}{C1+C2+C3+C4+C5+C6}$

where C1, C2, C3,…. is the total number of credits for semester I,II,III,…. and S1, S2, S3….is the SGPA of semester I,II,III,…..

$$CGPA = \frac{C1S1 + C2S2 + C3S3 + C4S4 + C5S5 + C6S6}{C1 + C2 + C3 + C4 + C5 + C6}$$

Calculation of GPA & CGPA: An example (1st semester)

Program Code	Course	Credits (a)	Grade Obtained	Credit Value (b)	Grade Points (axb)
	Course 1	4	B	8	32
	Course 2	4	B	8	32
	Course 3	4	O	10	40
	Course 4	2	C	7	14
	Course 5	2	A	9	18
	Total	**16**	**-**	**-**	**136**

1st Semester GPA = Total Grade Points / Total Credits = 136 / 16 = 8.5

2nd Semester GPA = 7 with respect to 18 Credits

Then 1st Year CGPA = (8.5 x 16) + (7 x 18) / 16 + 18 = 7.7

14. Any other Information (Progression Criteria, Re-entry after break of the study, Evaluation of Answer Scripts, Internship)

14.1 Progression Criteria

- The students are allowed to carry over any number of courses till sixth semester. But student is eligible to appear for the End semester exam of sixth semester if he/she has cleared all the Courses both Core, AEC, SEC & VAC of first, second, third & fourth semesters. If

student has any pending course of first to fourth semesters, he/she is not eligible to appear for the end semester exam of the sixth semester. However, Fifth semester courses are allowed to club with sixth semester end examination. But, all the Core, AEC, SEC & VAC of first to fourth semester should be completed to be eligible for sixth semester End Semester Examination.

- Candidate should clear all Courses (Core, AEC, SEC, VAC & ME) of all the semester, to be eligible to start the one year of mandatory internship.
- A fail in any one Course will mean the candidate has to reappear for the exam in that Course only.
- A candidate who passes the semester examinations in parts is eligible for only CGPA and letter grade but not for award/medal from the University.

14.2 Re-Entry after Break of the study:

Candidates admitted to a program abstaining for more than 3 months must seek readmission into the appropriate semester.

The candidate shall follow the syllabus in vogue (currently approved/is being followed) for the program.

All re-admissions of candidates are subject to the approval of the University.

14.3 Evaluation of Answer Scripts

a. Each theory examination shall have single evaluation. There shall be provision for re-evaluation on a payment of a fee. An external examiner shall value the paper, if the difference is more than 15% of previous marks the answer script shall be sent for third evaluation. In such an event, the average of the best two out of the three scores will be taken as the final score.

b. Practical examination shall be jointly conducted and evaluated by one internal examiner and one external examiner.

14.4 Internship

A candidate has to mandatorily complete 1 year (2 semesters) of internship. The total credit per semester is 20, and for two semesters it is 40.

- **Eligibility:** A candidate should have passed in all the courses (Core, AEC, VAC and Multidisciplinary Electives) amounting to 131 credits before entering into the internship.
- **Internship guidelines:** Each semester of Internship shall be a minimum of 20 credits. The credits are calculated based on 1 credit = 3 to 5 hours of practical training. There shall be an exit exam at the end of each semester at the college level.

- **Components of Exit Exam**

Sl. No.	Components	Marks
1	Spotters	30
2	Case scenario/Stations	30
3	Viva Voice	40
Total Marks		100

Particulars of Practical, Viva-Voce

- Practical examination will be aimed at the examination of clinical skills and competence of the candidates for undertaking independent work as an Optometrist.

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

- OSCE/OSPE- shall have minimum of 3 stations

SEMESTERI

HUMANANATOMY&PHYSIOLOGYI

Course:Core

Credits:04 **Numberof hours:60**

PARTA-HUMANANATOMY

- **CourseOutcomes:**

Attheendofthecourse,studentswillbeableto:

CO1:Toidentifyandlocateeachofthebodysystemstoapplyanatomicalknowledgetoperformminor technicalprocedural skills.

CO2:Toknowthenormaldispositionofthestructuresinthebodywhileclinicallyexamining a patient and while conducting clinicalprocedures.

CO3:To know theanatomical basis ofdiseaseand injury

CO4: To discuss the interrelationship of systems in maintaining homeostasis.

CO5:Todescribethestructureofeach body system

- **Coursecontent:**

UNIT	NO. OF HOURS	CONTENT	MUST KNOW	GOODTO KNOW	DESIRABLE TOKNOW	WEIGHTAGE %	TYPE OF QUESTIONS

UNIT	NO. OF HOURS	CONTENT	MUST KNOW	GOODTO KNOW	DESIRABLE TOKNOW	WEIGH TAGE %	TYPE OF QUESTIONS
Unit I	4	**Introduction: Human body as a whole** 1.1 Definition of anatomy and its divisions 1.2Terms of location, positions, and planes 1.3 Cell and its organelles. 1.4Epithelium: definition, classification, describe with examples, function. 1.5 Glands: classification, describe serous & mucous glands with examples. 1.6 Basic tissues: classification with examples 1.7Demonstration: Histology of types of epithelium. Histology of serous, mucous & mixed salivary gland.	√			10	SE & SA
Unit II	5	**Locomotion and support** 2.1Bone: classification, names of bone cells, parts of long bone, microscopy of compact bone, names of all bones, vertebral column, inter-vertebral disc, fontanelles of fetal skull. 2.2 Joints: classification of joints with examples,	√			15	LE, SE, SA

UNIT	NO. OF HOURS	CONTENT	MUST KNOW	GOODTO KNOW	DESIRABLE TOKNOW	WEIGH TAGE %	TYPE OF QUESTIONS
		synovial joint (in detail for radiology). 2.3Muscular system: classification of muscular tissue & histology, names of muscles of the body. 2.4 Demonstration: Bones & joints. Histology of compact bone (TS & LS). Demonstration of all muscles of the body. Histology of skeletal, smooth &cardiac muscle (TS & LS). Histology of the 3 types of cartilage. Demo of all bones showing parts, radiographs of normal.					
Unit III	5	**Cardiovascular system** 3.1Heart: size, location, chambers, exterior & interior, blood supply of heart 3.2 Systemic &pulmonary circulation, branches of aorta, common carotid artery, subclavian artery, axillary artery, brachial artery, superficial palmar arch, femoral artery, internal iliac artery, peripheral pulse, inferior vena cava, portal	√			25	LE, SE, SA

UNIT	NO. OF HOURS	CONTENT	MUST KNOW	GOODTO KNOW	DESIRABLE TOKNOW	WEIGH TAGE %	TYPE OF QUESTIONS
		vein, Porto-systemic anastomosis, great saphenous vein, Dural venous sinuses. 3.3 Lymphatic system: cisterna chyli& thoracic duct, histology of lymphatic tissues, names of regional lymphatics, axillary and inguinal lymph nodes in brief. 3.4Demonstration of heart and vessels in the body. Histology of large artery, medium sized artery & vein, large vein. Histology of lymph node, spleen, tonsil & thymus. Normal chest radiograph showing heart shadows.					
Unit IV	10	**Gastro-intestinal system** 4.1 Parts of GIT, oral cavity, lip, tongue, dentition, pharynx, oesophagus, stomach, small and large intestine,liver,gall bladder, pancreas. 4.2 Tonsil, salivary glands extrahepatic biliary apparatus,Waldeyer's ring 4.3Demonstration of parts of	√			30	LE, SE, SA

UNIT	NO. OF HOURS	CONTENT	MUST KNOW	GOODTO KNOW	DESIRABLE TOKNOW	WEIGHTAGE %	TYPE OF QUESTIONS
		gastro intestinal system. Normal radiographs of gastro intestinal system. Histology of gastro intestinal system.					
Unit V	4	**Respiratory system** 5.1 Parts of RS, nose, nasal cavity, larynx, trachea, lungs, broncho-pulmonary segments, histology of trachea, lung and pleura, names of paranasal air sinuses. 5.2 Demonstration of parts of respiratory System Normal radiographs of chest. - Histology of lung and trachea.	√			15	LE, SE, SA
Unit VI	2	**Embryology** 6.1Spermatogenesis & oogenesis. Ovulation, fertilization. Fetal circulation. Placenta, Demonstration of models.		√		5	SE, SA

❖ **LE-** Long Essay**, SE-** Short Essay**, SA-** Short Answer

Recommendedbooks:

1. Priya Ranganath, Leelavathy N,Basics in Human Anatomy for BSc Paramedical Courses,Revised and updatededition,The Health

2. ChaurasiaBD.Humananatomy.CBSPublisher; 2004.
3. Vishram Singh,TextbookofAnatomy,Revisedandupdatededition,Elsevier
4. Waugh A, Grant A., Ross &Wilson Anatomy and physiology in health and illness E-book.ElsevierHealth Sciences;2014 Jun 25.
5. InderbirS.Textbookofhumanhistologywithcoloratlas.NewDelhi:JaypeeBrothersMedicalPublishers.2006.

PARTB-PHYSIOLOGY

- **CourseOutcomes:**

Attheend ofthecourse,studentswill beable to:

CO1:Todemonstratetheunderstandingofphysiologicalstructureof Renalsystem,endocrinesystem,Nervoussystemand specialsenses.

CO2:Tobroadlyidentifytheclinicalabnormalitiesoforgansanditsclinicalphysiologicalimplications

- **Coursecontent:**

UNIT	NO. OF HOURS	CONTENT	MUST KNOW	GOODTO KNOW	DESIRABLE TOKNOW	WEIGHTAGE %	TYPE OF QUESTIONS
Unit I	2	**General Physiology** 1.1 Introduction to physiology 1.2 Homeostasis: Definition, Positive feedback, negative feedback. PH 1.3 Body Fluid Compartments	√	√		15	SE, SA

UNIT	NO. OF HOURS	CONTENT	MUST KNOW	GOODTO KNOW	DESIRABLE TOKNOW	WEIGHTAGE %	TYPE OF QUESTIONS
Unit II	5	**Muscle Nerve physiology** 2.1.1Introduction, Classification and structure of muscle, sarcomere 2.2Neuromuscular junction, Transmission across neuromuscular junction. 2.3 Excitation contraction coupling. Mechanism of muscle contraction, rigor mortis.	√	√		20	LE, SE, SA
Unit III	7	Blood 3.1 Introduction: composition and function of blood. 3.2 Blood Cells: types, Normal Count 3.3 Red blood cells: function. Erythropoiesis: Definition, Stages, Factors affecting 3.4 Hemoglobin: Function, concentration Physiological variation of RBC Count and Hb 3.5 White blood cells: different types, functions, normal count, differential count	√	√		25	LE, SE, SA

UNIT	NO. OF HOURS	CONTENT	MUST KNOW	GOODTO KNOW	DESIRABLE TOKNOW	WEIGHT AGE %	TYPE OF QUESTIONS
		3.6 Platelets: origin, normal count, functions. 3.7 Haemostasis: definition, steps, clotting factors, mechanism of clotting, disorders of clotting 3.8 Blood groups: ABO system, Rh system: Rh factor, Rh incompatibility. 3.9 Blood grouping & typing, cross matching. 3.10 Blood transfusion: indication, universal donor and recipient concept. Selection criteria of a blood donor, transfusion reactions. 3.11 Anaemias: definition, Symptoms and signs (brief). 3.12 Blood indices: colour index, MCH, MCV, MCHC (def and Normal Values). 3.13 ESR and PCV: normal values, definition, determination (methods). 3.14Plasma proteins: types and concentration, functions of albumin, globulin, fibrinogen, prothrombin. 3.15 Blood volume: normal					

UNIT	NO. OF HOURS	CONTENT	MUST KNOW	GOODTO KNOW	DESIRABLE TOKNOW	WEIGHT AGE %	TYPE OF QUESTIONS
		value, determination of blood volume					
Unit IV	8	**Cardiovascular system** 4.1 Heart: physiological anatomy, nerve supply. 4.2Properties of cardiac muscle PH 4.3Cardiac cycle: definition, systole, diastole, phases, JVP(brief) 4.4Cardiac output, stroke volume, EDV (only definitions). 4.5 Heart sounds, normal heart sounds, mechanism and features, areas of auscultation. 4.6 Blood pressure: definition, normal value, clinical measurement of blood pressure, hypotension, hypertension 4.7Heart rate: Physiological variations, regulation (brief), radial pulse 4.8Electrocardiogram (ECG): Definition, Normal ECG, Causes of ECG	√	√		20	LE, SE, SA

UNIT	NO. OF HOURS	CONTENT	MUST KNOW	GOODTO KNOW	DESIRABLE TOKNOW	WEIGHT AGE %	TYPE OF QUESTIONS
		waves, Uses of ECG. 4.9Cardiac shock: Definition, Types (brief), Triple response.					
Unit V	6	**Respiratory system** 5.1Introduction: Functions of respiratory system, physiological anatomy of respiratory system, respiratory tract 5.2Respiratory organs: lungs, alveoli, respiratory membrane 5.3Mechanism of breathing: Inspiration and Expiration, muscles involved, Mechanism. 5.4Surfactant: Composition, Function, 5.5Transport of oxygen: forms of transport, Oxygen Hemoglobin Curve. 5.6Lung volumes and capacities: Spirogram, Definitions and normal Volumes. 5.7Regulation of	√	√		20	LE, SE, SA

UNIT	NO. OF HOURS	CONTENT	MUST KNOW	GOODTO KNOW	DESIRABLE TOKNOW	WEIGHTAGE %	TYPE OF QUESTIONS
		respiration: Nervous and chemical regulation, respiratory center, Herring Breur reflexes. 5.8Hypoxia: Def, Classification, Description (in brief). 5.9 Cyanosis, Asphyxia, Dyspnea, Dysbarism, Artificial Respiration, Apnea(Definition Only)					

❖ **LE**- Long Essay**, SE**- Short Essay**, SA**- Short Answer

➢ RecommendedBooks

1. Guyton(Arthur):Text BookofPhysiology.Latest Ed.Prism publishers.
2. GanongWilliamF:ReviewofMedicalPhysiology.LatestEd. TataMcGrawHill

ChatterjeeCC:HumanPhysiologyLatestEd.Vol-1,MedicalAlliedAgency.ChoudharySujithK:ConciseMedical Physiology Latest Ed. New CentralBook.

PATHOLOGY&MICROBIOLOGY-I

Course:Core

Credits:4 **NoofHours:60 Hours**

PARTA-PATHOLOGY

- **CourseOutcome:**

Atthe endof thecourse,thestudentshouldbeableto:

CO1: Explain the blood cells structure, functions & its formation.

CO2:Enumerate themethods of estimatingcell counts.

CO3:Demonstratebloodcollectionbyvariousmethods

- **Coursecontent:**

UNIT	NO. OF HOURS	CONTENT	MUST KNOW	GOODTO KNOW	DESIRABLE TOKNOW	WEIGHTAGE %	TYPE OF QUESTIONS
Unit I	2	**Introduction to Pathology**		√		05	SA
Unit II	12	**Hematology** 2.1. Normal constituents of Blood, their structure and functions. 2.2. Collection of Blood samples. 2.3. Various anticoagulants used in hematology. 2.4. Hemoglobin estimation, different methods and normal values. 2.5. RBC count. 2.6. WBC count. 2.7. Platelet count.	√			35	LE,SE, SA

UNIT	NO. OF HOURS	CONTENT	MUST KNOW	GOODTO KNOW	DESIRABLE TOKNOW	WEIGHTAGE %	TYPE OF QUESTIONS
Unit III	10	**Blood Bank** 3.1. Introduction to blood banking. 3.2. Blood group system: ABO & Rh system. 3.3. Methods of blood grouping: Forward & Reverse. 3.4. Donor selection criteria. 3.5. Collection and processing of blood for transfusion.	√			30	LE, SE, SA
Unit IV	6	**Clinical Pathology** 4.1. Collection, transport, preservation and processing of various clinical specimens. Urine. CSF. Stool. Sputum. Body fluids. 4.2. Urine examination- collection and preservation, Physical, chemical and microscopicexamination for abnormal constituents.	√			30%	LE, SE, SA

❖ **LE**- Long Essay**, SE**- Short Essay**, SA**- Short Answer

➢ RecommendedBooks

1) Makroo RN. Blood Transfusion Reactions. In: Compendium of transfusion medicine.2nd ed.2009;332-345
2) Harmening DM. Adverse effects of Transfusion In: Modern Blood Banking & Transfusion practices.6th ed. 2012.

PARTB-MICROBIOLOGY

- **CourseOutcome:**

Attheend ofthe course,thestudent shouldbe ableto:

- Thegeneralcriteriaformicrobial classification,Typesofculturemediasand methods.
- Identifykeyconceptsofimmunology.
- Implementthe commonsterilizationanddisinfectionmethods.
- Outlineandpracticegeneralbiomedicalwastemanagement.

- **Coursecontent:**

UNIT	NO. OF HOURS	CONTENT	MUST KNOW	GOOD TO KNOW	DESIRABLE TO KNOW	WEIGHTAGE %	TYPE OF QUESTIONS
Unit 1	5	**Introduction** 1.1 Introduction & history of Microbiology 1.2 Classifications of microorganisms & structure of bacteria 1.3 Microscopy and types ofmicroscope	✓			10	LE, SE

UNIT	NO. OF HOURS	CONTENT	MUST KNOW	GOOD TO KNOW	DESIRABLE TO KNOW	WEIGHTAGE %	TYPE OF QUESTIONS
Unit 2	3	**Growth & Nutrition** 2.1 Nutrition, growth and multiplication of bacteria, Bacterial Growth Curve 2.2 Culture medias 2.3 Culture methods	✓			10	LE, SE, SA
Unit 3	4	**Sterilization & Disinfection** 3.1 Classification of Sterilization and Disinfection 3.2Sterilization:Different methods of sterilization, Principles and use of equipment's of sterilization- Hot Air oven &Autoclave in detail 3.3 Disinfection: Commonly used chemical disinfectants and their uses	✓			30	LE, SE

UNIT	NO. OF HOURS	CONTENT	MUST KNOW	GOOD TO KNOW	DESIRABLE TO KNOW	WEIGHTAGE %	TYPE OF QUESTIONS
Unit 4	9	**Immunology** 4.1 Immunity- Classification and types 4.2 Antigen 4.3 Antibody 4.4 Antigen antibody reactions 4.5 Hypersensitivity reactions 4.6 Immunization schedule	✓			30	LE, SE, SA
Unit 5	4	**Infection** 5.1 Infection- Definition, types, sources and mode of transmission 5.2 Hospital acquired infections 5.3 Types of infectious diseases- outbreak, endemic, epidemic, pandemic	✓			10	SE, SA
Unit 6	5	**Applied Microbiology** 6.1 Biomedical	✓			10	SE, SA

UNIT	NO. OF HOURS	CONTENT	MUST KNOW	GOOD TO KNOW	DESIRABLE TO KNOW	WEIGHTAGE %	TYPE OF QUESTIONS
		Waste Management: Principles & Practices 6.2 Standard precautions 6.3 Hand hygiene technique and body fluids spill management 6.4 Needle stick injury management-1					

➢

- **LE-** Long Essay**, SE-** Short Essay**, SA-** Short Answer

➢ RecommendedBook

1. BavejaCP.Textbookof microbiology.AryaPublications;2005.
2. AnanthanarayanR.AnanthanarayanandPaniker'stextbookofmicrobiology.OrientBlackswan;2006.
3. OwenJA,PuntJ,StanfordSA,JonesPP,KubyJ.Kubyimmunology.Seventhedition,International
4. Edition. Basingstoke: Macmillan Higher Education; 20135.

BIOCHEMISTRY

Course:Core

Credits:4 **No ofHours: 60Hours**

➢ Course Outcomes:

At the end of the course, students will be able to:

CO1: Have knowledge and understanding of procedures of specimen collection, reagent preparation of specimens, performing biochemical tests, interpreting results, and managing biomedical waste effectively.

CO2: Understand the basic procedures in specimen collection, reagent preparation, and testing in a clinical laboratory

CO3: Demonstrate the knowledge of properties of biomolecules and their function.

CO4: Have knowledge of the importance of nutrition in health and diseases.

➢ Coursecontent:

UNIT	NO. OF HOURS	CONTENT	MUST KNOW	GOODTO KNOW	DESIRABLE TOKNOW	WEIGHTAGE %	TYPE OF QUESTIONS
Unit I	5	**Introductionto Biochemistry and Clinical Laboratory** 1.1Specimen collection:Pre analytical, variables, collection of blood, Urine, CSF, and other	✓ ✓			15	LE, SA, SE

UNIT	NO. OF HOURS	CONTENT	MUST KNOW	GOODTO KNOW	DESIRABLE TOKNOW	WEIGHTAGE %	TYPE OF QUESTIONS
		body fluids, anticoagulants and preservatives 1.2 Dilutions: Dilution of solutions (Preparation of 0.1 N NaCl from 1 N NaCl), Preparation of percent solutions, Preparing working standard from stock standard, Specimen dilutions, Serial dilutions, and Reagent dilution 1.3Special investigations:Normal values, methods, and interpretation of biochemical parameters. Preparation of patients for special investigations,	✓ ✓	✓			

UNIT	NO. OF HOURS	CONTENT	MUST KNOW	GOODTO KNOW	DESIRABLE TOKNOW	WEIGHTAGE %	TYPE OF QUESTIONS
		and interfering substances 1.4 Quality control:Definition, types, IQAS and EQAS, Calculation of mean, standard deviation and percentage of coefficient variation 1.5 Safety measures, Conventional and SI units 1.6 Bio Medical waste management					
Unit II	10	**Carbohydrate and Lipid chemistry** 2.1Introduction, Definition, Properties of carbohydrates, Classification with suitable examples.	✓ ✓ ✓			25	LE, SE

UNIT	NO. OF HOURS	CONTENT	MUST KNOW	GOODTO KNOW	DESIRABLE TOKNOW	WEIGHTAGE %	TYPE OF QUESTIONS
		2.1.1Biomedical importance of carbohydrates. 2.2Introduction, Definition, Functions, and Classification of Lipids. Definition and Classification of fatty acids, Essential fatty acids with examples.					
Unit III	5	**Protein chemistry and Plasma Proteins** 3.1Introduction, Definition, and Classification of amino acids with examples. 3.1.1Peptides: definition & biologically important peptides with examples 3.1.2Introduction, Definition, and	✓ ✓ ✓ ✓			15	LE, SE, SA

UNIT	NO. OF HOURS	CONTENT	MUST KNOW	GOODTO KNOW	DESIRABLE TOKNOW	WEIGHTAGE %	TYPE OF QUESTIONS
		Classification of Proteins with examples 3.1.3Functions of amino acids and Proteins 3.2Introduction, types, functions, and biological reference range of plasma proteins. 3.2.1Immunoglobulins	✓				
Unit IV	5	**Enzymes** 4.1Introduction, Definition, classification with suitable examples, Active site of enzyme, Factors influencing enzyme activity, 4.1.1Definition of Cofactor, Coenzyme, And isoenzymes with examples.	✓ ✓			10	LE, SE, SA
Unit V	10	**Vitamins and Minerals**				20	LE, SE

UNIT	NO. OF HOURS	CONTENT	MUST KNOW	GOODTO KNOW	DESIRABLE TOKNOW	WEIGHTAGE %	TYPE OF QUESTIONS
		5.1Introduction, Definition, classification, Fat soluble and water-soluble vitamins: Sources, RDA, Biological functions and deficiency disorders. 5.2Introduction, Definition and classification of macro and micro minerals with examples 5.2.1Calcium, Phosphorous, iron, Sodium, Potassium: Sources, RDA, Reference ranges, Functions and Disorders of deficiency and excess	✓ ✓ ✓				

UNIT	NO. OF HOURS	CONTENT	MUST KNOW	GOODTO KNOW	DESIRABLE TOKNOW	WEIGHTAGE %	TYPE OF QUESTIONS
Unit VI	10	**Nutrition** 6.1Calorific values of carbohydrates, proteins, and fats 6.2Nutritional importance of Carbohydrates, lipids, proteins, and Essential amino acids 6.3SDA: Definition, values for major macronutrients, Significance of SDA 6.4Basal metabolic rate (BMR): Definition, Reference range of BMR in men and women, Factors affecting BMR 6.5Dietary fibers: Definition, functions,	✓ ✓ ✓ ✓ ✓			15	LE, SE, SA

UNIT	NO. OF HOURS	CONTENT	MUST KNOW	GOODTO KNOW	DESIRABLE TOKNOW	WEIGHTAGE %	TYPE OF QUESTIONS
		importance and their daily requirements Balanced diet 6.6Essential fatty acids: Definition, functions and deficiency manifestations 6.7Define the classes of protein-energy malnutrition: marasmus and kwashiorkor.					

- **LE**- Long Essay**, SE**- Short Essay**, SA**- Short Answer

➢ Recommended Books

1) Vasudevan DM, Sreekumari S, Vaidyanathan K. Textbook of Biochemistry for medical students. Jaypee Brothers Medical Publishers; 2019 Sep 30.
2) Satyanarayana U and U Chakrapani. 2013. Biochemistry (version 4th ed). 4th ed. New Delhi: Elsevier Health Sciences APAC.

BASIC PATIENT CARE

Course: Core

Credits: 04 **Number of Hours: 60**

Course outcomes:

CO1 Understand about the basic care of patients provided in hospital

CO2 Gets familiar with all the various Medical Terminologies and documentation

CO3 Learns how to communicate with patient in the hospital about conditions.

CO4 Gets familiar with the admission, transfer & discharge procedures.

CO5 To learn about infection control, standard precautions, wound care and first aid management

CO6 Gets familiar with all the bedside care procedures like positioning, vitals monitoring, ECG, drug administration, IV fluid, blood and blood product transfusion

Course content:

Unit	Hrs	Content	Must to know	Good to know	Desirable to know	Weightage in %	Types of question
Unit I: Introductionto Patient Care	4	1.1 Principles of patient care	✓			10%	SE, SA
		1.2 Types of patients (Gender, age, diseases, verity of illness, triage)	✓				
Unit II: Documentation& Communication	8	**Documentation:**				20%	LE, SE, SA
		2.1 Importance of documentation	✓				
		2.2 documentation of therapy, procedures and communication	✓				
		2.3 Types of records - ward records,	✓				

Unit	Hrs	Content	Must to know	Good to know	Desirable to know	Weightage in %	Types of question
		computerized documentation,					
		2.4 Common medical terminologies	✓				
		2.5 Communication: Communicating effectively with patient, families and team members and maintain effective human relations with special reference to communicating with vulnerable group (children, women, physically and mentally challenged and elderly)	✓				
		2.6 patient contact techniques, Factors influencing communication	✓				
		2.7 patient counseling: for surgical procedures, for treatment, grief counseling; protocols, medicare standards	✓				

Unit	Hrs	Content	Must to know	Good to know	Desirable to know	Weightage in %	Types of question
Unit III: Hospital Admission and Discharge	6	3.1 Admission to the hospital- Unit and its preparation, admission bed, Admission procedure, special considerations, Medico- legal issues.	✓			15%	LE, SE, SA
		3.2 Discharge from the hospital: Types- Planned discharge, LEMA and abscond, Referrals and transfers, Discharge Planning, Discharge procedure, Special considerations, Medico--legal issues, Care of the unit after discharge.	✓				
Unit IV - Universal Precautions and Infection Control	10	4.1 Process of infection (types of infection, disease transmission, portal of entry & exit of organisms, method of transmissions, nosocomial infection)	✓			15%	LE, SE, SA
		4.2 Hand washing and hygiene.	✓				

Unit	Hrs	Content	Must to know	Good to know	Desirable to know	Weightage in %	Types of question
		4.3 Injuries and Personal protection, Insulation and safety procedures.	✓				
		4.4 Aseptic techniques, sterilization and disinfection of devices and equipment	✓				
		4.5 Central sterilization and supply department	✓				
		4.6 Biomedical Medical waste management	✓				
Unit V - Medication Administration& Transfusion	10	5.1 Purposes of medicine administration Factors modifying the dosage and effect of drugs	✓			15%	LE, SE, SA
		5.2 Routes of administration Oral administration of drug Sublingual administration of drug Buccal route of administration of drug Parenteral	✓				

Unit	Hrs	Content	Must to know	Good to know	Desirable to know	Weightage in %	Types of question
		administration of medicine					
		5.3 Transfusion Blood & blood component transfusion Intravenous fluid infusion	✓				
Unit VI – Positionof Patient	2 hrs	6.1 Patient position: prone, lateral, dorsal, dorsal recumbent, Fowler's positions, comfort measures, bed making, rest and sleep.	✓			5%	LE, SE, SA
Unit VII – Bedside Careand Monitoring	10 hrs	7.1 Methods of giving nourishment: feeding, tube feeding, drips, transfusion.	✓			10%	LE, SE, SA
		7.2 Bed side managementObservation of stools, urine, sputum, drains Use and care of catheters and rubber goods. Care of immobile/bed ridden patients, bed sore and aspiration prevention	✓				

Unit	Hrs	Content	Must to know	Good to know	Desirable to know	Weightage in %	Types of question
		7.3 Recording of Bed side care: Pulse, ECG (Cardiac Monitor), Temperature, Oxygen Saturation, Blood Pressure, Multi parameter monitors Hydration, intake and output monitoring	✓				
Unit VIII- Wound Careand First Aid	10 hrs	8.1 Wound care: classifications of wounds, first aid management of wound	✓			10%	LE, SE, SA
		8.2 Surgical dressing: observation of dressing procedures.	✓				
		8.3 Splinting	✓				
		8.4 Basic care of patient with burns	✓				
		8.5 First Aid and Basic Life Support (BLS)	✓				

Recommended Books:

1. Ballweg, Ruth et al. Physician Assistant: A Guide to Clinical Practice. 2d ed. Philadelphia: Saunders,

2. Rahr, Richard R. et al. Appleton & Lange's Quick Review: Physician Assistant. 4th ed. Stamford, CT:
3. Appleton Lange. Physician Assistant Prescribing and Dispensing. Alexandria, VA: American Academy of Physician Assistants
4. Thresyamma CP. Basic Nursing Procedure Manual and Essentials Athithi Medical Book Publisher
5. Sr Nancy Stephanie's Principles and practice of Nursing .6th ed.
6. First Aid – Redcrosssocietyguidelines
7. Basic Life Support (BLS) - American Heart Association guidelines
8. Physician Assistant's Clinical Companion. Springhouse, PA: SpringhousePublishing Company

ENGLISH AND COMMUNICATION – I

Course: AEC

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

➢ Course Outcomes:

CO1: Acquire the LSRW (Listening, Speaking, Reading, and Writing) skills. Through Cambridge Interchange Fifth Edition, students will develop real world communication skills-enhancing fluency in speaking, listening, reading and writing – wile mastering grammar, expanding vocabulary and improving pronunciation with supportive digital tools.

CO2: Learn to appreciate Literature.

CO3: Be aware of social responsibilities.

CO4: Enhance the analytical skill

➢ Course content:

Unit	Hrs	Content	Must Know	Good to Know	Desirable to Know	Weightage	Types Of Questions
Unit I	10	Cambridge: Interchange Fifth Edition 1.1 Good Memories 1.2 Life in the City 1.3 Making Changes 1.4 Have you ever tried it? 1.5 Hit the Road. 1.6 Sure. I will do it. 1.7 What do you use this for? 1.8 Time to Celebrate.	√			23%	SA
Unit II	8	Phonetics 2.1 Brief Introduction 2.2 Classification of Vowels, Diphthongs and Consonants 2.3 Pronouncing the words phonemically and transcribing them into Phonetics 2.4 IPA	√			18%	SA
Unit III	11	Grammar and Written Communication 3.1 Parts of Speech 3.2 Verb Tenses 3.3 Articles 3.4 Capitalization and Punctuation 3.5 E-mail Drafts 3.6 Formal Letters 3.7 Essay Writing	√			24%	SA
Unit IV	4	Prose 4.1 Steev Jobs: Commencement Address	√			9%	

Unit	Hrs	Content	Must Know	Good to Know	Desirable to Know	Weightage	Types Of Questions
		4.2 Mother Teresa's Award-Winning Speech					LE, SE
Unit V	6	Poetry 5.1 The Road Not Taken: Robert Frost 5.2 The Man with the Wooden Leg: Catherine Mansfield 5.3 Our Casuarina Tree: Toru Dutt	√			13%	LE, SE
Unit VI	6	Short Stories 6.1 Gift of the Magi: O' Henry 6.2 Kabulivala: Raindranath Tagore 6.3 The Blue Umbrella: Ruskin Bond		√		13%	LE, SE

- **LE-** Long Essay**, SE-** Short Essay**, SA-** Short Answer

➢ Recommended Books:

1. Cambridge: Interchange Fifth Edition
2. Contemporary English Grammar Structures & Composition by David Green
3. English Grammar and Composition: Wren & Martin
4. English Grammar in Use by Raymond Murphy

KANNADA

Course:AEC

Credits:2 **No ofHours:30Hours**

- **CourseOutcome:**

Enablestudentstolearn alphabet,wordsandsimplesentencesinKannada.

Enable students to enhance speaking and writing communicative skills in Kannada and learntechnicalwordsrelated to medical science

- **Coursecontent:**

UnitI:KannadaLetters (vowels,Consonant)

Unit II: Words, Phrases, formation of sentences, Letter Writing, Essay Writing. Treatment related Kannadawords(from English toKannada)

UnitIII:

1) Possiblecommunicationin kannadabetween Patientsand Doctors.
2) Advisingsentencesto thepossiblequestionsofpatients.
3) Someimportantsentenceswhichenabletocommunicatewithdoctorsandcolleagues.

- **RecommendedBooks**

- KannadaVyakarana–(8th,9thand10thKarnatakagovernmenttextbooks)
- HSK,VyavarahikaKannada

SEMESTERII

HUMANANATOMY& PHYSIOLOGYII

YENEPOYA
(DEEMED TO BE UNIVERSITY)

Course:Core

Credits:4 **No ofHours: 60Hours**

PART A- HUMAN ANATOMY

- **Course outcomes:**

CO1. To identify and locate each of the body systems to apply anatomical knowledge to perform minor technical procedural skills.

CO2. To know the normal disposition of the structures in the body while clinically examining a patient and while conducting clinical procedures.

CO3. To know the anatomical basis of disease and injury

CO4. To discuss the interrelationship of systems in maintaining homeostasis.

CO5. To describe the structure of each body system

- **Coursecontent:**

UNIT	NO. OF HOURS	CONTENT	MUST KNOW	GOODTO KNOW	DESIRABLE TOKNOW	WEIGHTAGE %	TYPE OF QUESTIONS
Unit I	5	**Urinary system** 1.1 Kidney, ureter, urinary bladder, male and female urethra. 1.2 Demonstration of parts of urinary system. Histology of kidney, ureter, urinary bladder.	√			15	LE, SE, SA

UNIT	NO. OF HOURS	CONTENT	MUST KNOW	GOOD TO KNOW	DESIRABLE TO KNOW	WEIGHTAGE %	TYPE OF QUESTIONS
Unit II	10	**Reproductive system** 2.1Parts of male reproductive system, testis, vas deferens, epididymis, prostate 2.2 Parts of female reproductive system, uterus, fallopian tubes, ovary 2.3 Mammary gland 2.4 Demonstration of section of male and female pelvis with organs in situ. Histology of male and female reproductive organs.	√			30	LE, SE, SA
Unit III	3	**Endocrine glands** 3.1Endocrine glands: pituitary gland, thyroid gland, parathyroid gland, suprarenal gland 3.2 Demonstration of the glands. Histology of pituitary, thyroid, parathyroid, suprarenal glands.		√		15	SE, SA
Unit IV	10	**Nervous system** 4.1 Neuron, classification of nervous system, cerebrum, cerebellum, midbrain, pons, medulla oblongata, spinal cord with spinal nerve, meninges, ventricles & cerebrospinal fluid, names of basal nuclei, blood supply of brain, cranial nerves.	√			25	LE, SE, SA

UNIT	NO. OF HOURS	CONTENT	MUST KNOW	GOOD TO KNOW	DESIRABLE TO KNOW	WEIGHTAGE %	TYPE OF QUESTIONS
		Sympathetic trunk& names of parasympathetic ganglia 4.2 Histology of peripheral nerve & optic nerve. Demonstration of all plexuses and nerves in the body. Demonstration of all parts of brain. Histology of cerebrum, cerebellum, spinal cord.					
Unit V	2	**Sensory organs** 5.1 Skin: histology, appendages of skin. 5.2 Eye: parts of eye & lacrimal apparatus. Extra-ocular muscles & nerve supply. 5.3 Parts of ear: external, middle, and inner ear and contents. 5.4 Histology of thin and thick skin. Demonstration and histology of eyeball. Histology of cornea & retina.		√		15	SE, SA

- **LE**- Long Essay**, SE**- Short Essay**, SA**- Short Answer

➢ Recommended Books

1. Chaurasia BD. BD Chaurasia's Human Anatomy. CBS Publishers & Distributors PVt Ltd.; 2010.
2. Sampath Madhyastha, Manipal Manual of Anatomy for Allied Health Sciences,New Delhi: CBS publishers and distributors.

3. Waugh A, Grant A. Ross & Wilson Anatomy and physiology in health and illness E-book. Elsevier Health Sciences; 2014 Jun 25.
4. Dilly PN. Essentials of Human Embryology. Postgraduate Medical Journal. 1984 Jun;60(704):447.
5. Inderbir S. Textbook of human histology with color atlas. New Delhi: Jaypee Brothers Medical Publishers. 2006.
6. Priya Ranganath, Leelavathy N, Basics in Human Anatomy for BSc Paramedical Courses, Revised and updated edition, The Health

PART B- PHYSIOLOGY

➢ Course Outcomes:

At the end of the course, students will be able to:

CO1: To demonstrate the understanding of physiological structure of Renal system, endocrine system, Nervous system and special senses.

CO2: To broadly identify the clinical abnormalities of organs and its clinical physiological implications

➢ Course content:

UNIT	NO. OF HOURS	CONTENT	MUST KNOW	GOODTO KNOW	DESIRABLE TOKNOW	WEIGHTAGE %	TYPE OF QUESTIONS
Unit I	5	**Digestive System** 1.1 Introduction 1.2Physiological anatomy of gastro intestinal tract (All Structures in brief), functions of digestive system 1.3Functions of Saliva 14Deglutition: definition, stages 1.5Stomach: functions 1.6Gastric secretion: composition,	√			15	LE, SE, SA

UNIT	NO. OF HOURS	CONTENT	MUST KNOW	GOODTO KNOW	DESIRABLE TOKNOW	WEIGHTAGE %	TYPE OF QUESTIONS
		function, Phases of secretion 1.7Pancreas: Functions (exocrine), pancreatic juice: composition and regulation. Secretin and CCK-PZ 1.8Liver: Functions, Bile secretion, composition, function of bile; 1.9Bilirubin metabolism, types of bilirubin, Vandenberg reaction, Jaundice: types, significance. 1.10Gall bladder: Functions. 1.11Small intestine: functions, digestion and					

UNIT	NO. OF HOURS	CONTENT	MUST KNOW	GOODTO KNOW	DESIRABLE TOKNOW	WEIGHTAGE %	TYPE OF QUESTIONS
		absorption, movements. (brief) 1.12Large intestine: functions, defecation reflex					
Unit II	5	**Renal system** 2.1 Introduction: Functions of kidneys, composition of urine, nephron, cortical and juxtamedullary nephrons (comparison), 2.2 Juxta Glomerular Apparatus: structure and function. 2.3 Mechanism of urine formation 2.4 GFR: Definition, Normal Values, factors effecting	√	√		15	LE, SE, SA

UNIT	NO. OF HOURS	CONTENT	MUST KNOW	GOODTO KNOW	DESIRABLE TOKNOW	WEIGHTAGE %	TYPE OF QUESTIONS
		GFR, Measurement (Creatine, Inulin Clearance). Tubular reabsorption, TMG, Tubular secretion (brief). 2.5Mechanism of urine concentration: Counter-current mechanisms, Role of ADH 2.6 Micturition, innervation of bladder, cystometrogram.					
Unit III	2	**Skin and Body temperature** 3.1Structure and function of Skin 3.2 Body Temperature: physiological variation. 3.3 Regulatory mechanisms: Mechanisms	√	√		10	SE

UNIT	NO. OF HOURS	CONTENT	MUST KNOW	GOODTO KNOW	DESIRABLE TOKNOW	WEIGHTAGE %	TYPE OF QUESTIONS
		Activated by Heat/Cold 3.4 Role of hypothalamus, and fever.					
Unit IV	5	**Endocrine System** 4.1 Introduction: Definition, classification of endocrine glands & their hormones. 4.2 Hypothalamo-pitiutary Axis 4.3 Pituitary hormones: anterior and posterior pituitary hormones, Functions of Growth hormone, 4.4 Thyroid gland: Thyroid Hormones: physiological		√		15	LE, SE, SA

UNIT	NO. OF HOURS	CONTENT	MUST KNOW	GOODTO KNOW	DESIRABLE TOKNOW	WEIGHTAGE %	TYPE OF QUESTIONS
		function, regulation of secretion, disorders: hypo and hyper secretion of hormone. 4.5Adrenal cortex: functions of Cortisol and Aldosterone 4.6 Adrenal medulla: functions of Adrenaline and Noradrenaline. 4.7Pancreas (Endocrine): Hormones of pancreas. 4.8Insulin: functions, regulation of blood glucose level, Diabetes mellitus 4.9 Regulation of Calcium Metabolism:					

UNIT	NO. OF HOURS	CONTENT	MUST KNOW	GOODTO KNOW	DESIRABLE TOKNOW	WEIGHTAGE %	TYPE OF QUESTIONS
		Hormones involved, actions of PTH, Calcitonin, Vit D3					
Unit V	5	**Reproductive system** 5.1 Introduction, Function of reproductive system, Changes during puberty. 5.2 Male reproductive system: functions of testes Spermatogenesis: Definition, site, stages, factors influencing, Endocrine functions of testes. 5.3 Androgens: testosterone functions. 5.4 Female reproductive system	√	√		15	LE, SE, SA

UNIT	NO. OF HOURS	CONTENT	MUST KNOW	GOODTO KNOW	DESIRABLE TOKNOW	WEIGHTAGE %	TYPE OF QUESTIONS
		5.5Menstrual cycle: Definition, changes, ovulation 5.6 Functions of progesterone and estrogen 5.7 Physiological changes during pregnancy, Lactation(brief), milk ejection reflex					
Unit VI	3	**Special senses** 6.1 Vision: Functions of different parts(brief) 6.2Optic Pathway, Dark Adaptation, Colour vision. 6.3Hearing: Function of Middle Ear, Functions of inner ear, mechanism of	√	√		15	SE, SA

UNIT	NO. OF HOURS	CONTENT	MUST KNOW	GOODTO KNOW	DESIRABLE TOKNOW	WEIGHTAGE %	TYPE OF QUESTIONS
		hearing (brief). 6.4Chemical Senses: Taste: types, receptor, Smell: physiology, receptors.					
Unit VII	7	**Nervous system** 7.1 Introduction: Parts of CNS and PNS, Functions of nervous system 7.2Neuron: definition, structure 7.3 Nerve Fibre: classification, conduction of impulses continuous and saltatory. 7.4Synapse: Definition, structure, types, properties (brief). Receptors: definition, classification,	√	√		15	LE, SE, SA

UNIT	NO. OF HOURS	CONTENT	MUST KNOW	GOODTO KNOW	DESIRABLE TOKNOW	WEIGHTAGE %	TYPE OF QUESTIONS
		properties (brief). 7.5Reflex: Definition, Reflex Arc, Examples. 7.6Spinal cord nerve tracts: Diagram and Functions: Lateral Spino Thalamic Tract, Dorsal Column, Pyramidal Tract. 7.7Spinal cord nerve tracts: Diagram and Functions: Lateral Spino Thalamic Tract, Dorsal Column, Pyramidal Tract. 7.8Cerebro Spinal Fluid (CSF): site of formation, circulation (brief), functions. 7.9Autonomic Nervous System:					

UNIT	NO. OF HOURS	CONTENT	MUST KNOW	GOODTO KNOW	DESIRABLE TOKNOW	WEIGHTAGE %	TYPE OF QUESTIONS
		Sympathetic and parasympathetic distribution and functions (brief).					

- **LE**- Long Essay**, SE**- Short Essay**, SA**- Short Answer

➢ Recommended Books

1. Guyton (Arthur): Text Book of Physiology. Latest Ed. Prism publishers.
2. Ganong William F: Review of Medical Physiology. Latest Ed. Tata
   a. McGraw Hill
3. Chatterjee CC: Human Physiology Latest Ed. Vol-1, Medical Allied Agency. Choudhary Sujith K: Concise Medical Physiology Latest Ed. New Central Book.

PATHOLOGY&MICROBIOLOGY-II

Course:Core

Credits:4 **No ofHours: 60Hours**

PART A- PATHOLOGY

➢ Course objectives:

CO1: To study fundamental aspects of different groups of microorganisms and their importance.

CO2: To compute medically important infective organisms and their diagnosis.

CO3: To enumerate the common infections of bacteria, virus, parasite and fungi.

CO4: To understand fundamental analytical principles and process used in histopathology

➢ Course content:

UNIT	NO. OF HOURS	CONTENT	MUST KNOW	GOODTO KNOW	DESIRABLE TOKNOW	WEIGHTAGE %	TYPE OF QUESTIONS
Unit I	12	**Histopathology** 1.1 Introduction to histopathology 1.2. Grossing technique 1.3. Tissue processing (Fixation, Dehydration, Clearing & Impregnation) 1.4. Embedding technique 1.5. Section cutting 1.6. H&E staining	√			30	LE, SE, SA
Unit II	6	**Cytology** 2.1. Introduction to cytology. 2.2 FNAC 2.3. PAP stain.	√			25	SE, SA

UNIT	NO. OF HOURS	CONTENT	MUST KNOW	GOODTO KNOW	DESIRABLE TOKNOW	WEIGHTAGE %	TYPE OF QUESTIONS
Unit III	12	**General Pathology** 3.1. Cell injury: Agents causing cell injury, cellular adaptations (hypertrophy, atrophy, hyperplasia, metaplasia) reversible and irreversible injury. 3.2. Inflammation: Cardinal signs of inflammation, acute and chronic inflammation. Laboratory tests in inflammation. 3.3. Hemodynamic Edema & shock Thromboemboli	√			45	LE, SE, SA

UNIT	NO. OF HOURS	CONTENT	MUST KNOW	GOODTO KNOW	DESIRABLE TOKNOW	WEIGHTAGE %	TYPE OF QUESTIONS
		sm & Infarction. 3.4. Neoplasia: Definition of neoplasm, differences between benign and malignant tumors, Carcinogenesis 3.5. Genetic disorders: Introduction to genetic disease and classification of geneticdisorder.					

❖ **LE-** Long Essay**, SE-** Short Essay**, SA-** Short Answer

➢ Recommended Books:

1. Histopathology techniques and its management –by Dr.Ramdas Nayak
2. RamnikSood, Text book of Medical Laboratory Technology 6th Edition, Vol 1 & 2

PART B- MICROBIOLOGY

➢ Course Outcomes:

At the end of the course, students will be able to:

CO1: To outline fundamentals aspects of microbiology including origin, evolution of microorganisms, different groups of microorganisms and their importance, microscopy principles and applications, morphology, and structure.

CO2: To explain microbiological media, isolation, cultivation and enumeration methods of microorganisms, microbial growth characteristics, maintenance, and preservation of microbial cultures

CO3: To develop knowledge on basic immunological concepts.

CO4: To develop knowledge on general characteristics, structure and reproduction of fungi and parasites.

➢ Coursecontent:

UNIT	NO. OF HOURS	CONTENT	MUST KNOW	GOODTO KNOW	DESIRABLE TOKNOW	WEIGHTAGE %	TYPE OF QUESTIONS
Unit I	11	**Systematic Bacteriology** 1.1 Overview of common bacterial infections & bacterial virulence factors and antimicrobial sensitivity test 1.2 Morphology	✓			30	LE, SE, SA

UNIT	NO. OF HOURS	CONTENT	MUST KNOW	GOODTO KNOW	DESIRABLE TOKNOW	WEIGHTAGE %	TYPE OF QUESTIONS
		, pathogenesis and laboratory diagnosis of medically important bacteria (Staphylococcus aureus & MRSA, Pneumococcus. Enterobacteriaceae- Salmonella (Enteric fever), E. coli, Vibrio cholerae, Mycobacterium tuberculosis 1.3 Biochemical reactions and identification of bacteria.					

UNIT	NO. OF HOURS	CONTENT	MUST KNOW	GOODTO KNOW	DESIRABLE TOKNOW	WEIGHTAGE %	TYPE OF QUESTIONS
Unit II	8	**Virology** 2.1 Nutrition, growth and multiplication of bacteria, Bacterial Growth Curve 2.2 Morphology, pathogenesis and laboratory diagnosis of (HIV-1, Hepatitis viruses- Hepatitis B & Hepatitis C virus, Rabies-1, Arbo Viruses- Dengue virus	✓			30	LE, SE, SA
Unit III	4	**Mycology** 3.1 Introduction to Mycology-1 3.2 Morphology, pathogenesis and laboratory diagnosis of	✓			20	LE, SE, SA

UNIT	NO. OF HOURS	CONTENT	MUST KNOW	GOODTO KNOW	DESIRABLE TOKNOW	WEIGHTAGE %	TYPE OF QUESTIONS
		(Dermatophytes, Candida, Cryptococcus)					
Unit IV	7	**Parasitology** 4.1 Introduction to Parasitology. 4.2 Morphology, Life cycle, pathogenesis and laboratory diagnosis of (E.histolytica, Plasmodium, Ascaris, T.solium, T.saginata, Ancylostoma)	✓			20	LE, SE, SA

- **LE**- Long Essay**, SE**- Short Essay**, SA**- Short Answer

Recommended Books:

1. Baveja CP. Textbook of microbiology. Arya Publications; 2005.
2. Ananthanarayan R. Ananthanarayan and Paniker's textbook of microbiology. Orient Blackswan; 2006.

BASICS OF MEDICINE

Course: Core

Credits: 4 **Number of Hours: 60**

- **Course outcomes:**

At the end of the programme the student will be able to:

CO1 To understand the patient health status by taking history and physical examination

CO2 To familiarize with the vital signs of the body.

CO3 To know the different systems of the body and the common disorders.

- **Course content:**

Unit	T/L Hours	Contents/SLOs	Must Know	Good to know	Desirable to know	Weightage in %	Types of questions
Unit 1: Examination of patient & Normal lab values	10	**1.1 History collection:**	✓			15%	LE, SE, SA
		1.1.1. Present illness					
		1.1.2. Family history					
		1.1.3. Personal history					
		1.2 Physical Examination	✓				
		1.2.1 Inspection					

Unit	T/L Hours	Contents/SLOs	Must Know	Good to know	Desirable to know	Weightage in %	Types of questions
		1.2.2. Palpation					
		1.2.3. Percussion					
		1.2.4. Auscultation					
		1.3 Documentation of Vital signs					
		1.4 Normal basic lab values					
Unit 2: Circulatory system	6	2.1 BLOOD: Composition, function, normal count. Clotting factors, blood grouping & typing.	✓			10%	LE, SE, SA
		a. Common disorders of circulatory system					
		2.2.1 Anaemia					
		2.2.2 DIC					
		2.2.3 Platelet disorders					
Unit 3: Cardiovascular system	6	3.1 Anatomy & Physiology of cardiovascular system and Systemic circulation & pulmonary circulation	✓			10%	LE, SE, SA

Unit	T/L Hours	Contents/SLOs	Must Know	Good to know	Desirable to know	Weightage in %	Types of questions
		3.2 Common disorders of cardiovascular system - definition, signs & symptoms,diagnosis, treatment	✓				
		3.2.1 Angina					
		3.2.2 Myocardial Infarction					
		3.2.3 Heart Failure					
		3.2.4 Hypertension					
		3.2.5 Pericardial Effusion					
Unit 4: Respiratory system	6	4.1 Anatomy & physiology of respiratory system	✓			10%	SE, SA
		4.2 Common disorders of respiratory system -					
		4.2.1 Pneumonia					
		4.2.2 Tuberculosis					
		4.2.3 COPD					
		4.2.4 Pulmonary Oedema					
		4.2.5 Respiratory					

Unit	T/L Hours	Contents/SLOs	Must Know	Good to know	Desirable to know	Weightage in %	Types of questions
		Failure					
Unit 5: Gastrointestinal system	6	5.1 Anatomy & physiology of gastrointestinal tract	✓			10%	LE, SE, SA
		5.2 Common disorders of gastrointestinal system -	✓				
		5.2.1 GERD					
		5.2.2 Peptic Ulcer					
		5.2.3 Hernia					
		5.2.4 Diarrhoea					
		5.2.5 Constipation					
		5.2.6 Hepatitis					
		5.2.7 Chronic Liver Disease					
Unit 6: Urinary system	6	6.1 Anatomy & physiology of urinary system	✓			10%	LE, SE, SA
		6.2 Common disorders of urinary system -	✓				
		6.2.1 Acute Kidney Injury					
		6.2.2 chronic kidney disease					
		6.2.3 Urinary					

Unit	T/L Hours	Contents/SLOs	Must Know	Good to know	Desirable to know	Weightage in %	Types of questions
		Tract Infection					
		6.2.4 Renal Calculi					
Unit 7: Nervous system & Endocrine system	6	7.1 Anatomy & physiology of nervous system ·	✓			15%	LE, SE, SA
		7.1.1 Common disorders of nervous system					
		7.1.2 Head ache					
		7.1.3 Epilepsy					
		7.1.4 Stroke					
		7.1.5 Meningitis					
		7.2. Classification of endocrine glands and their hormones	✓				
		7.2.2 Common disorders of endocrine system					
		7.2.3 Pituitary gland disorders					
		7.2.4 Thyroid disorders					
		7.2.5 Diabetes Mellites					
Unit 8: Musculoskelet	6	8.1 Anatomy & physiology of	✓			10%	LE, SE,

Unit	T/L Hours	Contents/SLOs	Must Know	Good to know	Desirable to know	Weightage in %	Types of questions
al system		muscle & bone					SA
		8.2 Common disorders of Musculo skeletal system	✓				
		8.2.1 Myalgia					
		8.2.2 Fracture					
		8.2.3 Joint pain					
		8.2.4 Osteoarthritis					
		8.2.5 Rheumatoid arthritis					

Recommended Books

1. Nayak - Practice of Emergency Medicine, 2008

2. Elsevier Oxford Handbook of Accident and Emergency Medicine - 2005, Oxford Peter Manning

3. Essential of Emergency Medicine- 2004, McGraw Hill Haen Principle of Haematology - 1995,

4. Essentials of medicine- Davidson

ENGLISH AND COMMUNICATION – II

Course: AEC

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

➢ Course Outcomes:

CO1: Acquire the LSRW (Listening, Speaking, Reading, and Writing) skills. Through Cambridge Interchange Fifth Edition, students will develop real world communication skills-enhancing fluency in speaking, listening, reading and writing – wile mastering grammar, expanding vocabulary and improving pronunciation with supportive digital tools.

CO2: Learn to appreciate Literature.

CO3: Be aware of social responsibilities.

CO4: Enhance the analytical skill

➢ Course content:

Unit	Hrs	Content	Must Know	Good to Know	Desirable to Know	Weightage	Types Of Questions
Unit I	13	Cambridge Interchanges Fifth Edition 1.1 Only Time Will Tell 1.2 I Like Working with People 1.3 It's Really Worth Seeing 1.4 It's a Long Story 1.5 That's Entertainment 1.6 Now I Get it 1.7 I wouldn't have done that 1.8 Making Excuses	√			29%	SA
Unit II	3	Phonetics – IPA Transcription	√			7%	SA
Unit III	13	Grammar and Written Communication 3.1 Reported Speech 3.2 Modals 3.3 Clauses	√			29%	

Unit	Hrs	Content	Must Know	Good to Know	Desirable to Know	Weightage	Types Of Questions
		3.4 Gerunds 3.5 Active and Passive Voice 3.6 Synonyms and Antonyms 3.7 News Report Writing 3.8 Speech Writing 3.9 Dialogue Writing					SA
Unit IV	4	Prose 4.1 Chicago Address by Swami Vivekananda 4.2 I have a Dream: Martin Luther King	√			9%	LE, SE
Unit V	6	Poetry 5.1 Still, I Rise: Maya Angelou 5.2 The Raven: Edgar Allen Poe 5.3 Break, Break, Break: Alfred Lord Tennyson	√			13%	LE, SE
Unit VI	6	Short Stories 6.1 The Luncheon: William Somerset Maugham 6.2 The Power of Prayer: APJ Abdul Kalam 6.3 The Necklace: Guy De Maupassant		√		13%	LE, SE

- **LE-** Long Essay**, SE-** Short Essay**, SA-** Short Answer

Recommended Books:

1. Cambridge: Interchange Fifth Edition
2. Contemporary English Grammar Structures & Composition by David Green
3. English Grammar and Composition: Wren & Martin

4. English Grammar in Use by Raymond Murphy

CONSTITUTIONOFINDIA

Course:VAC

Credits:2 **No ofHours: 30Hours**

- **Course Outcome:**

CO1: This course is to keep the students abreast with the knowledge of the Constitution of India.

CO2: To make the students understand the importance of human rights as citizens of India.

- **Course content:**

UNIT	NO. OF HOURS	CONTENT	MUST KNOW	GOODTO KNOW	DESIRABLE TOKNOW	WEIGHTAGE %	TYPE OF QUESTIONS

UNIT	NO. OF HOURS	CONTENT	MUST KNOW	GOODTO KNOW	DESIRABLE TOKNOW	WEIGHTAGE %	TYPE OF QUESTIONS
Unit I	5	Indian Constitution • Meaning and Importance of Constitution • The Constituent Assembly • The Preamble • Salient Features of Constitution	√			10	SE, SA
Unit II	3	Fundamental Rights and Directive Principles • Meaning and Differences between Fundamental Rights and Directive	√			20	LE, SE, SA

UNIT	NO. OF HOURS	CONTENT	MUST KNOW	GOODTO KNOW	DESIRABLE TOKNOW	WEIGHTAGE %	TYPE OF QUESTIONS
		Principles • Fundamental Rights • Rights Information Act Meaning, importance of RTI 2005					
Unit III	4	Union Government • The President of India- Election, Powers and Position • Prime Minister and Council of Ministers • Parliament –Loksabha ,Rajyasabha- Organisations and	√			15	LE, SE, SA

UNIT	NO. OF HOURS	CONTENT	MUST KNOW	GOODTO KNOW	DESIRABLE TOKNOW	WEIGHTAGE %	TYPE OF QUESTIONS
		Powers					
Unit IV	4	State Government • The Governor • Chief Minister and Council of Ministers • State Legislature Vidhanasabha ,vidhanaParishad- Organisations and Powers	√			10	SE, SA
Unit V	2	Federalism in India • Meaning Federal and Unitary Features	√			10	SE, SA
Unit VI	2	The Judiciary • The Supreme Court- Organizatio	√			10	SE, SA

UNIT	NO. OF HOURS	CONTENT	MUST KNOW	GOODTO KNOW	DESIRABLE TOKNOW	WEIGHTAGE %	TYPE OF QUESTIONS
		n, Jurisdiction and Role • The High Court- Organization, Jurisdiction and Role					
Unit VII	2	Electoral Process in India • Election Commission – Organization, Functions	√			10	SE, SA
Unit VIII	2	Local Governments • Rural and Urban- Organization, Powers and Functions	√			5	SE, SA
Unit IX	3	Human Rights • Human Rights- Meaning	√			5	LE, SE, SA

UNIT	NO. OF HOURS	CONTENT	MUST KNOW	GOODTO KNOW	DESIRABLE TOKNOW	WEIGHTAGE %	TYPE OF QUESTIONS
		• Universal Declaration of Human Rights • Remedies against Violation of Human Rights in India					
Unit X	3	Special Constitutional Provisions • Special Rights created in the constitution for: Dalits, Backwards, Women and Children and the Religious and Linguistic Minorities. • Constitution and Sustainable Development in India • Minority Commission in	√			5	SE, SA

UNIT	NO. OF HOURS	CONTENT	MUST KNOW	GOODTO KNOW	DESIRABLE TOKNOW	WEIGHTAGE %	TYPE OF QUESTIONS
		India					

- **LE-** Long Essay**, SE-** Short Essay**, SA-** Short Answer

Recommended Books

- Basu, D.D, Constitution of India, New Delhi Himalaya Publication; 2001
- Dinesh Shelton, David P Stuart, International Human Rights in Nutshell. Thomas Burgenthel, West Nutshell Publisher; London; 2005.
- ParvathyAppaiah, Constitution of India, Mangalore DivyaDeepa Publication; 2005
- ParvathyAppaiah, Human Rights. DivyaDeepa Publication Mangalore; 2016
- RajRam. M, Constitution of India Himalaya Publication, New Delhi; 1999

SEMESTER III

SYSTEMICPATHOLOGY

Course: Core

Credits: 3NoofHours:60Hours

- **Course Outcomes:**

Attheendofthecourse,studentswillbeable to:

CO1:Tobeabletodefinethemedicalterms,defineandclassifydiseaseandunderstand the concepts of the disease.

CO2: To be able to describe the causes and mechanism of common disease that occur duringtheroutineworkandalsochangesseenindifferentindividualandvariousorgans and fluids

CO3: To be able to enumerate various laboratory tests on various organs and serous cavities.Example: body fluids

- **Course Content:**

Unit	T/L Hours	Contents/SLOs	Must to Know	Good to know	Desirable to know	Weightage in %	Types of questions
		Cardiovascularsystem 1 **Atherosclerosis:**Definition,riskfactors, pathogenesis,morphologyandcomplications 2 **Ischemic Heart Disease:**Myocardial infarction-definition,pathogenesis,pathogenesis, morphology and complications 3 **Hypertension:**Benign and malignant hypertension: pathogenesis, pathology and	✓			40%	LE,SE, SA

Unit	T/L Hours	Contents/SLOs	Must to Know	Good to know	Desirable to know	Weightage in %	Types of questions
UnitI	17 hours	complications 4. **Anuerysms** – Definition, classification, pathology and complications 5. **HeartFailure-** Rightandleftheartfailure: causes, pathophysiology and morphology 6. **Valvular heart Disease-** causes, pathology and complication. complications of arterial valves 7. **Rheumatic heart disease and infectious endocarditis** – definition, etiopathogenesis, morphologyandcomplications. 8. **Congenital Heart disease-** types and atrial septaldefect:aneurysm– typesandmorphology, cardiomyopathies in brief 9. **Pericardial effusion**– causes, effects and diagnosis. Cardiomyopathy – definition, types, causesandsignificance,Infectiveendocarditis myocarditis					
		Hematology: 1. Anemia:definition,morphologicaltypes anddiagnosisofanemia,briefconcept					

Unit	T/L Hours	Contents/SLOs	Must to Know	Good to know	Desirable to know	Weightage in %	Types of questions
Unit2	6 hours	about hemolytic anemia and polycythemia 2 Leukocyte disorder:briefly leukemia, leukocytosis, agranulocytosis etc. Bleeding disorder: definition, classification,causesand effectofimportant types of bleeding disorders. Briefly various laboratory tests used to diagnose bleeding disorders	✓			13%	LE,SE
Unit3	12 hours	**RespiratorySystem** .1 Atelectasis-types,Adultrespiratorydistresssyndrome-causes,pathogenesisand morphology Pulmonaryedema–classification,causesandmorphology Chronic obstructive pulmonary disease- Chronic bronchitis, emphysema, asthma,bronchiectasis:Definition,etiopathogenesis and morphology Restrictivepulmonarydiseases-Definition,categories,pathogenesisand morphology Pneumoconiosis-types,asbestosis, coal workers pneumoconiosis-etiopathogenesis and morphology	✓			26%	Unit3

Unit	T/L Hours	Contents/SLOs	Must to Know	Good to know	Desirable to know	Weightage in %	Types of questions
		Pleural effusion–causes, effects and diagnosis, Pulmonary embolism,infarction,pulmonaryhypertension-Definition, etiopathogenesisandmorphology					
Unit4	10 hours	**Renalsystem** 1 Clinical manifestation of renal disease. Briefly causes, mechanism, effects and laboratorydiagnosisofARF&CRF.Briefly glomerulonephritis and pyelonephritis 2 End stage renal disease – definition, causes,effectsandroleofdialysisandrenal transplantation and its management Briefly concept about obstructive uropathy	✓			21%	Unit4

- **LE**-LongEssay,**SE**-ShortEssay,**SA**-Short Answer

➢ RecommendedBooks

1)Dr.RamadasNayak,TextbookofPathologyforAlliedHealthSciences.

2)Comprehensive clinical Nephrology-6th edition- John feehaly.

APPLIEDMICROBIOLOGY

Course: Core

Credits: 3NoofHours:60Hours

- **Course Outcomes:**

Attheendofthecourse,studentswillbeable to:

CO1Tounderstandhealthcareassociatedinfectionsandantimicrobialresistance CO2 To acquire knowledge of the principles of sterilization and disinfection inhospital.

Unit	Hrs	Content	MustKnow	Goodto Know	Desirableto	Weigh tage	Type of Question

Unit	Hrs	Content	MustKnow	Goodto Know	Desirableto	Weightage	Type of Question
Unit 1	15	**Healthcareassociatedinfectionsandantimicrobialresistance** **1.1 Infection&Multidrugresistant organisms** 1.1.1Definitions of various types of infections, Source of infection, modes of transmission, Drug resistant pathogens-methicillin resistant Staphylococcus aureus 1.1.2 Clostridiumdiffice,Vancomycin, resistant enterococci **1.2 Hospitalacquired infections** 1.2.1 Definitions, criteria for diagnosis in brief and causative agents'catheterrelatedbloodstreaminfections, ventilatorassociatedpneumonia surgical cite infections	✓	✓		50 %	LE, SE, SA

Unit	Hrs	Content	MustKnow	Goodto Know	Desirableto	Weightage	Type of Question
		1.3 Microbiology of urinary tract infections 1.3.3Definition, Causative agents, Transmission, Predisposing factors,Pathogenesis,Labdiagnosis in detail significant bacteriuria, catheterrelatedurinary tractinfections **1.4 Healthcarepersonnelinhospitalset up** ✓ 1.4.1 Disease communicable to hospital personnel and preventive measures tocombat thespreadoftheseinfectionsby monitoring and control- tuberculosis, HIV, hepatitisB, hepatitisC, salmonella 1.4.2 Respiratory route (varicella- zoster, respiratory syncytial virus etc),Blood borne transmission (cytomegalovirus, Ebola virus etc), orofaecalroute (hepatitis Aetc),directcontact **1.5 Microbiologicalsurveillance** 1.5.1 Definitions,Methods&sampling techniques Desirable to know: To know thehospital floraand toassess theantimicrobial Resistance ✓ ✓					
Unit	15	**2.1 Immunity** 2.1.1 Definition,Classification of methods,Principles of Dry heat,Moist heat,autoclaving in detail- Preparation of materials forAutoclaving: packing of		✓			

Unit	Hrs	Content	MustKnow	Goodto Know	Desirableto	Weightage	Type of Question
2		differenttypesofmaterials, loading,holding timeandunloading. 2.1.2 Hot AirOven **2.2 Disinfection,antiseptics** 2.2.1 Disinfection of instruments used in patient care: classification, differentmethods, advantages and disadvantages of the various methods. Disinfection of the patientcareunit.Infection controlmeasuresforICUs. 2.2.2 Disinfectantefficacytesting **2.3 Sterilization–appliedaspects** 2.3.1 Rooms: gaseous sterilization, Equipment's: classificationof the instrumentsand appropriate methods of sterilization.Centralsupplydepartment:the zoning and the floor plan for instrument cleaning,High-leveldisinfecting andsterilizingcritical areas. 2.3.2Qualitycontrolin CSSD 2.4 Bacteriologicalanalysisofwater 2.4.1 Differentsamplingtechniquesforportablewater,RO water,dialysate. Endotoxintesting					

- **LE**-LongEssay,**SE**-ShortEssay,**SA**-Short Answer

Textbook/ReferenceBooks:

1. BavejaCP.Textbookofmicrobiology.AryaPublications;2005.
2. AnanthanarayanR.AnanthanarayanandPaniker'stextbookofmicrobiology.Orient Blackswan;2006.

APPLIEDMICROBIOLOGYPRACTICAL

Course:Core

Credits:4Duration:60hours

- **Course Outcomes:**

Attheendofthecourse,studentswillbeable to:

CO6 Tounderstandhealthcareassociatedinfectionsand antimicrobialresistance

CO7 Toacquireknowledgeoftheprinciplesofsterilizationanddisinfection in hospital.

Unit	Hrs	Content	MustKnow	Goodto	Desirableto	Weightage

Unit	Hrs	Content	MustKnow	Goodto	Desirableto	Weightage
Unit 1	10	**Principles of autoclaving & quality control sterilization** **Infection &Multidrug resistant organisms** 1.3 Principles of autoclaving & quality control of sterilization. Definition, Classification of methods, PrinciplesofDryheat,moist heat 1.4 In detail autoclaving Preparation of materials for autoclaving: packing of different types of materials, loading, holding time and unloading. Dry heat/Moist heat:Temperaturerecording charts interpretation, Color change indicators interpretation 1.2.1Definitions,criteria for diagnosis in brief and causative agents - catheterrelatedbloodstreaminfections,ventilatorassociated pneumonia,surgical site infections	✓			25%
Unit 2	5	**Disinfectionofwards, OTandlaboratory** 2.1Disinfectionofinstruments used in patient care classification,different methods, advantages and disadvantagesofthe variousmethods.Disinfectionofthe patient care unit. Infection control measures for ICU's	✓			25%

Unit	Hrs	Content	MustKnow	Goodto	Desirableto	Weightage
Unit 3	5	**Collection of specimens for sterility testing** 3.1 Collection of specimens from outpatient units, inpatient units, minor operation theatre and major operation theatre for sterility testing Air sampling culture plates, interpretation of colony forming units based on air flow rate and sampling time	✓			25%
Unit 4	10	**Methods employed for sterility testing &Interpretation of results of sterility testing.** 4.1 Rooms:gaseous sterilization, Equipments: classification of the instruments and appropriate methods of sterilization. Central supply department: the four areas and the floor planforinstrument cleaning,high-level disinfectingand Sterilizingareas. Interpretation of sterility ofhemodialysis water/distilled water/ de ionizedwater, based on growthofcoloniesin BHIAgartobereportedasXCFU/ unit	✓			25%

- **LE**-LongEssay,**SE**-ShortEssay,**SA**-Short Answer

Recommended Books:

3) BavejaCP.Textbookofmicrobiology.AryaPublications;2005.
4) Ananthanarayan R. Ananthanarayan and Paniker's textbook of microbiology. Orient Blackswan; 2006.

GENERALPHARMACOLOGY

Course: Core

Credits: 4 **NoofHours:60Hours**

Course Outcomes:

Attheendofthecourse,studentswillbeable to:

CO1.KnowthebasicsofPharmacologylike,sourcesofdrugs,routesofdrugAdministration and general principles

CO2.Describetheprinciplesofpharmacokineticsandpharmacodynamics CO3. To appreciate various adverse drug reactions

CO4.Tohaveabasic knowledgeofdrugsaffectingvariousbodysystems

Coursecontent:

UNIT	NO. OF HOURS	CONTENT	MUST KNOW	GOOD TO KNOW	DESIRABLE TO KNOW	WEIGHTAGE %	TYPE OF QUESTIONS
Unit I	8	**General Pharmacology**1.1Introduction to Pharmacology 1.2 Routes of drug Administration 1.3Absorption & Distribution Metabolism Excretion 1.4 Pharmacodynamics - Mechanism of drug action-receptors 1.5 Factors modifying drug actions 1.6 Adverse drug reactions	√			15	LE, SE, SA
Unit II	6	**Autonomic Nervous System drugs** 2.1 Sympathomimetics 2.2 Alpha blockers 2.3 Beta-blockers 2.4 Cholinomimetics 2.5 Anticholinergics 2.6 Skeletal muscle relaxants	√			15	LE, SE, SA
Unit III	11	**Central Nervous System** 3.1Opioid analgesics 3.2 Non-opioid analgesics (Prostaglandins) 3.3 NSAIDs	√			20	LE, SE, SA

UNIT	NO. OF HOURS	CONTENT	MUST KNOW	GOOD TO KNOW	DESIRABLE TO KNOW	WEIGHTAGE %	TYPE OF QUESTIONS
		3.4 Ethyl alcohol 3.5 Sedative hypnotics 3.6 Antiepileptic drugs 3.7 Local anesthetics-1 3.8 Local anesthetics-2 3.9 General anaesthetics- I 3.10 G A – II (PAM) 3.11 CNS stimulants					
Unit IV	9	**Cardio Vascular System Drugs** 4.1 Diuretics 4.2 Vasodilators (CCB's, Drugs acting on RAS) 4.3 Antihypertensives 4.4 Antianginal drugs 4.5 Pharmacotherapy of shocks 4.6 Cardiac glycosides 4.7 Cardioplegic drugs 4.8 Antiarrhythmic drugs 4.9 Primary solutions	√			15	LE, SE, SA
Unit V	6	**Blood** 5.1 Anaemia, erythropoietin 5.2 Anticoagulants 5.3 Anti platelet drugs 5.4 Fibrinolytics, 5.5 Lipid lowering drugs 5.6 Vit.D and calcium,			√	5	SE, SA

UNIT	NO. OF HOURS	CONTENT	MUST KNOW	GOOD TO KNOW	DESIRABLE TO KNOW	WEIGHTAGE %	TYPE OF QUESTIONS
		folic acid, phosphate binders					
Unit VI	1	**Endocrines** 6.1 Corticosteroids			√	5	SE, SA
Unit VII	9	**Chemotherapy** 7.1 General Principles of Chemotherapy 7.2 Sulfonamides 7.3 Penicillins 7.4 Cephalosporins 7.5 Broad spectrum antibiotics 7.6 Macrolides 7.7 Aminoglycosides 7.8 Chemotherapy of UTI 7.9 Drug Therapy of Tuberculosis	√			15	LE, SE, SA
Unit VIII	10	**Miscellaneous topics** 8.1 Antihistamines 8.2 Antiemetics 8.3 Drugs used in bronchial asthma 8.4 Drugs used in bronchial asthma-2 8.5 Cough 8.6 Inhalational gases and emergency drugs 8.7 I V fluids		√		10	SE, SA

UNIT	NO. OF HOURS	CONTENT	MUST KNOW	GOOD TO KNOW	DESIRABLE TO KNOW	WEIGHTAGE %	TYPE OF QUESTIONS
		8.8 Metabolic and electrolyte imbalance 8.9 Immunosuppressants 8.10 Antiseptics and disinfectants					

Course Outcomes:

Attheendofthecourse,thestudentswillbeable to

- Defineanddescribetheprinciplesof pharmacologyand pharmacotherapeutics
- Defineabsorption,distribution,metabolismandexcretionof drugs
- Define,identify anddescribetheadversedrugreactions
- Defineand describe the pharmacological actions and therapeutic uses of drugs affecting systems- autonomic nervous system, cardiovascular system, blood, endocrine etc.
- Tohaveabasicknowledgeofdrugsusedinthetreatmentofvariousinfections
- Tohaveabasicknowledgeonmiscellaneous drugs

➢ RecommendedBooks:

1. ShanBhagTV,ShenoyS&NayakV.PharmacologyforNurses,Elesever;3rdedition.2023.
2. UdaykumarP.TextbookofPharmacologyforDentalandAlliedSciences.Jaypee Brothers Publishers; 4th edition. 2017.

MEDICINE- I

YENEPOYA
(DEEMED TO BE UNIVERSITY)

Course:Core

Credits:04 **Numberofhours:60 hours**

Unit	T/L Hours	Contents/SLOs	Must to Know	Good to know	Desirable to know	Weightage in %	Types of questions
Unit 1: Respiratory disorders	8	1.1Brochial asthma	✓			15%	LE,SE, SA
		1.2 Empyema	✓				
		1.3 Atelectasis	✓				
		1.4 Pneumonia	✓				
		1.5Pulmonary edema	✓				
		1.6Pleural effusion	✓				
		1.7 Pneumothorax	✓				
		1.8 Lung abscess	✓				
		1.9Pulmonary tuberculosis	✓				
Unit2: GastroIntestinal disorders	10	2.1Oesophagitis	✓			15%	LE,SE, SA
		2.2Gastritis	✓				
		2.3Peptic and Dudenalulcer	✓				
		2.4Hiatalhernia			✓		
		2.5Anal fistula andAnalfissure	✓				
		2.6Cholecystsitis		✓			
		2.7Liver	✓				

Unit	T/L Hours	Contents/SLOs	Must to Know	Good to know	Desirable to know	Weightage in %	Types of questions
		cirrhosis					
		2.8Hepatic failure	✓				
Unit 3: Cardiovascular disorders	6	3.1Hypertension	✓			10%	LE,SE, SA
		3.2Aneurysm		✓			
		3.3 coronary artery disease	✓				
		3.4Angina pectoris	✓				
		3.5Valvular disorders	✓				
		3.6Myocardial infarction	✓				
Unit4: Genitourinary disorders	6	4.1Nephritis	✓			10	LE,SE, SA
		4.2Nephrotic syndrome	✓				
		4.3Renal failure		✓			
		4.4Renalcalculi	✓				
		4.5Benign prostate hypertrophy	✓				
Unit 5: Endocrine disorders	5	5.1Diabetic mellitus	✓			10	LE,SE, SA
		5.2Diabetic insipidus	✓				
		5.3Diabetic ketacidosis		✓			
		5.4Thyroid			✓		

Unit	T/L Hours	Contents/SLOs	Must to Know	Good to know	Desirable to know	Weightage in %	Types of questions
		crisis					
		5.5 Hyperthyroidism	✓				
		5.6 Hypothyroidism	✓				
Unit 6: Neurological disorders	10	6.1Headache	✓			10	LE,SE, SA
		6.2Headinjuries		✓			
		6.3Spinalcord injuries		✓			
		6.4 Encephalitis	✓				
		6.5Braintumor	✓				
		6.6 Meningitis	✓				
		6.7 Stroke	✓				
		6.8Epilepsy	✓				
Unit 7: Communicable disorders	10	7.1Diarrheal disease		✓		10	SE, SA
		7.2Herpes			✓		
		7.3Chickenpox	✓				
		7.4Typhoid	✓				
		7.5Leprosy	✓				
		7.6Malaria		✓			
		7.7Diptheria		✓			
		7.8Yellowfever	✓				
		7.9Tetanus	✓				
Unit 8: Dermitis	10	8.1 Inflammatory dermatos	✓			10	SE, SA
		8.2Acnevulgari		✓			

Unit	T/L Hours	Contents/SLOs	Must to Know	Good to know	Desirable to know	Weightage in %	Types of questions
		s					
		8.3Psoriasie	✓	✓			
		8.4 Alopecia					

❖ **LE**-LongEssay,**SE**-ShortEssay,**SA**-Short Answer

RecommendedBooks:

1. Nayak-Practice of Emergency Medicine, 2008
2. ElsevierOxfordHandbookofAccidentandEmergencyMedicine–2005, OxfordPeter Manning
3.Essential Of Emergency Medicine- 2004, Mcgraw Hill Haen Principle of Haematology - 1995,
4. Essentialsofmedicine- Davidson

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SURGERYI

Course:Core

Credits:04Numberofhours:60 hours

Courseoutcome:

CO1Know the importance of documentation and assessment knowledge in pre operative, intra and post-operative care.

CO2Aware of various surgical procedures and post -operative rehabilitative management of major body system.

CO3Understandthebasicsurgicalsepsis,surgicalwoundclosure, application of surgical dressings and post operative wound care. or infection control and preventive measurement

CO4 Knowledge and competency in using local and regional anesthesia and understanding

appropriateutilizationandmonitorwhengeneralanesthesiais utilized.

Unit	T/L Hours	Contents/SLOs	Must Know	Good to know	Desirable to know	Weightage in %	Type of questions
Unit 1: Introductiont o Surgery	4	**1.1Introductionto surgery:**				10%	LE, SE, SA
		1.1.1.Surgicalterminology, types of incision and their indications	✓				
		1.1.2.SurgicalSutures, Knots, Drains	✓				
		1.1.3. Tourniquets-useand durationofapplication and dangers of use	✓				
		1.1.4.Surgicalinstruments	✓				
Unit II: Introduction to Anaesthesia	8	**2.1.Introduction to Anaesthesia - Local anaesthesia**				20%	LE, SE, SA
		2.1.1. Technique, Drugs used,Complicationsand management 2.2. GeneralAnaesthesia	✓				
		2.2.1. Preparation, Drugs used, Technique of general anaesthesia,	✓				

Unit	T/L Hours	Contents/SLOs	Must Know	Good to know	Desirable to know	Weightage in %	Type of questions
		Equipment used, Recovery,Complications and management					
		2.3. Regional anaesthesia					
		2.3.1. Techniques of regionalanaesthesia, Drugs and equipment used, Position, Complication management	✓				
		2.3.2. Emergencyprocedures -Endotracheal intubation,Tracheostomy	✓				
Unit III: General Principles	4	**Generalprinciplesof management of open wound**				10%	LE, SE,SA
		3.1 Classificationof surgical wound	✓				
		3.2 Wounddehiscence Incisionalhernia	✓				
		3.1.2. Gangrene	✓				
UnitIV:Common post-	5	**4.1 Commonpost-operative**				10%	LE, SE,SA

Unit	T/L Hours	Contents/SLOs	Must Know	Good to know	Desirable to know	Weightage in %	Type of questions
operative complications		**complications**					
		4.1.1 Haemorrhage	✓				
		4.1.2 SurgicalSite Infections	✓				
		4.1.3 Septicaemia	✓				
		4.1.4 DVT	✓				
UnitV:Common General surgical procedures	8	**5.1.**CommonGeneral surgical procedures				10%	LE, SE, SA
		5.1.1 Appendectomy	✓				
		5.1.2 Hernioplasty	✓				
		5.1.3 Haemorrhoidectomy	✓				
		5.1.4 Fistulectomy	✓				
Unit VI: Burns andcommonskin surgeries	13	1. **Surgicalmanagement of burns** 6.1.1 Debridement	✓			20%	LE, SE, SA
		6.1.2 Excision	✓				
		6.1.3 Grafting	✓				
		6.1.4 Reconstruction		✓			
		6.2 CommonSkinsurgeries		✓			
		6.2.1 Skin biopsy	✓				
		6.2.2 curettage and	✓				

Unit	T/L Hours	Contents/SLOs	Must Know	Good to know	Desirable to know	Weightage in %	Type of questions
		cautery					
		6.2.3 cryosurgery		✓			
		6.2.4 Topical Chemotherapy		✓			
		6.2.5 Mohs Micrographic Surgery			✓		
UnitVII:Breast surgeries	8	7.1. **Breastsurgeries**	✓			10%	LE, SE, SA
		7.1.1 Lumpectomy	✓				
		7.1.2 mastectomy	✓				
		7.1.3 Lymph node biopsy	✓				
		7.1.4 Breast reconstruction	✓				
Unit VIII: Head andnecksurgeries	10	**8.1.Headandneck surgeries**				10%	LE, SE, SA
		8.1.1Sleepapneasurgery (UPPP)	✓				
		8.1.2 Parotidectomy	✓				
		8.1.3 Thyroidectomy	✓				
		8.1.4 Craniotomy	✓				

LE-LongEssay,**SE**-ShortEssay,**SA**-Short Answer

RecommendedBooks:

1. BaileyandLove–TextbookofSurgeryforMedicalStudents.ELBSand H.K.LewisandCompany Limited.
2. NormanS.Williams,ChristopherJ.K.Bulstrode,andPRonanO'Connell,Bailey

andLove'sShortPracticeofSurgery,(2008)25theditionOxfordUniversityPress, USA

3. ManipalManual of Surgery,KRajgopal Shenoy, AnithaShenoy,4 thedition,2014.

CLINICALMEDICINE-I

Course:SEC

Credits:4NoofHours:120 Hours

➢ Course Outcomes:

Attheendofthecourse,studentswillbeable to:

CO1 Increasingtheawarenessandknowledgeofstudentsofthevaluedimensionsof interactions with the patients, colleagues, relations and public.

CO2 Fosteringthedevelopmentofskillsofanalysis,decisionmakingandjudgment.

CO3 Making thestudentsawareoftheneedto respect therights ofthepatient.

CO4 Dutiesandresponsibilities ofthe technologists.

➢ Coursecontent

Unit	T/L Hours	Contents/SLOs	Must Know	Good to know	Desirable to know	Weightage in %
	25	• TakingHistory&Vital signs • Physicalexamination • Administrationofdrugs- various routes	✓			

Unit	T/L Hours	Contents/SLOs	Must Know	Good to know	Desirable to know	Weightage in %
UnitI	hours	• Oxygen administration • ECGmonitoring				20%
UnitII	20 Hours	• Postoperativeassessment • Monitoringof drainage • Cardiacmonitoring	✓			20%
Unit III	25 hours	• Knowing the normal & abnormalvaluesofblood and urine analysis • Knowingdifferentculture methods • Knowledgetodocument in EMR	✓			20%
Unit IV	25 Hours	• Assessmentofvarious systems • ABGnormalvalues • Knowledgeofwriting medicalandsurgicalcase history	✓			20%
UnitV	25 hours	• KnowledgeofSurgical equipment • Learning scrubbing, gowning & gloving • Assistinginanesthesia • Assisting in surgical dressing	✓			20%

RecommendedBooks:

1. TsaiDF.TheWMAmedicalethicsmanual.JournalofMedicalEthics.2006Mar 1;32(3):163

SEMESTER IV

SURGERYII

Course: Core

Credits:4NumberofHours:60

- **Courseoutcomes:**

Atthe end ofthe coursethestudent should beableto:

CO1 Provide adequate pre and post operative and follow up care of surgical patients.

CO2 Counsel and guide patients and relatives regarding need, implications and problems of surgery in the individual patient.

CO3 Proficiencyinsurgicalwoundclosure,applicationofsurgicaldressings andpost operativewound care.

CO4 Orderandinterpretdiagnosticevaluationofsurgicalpatientsin preoperative, intraoperativeandpostoperativesettings.

- **Coursecontent:**

UNIT	Hrs	Content	Must to know	Good to know	Desirable to know	Weightage in %	Types of questions
UnitI: HeadInjury	4	1.1Wounds ofscalp and their management.	✓			10%	SE, SA
		1.2Recognition, diagnosisandmonitoringof patientswithhead injuryincluding unconsciousness; Glasgow coma scale;recognitionof acutecerebalcompression.	✓				
UnitII: Thorax	6	2.1 Recognition and	✓			20%	LE,SE

UNIT	Hrs	Content	Must to know	Good to know	Desirable to know	Weightage in %	Types of questions
		treatmentof pneumothorax, haemothorax; pulmonary embolism; prevention/ Recognition And treatment;flail chest;stovein chest					, SA
		2.2postoperative pulmonary complications.	✓				
		2.3Principles of management of pyothorax	✓				
		2.4cancerlung.	✓				
UnitIII: Oesophagus Stomachand Duodenum	11	3.1 Oesophageal surgeries 3.1.1 Stricturoplasty 3.1.2 Nissen fundoplication 3.1.3 Oesophageal dilatation.	✓			20%	LE,SE , SA
		3.2 SurgeryforCa Oesophagus 3.2.1Oesophagectom		✓			

UNIT	Hrs	Content	Must to know	Good to know	Desirable to know	Weightage in %	Types of questions
		y 3.2.2 Hellermyotomy 3.2.3 Pyloromyotomy					
		3.2.4 Bariatric surgery 3.2.5 Gastrectomy 3.2.6 Peritoneocentesis	✓				
UnitIV:Liver,Spleen &PancreasSurgeries	8	4.1.1. Hepaticresectionsurgery		✓		10%	LE, SE, SA
		4.1.2 Hepatectomy	✓				
		4.1.3 Liver transplantation	✓				
		4.1.4 Spleen & pancreassurgeries		✓			
		4.1.5 splenectomy	✓				
		4.1.6 splenorrhaphy		✓			
		4.1.7 Whipple surgery	✓				
		4.1.8 Duct drainage procedures	✓				
UnitV: GallBladder Surgeries	8	5.1 Gallbladder surgeries	✓			**10**%	**LE, SE,SA**

UNIT	Hrs	Content	Must to know	Good to know	Desirable to know	Weightage in %	Types of questions
		5.1.1 Cholecystectomy	✓				
		5.1.2 ERCP	✓				
UnitVI: IntestinalSurgeries	3	6.1 Intestinal surgeries				10%	LE, SE, SA
		6.1.1 Bowel resection			✓		
		6.1.2Colectomy	✓				
		6.1.3 Jejunostomy		✓			
		6.1.4 Ileostomy	✓				
		6.1.5 Colorectal resection			✓		
Unit VII: Intestine	8	7.1Intestinal amoebiasis	✓			10%	LE, SE, SA
		7.1.1tuberculosis of intestine,		✓			
		7.1.2carcinoma colon	✓				
		7.1.3Lower gastrointestinal haemorrhage	✓				
		7.1.4Ulcerative colitis	✓				
		7.1.5 Premalignant conditions of large bowel	✓				
		7.1.5Intestinal					

UNIT	Hrs	Content	Must to know	Good to know	Desirable to know	Weightage in %	Types of questions
		Obstruction	✓				
Unit VIII: Pediatric Surgery	12	8.1.1 Ambiguous genetaliA	✓			10%	LE, SE,SA
		8.1.2 Gastroschisis		✓			
		8.1.2 Undescended testis		✓			
		8.1.3 Hypospadias		✓			
		8.1.5 Circumcision	✓				

LE-LongEssay**,SE**-ShortEssay**,SA-**Short Answer

RecommendedBooks:

1. BaileyandLove–TextbookofSurgeryforMedicalStudents.ELBSand H.K.LewisandCompany Limited.

2.NormanS.Williams,ChristopherJ.K.Bulstrode,andPRonanO'Connell,BaileyandLove'sShortPracticeofSurgery,(2008)25theditionOxfordUniversityPress,USA

3. ManipalManual of Surgery,KRajgopal Shenoy,AnithaShenoy,4th edition,2014.

OBSTETRICSANDGYNAECOLOGY

Course:Core

Credits:04Numberofhours:60hours

Course Outcome:

CO1 Toacquireknowledge aboutgynecologicalinfections.

CO2 TogainthoroughknowledgeandskillsofPelvicorganexamination

CO3 To understand Reproductive endocrinology.

CO4 ToidentifyMenopausalissuesanditsHormones

CO5Torecognizeappropriateinvestigationsandmanagementmodalitiesfor Gynaecological Cancers

Unit	Hrs	Content	Must to know	Good to know	Desirable to know	Weightage in %	Types of questions
Unit I	15	1.1 Bony pelvis – importantlandmarksof obstetrics significance, foetal skull	✓			20%	LE, SE, SA
		1.2Physiologicalchanges in pregnancy	✓				
		1.3 Menopause	✓				
		1.4 Conception	✓				
		1.5 Abortions	✓				
		1.6 Gestational trophoblasticdiseases	✓				
		1.7 Vulva -cyst, inflammation, neoplasia,dystrophy	✓				

Unit	Hrs	Content	Must to know	Good to know	Desirable to know	Weightage in %	Types of questions
		1.8 Vagina – cytology, infection, inflammation,neoplasia	✓				
		1.9 Uterus – endometriosis, adenomyosis , hyperplasia,atrophy, carcinoma	✓				
		1.10 Cervix – erosion, infections,malignancy	✓				
		1.11 Infections – STD, genitalTB,HIV,TORCH, vertical transmission of HIV	✓				
UnitII:	11	2.1OBSTETRICS: Diagnosisof pregnancy	✓			20%	LE,SE,SA
		2.2Antenatalcareand foetal surveillance	✓				
		2.3Firsttrimester bleeding	✓				
		2.4Normalandabnormal presentations and positions	✓				
		2.5Dystociaduetobony pelvis	✓				
		2.6 Softtissue		✓			
		2.7High risk pregnancies	✓				

Unit	Hrs	Content	Must to know	Good to know	Desirable to know	Weightage in %	Types of questions
		2.8 IUGR	✓				
		2.9 IUD	✓				
		2.10Preterm labour	✓				
		2.11Prematureruptureof membranes	✓				
		2.12Polyandoligo-hydramnios	✓				
		2.13Post dated delivery,	✓				
Unit III:	16	3.1Prolongedlabour	✓			20%	LE,SE,SA
		3.2Obstructedlabour	✓				
		3.3 Rupture uterus	✓				
		3.4PreviousLSCS	✓				
		3.5Thirdtrimester bleeding	✓				
		3.6Preeclampsiaand eclampsia	✓				
		3.7Medicaldisorders complicatingpregnancy	✓				
		3.8Surgicalemergencies in obstetrics	✓				
		3.9 Rh iso immunization	✓				
		3.10 Partogram		✓			
		3.11Ultrasoundin obstetrics		✓			
		3.12Foetalmonitoring					

Unit	Hrs	Content	Must to know	Good to know	Desirable to know	Weightage in %	Types of questions
				✓			
		3.13Activemanagement of labour	✓				
		3.14Neonatal resuscitation		✓			
		3.15 Analgesia and anaesthesiainobstetrics		✓			
		3.16Instrumental deliveries	✓				
		3.17 LSCS	✓				
		3.18Thirdstage complications	✓				
		3.19 Normal and abnormalpuerperium	✓				
		3.20 Morbidity and mortality, medical auditinginobstetrics			✓		
Unit IV:	15	4.1 Gynaecology : Mal-development, injuries, infections,cysts,tumours of female genital tract.	✓			20%	LE,SE,SA
		4.2Vulva–inflammation, ulcers, atrophy, dystrophies, cysts, neoplasm	✓				
		4.3Vagina–leucorrhoea,					

Unit	Hrs	Content	Must to know	Good to know	Desirable to know	Weightage in %	Types of questions
		infections, carcinoma	✓				
		4.4Cervix–erosion, ulcer, dysplasia, carcinoma	✓				
		4.5 Uterus – prolapse, displacements(inversion and retroversion),abnomalute rine bleeding / post menopausal bleeding, endometrialhyperplasia, benign and malignant tumours.	✓				
		4.6Primaryandsecondary amenorrhoea	✓				
		4.7 Infertility	✓				
		4.8 PCOD	✓				
		4.9Assistedreproductive techniques	✓				
		4.10 Choriocarcinoma	✓				
Unit V:	3	5.1Stress incontinence	✓			10%	SE,SA
		5.2Pelvicpain		✓			
		5.3Lowbackache			✓		
		5.4Cancerscreeningfor genital malignancy and	✓				

Unit	Hrs	Content	Must to know	Good to know	Desirable to know	Weightage in %	Types of questions
		breast / Pap smear					

LE-LongEssay,**SE**-ShortEssay,**SA**-Short Answer

RecommendedBooks:

- PrinciplesandpracticeofObstetricsandGynaecologybyKAmalBuckshae,2001 ,J.P.BrothersMedicalPublishersP.ltd.
- Howkins&Bourne:Shaw's textbookofGynecology-14th Edition
- Dutta–Gynaecology,NCBA

PAEDIATRICSANDGERIATRICS

Course: Core

Credits:4NumberofHours:60

- **Course Outcome:**

CO1Understanding of behavior and child development, and its impact on health and illness.

CO2Demonstratetheskillsnecessarytoperformacompleteandaccuratepediatric history including prenatal, birth, developmental, dietary, immunization, and psychosocial histories.

CO3Recognizecommondiseaseswhichpresentdifferentlyinelders.Andunderstanding of particular factors including diet exercise and sleep which affect older people's adjustments to life.

- **COURSECONTENT:**

Unit	Hrs	Content	Must to know	Good to know	Desirable to know	Weightage in %	Types of questions
Unit 1: Introduction	6	1.1Population,morbidity& mortality	✓			15%	LE,SE,SA
		1.2 National programmes	✓				

Unit	Hrs	Content	Must to know	Good to know	Desirable to know	Weightage in %	Types of questions
to paediatrics		on child health: Vitamin A deficiency control program Mid Day Meal program, National Nutritional anemia control program					
		1.3 Balwadi Nutrition Program ICDS (Integrated Child Development Services Scheme)		✓			
		1.4ARIcontrol programme	✓				
		1.5RCH(Reproductive& child health)programme.	✓				
Unit 2: Normal Growth &Developmentt	6	2.1somaticgrowth	✓			15	LE,SE,SA
		2.1.1Assessmentof physical growth	✓				
		2.2.Normaldevelopment	✓				
		2.2.1Importantmilestones in development	✓				
		2.2.2Social development	✓				
		2.3 psychological & behaviouralproblems.	✓				
Unit 3: Nutrition&Breast feeding	10	3.1Nutrition: Normalrequirements.	✓			15	LE,SE, SA
		3.2Undernutrition	✓				
		3.3 Breastfeeding : Advantages&Techniques	✓				

Unit	Hrs	Content	Must to know	Good to know	Desirable to know	Weightage in %	Types of questions
		3.3.1Typesofbreastmilk	✓				
		3.4Weaningoffoods& methods of weaning.	✓				
		3.5Assessmentof nutritional statusofchildbasedon history and physical examination.	✓				
		3.6 Nutritional Disorder:Proteinenergy malnutrition	✓				
		3.7 Obesity	✓				
Unit 4: Immunization &Vaccines	4	4.1Nationalimmunization programme	✓			10	SE,SA
		4.2 vaccines: vaccine preservation&coldchain	✓				
Unit 5:Disorders in paediatrics	18	5.1Disordersofrespiratory system	✓			20	LE,SE,SA
		5.2Disorders of Gastrointestinalsystem	✓				
		5.3DisordersofCentral nervous system	✓				
		5.4 Disorders of Cardiovascularsystem	✓				
		5.5 Disorders of genitourinarysystem	✓				
		5.6Haematological disorders.	✓				

Unit	Hrs	Content	Must to know	Good to know	Desirable to know	Weightage in %	Types of questions
		5.7 Principles of inheritanceanddiagnosis of genetic disorders – Down's syndrome	✓				
Unit 6:Paediatric emergency	2	6.1Paediatricemergencies –statusepilepticus,status asthmaticus,buns	✓			5	SA,SE
Unit 7:Geriatrics	14	7.1 physiological and psychological fundamentalsofaging process			✓	20	LE,SE,SA
		7.2Dietfortheaged and management of nutritional disorder		✓			
		7.3Degenerative joint disease-Osteoporosis.	✓				
		7.4Effectsofimmobility– prevention of contracture and bedsores.	✓				
		7.5Disordersofmajor geriatricailmentsand management	✓				
		7.6Economic and psychosocialneedsofthe aged- Role of various health care providers &family.			✓		

- **LE**-LongEssay,**SE**-ShortEssay,**SA**-Short Answer

- **RecommendedBooks**

1. BERGMAN,ABRAHAMB.20CommonProblems in pediatrics. New York: McGraw- Hill
2. HOEKELMAN,ROBERTA.PrimaryPediatricCare.3ded.St. Louis:Mosby,
3. PARKER,STEVEN,ANDZUCKERMAN,BARRYS.,EDS.
   BehavioralandDevelopmentalPediatrics:AHandbookfor PrimaryCare.NewYork:Little,BrownandCompany
4. ADELMAN,ALENM.,ANDDALY,MELP.,EDS.20Common
   ProblemsinGeriatrics.NewYork:McGraw-Hill,

CLINICALMEDICINEII

Course: SEC

Credits: 4 **NoofHours:120Hours**

- **Course Outcomes:**

Attheendofthecourse,studentswillbeable to:

CO1Understanding of behavior and child development, and its impact on health and illness.

CO2Understanding theeffectsofcommonmedicalproblemsonpregnancyand delivery.

CO3Recognizecommondiseaseswhichpresentdifferentlyinelders.And understanding of particular factors including diet exercise and sleep which affect older people’s adjustments to life.

Unit	Hrs	Content	Must to know	Good to know	Desirable to know	Weightage in %
Unit 1 – OBG	30	1.1 Normal Pelvis, fetal Skull, Diagnosis of pregnancy	✓			35%
		1.2 Ultrasoundinobstructs, stages of labor	✓			
		1.3 Fetalmonitoring	✓			
		1.4 Managementof labor	✓			
		1.5 Managementofthird stage and complications	✓			
		1.6 Papsmear	✓			
		1.7 Neonatology	✓			
		1.8Managementofbirth injuries	✓			
		1.9Immunizationof Newborn	✓			
		1.10Kangaroo care	✓			
		1.11Casehistory-Gynecology	✓			
		1.12 Casehistory – obstructs	✓			
Unit II Pediatrics	60	2.1History Taking & health AssessmentofNewborn, infant, toddler,preschooler, schooler, adolescent	✓			35%

		2.2Growth&developmental Assessment Newborn,infant, toddler, preschooler,schooler, adolescent	✓			
		2.3NutritionalAssessment Newborn,infant, toddler , preschooler, schooler, adolescent	✓			
		2.4DehydrationAssessment&management	✓			
		2.5Immunization /Administrationofvaccines	✓			
		2.6 BCG,Oralpolio,DPT, Measles, Hepatitis	✓			
		2.7Care of neonates in: Warmer,Incubator,Ventilator, Phototherapy	✓			
Unit III– Geriatrics	30	3.1Ward Rounds	✓			30%
		3.2OPD	✓			
		3.3Counselingforthe elderly	✓			
		3.4 Dietforthe aged	✓			
		3.5Adult Immunization Schedule	✓			

ENVIRONMENTALSTUDIES

Course:VAC

Credits:2NoofHours:30 Hours

➢ Course outcomes:

CO1 Studentswillbeabletolearnaboutenvironment,factorsaffectingit, environmental ethics and its protection.

CO2 Students will be able to describe a system, component, or process to meet desiredneedswithinrealisticconstrainssuchaseconomic,environmental,social, political, ethical and sustainability.

CO3Studentswillbeabletocriticallyanalyzetechnicalsubjectmatterforscientific merit apply learned environmental knowledge and understanding to solve technical/ research problems in new context.

➢ Coursecontent:

Unit	Hrs	Content	Must	Goodto	Desirable	Weightage	Type of Question
Unit I	2	Multidisciplinarynatureof Environmental Studies • Multidisciplinary nature of Environmental Studies Environment definition, Components of environment, Scopeofenvironmentalstudies. Four spheres of earth (Hydrosphere, Atmosphere, Lithosphere and Biosphere) • Concept of sustainability and sustainable development (Brundtland Commission), pillars of sustainability; SustainableDevelopmentGoals (SDGs). International Agreements: Montreal protocol, Kyoto protocol, Convention on BiologicalDiversity(CBD)	✓			5%	**SE,SA**

Unit	Hrs	Content	Must	Goodto	Desirable	Weightage	Type of Question
Unit II	6	Ecosystems • Whatisanecosystem? Ecological units.Structureofanecosystem; biotic and abiotic components, and function of an ecosystem; energy flow in the ecosystem; biogeochemicalcycle,biological interactions, food chains, food webs,ecological pyramids and ecological succession. • Typesofecosystems: a. Terrestrial • Forest ecosystem – tropical evergreen, tropical deciduous, temperate evergreen, temperatedeciduousand Taiga/Boreal • Grassland ecosystem – SavannasandTemperate grasslands (Steppes, Pampas, Prairies,Veldt andDowns.	✓			10%	SE,SA
		• Desertecosystem–hot and dry, semi-arid, coastalandcold.Plant andanimaladaptations. b.Aquaticecosystems–Marine, Freshwater(lenticandlotic) and Estuarine; Pond as an ecosystem. Ecosystemservices					

Unit	Hrs	Content	Must	Goodto	Desirable	Weightage	Type of Question
Unit III	7	NaturalResources • Classification of natural resources- RenewableandNon- renewable resources • Forest resources: Uses (timber, medicinal, food, economic importance,preventsoilerosion, control floods, religious and cultural practices) and overexploitation (Deforestation, timber extraction, mining, construction of dams). • Water resources: Uses (domestic, agricultural, industrial, electricity and transport)andoverutilizationof surface and ground water (drying of wells, lakes and ponds, extraction of groundwater, decrease in water table, deterioration of water quality and land subsidence). Floods, Drought, dams – benefits and problems, conflicts over water (state and international) • Land resources: Land as a resource;Landdegradation, earthquake, landslides, soil erosion and desertification. • Energy resources: Renewable and non-renewable energy sources,growingenergyneeds, useofalternateenergysources,casestudies(Kochi–firstsolar powered airport, Tamil Nadu – windmills, Gujarat – tidal energy)	✓			15%	SE,SA

Unit	Hrs	Content	Must	Goodto	Desirable	Weightage	Type of Question
		Conservationofforest,water, land and energy resources.					

Unit	Hrs	Content	Must	Goodto	Desirable	Weightage	Type of Question
Unit V	8	EnvironmentalPollution Definition • Cause,effectsandcontrol measures/managementof:- a. Airpollution b. Waterpollution c. Soilpollution d. Lightpollution e. Noisepollution f. Thermalpollution g. Radiationpollution Pollutioncasestudies(London smog, Bhopal gas tragedy, Beijing/Delhi air pollution,Eutrophication,Minamata disease,ExxonValdezoilspill, Lovecanaltragedy,Chernobyl disaster) • Climate change, Greenhouse effect,Globalwarming,Acid rain, Ozone layer depletion. • Solid waste management: controlmeasuresofurbanand industrial wastes. • Carbon footprint – How to calculatecarbonfootprintand ways to reduce your carbon footprint. • HumanPopulationgrowth – impactsonenvironment	✓			15%	SE,SA

Unit	Hrs	Content	Must	Goodto	Desirable	Weightage	Type of Question
		• Environmental movements: Chipkomovement,Bishnoi's of Rajasthan,Silent Valley, NarmadaBachaoAndolan					

❖ LE–LongEssay,SE-ShortEssay,SA-ShortAnswer

Recommended Books:

1. Carson,R.2002.SilentSpring.HoughtonMifflinHarcourt.
2. Gadgil,M.,&Guha,R.1993.ThisFissuredLand:AnEcologicalHistoryofIndia.Univ. of California Press.
3. Gleeson,B.andLow,N.(eds.)1999.GlobalEthicsandEnvironment,London,Routledge.
4. Gleick,P.H.1993.WaterinCrisis.PacificInstituteforStudiesinDev.,Environment& Security.StockholmEnv.Institute,OxfordUniv.Press.
5. Groom,MarthaJ.,Gary K.Meffe,and Carl RonaldCarroll.Principlesof

Conservation Biology.Sunderland:SinauerAssociates,2006.

6. Grumbine,R.Edward,andPandit,M.K.2013.ThreatsfromIndia'sHimalayadams .Science,339:36-37.
7. McCully,P.1996.Riversnomore:theenvironmentaleffectsofdams(pp.29-64).Zed Books.
8. McNeill,JohnR.2000.SomethingNewUndertheSun:AnEnvironmentalHistory ofthe Twentieth Century.
9. Odum,E.P.,Odum,H.T.&Andrews,J. 1971.Fundamentalsof Ecology. Philadelphia: Saunders.
10. Pepper,I.L.,Gerba,C.P.&Brusseau,M.L.2011.EnvironmentalandPollutionScience. Academic Press.
11. Rao,M.N.&Datta,A.K.1987.WasteWaterTreatment.OxfordandIBHPublishingCo. Pvt. Ltd.
12. Raven,P.H.,Hassenzahl,D.M.&Berg,L.R.2012.Environment.8thedition.JohnWiley&Sons.
13. Rosencranz,A.,Divan,S.,&Noble,M.L.2001.Environmentallawandpolicyin India. Tripathi 1992.
14. Sengupta, R. 2003. Ecology and economics:Anapproachtosustainable development. OUP.
15. Singh,J.S.,Singh,S.P.andGupta,S.R.2014.Ecology,EnvironmentalScienceand Conservation.S.ChandPublishing,NewDelhi.
16. Sodhi,N.S.,Gibson,L.&Raven,P.H.(eds).2013.ConservationBiology:Voicesfrom the Tropics. John Wiley & Sons.
17. Thapar,V.1998.LandoftheTiger:ANaturalHistoryoftheIndianSubcontinent.
18. Warren,C.E.1971.BiologyandWaterPollutionControl.WBSaunders.
19. Wilson,E.O. 2006.TheCreation: Anappealtosavelife onearth.NewYork: Norton.
20. WorldCommissiononEnvironmentandDevelopment.1987.OurCommonFuture. Oxford University Press

SEMESTER V

GASTROENTEROLOGY

Course:Core

YENEPOYA
(DEEMED TO BE UNIVERSITY)

Credits:4 **No.ofHours:60Hours**

CourseOutcome:

Onthesuccessfulcompletionofthe course,studentswillbeable to,

CO1ReviewtheAnatomyandPhysiologyofGI tract

CO2Performanddiagnosethediseasebyphysicalexamination,stooltest,structuralandfunctional tests

CO3GainKnowledgeaboutgastroenterologyrelateddisease

CO4LearnabouttheTherapeuticdrugsandTreatmentoftheGastroenterologicaldisease

CO5Aware of surgical interventions of Gastroenterological disease

Course content:

Unit	T/L Hours	Contents/SLOs	Must Know	Good to know	Desirable to know	Weightage in %	Types of questions
Unit 1 Anatomy and Physiology of GI tract	8	1.1 Layers of the wall in GI tract	✓			10	SE, SA
		1.2 Oral cavity	✓				
		1.3 Salivary glands	✓				
		1.4 Oesophagus	✓				
		1.5 Small intestine and large intestine	✓				
		1.6 Liver, Gallbladder and pancreas	✓				

Unit	T/L Hours	Contents/SLOs	Must Know	Good to know	Desirable to know	Weightage in %	Types of questions
Unit 2: Assessment and Diagnosis	10	2.1 Physical examination	✓			15	LE, SE, SA
		2.2 Bristol stool chart	✓				
		2.3 Colorectal screening	✓				
		2.4 Structural test	✓				
		2.5 Functional test	✓				
		2.6 Endoscopy	✓				
		2.7 Colonoscopy			✓		
		2.8 Jejunoscopy	✓				
		2.9 Cholangiopancreatogram		✓			
		2.10 Capsule endoscopy	✓				
		2.11 Sigmoidoscopy	✓				
Unit 3: Diseases	6	3.1 Dyspepsia	✓			10	SE, SA
		3.2 Peptic ulcer		✓			
		3.3 GI Cancer	✓				
		3.4 Inflammatory bowel disease	✓				
		3.5 Jaundice	✓				

Unit	T/L Hours	Contents/SLOs	Must Know	Good to know	Desirable to know	Weightage in %	Types of questions
		3.6 Constipation and Diarrhea	✓				
Unit 4: Therapeutic Drugs and Treatment	6	4.1 Dyspepsia Acid suppressor Therapy	✓			10	SE, SA
		4.2 Proton pump inhibitor	✓				
		4.3 Acid suppressor		✓			
		4.4 Antacids	✓				
		4.5 Benign prostate hypertrophy	✓				
Unit 5: Surgical interventions I	5	5.1Vagotomy	✓			15	LE, SE, SA
		5.2 Nissen fundoplications	✓				
		5.3 Esophageal replacement procedure		✓			
		5.4 Partial gastrectomy			✓		
		5.5 Vagotomy	✓				
		5.6 Endoscopic mucosal resection	✓				

Unit	T/L Hours	Contents/SLOs	Must Know	Good to know	Desirable to know	Weightage in %	Types of questions
Unit 6: Surgical interventions II	10	6.1Whipple's procedure	✓			10	LE, SE, SA
		6.2 Total gastrectomy		✓			
		6.3 Rectosigmoidectomy		✓			
		6.4 Endorectal pullthrough (Soave's procedure)	✓				
		6.5 Abdominal colectomy	✓				
		6.6 Rectal mucosectomoy	✓				

❖ Long Essay - LE, Short Essay - SE, Short Answer - SA

RecommendedBooks:

1. Feldman M, Friedman LS, Brandt LJ, editors. Sleisenger and Fordtran's gastrointestinal and liver disease: pathophysiology, diagnosis, management. Elsevier health sciences; 2020 Jun 9.
2. SchiffL,SchiffER,editors.DiseasesoftheLiver. Ph
3. iladelphia:Lippincott;1993Jun.
4. LeevyCM,PopperH,SherlockDS.Diseasesoftheliverandbiliarytract:Standardization ofnomenclature, diagnostic criteria, and diagnostic methodology. Department of Health, Education, and Welfare, Public Health Service, National Institutes of Health; 1976.
5. Podolsky D. K., Camilleri M., Fitz J. G., Kalloo A. N., Shanahan F., Wang T. C. *Yamada's Textbook of Gastroenterology.* 6th ed. Wiley-Blackwell; 2015.

6. Bloom S., Webster G., Marks D. *Oxford Handbook of Gastroenterology and Hepatology.* 3rd ed. Oxford University Press; 2022.
7. Kwo P. Y., Cohen S. M., Lim J. K. *Mayo Clinic Gastroenterology and Hepatology Board Review.* 5th ed. Oxford University Press; 2019.
8. Brunicardi F. C., Andersen D. K., Billiar T. R., Dunn D. L., Hunter J. G., Matthews J. B., Pollock R. E. *Schwartz's Principles of Surgery.* 11th ed. McGraw-Hill Education; 2019.
9. Sanyal A. J., Boyer T. D., Terrault N. A., Lindor K. D.*Zakim and Boyer's Hepatology: A Textbook of Liver Disease.* 7th ed. Elsevier; 2018.
10. Mahadevan U., Terdiman J. P. *Gastroenterology and Hepatology: Board Review Blueprint.* Wolters Kluwer; 2018.

NEPHROLOGY AND PULMONOLOGY

Course:Core

Credits:4 **No.ofHours:60Hour**

CourseOutcome:

Onthesuccessfulcompletionofthe course,studentswillbeable to

CO1 Gainknowledgeaboutnormalstructureandfunctionsofkidney

CO2 Help the students to evaluate the patient with kidney disease

CO3 Identify the Disorders of Kidney

CO4 Understandthebasicsofanatomyandphysiologyofrespiratorysystem, thoracic cavity, body fluids, blood.

CO5 Knowtheimportanceofassessmentanddiagnosticprocedures,invasivetechniques in respiratory system.

Course content:

Unit	T/L Hours	Contents/SLOs	Must Know	Good to know	Desirable to know	Weightage in %	Types of questions
Unit I Normal Structure and Functions of Kidney	7	1.1Anatomy of the kidney-The renal circulations and glomerular ultrafiltration	✓			15	LE, SE, SA
		1.2 Aldosterone regulation of ion transport-Transport of calcium, magnesium and phosphate	✓				
		1.3 Renal acidification mechanisms-Urine concentration and dilution	✓				
		1.4 Vasoactive molecules and the kidney	✓				
		1.5 Disorders of sodium balance	✓				
		1.6 Disorders of water balance	✓				
		1.7 Disorders of acid–base balance	✓				
		1.8 Disorders of potassium balance	✓				
		1.9 Disorders of calcium, magnesium and potassium	✓				
Unit II Evaluation of the Patient	7	2.1 Laboratory assessment of kidney disease: Glomerular filtration rate, urinalysis and proteinuria	✓			15	SE, SA

with Kidney Disease		2.2 Interpretation of electrolyteand acid-base parameters in blood and urine	✓				
		2.3 Diagnostic kidney imaging		✓			
		2.4 The renal biopsy	✓				
		2.5 Biomarkers in acute and chronic kidney diseases	✓				
Unit III Disorders of Kidney	8	3.1 Acute Kidney Injury-Primary Glomerular disease-Secondary glomerular disease	✓			15	LE, SE, SA
		3.2 Overview of therapy for glomerular disease-Microvascular and macrovascular diseases of the kidney		✓			
		3.3 Tubulo-interstitial diseases	✓				
		3.4 Urinary tract infection in adults	✓				
		3.5 Urinary tract obstruction	✓				
		3.6 Diabetic nephropathy	✓				
		3.7 Nephrolithiasis	✓				
		3.8 Renal neoplasia	✓				
Unit IV: Dialysis AndKidney Transplantation	8	4.1 Hemodialysis - Peritoneal dialysis - Critical care nephrology- Plasmapheresis	✓			10	LE, SE, SA
		4.2 Extracorporeal treatment of poisoning		✓			
		4.3 -Interventional nephrology		✓			

		4.4 Transplantation immunobiology-Donor and Recipient issues, Clinical management		✓			
Unit V Introduction, assessment and diagnostic measures of respiratory system	10	5.1 Basics–Upper respiratory tract, Lower respiratory tract	✓			15	LE, SE, SA
		5.2 Mechanics of respiration	✓				
		5.3 Neural & chemical regulation of respiration,	✓				
		5.4 Lung volumes and lung capacities	✓				
		5.5 Pulmonary Circulation	✓				
		5.6 cough reflex	✓				
		5.7 Auscultation of lung sounds	✓				
		5.8 physical assessment	✓				
		5.9 blood analysis	✓				
		5.10 Basic principles and concepts of thoracic imaging	✓				
		5.11 Pulmonary function tests		✓			
		5.12 Echocardiogram	✓				
		5.13 CT scan and MRI	✓				
		5.14 Ultrasound	✓				
		5.15 Spirometry	✓				
		5.16 Sputum examination	✓				
		5.17 Pulmonary and bronchial angiography		✓			
		5.18 Arterial blood gas analysis	✓				
		5.19Broncoscopy		✓			
		5.20 Thoracocentesis	✓				

Unit VI: Respiratory tract diseases And Chest wall diseases	10	Define, etiology, pathogenesis, clinical features, complications, Conservative and surgical management of the following conditions				15	LE, SE, SA
		6.1COPD–chronicbronchitisand Emphysema, Bronchial asthma	✓				
		6.2 Suppurative disease-Bronchiectasis, Lung abscess	✓				
		6.3 Common infectious disease-Pulmonary TB, Pneumonia, Interstitial lung disease, Occupational lung disease	✓				
		6.4 Pulmonary vascular disease-pulmonary HT, pulmonary thromboembolism, Cancer lung, Aspergillosis, Cystic fibrosis	✓				
		6.5 Disease of pleura-Pneumothorax, hydropneumothorax, pleural effusion, Empyema. Chest wall injuries, Fracture rib, Flail chest, Lung contusion	✓				
Unit VII: Medical and Surgical Management	10	7.1Drug Therapy of Bronchial asthma: Pharmacotherapy of cough: Antitubercular drugs, Aerosol therapy	✓			15	LE, SE, SA
		7.2 Intensive care unit(cardiac)Types of ICU, Oxygen therapy,	✓				

		7.3 Equipment used in adult and pediatric ICU		✓			
		7.4 Suctioning, Ventilators		✓			
		7.5 Intercostal drainage Thoracotomy – Median Sternotomy, Heart lung machine, Thoracotomy, Lobectomy, Pneumonectomy, Decortication, Thoracocentesis, Video assisted thoracic surgery, wedge resection, Bronchoalveolar lavage, Tracheotomy, benefits, Education, Pre and post-operative care and rehabilitation programme. Importance of lifestyle modification measures	✓				

- Long Essay - LE, Short Essay - SE, Short Answer - SA

RecommendedBooks:

1. Handbook of Dialysis Daugirdas
2. Sembulingam, K, Prema Sembulingam Essentials of Medical Physiology(1999, Reprint 2008) 4 th edition, Jaypee brothers Medical publishers New Delhi.
3. Harrison'sTextbookofMedicine, McgrawandHill,19thedition, volumeI&II.3
4. API'sTextbookofMedicine(2Volume),RKSingal, PritamGupta, Jaypee Brothers.
5. Yu A. S. L., Chertow G. M., Luyckx V. A., Marsden P. A., Skorecki K., Taal M. W. *Brenner & Rector's The Kidney.* 11th edition. Elsevier Health Sciences; 2019.

6. Johnson R. J., Floege J., Tonelli M. *Comprehensive Clinical Nephrology.* 7th ed. Elsevier; 2023.
7. Fairweather J., Findlay M., Isles C. *Clinical Companion in Nephrology.* 2nd edition. Springer; 2020
8. Springer (Ed.). *Kidney Transplant Management: A Guide to Evaluation and Comorbidities.* 1st ed. Springer Cham; 2019
9. Alhamad T. (Ed.). *The Washington Manual of Transplant Nephrology.* 1st ed. Wolters Kluwer; 2023
10. Levitzky M. G. *Pulmonary Physiology.* 10th edition. McGraw-Hill Medical; 2022
11. Broaddus V. C., Mason R. J., Ernst J. D., et al. *Murray & Nadel's Textbook of Respiratory Medicine.* 7th edition. Elsevier Health Sciences; 2021
12. Shah P. L., ed. *Essentials of Clinical Pulmonology.* 1st edition. Taylor & Francis; 2020.
13. Grippi M. A., Antin-Ozerkis D., Dela Cruz C. S., Kotloff R., Pack A. I., Silvestri G. A. *Fishman's Pulmonary Diseases and Disorders.* 6th edition. McGraw-Hill Medical; 2021
14. Turner J. F., Jain P., Yasufuku K., Mehta A. C., eds. *From Thoracic Surgery to Interventional Pulmonology: A Clinical Guide.* 1st edition. Springer; 2021

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NEUROLOGY

Course:Core

Credits:4 **No.ofHours:60Hour**

CourseOutcome:

Onthesuccessfulcompletionofthe course,studentswillbeable to

CO1 UnderstandthereviewofAnatomyandphysiologyof the nervous system.

CO2 Know the importance of Assessment, diagnostic measures, and Drugs used in neurological and neurosurgical disorders

CO3 ProvidestudentsinsightintomanagementofTraumaticconditions,Neuro emergencies and cerebrovascular disorders.

CO4 AwareofthemanagementofDegenerating,neuroinfections,Paroxysmal disorders, and Developmental disorders.

CO5 UnderstandtheManagementofNeuro-musculardisorders,Neoplasmsand Neurophysiology

Course content:

Unit	T/L Hours	Contents/SLOs	Must Know	Good to know	Desirable to know	Weightage in %	Types of questions
Unit: I Review of Anatomy and Physiology	8	1.1 Introduction to neuroscience (neurological and neurosurgical)	✓			20	LE, SE, SA
		1.2 Emerging trends and issues in neurology and neuro surgery and its implication neurological	✓				
		1.3 Risk factors associated with neurological conditions	✓				
		1.4 Review of Anatomy and physiology	✓				
		1.5 Structure and functions of Nervous system- CNS, ANS, cereberal circulation ,cranial And spinal nerves and reflexes, motor and sensory functions, Sensory	✓				

		organs.					
Assessment, Diagnostic Measures, And Drugs Used in Neurological and Neurosurgical Disorders	12	2.1 Assessment: History taking, Physical assessment, psychosocial assessment, Neurological assessments, Glasgow coma scale interpretation	✓			20	LE, SE, SA
		2.2 Diagnostic measures: Cerebro spinal fluid analysis	✓				
		2.3 Radiological studies-Skull and spine X-ray Cerebral Angiography, CTScan, Single Photon Emission Computer Tomography(SPECT), MRI (Magnetic Resonance Imaging), MRA, MRS, Functional MRI, PET (Positron	✓				

		Emission Test), Interventional radiology					
		2.4 Electorgraphic studies-Electroencephalography, MEG, EMG, video EEG. Nerve conduction studies-Evoked potentials, visual evoked potentials		✓			
		2.5 Ultrasound studies-Carotid Duplex, transcranial Doppler sonography Immunological studies		✓			
		2.6 Biopsies– muscle, nerve and Brain	✓				
		2.7 Interpretation of diagnostic measures	✓				

		2.8 Drugs used in neurological and neurosurgical disorders: Classification, Indications, contraindications, actions and effects, toxic effects	✓				
Unit: III Management of Traumatic Conditions, Neuro Emergencies and Cerebrovascular Disorders Traumatic Conditions	10	3.1 Traumatic conditions: Cranio cerebral injuries, Spinal & Spinal cord injuries, Peripheral Nerve injuries	✓			20	LE, SE, SA
		3.2 Neuroemergencies: Increased intracranial pressure, Unconscious, Herniation syndrome, Seizure, Severe head injuries, Spinal injuries, Cerebrovascular	✓				

		accidents					
		3.3 Cerebrovascular disorders: Stroke & arteriovenous thrombosis, Haemorrhagic embolus, Cerebrovascular accidents, Intracranial aneurysm, Subarachnoid Haemorrhage, Arteriovenous fistula, Brain tumors	✓				
		3.4 Diseases of cranial nerves : Trigeminal neuralgia, Facial palsy, Bulbar palsy	✓				
Unit: IV Management of Degenerating , Neurourological	10	4.1 Degenerating disorders: Motor neuron diseases	✓			20	LE, SE, SA

Infections, Paroxysmal Disorders and Developmental Disorders							
		4.2 Movement disorders: Tics, dystopia, chorea, Wilson's disease, essential tremors, Dementia, Parkinson's disease, Multiple sclerosis	✓				
		4.3 Alzheimer's Neuro infections: Meningitis, Encephalitis, Poliomyelitis, Parasitic infections, Bacterial infections, Neurosyphilis, HIV& amp; AIDS, Brain abscess	✓				
		4.4 Paroxysmal disorders: Epilepsy and seizures, Status epilepticus, Syncope, Menier's syndrome, Cephalgia	✓				

		4.5 Developmental disorders: Hydrocephalus, Craniosynostosis, spina bifida, Meningocele, Meningomyelocele, encephalocele, syringomyelia	✓				
		4.6 Cerebro vascular system anomalies, Cerebral palsy, Down's syndrome	✓				
Unit: V Management of Neuro Musculer Disorders	10	5.1 Neoplasms and Neuro-Rehabilitation		✓		20	LE, SE, SA
		5.2 Neuro muscular disorders: Polyneuritis– G B Syndrome, Muscular dystrophy, Myasthenia gravis, Trigeminal neuralgia, Bell's palsy, Menier's disease, Carpal tunnel syndrome, Peripheral neuropathies	✓				

		5.3 Neoplasms– surgical conditions :Space occupying lesions – types, Common tumors of CNS	✓				
		5.4 Autoimmune disorders- multiple sclerosis, inflammatory myopathies	✓				
		5.5 Concept and Principles of Neuro Rehabilitation and Neuro ICU		✓			

- **LE**-LongEssay,**SE**-ShortEssay,**SA**-Short Answer

REFERENCES:

1. Brazis,PW.Masdeu,JC,Biller,J.LocalizationinClinicalNeurology,2009,LWW
2. Gilman,S.Newman,W.ManterandGatz,EssentialsofClinical Neuroanatomy
3. and Neurophysiology,2007,Elsevier.
4. Wijicks,E.Theclinicalpracticeofcriticalcare,neurology,2010, Lippincott.
5. Bradley W. G., Daroff R. B., Fenichel G. M., Jankovic J. *Bradley's Neurology in Clinical Practice*7th edition. Elsevier; 2021
6. Adams R. D., Victor M., Ropper A. H., et al.*Adams & Victor's Principles of Neurology.* 11th edition. McGraw-Hill Education; 2019.
7. Rowland L. P., Pedley T. A.*Merritt's Neurology.* 14th edition. Wolters Kluwer; 2020.
8. Misulis K. E., Head T. C. *Smith's Clinical Neuroanatomy.* 3rd edition. McGraw-Hill Medical; 2018

9. Greenberg M. S. *Handbook of Neurosurgery.* 8th edition. Thieme; 2020
10. Rengachary S. S., Ellenbogen R. G., et al. *Principles of Neurosurgery.* 3rd edition. Elsevier; 2019.

CLINICAL MEDICINE III

Course: sec

Credits:4 **No.ofhours:120hours**

Courseoutcome:

CO1 GainproficiencyinperformingadetailedGIrelatedhistory&physical examination

CO2 Developexpertiseinsynthesisofclinicaldatatoformulatedifferential diagnosis for ortho-related problems

CO3 Able to demonstrate the knowledge, attitude & skills needed to independently care for patients with kidney diseases, dialysis, and renal transplantation

Course content:

Unit	Hrs	Content	Must Know	Goodto Know	Desirable to Know	Weightage
Unit I	40	• Asepticteчniques • Assistforendoscopy • Preandpostendoscopy care • Pre and postop Orthopedic surgical patients • InterpretationofX-ray, MRI and CT				40%

Unit II	40	• Assessment of Nephrologypatients • Pulmonaryassessment • Interpretationofvarious testsofpulmonary function				30%
Unit III	40	• AssessmentofNeuro patients • Interpretationof EEG • Interpretationof neurological investigations				30%

MEDICALETHICS

Course:VAC

Credits:2 **No ofHours: 30Hours**

➢ Course Outcomes:

At the end of the course, students will be able to:

CO1: Increasing the awareness and knowledge of students of the value dimensions of interactions with the patients, colleagues, relations and public.

CO2: Fostering the development of skills of analysis, decision making and judgment.

CO3: Making the students aware of the need to respect the rights of the patient.

➢ Course content:

UNIT	NO. OF HOURS	CONTENT	MUST KNOW	GOODTO KNOW	DESIRABLE TOKNOW	WEIGHTAGE %	TYPE OF QUESTIONS
Unit I	3	Introduction to ethics What is ethics, what are values and norms, freedom and personal responsibility?	✓			15	SA, SE
Unit II	4	Definition of medical ethics Major principles of	✓			20	LE, SA

UNIT	NO. OF HOURS	CONTENT	MUST KNOW	GOODTO KNOW	DESIRABLE TOKNOW	WEIGHTAGE %	TYPE OF QUESTIONS
		medic ethics.					
Unit III	4	Perspective of medical ethics The Hippocratic oath, The Declaration of Helsinki, The WHO Declaration of Geneva, International code of Medical Ethics (1993),Medical Council of India Code of Ethics (2002).	✓			15	LE, SA, SE
Unit IV	4	Ethics of the individual Truth and confidentiality, the concept of disease, health and healing, the Rightto	✓			15	SE

UNIT	NO. OF HOURS	CONTENT	MUST KNOW	GOODTO KNOW	DESIRABLE TOKNOW	WEIGHTAGE %	TYPE OF QUESTIONS
		health.					
Unit V	3	The ethics of human life Prenatal sex determination.	✓			15	SA, SE
Unit VI	4	The family and society in medical ethics Euthanasia, cancer and terminal care.		✓		10	LE, SA
Unit VII	4	Death and dying Use of life-support systems, the right to die with dignity, suicide–the Ethical outlook.		✓		05	LE, SA, SE
Unit VIII	4	Professional Ethics Contract and confidentiality, malpractice		✓		05	SA, SE

UNIT	NO. OF HOURS	CONTENT	MUST KNOW	GOODTO KNOW	DESIRABLE TOKNOW	WEIGHTAGE %	TYPE OF QUESTIONS
		and negligence.					

- **LE**- Long Essay**, SE**- Short Essay**, SA**- Short Answer

➢ Recommended Books:

1. Tsai DF. The WMA medical ethics manual. Journal of Medical Ethics. 2006 Mar 1;32(3):163
2. Loewy EE, Loewy RS. Textbook of healthcare ethics. Springer Science & Business Media; 2004 Jun 29.

HUMANRIGHTSANDGENDEREQUITY

Course:VAC

Credits:2 NoofHours:30Hours

➢ Course outcome:

At the end of this course, students will gain knowledge on,

Basic Knowledge of Human Rights and its function and authorities in society and industry women's status, issues and gender equity.

➢ **Course content:**

UNIT	NO. OF HOURS	CONTENT	MUST KNOW	GOODTO KNOW	DESIRABLE TOKNOW	WEIGHTAGE %	TYPE OF QUESTIONS
Unit I	5	Human Rights 1.1 Human Rights –Meaning 1.2 Universal declaration of Human Rights	√			20	SE, SA
Unit II	5	Human Rights Advocacy 2.1 Global Advocacy of Human Rights; Amnesty International and Other Organisations 2.2 People's Union for Civil Liberty (PUCL) 2.3 Human Rights Commission in India 2.4 Minority Commission in India 2.5 Remedies Against Violation	√			25	SE, SA

UNIT	NO. OF HOURS	CONTENT	MUST KNOW	GOODTO KNOW	DESIRABLE TOKNOW	WEIGHTAGE %	TYPE OF QUESTIONS
		of Human Rights in India					
Unit III	5	Gender Equity Key Concepts- 3.1 Sex and Gender 3.2 Masculinity and Femininity 3.3 Patriarchy, Matriarchy 3.4 Gender roles and Attributes,Gender Division of Labour 3.5 Gender Bias 3.6 Gender Stereotypes 3.7 Need for Gender Sensitization	√			20	SA
Unit IV	5	Women's Status in India 4.1 Important Indicators-Sex Ratio, Education,Health, Nutrition,	√			15	SE, SA

UNIT	NO. OF HOURS	CONTENT	MUST KNOW	GOODTO KNOW	DESIRABLE TOKNOW	WEIGHTAGE %	TYPE OF QUESTIONS
		Maternal and Infant Mortality,Work Participation Rate,And Political Participation.					
Unit V	5	Contemporary Women's Issues 5.1 Discrimination Against Girl Child 5.2 Violence Against Women 5.3 Problems of health and nutrition 5.4 Women's Education and Gender Bias in Education 5.5 Trafficking in women 5.6 Globalization and Impact on Women	√			15	SE, SA
Unit	5	State Initiatives		√		05	SE

UNIT	NO. OF HOURS	CONTENT	MUST KNOW	GOODTO KNOW	DESIRABLE TOKNOW	WEIGHTAGE %	TYPE OF QUESTIONS
VI		for Gender Equity 6.1 Constitutional Rights of Women 6.2 Laws Pertaining to Women 6.3 The National and State Commissions for Women					

- **SE-** Short Essay**, SA-** Short Answer

Recommended Books:

1. Parvathy Appaiah,Human Rights, Gender Equity and Environmental Studies, Shivam Books publishers, 2012.
2. Parvathy Appaiah,Human Rights, Gender Equity and Environmental Studies, Jai BharathPrakashan publishers, 2016.
3. Parvathy Appaiah,Human Rights, Gender Equity and Environmental Studies, Jai BharathPrakashan publishers, 2018-19.
4. NirmalChiranjivi:Human Rights in India,NewDelhi,OUP,2001

SEMESTER VI

ORTHOPAEDICS

Course: Core

Credits: 4 **Number of Hours: 60**

Course outcome:

CO1 Understanding the principles of treatment for common musculoskeletal conditions

CO2 Describe when blood tests and imaging methods are required for diagnosis, how to interpret them and how they influence management.

CO3 Assignment of limited co-management responsibilities under supervision Participation in clinic visits, daily patient rounds and conferences

Unit	T/L Hours	Contents/SLOs	Must Know	Good to know	Desirable to know	Weightage in %	Types of questions
Unit I: Trauma	8	1.1 General principles in Diagnosis	✓			15%	LE, SE, SA
		1.2 First aid and treatment method of closed fractures	✓				
		1.3 Open reductions including priniciples of Internal fixation and external fixation	✓				

Unit	T/L Hours	Contents/SLOs	Must Know	Good to know	Desirable to know	Weightage in %	Types of questions
		1.4 Preservation of Amputated parts before transfer	✓				
		1.5 General principles of Diagnosing and management of Non union	✓				
		1.6 Delayed union	✓				
Unit II: Diagnosis and First aid	10	2.1 Clavicle fracture	✓			20%	LE, SE, SA
		2.2Anterior dislocation of shoulder	✓				
		2.3 Fracture procimal end, Shaft, supracondylar & Internal condylar humerus	✓				
		2.4 Posterior dislocation of Elbow	✓				
		2.5 Fracture shaft of Radius and ulna	✓				

Unit	T/L Hours	Contents/SLOs	Must Know	Good to know	Desirable to know	Weightage in %	Types of questions
		2.6 Fracture of distal Radius	✓				
		2.7 Traumatic dislocation of Hip			✓		
		2.8Fracture patella	✓				
		2.9 Peripheral nerve injuries		✓			
		2.10 Polytrauma	✓				
		2.11Spinal injuries	✓				
Unit III: Infections of Bones and joints	6	3.1 Osteomyelitis	✓			15%	LE, SE, SA
		3.2 Arthritis		✓			
		3.3 Spinal Tb	✓				
		3.4 Leprosy	✓				
		3.5 Syphilitic infection of the bone	✓				
		3.6 Fungal infection of the bone	✓				
Unit IV: Tumors	6	4.1 Benign lesions	✓			10%	SE, SA
		4.1.1 Multiple Exostosis					

Unit	T/L Hours	Contents/SLOs	Must Know	Good to know	Desirable to know	Weightage in %	Types of questions
		4.1.2 Enchondroma		✓			
		4.1.3 Osteoid osteoma	✓				
		4.2 Malignant lesions	✓				
		4.3 Perthe's Disease	✓				
UNIT V. Degenerative Diseases and Deformities	3	5.1 Osteoarthritis.	✓			15%	LE, SE, SA
		5.2 Spondylosis.	✓				
		a. Degenerative disc disease	✓				
		b. Scoliosis – Diagnosis And Referral.					
		c. Genu Varum And Valgum – Diagnosis.					
UNIT VI. Congenital Anomalies	3	6.1 Congenital Dislocation Hip.	✓			10%	SE, SA
		6.2 Congenital talipesequinovarus	✓				
UNIT VII. Bone	3	7.1 Oesteogenesis	✓			10%	SE, SA

Unit	T/L Hours	Contents/SLOs	Must Know	Good to know	Desirable to know	Weightage in %	Types of questions
Dysplasia		Imperfecta.					
		7.2 Achondroplasia		✓			
UNIT VIII. Neuro-Muscular Disorders	3	8.1 Post –Polio Residual Paralysis.	✓			10%	SE, SA
		8.2 Cerebralpalsy	✓				

- **LE-** Long Essay**, SE-** Short Essay**, SA-** Short Answer

➢ Recommendedbooks

- OrthopaedicForPhysicianAssistantBySara.D.Ryndes,JeniferHort2013
- Sara D RyndersMPA, Jennifer Hart -Orthopaedics for Physician Assistants: Expert Consult

CARDIOLOGY AND CARDIAC SURGERY

Course: Core

Credits: 4 Number of Hours: 60

Course outcomes:

On the successful completion of the course, students will be able to

CO1 Understand the basics of anatomy and physiology of cardiovascular system, body fluids, blood.

CO2 Know the importance of assessment and diagnostic procedures, invasive techniques in cardiovascular system.

CO3 Improve knowledge in cardiovascular diseases and peripheral vascular diseases. CO4 Provide students insight into drug and intensive care management of Cardiovascular System.

CO5 Aware of various surgical procedures and post operative rehabilitative management of cardiovascular system, cardiac rehabilitation and life style modifications.

Unit	**T/L Hours**	**Contents**	**Must Know**	**Good to know**	**Desirable to know**	**Weightage in %**	**Types of Question**
Unit I	15	1.1 Basics – Embryology	✓			20%	LE, SE, SA
		1.2 Anatomy of Heart	✓				
		1.3 Cardiac cycle, Heart sounds and Coronary Perfusion	✓				
		1.4 Structural basis of cardiovascular diseases.	✓				
Unit II	15	2.1.1 Cardiovascular diseases- Congenital heart diseases - Cyanotic and Acyanotic heart diseases.	✓			20%	LE, SE, SA
		2.1.2 Signs and symptoms	✓				
		2.2 Coronary artery disease	✓				

Unit	T/L Hours	Contents	Must Know	Good to know	Desirable to know	Weightage in %	Types of Question
		2.3 Rheumatic heart disease	✓				
		2.4 Heart failure	✓				
		2.5 Cardiac arrhythmias	✓				
		2.6 Cardiomyopathy	✓				
		2.7 PVD	✓				
		2.8 PTE	✓				
		2.9 Hypertension - Systemic and Pulmonary artery hypertension	✓				
		2.10 Burger' disease		✓			
		2.11 Pregnancy and heart diseases		✓			
		2.12 Pericardial disease	✓				
		2.13 Cardiac trauma	✓				
		2.14 Tumors of the heart	✓				
		2.15 Prevention of heart diseases - Importance of life style modification		✓			
		2.16 Diagnostic tools- ECG, Chest x- ray, Echo,TMT, Holter, Blood Analysis	✓				

Unit	T/L Hours	Contents	Must Know	Good to know	Desirable to know	Weightage in %	Types of Question
		2.17 Cardiac catheterization, CAG, Preparation of patients- mentally, physically	✓				
		2.18 Pre and post operative care and rehabilitation program	✓				
		2.19 PPI	✓				
Unit III	5	3.1 Blood conservation techniques in cardiac surgery		✓		10%	LE, SE, SA
		3.2 Blood conservation approach surgical and pharmacological		✓			
		3.3 Preoperative, Perioperative, Postoperative and Cell saver		✓			
Unit IV	5	4.1 Care of surgical patients	✓			10%	LE, SE, SA
		4.2 Preop check list for cardiac and Thoracic surgery	✓				
Unit V	5	5.1 Indications, steps and complications of Central line, Subclavian and Femoral vein (central		✓		20%	LE, SE, SA

Unit	T/L Hours	Contents	Must Know	Good to know	Desirable to know	Weightage in %	Types of Question
		venous pressure monitoring line)					
		5.2 Arterial line insertion and Endotracheal Intubation	✓				
Unit VI	15	6.1 Cardiac surgery basics- CPB, Closed heart and open heart operation		✓		20%	LE, SE, SA
		6.2 PA Banding, BT shunt, Pericardectomy and CMV	✓				
		6.3 ASD,VSD,TOF,Valve surgeries, Surgeries for TGA and CABG	✓				

- **LE-** Long Essay**, SE-** Short Essay**, SA-** Short Answer

Recommended books:

- Sembulingam.K,PremaSembulingamEssentialsofMedicalPhysiology(1999,Reprint 2008) 4th edition, Jaypee brotherMedical publishers New Delhi.
- Harrison'sTextbookofmedicine,McgrawandHill,19thedition,volumeI&II.3
- Brawnwald'sCardiology,Braunwald'sHeartDisease,3rdEdition,GeorgeL.BakrisMatthewSorrentino,Elsevier
- API's Text book of Medicine (2 Volume),RK Singal,PritamGupta,Jaypeebrothers.com

BASIC INTENSIVE CARE

Course: Core

Credits: 4 **Number of Hours: 60**

COURSE OUTCOME:

CO1 Understands the practical care given in the general ICU and close monitoring of the patients in ICU

CO2 Acquires knowledge to assess and manage head injury patients and also to use and monitor the ventilators.

Unit	T/L Hours	Contents/SLOs	Must to know	Good to know	Desirable to know	Weightage in %	Types of Question
Unit 1 General ICU care and Monitoring	12	1.1 General care of ICU Patients- eye, skin, bladder care, positioning, airways, drains, catheters	✓			20	LE, SE, SA
		1.1.2 Transport of critically ill patient to and out of ICU	✓				
		1.1.3 Monitoring in critical care - vital signs, ECG, CVP& , fluid intake &	✓				

Unit	T/L Hours	Contents/SLOs	Must to know	Good to know	Desirable to know	Weightage in %	Types of Question
		output.					
Unit 2 Infection Control and Nutrition in ICU	12	2.1prevention of cross infection,	✓			20	LE, SE, SA
		2.2personal protection,	✓				
		2.3 antibiotics and policy	✓				
		2.4 Nutrition and Fluid balance - total parentral nutrition.	✓				
		2.5nasogastric tube, gastrictube, jejunostomy tube care and feeding, IV Fluids.	✓				
Unit 3 Systemic Diseases and Care in ICU	16	3.1 Cardiac care - hypertension, hypotension, arrhythmias, cardiac arrest, ACLS	✓			20	LE, SE, SA
		3.2 Respiratory care - airway care, tracheostomy care, endotracheal intubation, mechanical ventilation, care of	✓				

Unit	T/L Hours	Contents/SLOs	Must to know	Good to know	Desirable to know	Weightage in %	Types of Question
		ventilated patient, complications and weaning					
		3.3 Renal failure- types, etiology, complications, corrective measures	✓				
		3.4 Hepatic failure - types, etiology, complications, corrective measures	✓				
Unit 4 Head Injury and Trauma care in ICU	10	4.1 Glasgow coma scale	✓			20	LE, SE, SA
		4.2 care of head injury patient, poly trauma patient	✓				
		4.3 Blood and bloodproducts transfusion	✓				
		4.4 Transfusion reactions &complications,Massive transfusion	✓				
Unit 5 Ventilator Management	10	5.1 Basics of Ventilator management	✓			20	LE, SE, SA
		5.2 Modes of Ventilation	✓				

❖ **LE-** Long Essay**, SE-** Short Essay**, SA-** Short Answer

Recommended books:

- Marino PL. The ICU book. Lippincott williams&wilkins; 2007.
- Ling L, So C, Shum HP, Chan PK, Lai CK, Kandamby DH, Ho E, So D, Yan WW, Lui G, Leung WS. Critically ill patients with COVID-19 in Hong Kong: a multicentre retrospective observational cohort study. Critical Care and Resuscitation. 2020 Jun;22(2):119-25.
- Irwin RS, Rippe JM, editors. Manual of intensive care medicine. Lippincott Williams & Wilkins; 2010.

CLINICAL MEDICINE – IV

Course: Core

Credits: 4 Number of Hours: 120

Course Outcome:

CO1 Acquires knowledge to assess and manage head injury patients and also to use and monitor the ventilators.

CO2 Comprehend basics of cardiac surgery and arterial line insertion.

Develop expertise in synthesis of clinical data to formulate differential diagnosis for ortho related problems

Unit	Hrs	Content	Must Know	Good to Know	Desirable to Know	Weightage
Unit I	40	· Preop and postop care of Cardiothoracic surgery patients · Monitoring and interpretation of Cardiac investigations · Knowing the importance of preop checklist for cardiac surgery · Assisting for CVP and arterial line	✓			40%
Unit II	40	· Assist in Endotracheal intubation & tracheostomy · Urinary catheterization · Rehabilitation of cardiac patients	✓			30%
Unit III	40	· Assist for open heart and closed heart procedures · Assist in harvesting saphenous vein · Assist/perform suturing	✓			30%

❖ **LE-** Long Essay**, SE-** Short Essay**, SA-** Short Answer

BIOSTATISTICS

YENEPOYA
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Course: AEC

Credits: 2 No of Hours: 30 Hours

Course Outcomes:

At the end of the course, students will be able to:

CO 1: Understand the concepts of Statistics in the field of Health Professionals.

Unit	Hrs	Content	Must Know	Good to Know	Desirable to	Weightage	Types of Question
Unit I	3	Introduction	✓			15%	SA, SE
		1.1 Meaning, definition of statistics.					
		1.2 Importance of the study of statistics.					
		1.3 Branches of statistics.					
		1.4 Statistics and health science including nursing.					
		1.5 Parameters and estimates.					
		1.6 Descriptive and inferential statistics.					
		1.7 Variables and their types.					
		1.8 Measurement scales					
Unit	3	Tabulation of Data	✓			15%	SA, SE

Unit	Hrs	Content	Must Know	Good to Know	Desirable to	Weightage	Types of Question
II		2.1 Raw data, the array, frequency distribution					
		2.2 Basic principles of graphical representation					
		2.3 Types of diagrams - histograms, frequency polygons, smooth frequency polygon, cumulative frequency curve, ogive.					
		2.4 Normal probability curve.					
Unit III	4 hours	Measure of Central Tendency	✓			15%	LE, SE
		3.1 Need for measures of central tendency					
		3.2 Definition and calculation of mean- ungrouped and grouped					
		3.3 Meaning, interpretation and calculation of					

Unit	Hrs	Content	Must Know	Good to Know	Desirable to	Weightage	Types of Question
		median ungrouped and grouped 3.4 Meaning and calculation of mode. 3.5 Comparison of the mean, and mode.					
Unit IV	6	Measure of Variability 4.1 Need for measure of dispersion. The range, the average deviation. 4.2 The variance and standard deviation. 4.3 Calculation of variance and standard deviation ungrouped and grouped. 4.4 Properties and uses of variance	✓			15%	LE, SE
Unit V	6	Probability and Standard Distributions 5.1 Meaning of probability of standard	✓			15%	SA, SE

Unit	Hrs	Content	Must Know	Good to Know	Desirable to	Weightage	Types of Question
		distribution. 5.2 The Binominal distribution. 5.3 The normal distribution. 5.4 Divergence from normality - skewness, kurtosis.					
Unit VI	5 hours	Sampling Techniques 6.1 Need for sampling - Criteria for good samples. 6.2 Various sampling designs. 6.3 Procedures of sampling and sampling designs errors. 6.4 Sampling variation. 6.5 Tests of significance.	✓			15%	LE, SA, SE
Unit VII	3 hours	Health Indicator 7.1 Importance of health Indicator. 7.2 Indicators of population,	✓			10%	SA, SE

Unit	Hrs	Content	Must Know	Good to Know	Desirable to	Weightage	Types of Question
		morbidity, mortality, health services. 7.3 Calculation of rates and rations of health.					

- **LE**- Long Essay**, SE**- Short Essay**, SA**- Short Answer

INTERNSHIP(SEMESTERVII&VIII)

ELIGIBILTY:

Acandidateshouldhavepassedinallthecourses(Core,AECCandElectives)amounting to 138 number of credits before entering in to internship.

DURATION:

A candidate has to mandatorily complete 1 year (2 semesters) of internship. The totalcredit per semester is 20 and for two semesters it is 40.

OBJECTIVES:

1. Beabletodevelop skills:
2. Tocheckvitals, historytaking andphysical examination
3. Tocarryout investigations
4. Toimpartknowledgewithregardtomedicaldisordersandsurgicalprocedures

5. Toimpartknowledgeontreatmentmodalitiesfromtheperspectiveofcounselling
6. Toacquireknowledgeabout thereferral
7. Beableto assistthesurgical procedureswith consultant
8. Beabletointerpretthelaboratoryinvestigations,ECG,ECHO,CXR,USG,angiogram,CT and MRI
9. BeabletoassistforminorproceduresinOPD
10. Dailyroundsand followupofpatients
11. Dressingofthewound
12. Togainknowledgeandskillforearlydetectionofvariousmedicalemergenciesand management.

LEARNINGOUTCOMES:

Sl. No.	Learning Outcomes	Knowledge	Application/Evaluation
1.	Develop skills on Comprehensive historytakingand physicalexamination	Knowledgeaboutanatomyand physiology of various systems	Sends the patient for the relevant investigations pertaining to the patient after clinically corelating
2.	Checking vitals	Knowledgeaboutnormal vital parameters	Abletocheckallthe vitals independently
3.	Interpretation of various diagnostic procedures	Knowledge about all the investigative procedures and their normal parameters	Abletointerpretallthe investigations
4.	Assistingforminor procedures in OPD	Knowledgeabouttheprocedures carried out in OPD	Able to assist for minor procedures in OPD

5.	Assisting for the various speciality surgical procedures	Knowledge about steps of surgical procedures instruments and equipments	Able to assist for various speciality surgical procedures
6.	Performdailyrounds to the wards and ICU's	To have updated knowledge about the patient's condition on daily basis	Informingthepatient'sconditionto theconsultantondaily basis

INTERNSHIPTRAININGRULESANDCODEOFCONDUCT

1. The duration of the internship shall be a minimum of one year or 2 semesters (8 hours of practice a day, totaling to 36 credits).

2. The Interns shall be entitled for 12 day total leave on any account during the entire period of Internship and no other leave shall be permissible.

3. The candidate is expected to work for minimum 8 hours per day and this may be more depending on the need and the healthcare setting.

4. If the period of leave exceeds the sanctioned limit, Internship is liable to be extended at the discretion of the authority. In case of Emergency any additional leave asked for shall be discretion of the authority and will be doubled.

5. The attendance of all the interns shall be marked/monitored by the respective Clinical coordinatorandconcernedHOD,bymaintainingtheintern'sattendanceregister.Alltheinterns are directed to mark their attendance, by putting their full initials (specimen signature to be given to the Clinical coordinator).

6. Internsshallobservedutiesaspertheroasterdevisedbythedepartment,andnochangeinduty shall bepermissible without the permissionofclinicalcoordinators Internsshallbe courteous, polite,respectfulandsympathetictowardsthepatients,their accompanyingattenders,hospital staff and their colleagues.

7. Internshallmaintaindecorumandcommitmentanddisciplineoftheprofessionandshowkeen interest in patient care.

8. The interns will be entrusted with clinical responsibilities under supervision of the senior Technician/Technologistandareexpectedtodischargethedutiesassignedtothemsincerely&effectively.

9. Aprons/scrubs&IDismandatorywhilereportingtotheHospitalandalwayscarrytherequired articles needed for examination of the patients. A fine of Rs.500/- will be charged from the interns not using white coat/scrubs and identification card during their duty in the Hospital.

10. Scrubs should be worn inside the campus only. If found outside, a fine of Rs 500/- will be charged.

11. Theperformanceshallbeassessedbasedontheassessmentsheetprovidedin theLog Book.

COMPONENTSOFEXITEXAM:

SI.No.	Components	Marks
1	Spotters	30
2	Case scenario/Stations	30
3	VivaVoice	40
TotalMarks		100

ExitExamshallbeconductedbytheCollegeandthemarksshallbesenttotheCOEforneedful.

PARTICULARSOFPRACTICAL,VIVA-VOCE:

- Practicalexaminationwillbeaimedatexaminationofclinicalskillsandcompetenceofthe candidatesforundertakingindependentworkasaspecialist.
- Viva-Voceexaminationshallaimatassessing,i.e.,depthofknowledge,logicalreasoning, confidence &oral communicationskills.
- OSCE/OSPE-shallhaveminimumof3stations.

ANNEXURES

List of Annexures:

- ANNEXURE – I: Question Paper Layout for Internal Assessment of Theory Examination (Core)
- ANNEXURE – II: Question Paper Layout for Internal Assessment of Theory Examination (AEC & VAC)
- ANNEXURE – III: Internship Competency Checklist
- ANNEXURE – IV: Logbook Format

ANNEXURE – I

Model Question Paper for SEE & IA of core subjects

I Semester B.Sc. Physician Associate

Time: 2 Hours Max. Marks: 50 Marks

SUBJECT NAME:
Q.P Code:
Your answer shall be specific to question asked.
Draw neat and labeled diagrams wherever necessary.

LONG ESSAY (Answer any One) **(1x10=10Marks)**

1.
2.

SHORT ESSAY (Answer any Five) **(5x4=20Marks)**

3.
4.
5.
6.
7.
8.
9.

SHORT ANSWERS (Answer any Ten) **(10x2=20Marks)**

10.
11.
12.
13.
14.
15
16.
17.
18.

19.

20.

21.

ANNEXURE – II

Model Question Paper AEC & VAC

I Semester B.Sc.

Time: 1.5 Hours Max. Marks: 25 Marks

Subject Name:

Q.P Code:

Your answer shall be specific to question asked.

Draw neat and labeled diagrams wherever necessary.

LONG ESSAY (Answerany Three) **(3x5=15Marks)**

1.

2.

3.

4.

5.

SHORT ANSWERS (Answer any Five) **(5x2=10Marks)**

6.

7.

8.

9.

10.

11.

12.

ANNEXURE III

Internship Competency Checklist

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OSCE Assessment Checklist

Criteria	Achieved	Not Achieved	Remarks
Station Preparation			
Instructions clear and visible	■	■	
Equipment and patient/simulator ready	■	■	
Examiner has marking scheme	■	■	
Time clearly indicated	■	■	
History Taking / Data Gathering			
Introduces self, confirms identity	■	■	
Explains purpose, seeks consent	■	■	
Uses open and closed questions	■	■	
Elicits relevant history (presenting, past, family, social, drug/allergy)	■	■	
Clarifies patient concerns/expectations	■	■	
Clinical Examination			
Washes hands / infection control	■	■	
Explains procedure to patient	■	■	
Performs exam systematically	■	■	
Uses instruments correctly	■	■	
Identifies key findings	■	■	
Clinical Reasoning			
Interprets findings accurately	■	■	
Suggests differential diagnoses	■	■	
Recommends appropriate investigations	■	■	
Proposes initial management plan	■	■	
Communication Skills			
Establishes rapport, maintains eye contact	■	■	
Uses clear, empathetic language	■	■	
Checks patient understanding	■	■	
Provides health education/counseling	■	■	
Professionalism			
Maintains patient dignity & confidentiality	■	■	
Respects patient's cultural/social background	■	■	
Demonstrates confidence without arrogance	■	■	
Works within ethical boundaries	■	■	

YENEPOYA
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OSPE Assessment Checklist

Criteria	Achieved	Not Achieved	Remarks
Station Setup			
Station instructions clear & concise	■	■	
Required equipment/materials available & functional	■	■	
Adequate time allotted for task	■	■	
Standardized patient/simulator prepared (if applicable)	■	■	
Answer sheet/marking scheme ready			
Student Performance - Knowledge & Understanding			
Demonstrates understanding of concept/procedure	■	■	
Answers station-specific questions correctly			
Student Performance - Skills & Technique			
Performs steps in logical sequence	■	■	
Handles instruments/equipment correctly	■	■	
Maintains aseptic/standard precautions	■	■	
Completes task within allocated time			
Student Performance - Communication			
Explains procedure to patient/supervisor	■	■	
Uses appropriate medical terminology	■	■	
Seeks consent where required			
Student Performance - Professionalism			
Maintains patient respect & privacy	■	■	
Demonstrates confidence & ethical behavior			
Assessment & Scoring			
Structured checklist/marking scheme used	■	■	
Marks allocated for each step	■	■	
Negative marking avoided unless justified	■	■	
Examiner consistency ensured across students			
Logistics & Examiner Role			
Examiner briefed & calibrated before OSPE	■	■	
No coaching/hints given during station	■	■	
Feedback documented for student performance	■	■	

ANNEXURE IV

Logbook Format

YENEPOYA SCHOOL OF ALLIED HEALTH SCIENCES

B.Sc. PHYSICIAN ASSOCIATES INTERNSHIP PROGRAM

Log Book

Yenepoya School of Allied Health sciences

B.Sc. PHYSICIAN ASSOCIATES

Internship Completion Declaration

Name –

Reg. No –

Duration –

SIGNATURE OF STUDENT COURSE COORDINATOR DEAN

GENERAL GUIDELINES AND INSTRUCTIONS:

1. Before starting internship, the intern must have qualified all university examination.

2. After the posting orders are issued by the clinical coordinator the interns must report to concern clinical staff where which he/ she posted.

3. The interns should attend the posting regularly and should get the attendance register signed on daily basis.

4. On the first day of posting itself the intern must obtain the concerned clinical staff signature at the appropriate place in the log book.

5. Every week the intern should get the log book signed by clinical coordinator.

6. On completion of the posting the interns must get the Program Coordinator / HOD and Dean signature on the last day itself and never postpone it.

INTERNSHIP (SEMESTER VII &VIII)

ELIGIBILTY:

A candidate should have passed in all the courses (Core, AECC and Electives) amounting to 138 numberof credits before entering in to internship.

DURATION:

A candidate has to mandatorily complete 1 year (2 semesters) of internship. The total credit per semesteris 20 and for two semesters it is 40.

OBJECTIVES:

1. Be able to develop skills:

a. To check vitals, history taking and physical examination

b. To carryout investigations

c. To impart knowledge with regard to medical disorders and surgical procedures

d. To impart knowledge on treatment modalities from the perspective of counselling

e. To acquire knowledge about the referral

2. Be able to assist the surgical procedures with consultant

3. Be able to interpret the laboratory investigations, ECG, ECHO, CXR, USG, angiogram, CT and MRI

4. Be able to assist forminor procedures in OPD

5. Daily rounds and follow up of patients

6. Dressing of the wound

7. To gain knowledge and skill for early detection of various medical emergencies and management.

CASE HISTORY

Patient Name: **Hospital ID:**

Age:

Sex:

Height/Weight:

Present Complaints:

Signs & Symptoms:

Past History:

Investigations Done:

Diagnosis: