



# **Rawalpindi Medical University Anatomy Department Learning Management System (LMS) Curriculum**

## **1<sup>st</sup> & 2<sup>nd</sup> Year MBBS (2025)**



بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ



The Vice Chancellor envisions the creation of an innovative Learning Management System (LMS) curriculum designed to cater to the evolving needs of today's students. Recognizing the importance of flexibility, the curriculum is structured to allow students to engage in their studies during evening hours, promoting a balanced approach to academic and personal life. With a focus on collaborative learning, students will be encouraged to open books, engage in peer interactions, and work together to solve LMS assessments. Emphasizing the integration of the latest online methodologies, the curriculum aims to create a dynamic and interactive learning environment, fostering critical thinking and problem-solving skills that are essential for success in the modern world. This vision reflects the commitment to making education more accessible, engaging, and aligned with the future of digital learning.

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Our Learning Management System (LMS) curriculum at the Rawalpindi Medical University is designed to create a technology-driven learning environment that fosters a deep and integrated understanding of medical knowledge. By integrating modern educational practices with core medical content, the system promotes continuous engagement and provides students with the tools needed for lifelong learning. Through vertical, horizontal, and spiral integration, our curriculum ensures that students can build upon previous knowledge, connect concepts across disciplines, and revisit key topics at increasing levels of complexity, all while receiving ongoing support through formative and summative assessments. This vision aims to cultivate well-rounded, competent medical professionals who are prepared for both academic challenges and real-world clinical practice.

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## Table of content

S No.	Content	Page no
1.	Introduction	6
2.	Implementation	7
3.	Outcomes	8
4.	1 <sup>st</sup> Year Breakdown	9
5.	2 <sup>nd</sup> Year Breakdown	10

### 1<sup>st</sup> Year MBBS Modules

S No.	Module Name	Page no
6.	Foundation Module-I	11-20
7.	Musculoskeletal Module-I (MSK-I)	21-31
8.	Musculoskeletal Module-II (MSK-II)	32-39
9.	Hematology and Immunology Module-I	40-48
10.	Cardiovascular System Module (CVS) -I	49-58
11.	Respiratory Module-I	59-69

### 2<sup>nd</sup> Year MBBS Modules

S No.	Module Name	Page no
1.	Gastrointestinal Tract Module (GIT) -I	71-87
2.	Renal Module-I	88-98
3.	Reproduction Module-I	99-110
4.	Central Nervous System Module (CNS) -I	111-118
5.	Special Senses Module	119-130
6.	Endocrinology Module-I	131-140

## **Introduction**

Our medical university has introduced an innovative Learning Management System (LMS) curriculum for first and second-year MBBS students, aiming to integrate modern technology into traditional medical education. Spearheaded by our Vice Chancellor, this initiative focuses on providing a flexible, interactive, and engaging learning environment through continuous formative assessments and summative evaluations. The curriculum is built around vertical, horizontal, and spiral integration, ensuring that students not only grasp individual modules but also understand the connections between different medical disciplines. By conducting assessments in the evening, students are encouraged to engage with their coursework beyond university walls, promoting independent, self-directed learning.

At the core of this LMS initiative is the use of technology to create an accessible, interactive platform that supports students in managing their learning. The system allows students to track their progress, access course materials, and collaborate with peers, all while developing critical thinking and reflective learning skills. This technology-driven approach aims to foster both academic excellence and professional preparedness, equipping students with the knowledge and skills needed for success in medical practice and future exams like the USMLE. By blending modern teaching methods with traditional medical training, our LMS curriculum prepares students to become competent, well-rounded healthcare professionals.

## **Implementation**

The implementation of the LMS curriculum involves a structured approach that combines formative and summative assessments throughout the academic year. Each of the first and second-year MBBS students will engage in two formative assessments per module, allowing for regular feedback and the opportunity to review and improve their understanding of core content. At the end of every two modules, a summative block LMS assessment will be conducted, providing a comprehensive evaluation of student progress and reinforcing the cumulative learning from previous modules. The integration of vertical, horizontal, and spiral concepts within the curriculum ensures that students develop a well-rounded understanding that links different disciplines and revisits key material at appropriate stages of their education. The use of technology in delivering these assessments allows for greater flexibility, accessibility, and scalability, ensuring that students have the support they need to succeed in a modern medical education environment.

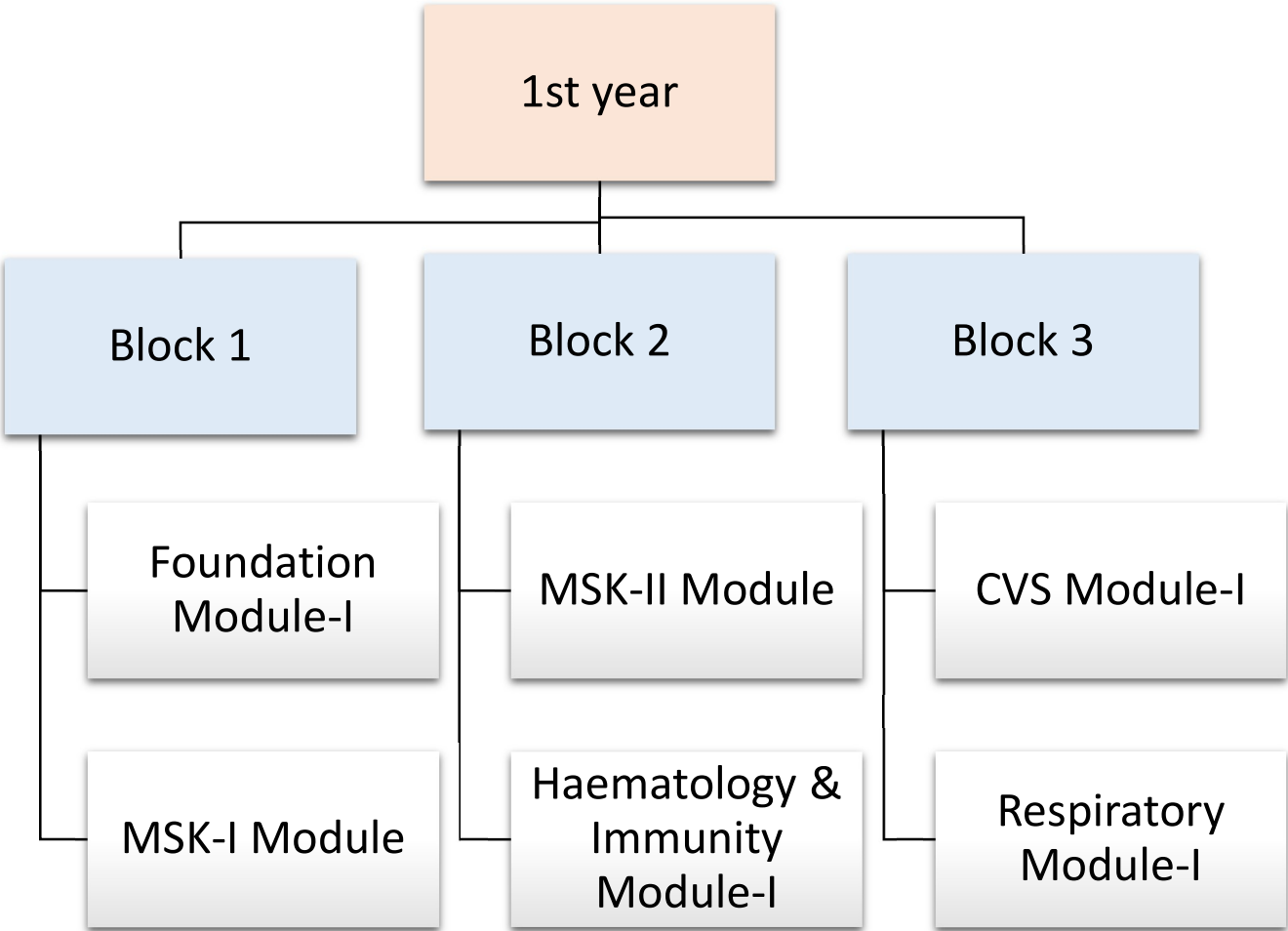
## Outcomes

The LMS system not only supports academic learning but also prepares students for professional exams, promotes flexibility, and cultivates key skills for their future medical careers.

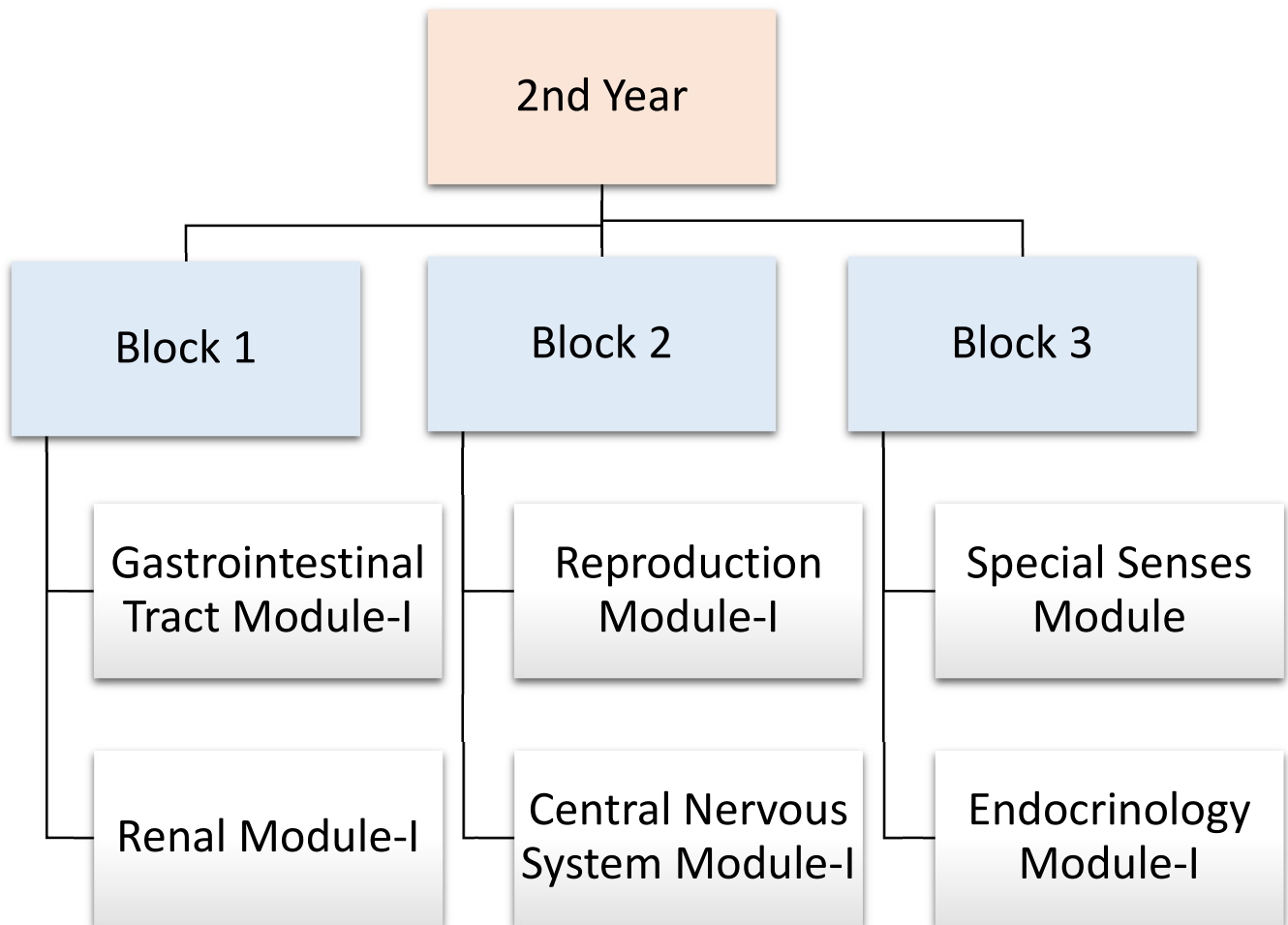
- **USMLE-based Preparation:** The LMS curriculum is aligned with the structure and content of the United States Medical Licensing Examination (USMLE), helping students develop the foundational knowledge and test-taking skills required for this important international benchmark in medical education.
- **Learning Beyond University Walls:** Conducted during evening hours, the LMS provides students the flexibility to learn outside traditional classroom settings, enabling them to balance their academic responsibilities with personal commitments and access learning materials at their own convenience.
- **Harnessing Technology for Learning:** By integrating advanced technology, the LMS creates an interactive, engaging learning environment where students can access resources, participate in assessments, and track their progress from anywhere, enhancing the learning experience and supporting a modern approach to medical education.
- **Promoting Self-Directed Learning:** The LMS fosters a culture of independent learning, encouraging students to take ownership of their educational journey, explore topics in depth, and engage with diverse resources beyond the core curriculum.
- **Encouraging Reflective Learning:** Through regular formative assessments and feedback, students are prompted to reflect on their performance, identify strengths and areas for improvement, and implement strategies for continuous self-improvement and mastery of medical content.
- **Integration Across Disciplines:** Vertical, horizontal, and spiral integration ensures that students not only learn individual modules but understand how different concepts interconnect, promoting a more comprehensive and holistic understanding of medical knowledge.
- **Continuous Assessment and Progress Tracking:** Regular formative assessments allow for ongoing evaluation, helping students identify gaps in their knowledge early, while summative block assessments provide a comprehensive review and ensure readiness for future academic and clinical challenges.
- **Collaboration and Peer Learning:** The LMS encourages collaborative learning through group discussions, peer assessments, and shared resources, promoting a sense of community and collective learning among students.



1<sup>st</sup> Year Module Breakdown



## 2<sup>nd</sup> Year Module Breakdown



**Module Wise Learning Objectives**  
**Foundation Module**  
**Large Group Interactive Session (LGIS)**

Topic	Learning Objectives At the End of One Hour the Lecture the Student Should Be Able To	Calgary Gauge	Learning Domain	Learning Resources
Introduction to General Anatomy	<ul style="list-style-type: none"> <li>Define the term Anatomy and its various branches</li> </ul>	Should Know	C1	<ul style="list-style-type: none"> <li>Clinically Oriented Anatomy by Keith Moore 9th edition.</li> <li>Cunningham's Manual of Practical Anatomy by G.J. Romanes, 16th edition, Vol-I, II and III</li> </ul>
	<ul style="list-style-type: none"> <li>Define different terminologies related to Anatomy</li> </ul>	Should Know	C1	
	<ul style="list-style-type: none"> <li>Describe different Anatomical planes and directions in relation to anatomical position</li> </ul>	Must Know	C2	
	<ul style="list-style-type: none"> <li>Elaborate different phases in life span of man</li> </ul>	Nice to Know	C2	
	<ul style="list-style-type: none"> <li>Define basic tissues of human body</li> </ul>	Should Know	C1	
	<ul style="list-style-type: none"> <li>Discuss general outlines and functions of basic tissues</li> </ul>	Must Know	C2	
	<ul style="list-style-type: none"> <li>Describe formation of different systems of body</li> </ul>	Should Know	C2	
	<ul style="list-style-type: none"> <li>Understand the curative and preventive health care measures.</li> </ul>	Nice to Know	C3	
	<ul style="list-style-type: none"> <li>Practice the principles of bioethics</li> </ul>	Nice to Know	C3	
	<ul style="list-style-type: none"> <li>Apply the strategic use of artificial intelligence in healthcare</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Read relevant research article</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Use HEC digital library</li> </ul>	Nice to know	C3	
Introduction to Human Development	<ul style="list-style-type: none"> <li>Discuss significance and importance of studying Embryology.</li> </ul>	Should Know	C2	<ul style="list-style-type: none"> <li>The developing Human by Keith Moore 8th edition, chapter no.1</li> </ul>
	<ul style="list-style-type: none"> <li>Define different terminologies to describe developmental stages.</li> </ul>	Must Know	C1	
	<ul style="list-style-type: none"> <li>Describe series of critical events that take place during embryonic development.</li> </ul>	Must Know	C2	
	<ul style="list-style-type: none"> <li>Appreciate difference between embryonic and fetal period.</li> </ul>	Must Know	C2	
	<ul style="list-style-type: none"> <li>Discuss common chromosomal abnormalities.</li> </ul>	Should Know	C2	
	<ul style="list-style-type: none"> <li>Understand the curative and preventive health care measures.</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Apply the strategic use of artificial intelligence in healthcare.</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Practice principles of bioethics</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Use HEC digital library.</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Read relevant research article.</li> </ul>	Nice to know	C3	
Oogenesis	<ul style="list-style-type: none"> <li>Discuss role of female hormones during oogenesis</li> </ul>	Must Know	C2	<ul style="list-style-type: none"> <li>The developing Human by Keith Moore 8th edition, chapter no.1</li> </ul>
	<ul style="list-style-type: none"> <li>Describe different stages of oogenesis</li> </ul>	Must Know	C2	
	<ul style="list-style-type: none"> <li>Correlate clinical aspects of gametogenesis</li> </ul>	Must Know	C3	
	<ul style="list-style-type: none"> <li>To understand the bio-physiological aspects of gametogenesis</li> </ul>	Must Know	C2	
	<ul style="list-style-type: none"> <li>Understand the curative and preventive health care measures.</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Apply the strategic use of artificial intelligence in healthcare</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Practice the principles of bioethics</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Use HEC digital library</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Read a relevant research article</li> </ul>	Nice to know	C3	
Spermatogenesis	<ul style="list-style-type: none"> <li>Define spermatogenesis.</li> </ul>	Should Know	C1	<ul style="list-style-type: none"> <li>The developing Human by Keith Moore 8th edition, chapter no.1</li> </ul>
	<ul style="list-style-type: none"> <li>Describe different phases of spermatogenesis</li> </ul>	Should Know	C2	
	<ul style="list-style-type: none"> <li>Discuss stages of spermiogenesis</li> </ul>	Should Know	C2	
	<ul style="list-style-type: none"> <li>Elaborate functions of male hormones during spermatogenesis</li> </ul>	Should know	C2	
	<ul style="list-style-type: none"> <li>Understand the curative and preventive health care measures.</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Practice the principles of bioethics</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Apply the strategic use of artificial intelligence in healthcare</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Able to read a relevant research article</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Use HEC digital library</li> </ul>	Should Know	C3	

Female Reproductive Cycles	<ul style="list-style-type: none"> <li>Understand Ovarian and Uterine cycle</li> </ul>	Must Know	C1	<ul style="list-style-type: none"> <li>The developing Human by Keith Moore 8th edition, chapter no.1</li> </ul>
	<ul style="list-style-type: none"> <li>Correlate Ovarian and Uterine cycles</li> </ul>	Must Know	C3	
	<ul style="list-style-type: none"> <li>Describe different phases of Ovarian and Uterine cycles</li> </ul>	Must Know	C2	
	<ul style="list-style-type: none"> <li>Enumerate female sex hormones</li> </ul>	Must Know	C1	
	<ul style="list-style-type: none"> <li>Discuss functional significance of female reproductive hormones in reproductive cycles</li> </ul>	Must Know	C2	
	<ul style="list-style-type: none"> <li>Discuss the anovulatory cycle in female</li> </ul>	Must Know	C3	
	<ul style="list-style-type: none"> <li>Understand the bio-physiological aspects female reproductive cycle</li> </ul>	Nice to know	C2	
	<ul style="list-style-type: none"> <li>Focus on provision of curative and preventive health care services</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Read a relevant research article</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Apply the strategic use of artificial intelligence in healthcare</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Use HEC digital library</li> </ul>	Nice to know	C3	
Ovulation and Fertilization	<ul style="list-style-type: none"> <li>Describe follicular development, ovulation and subsequent events in ovary</li> </ul>	Must Know	C2	<ul style="list-style-type: none"> <li>The developing Human by Keith Moore 8th edition, chapter no.1</li> </ul>
	<ul style="list-style-type: none"> <li>Give an account on role of luteinizing hormone in ovulation</li> </ul>	Must Know	C1	
	<ul style="list-style-type: none"> <li>Discuss capacitation in female genital tract</li> </ul>	Must Know	C2	
	<ul style="list-style-type: none"> <li>Describe different phases and results of fertilization</li> </ul>	Should Know	C2	
	<ul style="list-style-type: none"> <li>Enlist causes of infertility.</li> </ul>	Should Know	C1	
	<ul style="list-style-type: none"> <li>Enlist different technologies of assisted fertilization</li> </ul>	Should Know	C1	
	<ul style="list-style-type: none"> <li>Discuss different techniques of assisted reproduction with special emphasis on IVF</li> </ul>	Should Know	C3	
	<ul style="list-style-type: none"> <li>Discuss the bio-physiological aspects of ovulation and fertilization</li> </ul>	Nice to know	C2	
	<ul style="list-style-type: none"> <li>Focus on provision of curative and preventive health care services.</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Practice principles of bioethics</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Apply the strategic use of artificial intelligence in healthcare</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Understand the curative and preventive health care measures.</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Read a relevant research article</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Use HEC digital library</li> </ul>	Nice to know	C3	
Cleavage and Formation of Blastocyst	<ul style="list-style-type: none"> <li>Define cleavage</li> </ul>	Must Know	C1	<ul style="list-style-type: none"> <li>The developing Human by Keith Moore 8th edition, chapter no.1</li> </ul>
	<ul style="list-style-type: none"> <li>Define compaction</li> </ul>	Must Know	C1	
	<ul style="list-style-type: none"> <li>Describe blastocyst formation</li> </ul>	Must Know	C2	
	<ul style="list-style-type: none"> <li>Understand the bio-physiological aspects of cleavage and blastocyst</li> </ul>	Must Know	C2	
	<ul style="list-style-type: none"> <li>Correlate clinical condition of cleavage and blastocyst formation</li> </ul>	Should Know	C3	
	<ul style="list-style-type: none"> <li>Apply the strategic use of artificial intelligence in healthcare</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Understand the curative and preventive health care measures.</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Practice principles of bioethics</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Read a relevant research article</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Use HEC digital library</li> </ul>	Nice to know	C3	
Development Of Mammary Gland	<ul style="list-style-type: none"> <li>Describe the Sources of development of mammary gland.</li> </ul>	Must Know	C2	<ul style="list-style-type: none"> <li>The developing human, 8<sup>th</sup> edition, chapter no. 19</li> </ul>
	<ul style="list-style-type: none"> <li>Discuss different stages of activity of mammary gland.</li> </ul>	Must Know	C2	
	<ul style="list-style-type: none"> <li>Understand the bio-physiological aspects of mammary gland.</li> </ul>	Must Know	C2	
	<ul style="list-style-type: none"> <li>Correlate clinical conditions of mammary gland</li> </ul>	Should Know	C3	
	<ul style="list-style-type: none"> <li>Apply the strategic use of artificial intelligence in healthcare</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Practice principles of bioethics.</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Understand the curative and preventive health care measures.</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Read a relevant research article;</li> </ul>	Nice to know	C3	

	<ul style="list-style-type: none"> <li>• Use HEC digital library.</li> </ul>	Nice to know	C3	
Types of Epithelium	<ul style="list-style-type: none"> <li>• Define Epithelium</li> </ul>	Must Know	C1	<ul style="list-style-type: none"> <li>• diFiore’s Atlas of histology with clinical correlation, 11<sup>th</sup> edition, chapter 2</li> </ul> Junqueira’s Basic Histology, 15 <sup>th</sup> edition, chapter no. 4
	<ul style="list-style-type: none"> <li>• Discuss general features of Epithelial cells (basal, apical and lateral surfaces)</li> </ul>	Must Know	C2	
	<ul style="list-style-type: none"> <li>• Classify epithelium</li> </ul>	Must Know	C2	
	<ul style="list-style-type: none"> <li>• Explain the histological structure of simple epithelium</li> </ul>	Must Know	C2	
	<ul style="list-style-type: none"> <li>• Describe the location and functions of simple epithelium</li> </ul>	Must Know	C2	
	<ul style="list-style-type: none"> <li>• Classify stratified epithelium.</li> </ul>	Must Know	C2	
	<ul style="list-style-type: none"> <li>• Describe the functions and distribution of stratified epithelium</li> </ul>	Must Know	C1	
	<ul style="list-style-type: none"> <li>• Appreciate the differences between stratified and pseudostratified epithelium</li> </ul>	Must Know	C2	
	<ul style="list-style-type: none"> <li>• Describe characteristics of transitional epithelium</li> </ul>	Must Know	C2	
	<ul style="list-style-type: none"> <li>• Correlate clinical aspects of different types of epithelia</li> </ul>	Should Know	C3	
	<ul style="list-style-type: none"> <li>• To understand the bio-physiological aspects of different types of epithelia</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>• Apply the strategic use of artificial intelligence in healthcare</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>• Understand the curative and preventive health care measures.</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>• Practice principles of bioethics</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>• Read a relevant research article</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>• Use HEC digital library</li> </ul>	Nice to know	C3	
Specializations of Apical Cell Surface	<ul style="list-style-type: none"> <li>• Enumerate different apical modifications of cells</li> </ul>	Must Know	C1	<ul style="list-style-type: none"> <li>• diFiore’s Atlas of histology with clinical correlation, 11<sup>th</sup> edition, chapter 1</li> </ul> Junqueira’s Basic Histology, 15 <sup>th</sup> edition, chapter no. 22
	<ul style="list-style-type: none"> <li>• Describe histological structure of each apical modification.</li> </ul>	Must Know	C2	
	<ul style="list-style-type: none"> <li>• Discuss functions of each type of apical modifications</li> </ul>	Must Know	C2	
	<ul style="list-style-type: none"> <li>• Correlate clinical aspects of Specializations of apical cell surfaces</li> </ul>	Should Know	C3	
	<ul style="list-style-type: none"> <li>• Understand the bio-physiological aspects of specializations of apical cell surface</li> </ul>	Nice to know	C2	
	<ul style="list-style-type: none"> <li>• Enlist causes of infertility.</li> </ul>	Should Know	C 1	
	<ul style="list-style-type: none"> <li>• Apply the strategic use of artificial intelligence in healthcare</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>• Practice principles of bioethics</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>• Understand the curative and preventive health care measures.</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>• Read a relevant research article</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>• Use HEC digital library</li> </ul>	Nice to know	C3	
Intercellular Junctions and Adhesions	<ul style="list-style-type: none"> <li>• Enumerate different cell junctions</li> </ul>	Must Know	C1	<ul style="list-style-type: none"> <li>• diFiore’s Atlas of histology with clinical correlation, 11<sup>th</sup> edition, chapter 1</li> </ul> Junqueira’s Basic Histology, 15 <sup>th</sup> edition, chapter no. 22
	<ul style="list-style-type: none"> <li>• Describe histological structure of different cell junctions</li> </ul>	Must Know	C2	
	<ul style="list-style-type: none"> <li>• Understand the bio-physiological aspects of intercellular junctions and adhesions</li> </ul>	Should Know	C2	
	<ul style="list-style-type: none"> <li>• Apply the strategic use of artificial intelligence in healthcare</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>• Practice principles of bioethics</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>• Understand the curative and preventive health care measures.</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>• Read a relevant research article</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>• Use HEC digital library</li> </ul>	Nice to know	C3	
Glandular Epithelium	<ul style="list-style-type: none"> <li>• Define gland.</li> </ul>	Must Know	C1	<ul style="list-style-type: none"> <li>• diFiore’s Atlas of histology with clinical correlation, 11<sup>th</sup> edition, chapter 1</li> </ul> Junqueira’s Basic Histology, 15 <sup>th</sup> edition, chapter no. 22
	<ul style="list-style-type: none"> <li>• Compare between exocrine and endocrine glands with examples.</li> </ul>	Must Know	C2	
	<ul style="list-style-type: none"> <li>• Classify glands on the basis of morphology, secretory product, and mode of secretion.</li> </ul>	Must Know	C2	
	<ul style="list-style-type: none"> <li>• Understand the bio-physiological aspects of glands.</li> </ul>	Should know	C2	
	<ul style="list-style-type: none"> <li>• Practice principles of bioethics.</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>• Apply the strategic use of artificial intelligence in healthcare.</li> </ul>	Nice to know	C3	

	<ul style="list-style-type: none"> <li>Understand the curative and preventive health care measures.</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Read a relevant research article</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Use HEC digital library</li> </ul>		C3	
Development and Histology Of Mammary Gland	<ul style="list-style-type: none"> <li>Describe the Sources of development of mammary gland</li> </ul>	Must Know	C2	<ul style="list-style-type: none"> <li>diFiore’s Atlas of histology with clinical correlation, 11<sup>th</sup> edition, chapter 1</li> <li>Junqueira’s Basic Histology, 15<sup>th</sup> edition, chapter no. 22</li> </ul>
	<ul style="list-style-type: none"> <li>Discuss the ultra-structure of mammary gland</li> </ul>	Must Know	C2	
	<ul style="list-style-type: none"> <li>Discuss different stages of activity of mammary gland</li> </ul>	Must Know	C2	
	<ul style="list-style-type: none"> <li>Understand the bio-physiological aspects of mammary gland</li> </ul>	Should Know	C2	
	<ul style="list-style-type: none"> <li>Correlate clinical conditions of mammary glands.</li> </ul>	Should Know	C3	
	<ul style="list-style-type: none"> <li>Practice principles of bioethics</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Apply the strategic use of artificial intelligence in healthcare</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Understand the curative and preventive health care measures.</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Read a relevant research article</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Use HEC digital library</li> </ul>	Nice to know	C3	

## SMALL GROUP DISCUSSION (SGDS)

Demonstration/Dis section	At the End of The Demonstration Student Should Be Able To	Calgary Gauge	Learning Domains	Learning Resources
Anatomicomedical Terminology I (Anatomical Position and Planes)	• Describe different anatomical planes of human body and correlate with radiological anatomy	Must Know	C2	<ul style="list-style-type: none"> <li>• Clinical Oriented Anatomy by Keith L. Moore.8<sup>TH</sup> Edition. (Chapter 3, Page143,153,154) .<a href="https://www.youtube.com/watch?v=Ykfzt-olaYs">https://www.youtube.com/watch?v=Ykfzt-olaYs</a></li> </ul>
	• Demonstrate anatomical position of human body	Nice to know	C3	
	• Apply the strategic use of artificial intelligence in healthcare	Nice to know	P C3	
	• Practice principles of bioethics	Nice to know	C3	
	• Read a relevant research article	Nice to know	C3	
Anatomicomedical Terminology -II (Anatomical Terms and Axis of Movements)	• Define different terms related to body parts	Must Know	C1	<ul style="list-style-type: none"> <li>• Clinical Oriented Anatomy by Keith L. Moore.8<sup>TH</sup> Edition. (Chapter 3, Page143,153,154) . .<a href="https://www.youtube.com/watch?v=Ykfzt-olaYs">https://www.youtube.com/watch?v=Ykfzt-olaYs</a></li> </ul>
	• Describe axis of movement	Must Know	C2	
	• Demonstrate axis of movement	Must Know	P	
	• Strategic use of artificial intelligence in healthcare	Nice to know	C3	
	• Focus on provision of curative and preventive health care services	Nice to Know	C3	
	• Practice principles of bioethics	Nice to know	C3	
	• Apply the strategic use of artificial intelligence in healthcare	Nice to know	C3	
	• Understand the curative and preventive health care measures.	Nice to know	C3	
	• Read a relevant research article	Nice to know	C3	
	• Use HEC digital library	Nice to know	C3	
Anatomicomedical Terminology -III (Cell and Tissues)	• Define cell	Must Know	C1	<ul style="list-style-type: none"> <li>• Clinical Oriented Anatomy by Keith L. Moore.8<sup>TH</sup> Edition. (Chapter 3, Page143,153,154) . .<a href="https://www.youtube.com/watch?v=Ykfzt-olaYs">https://www.youtube.com/watch?v=Ykfzt-olaYs</a></li> </ul>
	• Define tissue	Must Know	C1	
	• Describe basic tissues of human body	Must Know	C2	
	• Practice principles of bioethics	Nice to know	C3	
	• Apply the strategic use of artificial intelligence in healthcare	Nice to know	C3	
	• Understand the curative and preventive health care services	Nice to know	C3	
	• Read a relevant research article	Nice to know	C3	
Anatomicomedical Terminology-IV (Skin and Body Systems)	• Use digital library	Nice to know	C3	<ul style="list-style-type: none"> <li>• Clinical Oriented Anatomy by Keith L. Moore.8<sup>TH</sup> Edition. (Chapter 3, Page143,153,154) . .<a href="https://www.youtube.com/watch?v=Ykfzt-olaYs">https://www.youtube.com/watch?v=Ykfzt-olaYs</a></li> </ul>
	• Describe general organization of different systems of body	Must Know	C2	
	• Discuss concepts of skin and fascia	Must Know	C2	
	• Describe the classification of blood vessels	Must Know	C2	
	• Describe the concepts of divisions of nervous system	Must Know	C1	
	• Describe the formation of spinal nerve	Should Know	C2	
	• Practice principles of bioethics	Nice to know	C3	
	• Understand the curative and preventive health care measures.	Nice to know	C3	
	• Read a relevant research article	Nice to know	C3	
	• Apply strategic use of artificial intelligence in healthcare	Nice to know	C3	
Clavicle	• Use HEC digital library	Nice to know	C3	<ul style="list-style-type: none"> <li>• Clinical Oriented Anatomy by Keith L. Moore.8<sup>TH</sup> Edition. Clavicle (Chapter 3, Page143,153,154) . .<a href="https://www.youtube.com/watch?v=Ykfzt-olaYs">https://www.youtube.com/watch?v=Ykfzt-olaYs</a></li> </ul>
	• Determine the side	Must Know	C2	
	• Demonstrate anatomical position, general features, attachments and articulations (medial and lateral).	Must Know	P	
	• Elaborate pectoral girdle formation movement and dislocation.	Must Know	C3	
	• Describe ossification in detail and Fracture Of clavicle.	Should Know	C3	
	• Practice principles of bioethics	Nice to know	C3	
	• Apply the strategic use of artificial intelligence in healthcare	Nice to know	C3	
	• Understand the curative and preventive health care measures.	Nice to know	C3	
	• Use HEC digital library	Nice to know	C3	

	<ul style="list-style-type: none"> <li>Read a relevant research article</li> </ul>	Nice to know	C3	
Scapula	<ul style="list-style-type: none"> <li>Determine the side</li> </ul>	Must Know	C2	<ul style="list-style-type: none"> <li>Clinical Oriented Anatomy by Keith L. Moore. 8TH Edition. (Chapter 3, Page 143-145, 154, 171, 172). <a href="https://www.youtube.com/watch?v=zFawNgaSL6E">https://www.youtube.com/watch?v=zFawNgaSL6E</a></li> </ul>
	<ul style="list-style-type: none"> <li>Demonstrate anatomical position, general features, attachments, and articulation. (clavicle and shoulder joints)</li> </ul>	Must Know	P	
	<ul style="list-style-type: none"> <li>Describe scapular anastomosis and its clinical significance</li> </ul>	Must Know	C3	
	<ul style="list-style-type: none"> <li>Demonstrate Scapular movements.</li> </ul>	Must Know	P	
	<ul style="list-style-type: none"> <li>Practice principles of bioethics</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Apply the strategic use of artificial intelligence in healthcare</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Focus on provision of curative and preventive health care services</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Use HEC digital library.</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Read a relevant research article</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Determine the side</li> </ul>	Must Know	C2	
Humerus	<ul style="list-style-type: none"> <li>Demonstrate anatomical position, general features, attachments and articulation (shoulder and elbow).</li> </ul>	Must Know	P	<ul style="list-style-type: none"> <li>Clinical Oriented Anatomy by Keith L. Moore. 8TH Edition. (Chapter 3, Page 168, 169). <a href="https://teachmeanatomy.info/">https://teachmeanatomy.info/</a></li> </ul>
	<ul style="list-style-type: none"> <li>Describe the importance of anatomical and surgical neck of humerus</li> </ul>	Should Know	C2	
	<ul style="list-style-type: none"> <li>Correlate axillary, radial, median and ulnar nerve damage with respect to various fractures of humerus.</li> </ul>	Should Know	C2	
	<ul style="list-style-type: none"> <li>Describe Significance of bicipital groove, angle of humeral torsion and carrying angle</li> </ul>	Must Know	C2	
	<ul style="list-style-type: none"> <li>Discuss Ossification and fractures</li> </ul>	Should to know	C3	
	<ul style="list-style-type: none"> <li>Understand the curative and preventive health care measures.</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Apply the strategic use of artificial intelligence in healthcare</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Practice principles of bioethics</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Use HEC digital library</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Read a relevant research article</li> </ul>	Nice to know	C3	
Anterior Axioappendicular Region	<ul style="list-style-type: none"> <li>Describe Superficial fascia with cutaneous nerves and vessels of anterior axioappendicular region</li> <li>Tabulate muscles of the anterior axioappendicular region</li> </ul>	Must Know	C2	<ul style="list-style-type: none"> <li>Clinical Oriented Anatomy by Keith L. Moore. 8TH Edition. (Chapter 3, Page 168, 169). <a href="https://teachmeanatomy.info/">https://teachmeanatomy.info/</a></li> </ul>
	<ul style="list-style-type: none"> <li>Understand the bio-physiological aspects of anterior axioappendicular region.</li> </ul>	Should Know	C1	
	<ul style="list-style-type: none"> <li>Strategic use of artificial intelligence in healthcare</li> </ul>	Nice to Know	C3	
	<ul style="list-style-type: none"> <li>Understand the curative and preventive health care measures</li> <li>Practice principles of bioethics</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Apply the strategic use of artificial intelligence in healthcare</li> </ul>	Nice to Know	C3	
	<ul style="list-style-type: none"> <li>Use HEC digital library</li> </ul>	Nice to Know	C3	
	<ul style="list-style-type: none"> <li>Read a relevant research article</li> </ul>	Nice to know	C3	
Posterior Axioappendicular Muscles	<ul style="list-style-type: none"> <li>Tabulate muscles of the pectoral region (origin, insertion, nerve supply, action and applied).</li> </ul>	Must Know	C2	<ul style="list-style-type: none"> <li>Clinical Oriented Anatomy by Keith L. Moore. 8TH Edition. (Chapter 3, Page 168, 169). <a href="https://teachmeanatomy.info/">https://teachmeanatomy.info/</a></li> </ul>
	<ul style="list-style-type: none"> <li>Identify and describe the pectoral and clavipectoral fascia</li> </ul>	Must Know	C2	
	<ul style="list-style-type: none"> <li>Use HEC digital library</li> </ul>	Nice to Know	C3	
	<ul style="list-style-type: none"> <li>Understand the curative and preventive health care measures</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Apply the strategic use of artificial intelligence in healthcare</li> </ul>	Nice to Know	C3	
	<ul style="list-style-type: none"> <li>Read a relevant research article</li> </ul>	Nice to Know	C3	
	<ul style="list-style-type: none"> <li>Define axilla</li> </ul>	Must Know	C2	<ul style="list-style-type: none"> <li>Clinical Oriented Anatomy by Keith L. Moore. 8TH Edition. (Chapter 3, Page 191-196).</li> </ul>
	<ul style="list-style-type: none"> <li>Describe its boundaries.</li> </ul>	Must Know	C2	
	<ul style="list-style-type: none"> <li>Enumerate the Contents of axilla, (axillary artery with its branches, axillary vein and tributaries, axillary lymphatics, lymph nodes and brachial</li> </ul>	Must Know	C2	



Axilla	plexus).			<a href="https://www.youtube.com/watch?v=1qgqrXlpr1Y">https://www.youtube.com/watch?v=1qgqrXlpr1Y</a>
	• Describe the clinical significance of axillary lymph nodes	Should Know	C3	
	• Practice principles of bioethics	Nice to Know	C3	
	• Understand the curative and preventive health care measures	Nice to know	C3	
	• Apply the strategic use of artificial intelligence in healthcare	Nice to Know	C3	
	• Read a relevant research article	Nice to Know	C3	
	• Use HEC digital library	Nice to Know	C3	
Brachial Plexus	• Describe the formation of brachial plexus its roots and trunks.	Must Know	C2	<ul style="list-style-type: none"> <li>• Clinical Oriented Anatomy by Keith L. Moore.8TH Edition. (Chapter 3, Page 199-200).</li> <li>• <a href="https://teachmeanatomy.info/">https://teachmeanatomy.info/</a> <a href="https://www.youtube.com/watch?v=c9giLkwgYA0">https://www.youtube.com/watch?v=c9giLkwgYA0</a></li> </ul>
	• Describe the origin and root value of different nerves arising	Must Know	C2	
	• Understand the curative and preventive health care measures	Nice to Know	C3	
	• Practice principles of bioethics	Nice to Know	C3	
	• Apply the strategic use of artificial intelligence in healthcare	Nice to Know	C3	
	• Read a research article on brachial plexus	Nice to Know	C3	
	• Use HEC digital library	Nice to Know	C3	
Brachial Plexus Injuries	• Describe the different neurological deficits arising as a result of damaged to roots, trunks and branches of brachial plexus at different levels.	Must Know	C3	<ul style="list-style-type: none"> <li>• Clinical Oriented Anatomy by Keith L. Moore.8TH Edition. (Chapter 3, Page 199-200).</li> <li>• <a href="https://teachmeanatomy.info/">https://teachmeanatomy.info/</a> <a href="https://www.youtube.com/watch?v=c9giLkwgYA0">https://www.youtube.com/watch?v=c9giLkwgYA0</a></li> </ul>
	• Describe the origin and root value of different nerves arising	Must Know	C3	
	• Read a research article on brachial plexus	Nice to know	C3	
	• Understand the curative and preventive health care measures	Nice to know	C3	
	• Practice principles of bioethics	Nice to know	C3	
	• Apply the strategic use of artificial intelligence in healthcare	Nice to know	C3	
	• Read a relevant research article	Nice to know	C3	
	• Use HEC digital library	Nice to know	C3	
Breast	• Describe the extent of breast	Must Know	C2	<ul style="list-style-type: none"> <li>• Clinical Oriented Anatomy by Keith L. Moore.8TH Edition. (Chapter 4, Page 315-318,323-326).</li> <li>• <a href="https://www.youtube.com/watch?v=OW0qQnT5GoA">https://www.youtube.com/watch?v=OW0qQnT5GoA</a></li> </ul>
	• Describe the relations of breast	Must Know	C2	
	• Describe structure of gland.	Must Know	C2	
	• Discuss the blood supply, venous drainage and lymphatics.	Must Know	C2	
	• Correlate Clinical picture and lymphatic spread in breast carcinoma.	Should know	C3	
	• Discuss congenital anomalies of breast	Should know	C3	
	• Practice principles of bioethics	Nice to know	C3	
	• Understand the curative and preventive health care measures	Nice to know	C3	
	• Read a relevant research article	Nice to know	C3	
	• Apply the strategic use of artificial intelligence in healthcare	Nice To Know		
	• Use HEC digital library	Nice to know	C3	
	• Interpret the normal radiologic appearance of bones in axioappendicular region.	Must Know	C3	
	• Apply the strategic use of artificial intelligence in healthcare	Nice to know	C3	
	• Practice principles of bioethics	Nice to know	C3	
	• Understand the curative and preventive health care measures	Nice to know	C3	

PRACTICALS SKILL LABORATORY (SKL)

Practical	At the End of The Practical Student Should Be Able To	Calgary Gauge	Learning Domains	Learning Resources
Histology				
Introduction to Microscope	<ul style="list-style-type: none"><li>Identify different types of microscopes.</li></ul>	Should know	C1	<ul style="list-style-type: none"><li>DiFiore’s Atlas of histology with clinical correlation, 11<sup>th</sup> edition, chapter1.</li><li>Junqueira’s Basic Histology, 15<sup>th</sup> edition, chapter no. 1</li><li>USMLE Q Bank Step 1 (Volume 1) 2023-2034</li></ul>
	<ul style="list-style-type: none"><li>Describe functions of different parts of microscope.</li></ul>	Should know	C1	
	<ul style="list-style-type: none"><li>Identify different types of lenses.</li></ul>	Should know	C1	
	<ul style="list-style-type: none"><li>Focus slides.</li></ul>	Must know	P	
Simple epithelium	<ul style="list-style-type: none"><li>Classify epithelium.</li></ul>	Should know	C2	<ul style="list-style-type: none"><li>DiFiore’s Atlas of histology with clinical correlation, 11<sup>th</sup> edition, chapter2</li><li>Junqueira’s Basic Histology, 15<sup>th</sup> edition, chapter no. 4</li></ul>
	<ul style="list-style-type: none"><li>Illustrate different types of simple epithelium</li></ul>	Should know	P	
	<ul style="list-style-type: none"><li>Identify types of simple epithelium.</li></ul>	Should know	P	
	<ul style="list-style-type: none"><li>Write two points of identification</li></ul>	Must know	C1	
Stratified epithelium /Transitional Epithelium	<ul style="list-style-type: none"><li>Classify stratified epithelium.</li></ul>	Should know	C1	<ul style="list-style-type: none"><li>DiFiore’s Atlas of histology with clinical correlation, 11<sup>th</sup> edition, chapter 2</li><li>Junqueira’s Basic Histology, 15<sup>th</sup> edition, chapter no. 4</li><li>USMLE Q Bank Step 1 (Volume 1) 2023-2034</li></ul>
	<ul style="list-style-type: none"><li>Illustrate different types of stratified epithelium</li></ul>	Should know	C1	
	<ul style="list-style-type: none"><li>Discuss functions of stratified epithelium</li></ul>	Should know	C2	
	<ul style="list-style-type: none"><li>Enlist sites of specific type of epithelium</li></ul>	Should know	C2	
	<ul style="list-style-type: none"><li>Identify epithelium under microscope</li></ul>	Should know	C1	
	<ul style="list-style-type: none"><li>Write two points of identification</li></ul>	Must know	P	
Mammary gland	<ul style="list-style-type: none"><li>Illustrate the different stages of activity of mammary gland</li></ul>	Should know	C2	<ul style="list-style-type: none"><li>DiFiore’s Atlas of histology with clinical correlation, 11<sup>th</sup> edition, chapter 19</li><li>Junqueira’s Basic Histology, 15<sup>th</sup> edition, chapter no. 22</li><li>USMLE Q Bank Step 1 (Volume 1) 2023-2034</li></ul>
	<ul style="list-style-type: none"><li>Identify the slides of different stages of mammary gland</li></ul>	Must know	P	

## TOS for LMS Assessment of Foundation Module-I Of First Year MBBS, Batch -52 (Session 2024-25)

1<sup>ST</sup> LMS Assessment for the first year MBBS for the Foundation Module will be held on 03-03-2025 (Monday) from 7:00pm to 7:30pm. Details of topics are mentioned in the table below:

S No.	Domain of Teaching Activity	Topic	No. of MCQs	Cognitive Domain		
				C1	C2	C3
1.	LGIS	<b>General Anatomy</b> Introduction to General Anatomy	05	1	2	2
		<b>General Embryology</b> Introduction to Human development	05	1	2	2
2.	SGD/Dissection	Anatomicomedical terminologies a. Position and Planes b. Anatomical terms and axis of movements c. Cell and Tissues d. Skin and Body Systems Clavicle Scapula Humerus	15	5	5	5
3.	Practical	Introduction to Microscope and Preparation of Slide. Artifacts	05	1	2	2
4.	TOTAL		30			

Learning Resources:

- **Embryology** :- KLM Embryology Developing Human 11<sup>th</sup> Edition
- **Histology** :-Junqueira's Basic Histology 18th Edition
- **Gross Anatomy** :- KLM clinically oriented anatomy edition 10
- **USMLE Q Bank Step 1** (Volume 1) 2023-2034
- **UWORLD Step 1** (Volume 3) 2023-2024

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## TOS for LMS Assessment of Foundation Module-I Of First Year MBBS, Batch -52 (Session 2024-25)

1<sup>ST</sup> LMS Assessment for the first year MBBS for the Foundation Module will be held on 17-03-2025 (Monday) from 7:00pm to 7:30pm. Details of topics are mentioned in the table below:

S No.	Domain of Teaching Activity	Topic	No. of MCQs	Cognitive Domain		
				C1	C2	C3
5.	LGIS	<b>Embryology</b> Gametogenesis Female reproductive cycles Fertilization	05	1	2	2
		<b>Histology</b> Types of epithelium Cell surface modification Intercellular junctions	05	1	2	2
6.	SGD/Dissection	Anterior Axioappendicular Muscles Posterior Axioappendicular Muscles Axilla Brachial Plexus	15	5	5	5
7.	Practical	Simple Epithelium Stratified epithelium	05	1	2	2
8.	TOTAL		30			

### Learning Resources:

- **Embryology** :- KLM Embryology Developing Human 11<sup>th</sup> Edition
- **Histology** :-Junqueira's Basic Histology 18th Edition
- **Gross Anatomy** :- KLM clinically oriented anatomy edition 10
- **USMLE Q Bank Step 1** (Volume 1) 2023-2034
- **UWORLD Step 1** (Volume 3) 2023-2024

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Rawalpindi

Musculoskeletal Module I (MSK-I)

Learning Objectives  
Large Group Interactive Session (LGIS)

Topic	Learning Objectives At the end of session students should be able to	Calgary Gauge	Learning Domain	Learning Resources
Embryology				
Formation of Bilaminar Embryonic Disc (2 <sup>nd</sup> week of Human Development)	<ul style="list-style-type: none"><li>Describe formation of Amniotic Cavity, embryonic disc and Umbilical vesicle</li></ul>	Should know	C2	<ul style="list-style-type: none"><li>KLM Embryology Developing Human 11<sup>th</sup> Edition</li><li>USMLE Q Bank Step 1 (Volume 1) 2023-2034</li></ul>
	<ul style="list-style-type: none"><li>Discuss development of chorionic sac</li></ul>	Should know	C2	
	<ul style="list-style-type: none"><li>Outline the process of implantation</li></ul>	Should know	C1	
	<ul style="list-style-type: none"><li>Describe changes in Gravid Endometrium</li></ul>	Should know	C2	
	<ul style="list-style-type: none"><li>Understand the Bio-physiological aspects of gravid endometrium</li></ul>	Should know	C2	
	<ul style="list-style-type: none"><li>Corelate with the clinical conditions</li></ul>	Must know	C3	
	<ul style="list-style-type: none"><li>focus on provision of curative and preventive health care measures</li></ul>	Nice to know	C3	
	<ul style="list-style-type: none"><li>Practice principles of bioethics</li></ul>	Nice to know	C3	
	<ul style="list-style-type: none"><li>Apply strategic use of AI in health care</li></ul>	Nice to know	C3	
	<ul style="list-style-type: none"><li>read relevant research article</li></ul>	Nice to know	C3	
Gastrulation  Establishment of Body Axis and Fate Map ( 3 <sup>rd</sup> week)	<ul style="list-style-type: none"><li>Discuss process of gastrulation with special reference to primitive streak</li></ul>	Should know	C2	<ul style="list-style-type: none"><li>KLM Embryology Developing Human 11<sup>th</sup> Edition</li><li>USMLE Q Bank Step 1 (Volume 1) 2023-2034</li></ul>
	<ul style="list-style-type: none"><li>Describe the fate of primitive streak</li></ul>	Should know	C2	
	<ul style="list-style-type: none"><li>Discuss establishment of body axis</li></ul>	Should know	C2	
	<ul style="list-style-type: none"><li>Draw fate map and discuss its importance in future development</li></ul>	Should know	C2	
	<ul style="list-style-type: none"><li>Understand the Biophysiological aspects of gastrulation</li></ul>	Should know	C2	
	<ul style="list-style-type: none"><li>Describe congenital abnormalities associated with gastrulation</li></ul>	Should know	C3	
		Must know	C3	
	<ul style="list-style-type: none"><li>Corelate with the clinical conditions</li></ul>		C3	
	<ul style="list-style-type: none"><li>focus on provision of curative and preventive health care</li></ul>	Nice to know	C3	
	<ul style="list-style-type: none"><li>Practice principles of bioethics</li></ul>	Nice to know	C3	
Notochord Formation  (3 <sup>rd</sup> week)	<ul style="list-style-type: none"><li>Define notochord</li></ul>	Should know	C1	<ul style="list-style-type: none"><li>KLM Embryology Developing Human 11<sup>th</sup> Edition</li><li>USMLE Q Bank Step 1 (Volume 1) 2023-2034</li></ul>
	<ul style="list-style-type: none"><li>Delineate different stages of notochord formation</li></ul>	Should know	C1	
	<ul style="list-style-type: none"><li>Discuss the importance of notochord in development of central nervous system</li></ul>	Should know	C2	
	<ul style="list-style-type: none"><li>Describe role of notochord in development of axial Skeleton</li></ul>	Should know	C1	
	<ul style="list-style-type: none"><li>Describe the fate of notochord</li></ul>	Should know	C2	
	<ul style="list-style-type: none"><li>Correlate with clinical conditions of notochord formation</li></ul>	Must know	C3	
	<ul style="list-style-type: none"><li>focus on provision of curative and preventive health care measures</li></ul>	Nice to know	C3	
	<ul style="list-style-type: none"><li>Practice principles of bioethics</li></ul>	Nice to know	C3	
	<ul style="list-style-type: none"><li>Apply strategic use of AI in health care</li></ul>	Nice to know	C3	
	<ul style="list-style-type: none"><li>read relevant research article</li></ul>	Nice to know	C3	
Neurulation (3 <sup>rd</sup> week)	<ul style="list-style-type: none"><li>Define neurulation</li></ul>	Should know	C1	<ul style="list-style-type: none"><li>KLM Embryology Developing Human 11<sup>th</sup> Edition</li><li>USMLE Q Bank Step 1 (Volume 1) 2023-2034</li></ul>
	<ul style="list-style-type: none"><li>Describe formation of neural plate and neural tube</li></ul>	Should know	C2	
	<ul style="list-style-type: none"><li>Discuss neural crest formation</li></ul>	Should know	C2	
	<ul style="list-style-type: none"><li>Enlist derivatives of neural crest cells</li></ul>	Should know	C1	
	<ul style="list-style-type: none"><li>Understand the bio-physiological aspects of Neurulation</li></ul>	Should know	C2	
	<ul style="list-style-type: none"><li>Discuss neural tube defects</li></ul>	Should know	C3	
	<ul style="list-style-type: none"><li>Discuss different types of spina bifida</li></ul>	Should know	C3	
	<ul style="list-style-type: none"><li>Discuss the importance of folic acid in the prevention of spina bifida</li></ul>	Should know	C2	
	<ul style="list-style-type: none"><li>Corelate with the clinical conditions</li></ul>	Must know	C3	
	<ul style="list-style-type: none"><li>focus on provision of curative and preventive health care measures</li></ul>	Nice to know	C3	
	<ul style="list-style-type: none"><li>Practice principles of bioethics</li></ul>	Nice to know	C3	
	<ul style="list-style-type: none"><li>Apply strategic use of AI in health care</li></ul>	Nice to know	C3	
	<ul style="list-style-type: none"><li>read relevant research article</li></ul>	Nice to know	C3	
	<ul style="list-style-type: none"><li>Enumerate three germ layers and their derivatives</li></ul>	Nice to know	C1	

Development and Differentiation of Somites	<ul style="list-style-type: none"> <li>Describe different divisions of mesoderm</li> </ul>	Nice to know	C2	<ul style="list-style-type: none"> <li>KLM Embryology Developing Human 11<sup>th</sup> Edition</li> <li>USMLE Q Bank Step 1 (Volume 1) 2023-2034</li> </ul>
	<ul style="list-style-type: none"> <li>Describe development of somites and their differentiation</li> </ul>	Should know	C2	
	<ul style="list-style-type: none"> <li>Explain different stages of somite development</li> </ul>	Should know	C2	
	<ul style="list-style-type: none"> <li>Understand the Biophysiological aspects of Somite differentiation</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Correlate clinical aspects of somite differentiation</li> </ul>	Must know	C3	
	<ul style="list-style-type: none"> <li>Focus on provision of curative and preventive health care measures</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Practice principles of bioethics</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Apply strategic use of AI in health care</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Read relevant research article</li> </ul>	Nice to know	C3	
Early Development of Cardiovascular System & highlights of 4th-8th week	<ul style="list-style-type: none"> <li>Describe early development of cardiovascular system and chorionic villi</li> </ul>	Should know	C2	<ul style="list-style-type: none"> <li>KLM Embryology Developing Human 11<sup>th</sup> Edition</li> <li>USMLE Q Bank Step 1 (Volume 1) 2023-2034</li> </ul>
	<ul style="list-style-type: none"> <li>Discuss development of intraembryonic coelom</li> </ul>	Should know	C2	
	<ul style="list-style-type: none"> <li>Define angiogenesis and vasculogenesis.</li> </ul>	Should know	C1	
	<ul style="list-style-type: none"> <li>Correlate clinical aspects of angiogenesis</li> </ul>	Should know	C3	
	<ul style="list-style-type: none"> <li>Summarize the main developmental events and changes in external form of the embryo during the 4th to 8th weeks</li> </ul>	Should know	C2	
	<ul style="list-style-type: none"> <li>Corelate with the clinical conditions</li> </ul>	Must know	C3	
	<ul style="list-style-type: none"> <li>focus on provision of curative and preventive health care measures</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Practice principles of bioethics</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Apply strategic use of AI in health care</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>read relevant research article</li> </ul>	Nice to know	C3	
Folding of Embryo	<ul style="list-style-type: none"> <li>Enlist different phases of embryonic development</li> </ul>	Should know	C1	<ul style="list-style-type: none"> <li>KLM Embryology Developing Human 11<sup>th</sup> Edition</li> <li>USMLE Q Bank Step 1</li> </ul>
	<ul style="list-style-type: none"> <li>Describe folding of the embryo in median plane</li> </ul>	Should know	C2	
	<ul style="list-style-type: none"> <li>Describe folding of the embryo in horizontal plane</li> </ul>	Should know	C2	
	<ul style="list-style-type: none"> <li>Discuss results of folding</li> </ul>	Should know	C2	
	<ul style="list-style-type: none"> <li>Discuss Omphalocele and Gastroschisis</li> </ul>	Should know	C3	
	<ul style="list-style-type: none"> <li>Corelate with the clinical conditions</li> </ul>	Must know	C3	
	<ul style="list-style-type: none"> <li>focus on provision of curative and preventive health care measures</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Practice principles of bioethics</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Apply strategic use of AI in health care</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>read relevant research article</li> </ul>	Nice to know	C3	
Fetal period	<ul style="list-style-type: none"> <li>Describe different criteria for fetal age estimation</li> </ul>	Should know	C2	<ul style="list-style-type: none"> <li>KLM Embryology Developing Human 11<sup>th</sup> Edition</li> <li>USMLE Q Bank Step 1 (Volume 1) 2023-2034</li> </ul>
	<ul style="list-style-type: none"> <li>Discuss the trimesters of pregnancy with their importance</li> </ul>	Should know	C2	
	<ul style="list-style-type: none"> <li>Describe highlights of fetal period</li> </ul>	Should know	C2	
	<ul style="list-style-type: none"> <li>Differentiate between embryonic and fetal period</li> </ul>	Should know	C2	
	<ul style="list-style-type: none"> <li>Tabulate growth in length and weight during fetal period</li> </ul>	Should know	C2	
	<ul style="list-style-type: none"> <li>Enumerate and discuss factors influencing fetal growth</li> </ul>	Should know	C2	
	<ul style="list-style-type: none"> <li>Define the term perinatology</li> </ul>	Should know	C1	
	<ul style="list-style-type: none"> <li>Enlist and briefly describe procedures for assessing fetal well-being</li> </ul>	Should know	C3	
	<ul style="list-style-type: none"> <li>Correlate clinical aspects of fetal period</li> </ul>	Should know	C3	
	<ul style="list-style-type: none"> <li>focus on provision of curative and preventive health care measures</li> </ul>	Must know	C3	
	<ul style="list-style-type: none"> <li>Practice principles of bioethics</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Apply strategic use of AI in health care</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>read relevant research article</li> </ul>	Nice to know	C3	
Placenta	<ul style="list-style-type: none"> <li>Discuss Implantation and establishment of the embryo within the uterus</li> </ul>	Should know	C2	<ul style="list-style-type: none"> <li>KLM Embryology Developing Human 11<sup>th</sup> Edition</li> <li>USMLE Q Bank Step 1 (Volume 1) 2023-2034</li> </ul>
	<ul style="list-style-type: none"> <li>Describe the differentiation of the uterine lining into decidua</li> </ul>	Should know	C2	
	<ul style="list-style-type: none"> <li>Describe the development of a placenta</li> </ul>	Should know	C2	
	<ul style="list-style-type: none"> <li>Describe fetal – maternal circulation</li> </ul>	Should know	C2	
	<ul style="list-style-type: none"> <li>Discuss the bio-physiological aspects of placenta</li> </ul>	Should know	C2	
	<ul style="list-style-type: none"> <li>Corelate the clinical conditions associated with placenta</li> </ul>	Must know	C3	
	<ul style="list-style-type: none"> <li>focus on provision of curative and preventive health care measures</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Practice principles of bioethics</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Apply strategic use of AI in health care</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>read relevant research article</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Enlist membranes developing during pregnancy</li> </ul>	Should know	C1	

Fetal Membranes and Multiple Pregnancies	<ul style="list-style-type: none"><li>Discuss origin, composition, location, function and fate of yolk sac</li></ul>	Should know	C2	<ul style="list-style-type: none"><li>KLM Embryology Developing Human 11<sup>th</sup> Edition</li><li>USMLE Q Bank Step 1 (Volume 1) 2023-2034</li></ul>
	<ul style="list-style-type: none"><li>Explain origin, composition, location, function and fate of Amnion</li></ul>	Should know	C2	
	<ul style="list-style-type: none"><li>Describe formation of umbilical cord and its structure</li></ul>	Should know	C2	
	<ul style="list-style-type: none"><li>Define Allantois along with its importance and function</li></ul>	Should know	C1	
	<ul style="list-style-type: none"><li>Discuss different types of twins</li></ul>	Should know	C2	
	<ul style="list-style-type: none"><li>Correlate clinical aspects of fetal membranes</li></ul>	Must know	C3	
	<ul style="list-style-type: none"><li>Correlate with the clinical conditions of twin pregnancy</li></ul>	Must know	C3	
	<ul style="list-style-type: none"><li>focus on provision of curative and preventive health care measures</li></ul>	Nice to know	C3	
	<ul style="list-style-type: none"><li>Practice principles of bioethics</li></ul>	Nice to know	C3	
	<ul style="list-style-type: none"><li>Apply strategic use of AI in health care</li></ul>	Nice to know	C3	
	<ul style="list-style-type: none"><li>read relevant research article</li></ul>	Nice to know	C3	
Histology LGIS				
Cells of connective tissue, Embryonic connective tissue / mucoid Connective Tissue	<ul style="list-style-type: none"><li>Define connective tissue</li></ul>	Should know	C1	<ul style="list-style-type: none"><li>Junqueira's Basic Histology 18th Edition</li><li>USMLE Q Bank Step 1 (Volume 1) 2023-2034</li></ul>
	<ul style="list-style-type: none"><li>Classify connective tissue</li></ul>	Should know	C2	
	<ul style="list-style-type: none"><li>Enlist and explain types of cells in CT</li></ul>	Should know	C2	
	<ul style="list-style-type: none"><li>Enumerate sites and describe the function of each type of cell of connective tissue</li></ul>	Should know	C2	
	<ul style="list-style-type: none"><li>Understand the Biophysiological aspects of connective tissue</li></ul>	Should know	C2	
	<ul style="list-style-type: none"><li>Draw and label histological structure of mucoid CT.</li></ul>	Should know	C2	
	<ul style="list-style-type: none"><li>Describe fibers in mucoid CT</li></ul>	Should know	C2	
	<ul style="list-style-type: none"><li>Correlate clinical conditions of CT</li></ul>	Must know	C3	
	<ul style="list-style-type: none"><li>focus on provision of curative and preventive health care measures</li></ul>	Nice to know	C3	
	<ul style="list-style-type: none"><li>Practice principles of bioethics</li></ul>	Nice to know	C3	
	<ul style="list-style-type: none"><li>Apply strategic use of AI in health care</li></ul>	Nice to know	C3	
	<ul style="list-style-type: none"><li>read relevant research articles</li></ul>	Nice to know	C3	
Loose aerolar connective tissue & its types Reticular CT	<ul style="list-style-type: none"><li>Enumerate examples and location of reticular, connective tissue</li></ul>	Should know	C1	<ul style="list-style-type: none"><li>Junqueira's Basic Histology 18th Edition</li><li>USMLE Q Bank Step 1 (Volume 1) 2023-2034</li></ul>
	<ul style="list-style-type: none"><li>Illustrate histological structure of loose and reticular connective tissue</li></ul>	Should know	C2	
	<ul style="list-style-type: none"><li>Correlate clinical aspects of loose and reticular CT</li></ul>	Must know	C3	
	<ul style="list-style-type: none"><li>focus on provision of curative and preventive health care measures</li></ul>	Nice to know	C3	
	<ul style="list-style-type: none"><li>Practice principles of bioethics</li></ul>	Nice to know	C3	
	<ul style="list-style-type: none"><li>Apply strategic use of AI in health care</li></ul>	Nice to know	C3	
	<ul style="list-style-type: none"><li>read relevant research article</li></ul>	Nice to know	C3	
Connective tissue III Adipose CT Dense regular and irregular connective	<ul style="list-style-type: none"><li>Enumerate examples and location of adipose and dense CT.</li></ul>	Should know	C1	<ul style="list-style-type: none"><li>Junqueira's Basic Histology 18th Edition</li><li>USMLE Q Bank Step 1 (Volume 1) 2023-2034</li></ul>
	<ul style="list-style-type: none"><li>Draw, describe and label histological structure of all types of connective tissue.</li></ul>	Should know	C2	
	<ul style="list-style-type: none"><li>Differentiate between dense regular and irregular connective tissue microscopically</li></ul>	Should know	C2	
	<ul style="list-style-type: none"><li>Correlate clinical aspects of loose and reticular CT</li></ul>	Must know	C3	
	<ul style="list-style-type: none"><li>focus on provision of curative and preventive health care measures</li></ul>	Nice to know	C3	
	<ul style="list-style-type: none"><li>Practice principles of bioethics</li></ul>	Nice to know	C3	
	<ul style="list-style-type: none"><li>Apply strategic use of AI in health care</li></ul>	Nice to know	C3	
	<ul style="list-style-type: none"><li>read relevant research article</li></ul>	Nice to know	C3	
Cartilage	<ul style="list-style-type: none"><li>Classify cartilage</li></ul>	Should know	C2	<ul style="list-style-type: none"><li>Junqueira's Basic Histology 18th Edition</li><li>USMLE Q Bank Step 1 (Volume 1) 2023-2034</li></ul>
	<ul style="list-style-type: none"><li>Enlist sites of hyaline, fibro and elastic cartilage</li></ul>	Should know	C1	
	<ul style="list-style-type: none"><li>Appreciate microscopic structure of Hyaline, Elastic and Fibrocartilage</li></ul>	Should know	C2	
	<ul style="list-style-type: none"><li>Differentiate between three cartilages</li></ul>	Should know	C2	
	<ul style="list-style-type: none"><li>Describe the structure of perichondrium</li></ul>	Should know	C2	
	<ul style="list-style-type: none"><li>Describe the arrangement of layers in articular cartilage</li></ul>	Should know	C2	
	<ul style="list-style-type: none"><li>Understand the Biophysiological aspects of cartilage</li></ul>	Should know	C2	
	<ul style="list-style-type: none"><li>Correlate with clinical conditions</li></ul>	Must know	C3	
	<ul style="list-style-type: none"><li>focus on provision of curative and preventive health care measures</li></ul>	Nice to know		
	<ul style="list-style-type: none"><li>Practice principles of bioethics</li></ul>	Nice to know	C3	
	<ul style="list-style-type: none"><li>Apply strategic use of AI in health care</li></ul>	Nice to know	C3	
	<ul style="list-style-type: none"><li>read relevant research article</li></ul>	Nice to know	C3	
Bone-I (Cells & Types)	<ul style="list-style-type: none"><li>Describe structure and functions of bone cells</li></ul>	Should know	C2	<ul style="list-style-type: none"><li>Junqueira's Basic Histology 18th Edition</li></ul>
	<ul style="list-style-type: none"><li>Discuss periosteum and endosteum</li></ul>	Should know	C2	
	<ul style="list-style-type: none"><li>Discuss types of bones</li></ul>	Should know	C2	
	<ul style="list-style-type: none"><li>Describe the histological features of spongy and</li></ul>	Should know	C2	

	compact bone			<ul style="list-style-type: none"><li>USMLE Q Bank Step 1 (Volume 1) 2023-2034</li></ul>
	<ul style="list-style-type: none"><li>Describe structure of osteon.</li></ul>	Should know	C2	
	<ul style="list-style-type: none"><li>Understand the Biophysiological aspects of bone</li></ul>	Should know	C2	
	<ul style="list-style-type: none"><li>Correlate clinical aspects of bone</li></ul>	Must know	C3	
	<ul style="list-style-type: none"><li>focus on provision of curative and preventive health care measures</li></ul>	Nice to know	C3	
	<ul style="list-style-type: none"><li>Practice principles of bioethics</li></ul>	Nice to know	C3	
	<ul style="list-style-type: none"><li>Apply strategic use of AI in health care</li></ul>	Nice to know	C3	
	<ul style="list-style-type: none"><li>read relevant research article</li></ul>	Nice to know	C3	
Bone-II (Ossification)	<ul style="list-style-type: none"><li>Describe osteogenesis</li></ul>	Should know	C2	<ul style="list-style-type: none"><li>Junqueira's Basic Histology 18th Edition</li><li>USMLE Q Bank Step 1 (Volume 1) 2023-2034</li></ul>
	<ul style="list-style-type: none"><li>Discuss bone growth, remodeling and repair</li></ul>	Should know	C2	
	<ul style="list-style-type: none"><li>Describe histological changes in bones in osteoporosis, rickets, osteomalacia, osteopetrosis and bone tumors</li></ul>	Should know	C3	
	<ul style="list-style-type: none"><li>Correlate with the clinical conditions.</li></ul>	Must know	C3	
	<ul style="list-style-type: none"><li>focus on provision of curative and preventive health care measures</li></ul>	Nice to know	C3	
	<ul style="list-style-type: none"><li>Practice principles of bioethics</li></ul>	Nice to know	C3	
	<ul style="list-style-type: none"><li>Apply strategic use of AI in health care</li></ul>	Nice to know	C3	
	<ul style="list-style-type: none"><li>read relevant research article</li></ul>	Nice to know	C3	
Gross Anatomy				
Bone-I (General Features)	<ul style="list-style-type: none"><li>Describe the functions of bone and skeleton</li></ul>	Should know	C2	<ul style="list-style-type: none"><li>KLM clinically oriented anatomy edition 10</li><li>USMLE Q Bank Step 1 (Volume 1) 2023-2034</li></ul>
	<ul style="list-style-type: none"><li>Identify general features of bone</li></ul>	Should know	C2	
	<ul style="list-style-type: none"><li>Differentiate between maceration and decalcification of bones</li></ul>	Should know	C2	
	<ul style="list-style-type: none"><li>Correlate with clinical conditions of bone</li></ul>	Must know	C3	
	<ul style="list-style-type: none"><li>focus on provision of curative and preventive health care measures</li></ul>	Nice to know	C3	
	<ul style="list-style-type: none"><li>Practice principles of bioethics</li></ul>	Nice to know	C3	
	<ul style="list-style-type: none"><li>Apply strategic use of AI in health care</li></ul>	Nice to know	C3	
	<ul style="list-style-type: none"><li>read relevant research article</li></ul>	Nice to know	C3	
Bone-II Classification & Blood supply)	<ul style="list-style-type: none"><li>Classify bones based on different criteria</li></ul>	Should know	C2	<ul style="list-style-type: none"><li>KLM Clinically oriented anatomy edition 10</li><li>USMLE Q Bank Step 1 (Volume 1) 2023-2034</li></ul>
	<ul style="list-style-type: none"><li>Describe the growing end hypothesis</li></ul>	Should know	C2	
	<ul style="list-style-type: none"><li>Describe blood supply of bones</li></ul>	Should know	C2	
	<ul style="list-style-type: none"><li>Appreciate role of bones in estimation of sex, age and stature.</li></ul>	Should know	C2	
	<ul style="list-style-type: none"><li>Correlate with the clinical conditions.</li></ul>	Must know	C3	
	<ul style="list-style-type: none"><li>focus on provision of curative and preventive health care measures</li></ul>	Nice to know	C3	
	<ul style="list-style-type: none"><li>Practice principles of bioethics</li></ul>	Nice to know	C3	
	<ul style="list-style-type: none"><li>Apply strategic use of AI in health care</li></ul>	Nice to know	C3	
	<ul style="list-style-type: none"><li>read relevant research article</li></ul>	Nice to know	C3	
Joints-I (Types)	<ul style="list-style-type: none"><li>Define joints</li></ul>	Should know	C1	<ul style="list-style-type: none"><li>KLM clinically oriented anatomy edition 10</li><li>USMLE Q Bank Step 1 (Volume 1) 2023-2034</li></ul>
	<ul style="list-style-type: none"><li>Classify fibrous joints with examples</li></ul>	Should know	C2	
	<ul style="list-style-type: none"><li>Classify cartilaginous joints with examples</li></ul>	Should know	C2	
	<ul style="list-style-type: none"><li>Classify synovial joints with examples</li></ul>	Should know	C2	
	<ul style="list-style-type: none"><li>Understand the Bio-physiological aspects of joints</li></ul>	Should know	C2	
	<ul style="list-style-type: none"><li>Correlate with the clinical conditions</li></ul>	Must know	C3	
	<ul style="list-style-type: none"><li>focus on provision of curative and preventive health care measures</li></ul>	Nice to know	C3	
	<ul style="list-style-type: none"><li>Practice principles of bioethics</li></ul>	Nice to know	C3	
	<ul style="list-style-type: none"><li>Apply strategic use of AI in health care</li></ul>	Nice to know	C3	
	<ul style="list-style-type: none"><li>read relevant research article</li></ul>	Nice to know	C3	
Joints-II (Movements)	<ul style="list-style-type: none"><li>Describe structure of synovial joint</li></ul>	Should know	C2	<ul style="list-style-type: none"><li>KLM clinically oriented anatomy edition 10</li><li>USMLE Q Bank Step 1 (Volume 1) 2023-2034</li></ul>
	<ul style="list-style-type: none"><li>Discuss movements at various types of joints</li></ul>	Should know	C2	
	<ul style="list-style-type: none"><li>Correlate with the clinical conditions</li></ul>	Must know know	C3	
	<ul style="list-style-type: none"><li>Understand the Bio-physiological aspects of joints</li></ul>	Nice to know	C3	



## SMALL GROUP DISCUSSION (SGDS)

Topic	Learning Objectives At the end of Session students should be able to	Calgary gauge	Learning Domain	Learning Resource
<b>Gross Anatomy</b>				
Shoulder Joint	<ul style="list-style-type: none"> <li>Classify the joint (according to type, shape and movement)</li> </ul>	Should know	C2	<ul style="list-style-type: none"> <li>Clinical Oriented Anatomy by Keith L. Moore.8<sup>TH</sup> Edition. (Chapter 3, Page 266- 271,284-285). <a href="https://teachmeanatomy.info/upper-limb/joints/shoulder">https://teachmeanatomy.info/upper-limb/joints/shoulder</a></li> <li>USMLE Q Bank Step 1 (Volume 1) 2023-2034</li> </ul>
	<ul style="list-style-type: none"> <li>Discuss the attachments of capsule and ligament</li> </ul>	Should know	C2	
	<ul style="list-style-type: none"> <li>Enlist the intra-articular structure (tendon of biceps brachii)</li> </ul>	Should know	C1	
	<ul style="list-style-type: none"> <li>Describe attachment of glenoidal labrum with its significance in relation to synovial membrane</li> </ul>	Should know	C2	
	<ul style="list-style-type: none"> <li>Discuss the neurovascular supply</li> </ul>	Should know	C2	
	<ul style="list-style-type: none"> <li>Discuss factors indispensable for stability of joint</li> </ul>	Should know	C2	
	<ul style="list-style-type: none"> <li>Discuss the movements at shoulder joint</li> </ul>	Should know	C2	
	<ul style="list-style-type: none"> <li>Enlist related bursae.</li> </ul>	Should know	C1	
	<ul style="list-style-type: none"> <li>Explain the related clinicals (shoulder dislocation, rotator cuff injuries, Glenoid Labrum tears, Frozen shoulder)</li> </ul>	Must know	C3	
	<ul style="list-style-type: none"> <li>Correlate with the clinical conditions</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>focus on provision of curative and preventive health care measures</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Practice principles of bioethics</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Apply strategic use of AI in health care</li> </ul>	Nice to know	C3	
Flexor compartment & Neurovascular organization of the arm	<ul style="list-style-type: none"> <li>Tabulate muscles of flexor compartment with their origin, insertion, nerve supply and actions</li> </ul>	Should know	C2	<ul style="list-style-type: none"> <li>Clinical Oriented Anatomy by Keith L. Moore.8<sup>TH</sup> Edition. (Chapter 3, Page201- 211,211-214). <a href="https://teachmeanatomy.info/upper-limb/muscles/anterior-forearm/">https://teachmeanatomy.info/upper-limb/muscles/anterior-forearm/</a></li> <li>USMLE Q Bank Step 1 (Volume 1) 2023-2034</li> </ul>
	<ul style="list-style-type: none"> <li>Describe Neurovascular organization of arm.</li> </ul>	Should know	C2	
	<ul style="list-style-type: none"> <li>Map the outline of Brachial artery and Musculo cutaneous nerve in a simulated patient or model</li> </ul>	Should know	P	
	<ul style="list-style-type: none"> <li>Correlate with the clinical conditions ( biceps tendinitis, dislocation of tendon of biceps brachii)</li> </ul>	Must know	C3	
	<ul style="list-style-type: none"> <li>focus on provision of curative and preventive health care measures</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Practice principles of bioethics</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Apply strategic use of AI in health care</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Read a relevant research article</li> </ul>	Nice to know	C3	
Extensor compartment of the arm	<ul style="list-style-type: none"> <li>Tabulate Muscles of extensor compartment with origin insertion, nerve supply and actions</li> </ul>	Should know	C2	<ul style="list-style-type: none"> <li>Clinical Oriented Anatomy by Keith L. Moore.8<sup>TH</sup> Edition. (Chapter 3, Page201- 211,211-214). <a href="https://teachmeanatomy.info/upper-limb/muscles/upper-arm/">https://teachmeanatomy.info/upper-limb/muscles/upper-arm/</a></li> <li>USMLE Q Bank Step 1 (Volume 1) 2023-2034</li> </ul>
	<ul style="list-style-type: none"> <li>Describe the neurovascular organization</li> </ul>	Should know	C2	
	<ul style="list-style-type: none"> <li>Discuss consequences of injury to radial nerve (wrist drop), venipuncture in cubital fossa)</li> </ul>	Should know	C3	
	<ul style="list-style-type: none"> <li>Map the outline of Radial nerve and ulnar nerve on a simulated patient or model</li> </ul>	Should know	P	
	<ul style="list-style-type: none"> <li>Correlate with the clinical conditions</li> </ul>	Must know	C3	
	<ul style="list-style-type: none"> <li>focus on provision of curative and preventive health care measures</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Practice principles of bioethics</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Apply strategic use of AI in health care</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Read relevant research article</li> </ul>	Nice to know	C3	
Ulna	<ul style="list-style-type: none"> <li>Determine the side</li> </ul>	Should know	C1	<ul style="list-style-type: none"> <li>Clinical Oriented Anatomy by Keith L. Moore.8<sup>TH</sup> Edition. (Chapter 3, Page147). <a href="https://teachmeanatomy.info/upper-limb/bones/ulna/">https://teachmeanatomy.info/upper-limb/bones/ulna/</a></li> </ul>
	<ul style="list-style-type: none"> <li>Demonstrate anatomical position</li> </ul>	Should know	P	
	<ul style="list-style-type: none"> <li>Discuss general features, attachments and articulations</li> </ul>	Should know	C2	
	<ul style="list-style-type: none"> <li>Describe ossification</li> </ul>	Should know	C2	
	<ul style="list-style-type: none"> <li>Elaborate interosseous membrane and its importance</li> </ul>	Should know	C2	
	<ul style="list-style-type: none"> <li>Correlate with the clinical conditions</li> </ul>	Must know	C3	
	<ul style="list-style-type: none"> <li>focus on provision of curative and preventive health care measures</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Practice principles of bioethics</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Apply strategic use of AI in health care</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Read a relevant research article</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Determine the side</li> </ul>	Should know	C1	<ul style="list-style-type: none"> <li>Clinical Oriented</li> </ul>

Radius	• Demonstrate its anatomical position	Should know	P	Anatomy by Keith L. Moore.8 <sup>TH</sup> Edition. (Chapter 3, Page148).  <a href="https://teachmeanatomy.info/upper-limb/bones/radius/">https://teachmeanatomy.info/upper-limb/bones/radius/</a>
	• Discuss general features, attachments and articulations	Should know	C2	
	• Describe its ossification	Should know	C2	
	• Describe the interosseous membrane and its importance	Should know	C2	
	• Correlate the clinical conditions	Must know	C3	
	• focus on provision of curative and preventive health care measures	Nice to know	C3	
	• Practice principles of bioethics	Nice to know	C3	
	• Apply strategic use of AI in health care	Nice to know	C3	
	• Read a relevant research article	Nice to know	C3	
Flexor compartment of the forearm	• Tabulate muscles of flexor compartment with their origin, insertion, nerve supply and actions	Should know	C2	• Clinical Oriented Anatomy by Keith L. Moore.8 <sup>TH</sup> Edition. (Chapter 3, Page215-234,236,240)  <a href="https://teachmeanatomy.info/upper-limb/muscles/anterior-forearm/">https://teachmeanatomy.info/upper-limb/muscles/anterior-forearm/</a>  • USMLE Q Bank Step 1 (Volume 1) 2023-2034
	• Correlate with clinical conditions associated with flexor compartment	Must know	C3	
	• Map the outline of Median Nerve , Radial Artery and Ulnar Artery of forearm in a simulated patient or Model	Should know	P	
	• focus on provision of curative and preventive health care measures	Must know	C3	
	• Practice principles of bioethics	Nice to know	C3	
	• Apply strategic use of AI in health care	Nice to know	C3	
	• Read a relevant research article	Nice to know	C3	
Extensor compartment of the forearm	• Tabulate muscles of extensor compartment with origin, insertion, nerve supply and actions	Should know	C2	• Clinical Oriented Anatomy by Keith L. Moore.8 <sup>TH</sup> Edition. (Chapter 3, Page215-234,236,240).  • USMLE Q Bank Step 1 (Volume 1) 2023-2034
	• Correlate with clinical conditions associated with extensor compartment of forearm (Tennis elbow)	Must know	C3	
	• focus on provision of curative and preventive health care measures	Nice to know	C3	
	• Practice principles of bioethics	Nice to know	C3	
	• Apply strategic use of AI in health care	Nice to know	C3	
	• Read a relevant research article	Nice to know	C3	
Neurovascular organization of forearm	• Describe nerves and vessels of forearm (formation, commencement, course, branches and relations)	Should know	C2	• Clinical Oriented Anatomy by Keith L. Moore.8 <sup>TH</sup> Edition. (Chapter 3, Page215-234,236,240).  <a href="https://teachmeanatomy.info/upper-limb/muscles/posterior-forearm/">https://teachmeanatomy.info/upper-limb/muscles/posterior-forearm/</a>  • USMLE Q Bank Step 1 (Volume 1) 2023-2034
	• Correlate with associated clinical conditions (Median nerve injury, pronator syndrome, cubital tunnel syndrome)	Must know	C3	
	• Map the outline of Radial Nerve and Ulnar Nerve on a simulated patient or model	Should know	P	
	• Correlate with the clinical conditions	Must know	C3	
	• focus on provision of curative and preventive health care measures	Nice to know	C3	
	• Practice principles of bioethics	Nice to know	C3	
	• Apply strategic use of AI in health care	Nice to know	C3	
	• Read relevant research article		C3	
Elbow joint	• Describe the type of joint with its articular surfaces	Should know	C2	• Clinical Oriented Anatomy by Keith L. Moore.8 <sup>TH</sup> Edition (Chapter 3, Page271-274).  <a href="https://www.kenhub.com/en/library/anatomy/elbow-joint">https://www.kenhub.com/en/library/anatomy/elbow-joint</a>  • USMLE Q Bank Step 1 (Volume 1) 2023-2034
	• Discuss the capsule, synovial membrane and ligaments of the joints	Should know	C2	
	• Enumerate the related bursae,	Should know	C1	
	• Describe axis and plane of movements	Should know	C2	
	• Enumerate muscles producing movements at elbow joint.	Should know	C1	
	• Correlate with the associated clinical conditions (Elbow joint dislocation and student's elbow)	Must know	C3	
	• focus on provision of curative and preventive health care measures	Nice to know	C3	
	• Practice principles of bioethics	Nice to know	C3	
	• Apply strategic use of AI in health care	Nice to know		
	• Read a relevant research article	Nice to know	C3	
Proximal and distal radioulnar joints	• Describe type of radioulnar joints, articular surfaces, capsular attachments, synovial membrane and ligaments.	Should know	C2	• Clinical Oriented Anatomy by Keith L. Moore.8 <sup>TH</sup> Edition. (Chapter 3, Page274-277).  <a href="https://www.kenhub.com/en/library/anatomy/proximal-radioulnar-joint">https://www.kenhub.com/en/library/anatomy/proximal-radioulnar-joint</a>
	• Describe movements of supination and pronation with special reference to axes	Should know	C2	
	• Enumerate the muscles producing these movements	Should know	C1	
	• Correlate clinical aspects of joint	Must know	C3	
	• focus on provision of curative and preventive health care measures	Nice to know	C3	

	• Practice principles of bioethics	Nice to know	C3	<a href="https://www.kenhub.com/en/library/anatomy/distal-radioulnar-joint">https://www.kenhub.com/en/library/anatomy/distal-radioulnar-joint</a> <ul style="list-style-type: none"> <li>USMLE Q Bank Step 1 (Volume 1) 2023-2034</li> </ul>
	• Apply strategic use of AI in health care	Nice to know	C3	
	• Read a relevant research article	Nice to know	C3	
Hand	• Understand the arrangement of carpal bones	Should know	C1	<ul style="list-style-type: none"> <li>Clinical Oriented Anatomy by Keith L. Moore.8TH Edition. Chapter 3, Page148-151,278-283).</li> </ul> <a href="https://teachmeanatomy.info/upper-limb/muscles/hand/">https://teachmeanatomy.info/upper-limb/muscles/hand/</a> <ul style="list-style-type: none"> <li>USMLE Q Bank Step 1 (Volume 1) 2023-2034</li> </ul>
	• Identify the salient features of carpal bone.	Should know	C2	
	• Discuss the special blood supply of scaphoid bone.	Should know	C3	
	• Describe the mid carpal joint.	Should know	C2	
	• Discuss the 1st carpometacarpal joint including the type of the joint capsule synovial membrane and ligaments with axis of the movement and the muscles producing the movements	Should know	C2	
	• Correlate with the clinical conditions.	Must know	C3	
	• focus on provision of curative and preventive health care measures	Nice to know	C3	
	• Practice principles of bioethics	Nice to know	C3	
	• Apply strategic use of AI in health care	Nice to know		
	• Read relevant research article	Nice to know	C3	
Wrist joint	• Describe the type of joint with its articular surfaces	Should know	C2	<ul style="list-style-type: none"> <li>Clinical Oriented Anatomy by Keith L. Moore.8TH Edition. (Chapter 3, Page278).</li> </ul> <a href="https://www.kenhub.com/en/library/anatomy/the-wrist-joint">https://www.kenhub.com/en/library/anatomy/the-wrist-joint</a> <ul style="list-style-type: none"> <li>USMLE Q Bank Step 1 (Volume 1) 2023-2034</li> </ul>
	• Discuss the capsule, synovial membrane and ligaments of the joint	Should know	C2	
	• Enumerate the related bursae	Should know	C1	
	• Describe axis and plane of movements	Should know	C2	
	• Enumerate muscles producing movements at joint	Should know	C1	
	• Discuss wrist fractures & Dislocations	Should know	C3	
	• Correlate with the clinical conditions	Must know	C3	
	• Focus on provision of curative and preventive health care measures	Nice to know	C3	
	• Practice principles of bioethics	Nice to know	C3	
	• Apply strategic use of AI in health care	Nice to know	C3	
Anastomosis around wrist joint	• Read a relevant research article	Nice to know		
	• Discuss the blood vessels involved in the formation of anastomosis around the wrist joint	Should know	C2	<ul style="list-style-type: none"> <li>Clinical Oriented Anatomy by Keith L. Moore.8TH Edition. (Chapter 3, Page278).</li> </ul> <a href="https://www.kenhub.com/en/library/anatomy/arterial-anastomoses-of-the-upper-extremity">https://www.kenhub.com/en/library/anatomy/arterial-anastomoses-of-the-upper-extremity</a>
	• Explain the importance of anastomosis.	Should know	C2	
	• Correlate with the clinical conditions	Must know	C3	
	• Focus on provision of curative and preventive health care measures Able to focus on provision of curative and preventive health care measures	Nice to know	C3	
	• Practice principles of bioethics	Nice to know	C3	
	• Apply strategic use of AI in health care	Nice to know	C3	
	• Read a relevant research article	Nice to know		
Dorsum of Hand, Flexor retinaculum Extensor retinaculum	• Discuss the blood vessels involved in the formation of anastomosis around the wrist joint	Should know	C2	<ul style="list-style-type: none"> <li>Clinical Oriented Anatomy by Keith L. Moore.8TH Edition. (Chapter 3, Page159,224-226).</li> </ul> <a href="https://teachmeanatomy.info/upper-limb/muscles/hand/">https://teachmeanatomy.info/upper-limb/muscles/hand/</a> <ul style="list-style-type: none"> <li>USMLE Q Bank Step 1 (Volume 1) 2023-2034</li> </ul>
	• Explain the importance of anastomosis.	Should know	C2	
	• Correlate with the clinical conditions	Must know	C3	
	• Focus on provision of curative and preventive health care measures Able to focus on provision of curative and preventive health care measures	Nice to know	C3	
	• Practice principles of bioethics	Nice to know	C3	
	• Apply strategic use of AI in health care	Nice to know	C3	
	• Read a relevant research article	Nice to know		
	• Describe the muscles of dorsum of hand	Should know	C2	
	• Discuss the Dorsal digital expansion	Should know	C2	
	• Describe the attachment of flexor retinaculum with structures related to it.	Should know	C2	
	• Map the outline of flexor and extensor retinacula on a simulated patient or a model.	Should know	P	
	• Describe the Guyon's canal.	Should know	C2	
	• Describe the formation of the carpal tunnel and its applied anatomy.	Should know	C3	
Palm of hand-I Muscles & Neurovascular	• Describe the attachment of extensor retinaculum and its various compartments with structures passing through it.	Should know	C2	
	• Discuss the De Quervain's disease.	Should know	C3	
	• Correlate with the clinical conditions.	Must know	C3	
	• Focus on provision of curative and preventive health care measures	Nice to know	C3	
	• Practice principles of bioethics	Nice to know	C3	
	• Apply strategic use of AI in health care	Nice to know		
	• Read a relevant research article	Nice to know	C3	
	• Tabulate the muscles forming the thenar and hypothenar eminence.	Should know	C2	<ul style="list-style-type: none"> <li>Clinical Oriented Anatomy by Keith L. Moore.8TH Edition. (Chapter 3, Pag243-256).</li> </ul>
	• Discuss Lumbricals, Palmar and dorsal interossei with their attachments and actions.	Should know	C2	
	• Discuss the formation of superficial and deep arterial arches	Should know	C2	

organization	<ul style="list-style-type: none"> <li>Map the outline of superficial and deep arterial arches on a simulated patient or model.</li> </ul>	Should know	P	<a href="https://teachmeanatomy.info/upper-limb/muscles/hand/">https://teachmeanatomy.info/upper-limb/muscles/hand/</a> <ul style="list-style-type: none"> <li>USMLE Q Bank Step 1 (Volume 1) 2023-2034</li> </ul>
	<ul style="list-style-type: none"> <li>Correlate with the clinical conditions.</li> </ul>	Must know	C3	
	<ul style="list-style-type: none"> <li>Focus on provision of curative and preventive health care measures</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Practice principles of bioethics</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Apply strategic use of AI in health care</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Read a relevant research article</li> </ul>	Nice to know	C3	
Palm of hand-II Fascial spaces of hand Grip	<ul style="list-style-type: none"> <li>Discuss the formation and attachments of palmar aponeurosis.</li> </ul>	Should know	C2	<ul style="list-style-type: none"> <li>Clinical Oriented Anatomy by Keith L. Moore.8TH Edition. (Chapter 3, Page241-243,258-262).</li> </ul> <a href="https://boneandspine.com/spaces-of-hand/">https://boneandspine.com/spaces-of-hand/</a> <ul style="list-style-type: none"> <li>USMLE Q Bank Step 1 (Volume 1) 2023-2034</li> </ul>
	<ul style="list-style-type: none"> <li>Describe the formation of palmar spaces and its divisions</li> </ul>	Should know	C2	
	<ul style="list-style-type: none"> <li>Describe the thenar and mid palmar spaces.</li> </ul>	Should know	C2	
	<ul style="list-style-type: none"> <li>Define pulp spaces</li> </ul>	Should know	C1	
	<ul style="list-style-type: none"> <li>Relate anatomy of pulp space with its common clinical conditions</li> </ul>	Should know	C3	
	<ul style="list-style-type: none"> <li>Describe dorsal subcutaneous spaces</li> </ul>	Should know	C2	
	<ul style="list-style-type: none"> <li>Demonstrate surgical incisions.</li> </ul>	Must know	C3	
	<ul style="list-style-type: none"> <li>Describe different types of grips</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Correlate with the clinical conditions.</li> </ul>	Must know	C3	
	<ul style="list-style-type: none"> <li>Focus on provision of curative and preventive health care measures</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Practice principles of bioethics</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Apply strategic use of AI in health care</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Read a relevant research article</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Correlate with the clinical conditions</li> </ul>	Must know	C3	
	<ul style="list-style-type: none"> <li>Read a relevant research article</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Apply strategic use of AI in health care</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Classify synovial joints</li> </ul>	Should know	C2	
	<ul style="list-style-type: none"> <li>Explain movements around synovial joints</li> </ul>	Should know	C2	
	<ul style="list-style-type: none"> <li>Enlist Degenerative joint diseases</li> </ul>	Should know	C3	
	<ul style="list-style-type: none"> <li>Describe the involvement of anatomical structure of the articular cartilage in Degenerative joint disease</li> </ul>	Should know	C3	
	<ul style="list-style-type: none"> <li>Correlate with the clinical conditions.</li> </ul>	Must know	C3	
	<ul style="list-style-type: none"> <li>Focus on provision of curative and preventive health care measures</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Practice principles of bioethics</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Apply strategic use of AI in health care</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>read relevant research article</li> </ul>	Nice to know	C3	

Practicals Skill Laboratory (SKL)

Topic	At The End Of The Practical The Students Should Be Able To	Calgary Gauge	Learning Domain	Learning Resources
Histology				
Connective Tissue-I <ul style="list-style-type: none"><li>Embryonic connective tissue / mucoid Connective Tissue</li><li>Loose areolar connective tissue</li><li>Reticular Connective Tissue</li><li>Adipose Connective Tissue</li></ul>	<ul style="list-style-type: none"><li>Identify mucoid connective tissue under microscope</li></ul>	Should know	P	<ul style="list-style-type: none"><li>DiFiore's Atlas of histology with clinical correlation, 11<sup>th</sup> edition, chapter 3</li></ul>
	<ul style="list-style-type: none"><li>Illustrate histological structure of mucoid connective tissue</li></ul>	Must know	C2	
	<ul style="list-style-type: none"><li>Write two points of identification</li></ul>	Must know	C1	
	<ul style="list-style-type: none"><li>Identify reticular and adipose connective tissue under microscope</li></ul>		C2	
	<ul style="list-style-type: none"><li>Illustrate histological structure of reticular and adipose connective tissue</li></ul>	Must know	C2	
	<ul style="list-style-type: none"><li>Write two points of identification</li></ul>	Must know	C1	
	<ul style="list-style-type: none"><li>Focus the slide</li></ul>	Should know	P	
Connective Tissue-II <ul style="list-style-type: none"><li>Dense regular connective tissue</li><li>Dense irregular connective tissue</li></ul>	<ul style="list-style-type: none"><li>Identify dense regular and irregular connective tissue under microscope</li></ul>	Should know	P	<ul style="list-style-type: none"><li>DiFiore's Atlas of histology with clinical correlation, 11<sup>th</sup> edition, chapter 3</li></ul>
	<ul style="list-style-type: none"><li>Illustrate histological structure of dense regular and irregular connective tissue</li></ul>	Must know	C2	
	<ul style="list-style-type: none"><li>Write two points of identification</li></ul>	Must know	C1	
	<ul style="list-style-type: none"><li>Differentiate between dense regular and irregular connective tissue microscopically</li></ul>	Must know	C2	
	<ul style="list-style-type: none"><li>Focus the slide</li></ul>	Should know	P	
Cartilage <ul style="list-style-type: none"><li>Hyaline cartilage</li><li>Elastic cartilage</li><li>Fibrocartilage</li></ul>	<ul style="list-style-type: none"><li>Identify all three types of cartilages under microscope</li></ul>	Should know	P	<ul style="list-style-type: none"><li>DiFiore's Atlas of histology with clinical correlation, 11<sup>th</sup> edition, chapter 3</li></ul>
	<ul style="list-style-type: none"><li>Illustrate microscopic structure of all three cartilages</li></ul>	Must know	C2	
	<ul style="list-style-type: none"><li>Discuss the structure of perichondrium</li></ul>	Must know	C1	
	<ul style="list-style-type: none"><li>Write two points of identification</li></ul>	Must know	C1	
	<ul style="list-style-type: none"><li>Enlist sites of hyaline, fibro and elastic cartilage</li></ul>	Must know	C1	
	<ul style="list-style-type: none"><li>Focus the slide</li></ul>	Should know	P	
Bone <ul style="list-style-type: none"><li>Compact Bone</li><li>Spongy Bone</li></ul>	<ul style="list-style-type: none"><li>Identify compact and spongy bone under microscope</li></ul>	Should know	P	<ul style="list-style-type: none"><li>DiFiore's Atlas of histology with clinical correlation, 11<sup>th</sup> edition, chapter 3</li></ul>
	<ul style="list-style-type: none"><li>Illustrate microscopic structure of compact bone and spongy bone</li></ul>	Must know	C2	
	<ul style="list-style-type: none"><li>Write two points of identification</li></ul>	Must know	C1	
	<ul style="list-style-type: none"><li>Focus the slide</li></ul>	Should know	P	

**TOS for LMS Assessment of MSK-I Module of  
First Year MBBS, Batch -52 (Session 2024-25)**

1<sup>ST</sup> LMS Assessment for the first year MBBS for the MSK 1 Module will be held on ----- from 7:00pm to 7:30pm. Detail of topics are mentioned in the table below:

S No.	Domain of Teaching Activity	Topic	No.of MCQs	Cognitive Domain		
				C1	C2	C3
1.	LGIS	<b>Embryology</b> 2 <sup>nd</sup> week of development 3 <sup>rd</sup> week of development (gastrulation) 3 <sup>rd</sup> week (notochord formation and differentiation of somites)	05	1	2	2
		<b>General Anatomy</b> Bone I (General Features) Bone II (Classification & blood supply)	02	1	1	
		<b>Histology</b> Connective Tissue I (Cells of Connective Tissue) Connective Tissue II (Extracellular Matrix and Cells of CT)	05	1	2	2
2.	SGD	Shoulder Joint Flexor Compartment and Neurovascular Organization of arm Extensor compartment and Neurovascular Organization of arm (wrist drop) Bones of Forearm Flexor Compartment Of forearm (Muscles) Extensor Compartment of Forearm (Muscles)	13	3	4	6
3.	Practical	Connective Tissue I	05	1	2	2
4.	Total		30			

Learning Resources:

- **Embryology** :- KLM Embryology Developing Human 11<sup>th</sup> Edition
- **Histology** :-Junqueira's Basic Histology 18th Edition
- **Gross Anatomy** :- KLM clinically oriented anatomy edition 10
- **USMLE Q Bank Step 1** (Volume 1) 2023-2034
- **UWORLD Step 1** (Volume 3) 2023-2024

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Rawalpindi

**TOS for LMS Assessment of MSK-I Module of  
First Year MBBS, Batch -52 (Session 2024-25)**

2<sup>nd</sup> LMS Assessment for the first year MBBS for the MSK 1 Module will be held on -----(Monday) from 7:00pm to 7:30pm. Details of topics are mentioned in the table below:

S No.	Domain of Teaching Activity	Topic	No.of MCQs	Cognitive Domain		
				C1	C2	C3
1.	LGIS	<b>Embryology</b> 3 <sup>rd</sup> week (Neurulation) 4 <sup>th</sup> to 8 <sup>th</sup> week of development and early development of CVS Folding of embryo	05	1	2	2
		<b>General Anatomy</b> Bone I (Cells and types)	02	1	1	-
		<b>Histology</b> Connective Tissue III (Types of CT) Cartilage	05	1	2	2
2.	SGD/Dissection	Neurovascular Organization of forearm Elbow joint and anastomosis around elbow joint Proximal and distal radioulnar joint Bones of hand	13	3	4	6
3.	Practical	Connective Tissue II Cartilage	05	1	2	2
4.	TOTAL		30			

Learning Resources:

- **Embryology** :- KLM Embryology Developing Human 11<sup>th</sup> Edition
- **Histology** :-Junqueira's Basic Histology 18th Edition
- **Gross Anatomy** :- KLM clinically oriented anatomy edition 10
- **USMLE Q Bank Step 1** (Volume 1) 2023-2034
- **UWORLD Step 1** (Volume 3) 2023-2024

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# Module Wise Learning Objectives

## Musculoskeletal Module II (MSK-II)

### Large Group Interactive Session (LGIS)

Topic	Learning Objectives At The End Of Lecture Students Should Be Able To:	Calgary Gauge	Learning Domain	Learning Resources
<b>General Anatomy</b>				
Muscle I	<ul style="list-style-type: none"> <li>Classify muscles with examples</li> <li>Describe the general features of skeletal muscle.</li> <li>Differentiate between Red white and intermediate fibers.</li> <li>Describe blood supply and nerve supply of skeletal muscles.</li> <li>Correlate the clinical conditions</li> <li>Understand the preventive and curative health care measures</li> <li>Practice the principles of Bioethics</li> <li>Apply strategic use of AI in health care</li> <li>Read relevant research article</li> </ul>	Must know Must know  Must know  Must know  Should know Should know  Nice to know Nice to know Nice to know	C1 C3  C3  C3  C3 C3  C3 C3 C3	<ul style="list-style-type: none"> <li>Junqueira's Basic Histology 18th Edition</li> <li>USMLE Q Bank Step 1 (Volume 1) 2023-2034</li> </ul>
Muscle II	<ul style="list-style-type: none"> <li>Discuss connective tissue associated with skeletal muscle.</li> <li>Discuss parts of skeletal muscles.</li> <li>Give classification of skeletal muscles.</li> <li>Explain the actions of a prime mover or agonist Fixators</li> <li>Synergist and antagonist with examples.</li> <li>Correlate the clinical conditions</li> <li>Understand the preventive and curative health care measures</li> <li>Practice the principles of Bioethics</li> <li>Apply strategic use of AI in health care</li> <li>Read relevant research article</li> </ul>	Must know  Must know Must know Must know  Must know Should know Should know Nice to know  Nice to know Nice to know	C2  C2 C1 C2  C3 C3 C3 C3 C3 C3	<ul style="list-style-type: none"> <li>Junqueira's Basic Histology 18th Edition</li> <li>USMLE Q Bank Step 1 (Volume 1) 2023-2034</li> </ul>
Skin	<ul style="list-style-type: none"> <li>Enlist functions of skin</li> <li>Discuss types of skin</li> <li>Compare between thick and thin skin</li> <li>Classify skin lines</li> <li>Describe the significance of skin lines</li> <li>Discuss burns of skin</li> <li>Correlate the clinical conditions</li> <li>Understand the preventive and curative health care measures</li> <li>Practice the principles of Bioethics</li> <li>Apply strategic use of AI in health care</li> </ul>	Must know Must know Must know Must know Must know Must know Should know Should know Nice to know Nice to know Nice to know	C1 C2 C2 C1 C2 C3 C3 C3 C3 C3 C3	<ul style="list-style-type: none"> <li>Junqueira's Basic Histology 18th Edition</li> <li>USMLE Q Bank Step 1 (Volume 1) 2023-2034</li> </ul>
<b>Histology</b>				
Skeletal Muscle	<ul style="list-style-type: none"> <li>Classify muscle on histological basis.</li> <li>Describe histological structure of skeletal muscles</li> <li>Discuss ultrastructure of skeletal muscles</li> <li>Understand the contraction mechanism</li> <li>Correlate the clinical conditions</li> <li>Understand the preventive and curative health care measures</li> <li>Practice the principles of Bioethics</li> <li>Apply strategic use of AI in health care</li> <li>Read relevant research article</li> </ul>	Must know Must know Must know  Should know Should know Nice to know Nice to know  Nice to know Nice to know Nice to know	C1 C2 C2  C2 C3 C3  C3 C3 C3	<ul style="list-style-type: none"> <li>Junqueira's Basic Histology 18th Edition</li> <li>USMLE Q Bank Step 1 (Volume 1) 2023-2034</li> </ul>
Cardiac & Smooth Muscles	<ul style="list-style-type: none"> <li>Describe histological structure of cardiac and smooth muscles</li> <li>Describe ultrastructure of smooth and cardiac muscles.</li> <li>Differentiate between skeletal smooth and cardiac muscles.</li> <li>Discuss regeneration of muscle fibers</li> <li>Correlate the clinical conditions</li> <li>Understand the preventive and curative health care measures</li> <li>Practice the principles of Bioethics</li> <li>Apply strategic use of AI in health care</li> </ul>	Must know  Must know  Must know Must know  Should know Should know Nice to know  Nice to know Nice to know	C2  C2  C2 C2  C3 C3 C3  C3 C3	<ul style="list-style-type: none"> <li>Junqueira's Basic Histology 18th Edition</li> <li>USMLE Q Bank Step 1 (Volume 1) 2023-2034</li> </ul>
Skin	<ul style="list-style-type: none"> <li>Enlist components of integumentary system</li> <li>Describe histological structure of skin with special reference to cells residing in epidermis.</li> </ul>	Must know Must know  Must know  Must know	C1 C2  C2  C2	<ul style="list-style-type: none"> <li>Junqueira's Basic Histology 18th Edition</li> <li>USMLE Q Bank Step 1 (Volume 1) 2023-2034</li> </ul>



	<ul style="list-style-type: none"> <li>Describe histological features of thick and thin skin</li> <li>Differentiate between thick and thin skin</li> <li>Correlate the clinical conditions</li> <li>Understand the preventive and curative health care measures</li> <li>Practice the principles of Bioethics</li> <li>Apply strategic use of AI in health care</li> </ul>	Should know Should know Nice to know  Nice to know Nice to know	C3 C3 C3 C3 C3	
Skin Appendages	<ul style="list-style-type: none"> <li>Describe appendages of skin</li> <li>Discuss histological structure of hair</li> <li>Discuss histological structure of nail</li> <li>Discuss histological structure of glands of skin</li> <li>Correlate the clinical conditions</li> <li>Understand the preventive and curative health care measures</li> <li>Practice the principles of Bioethics</li> <li>Apply strategic use of AI in health care</li> </ul>	Must know Must know Must know Must know  Should know Should know  Nice to know Nice to know Nice to know	C2 C2 C2 C2  C3 C3  C3 C3 C3	<ul style="list-style-type: none"> <li>Junqueira's Basic Histology 18th Edition</li> <li>USMLE Q Bank Step 1 (Volume 1) 2023-2034</li> </ul>
<b>Embryology</b>				
Development Of Axial Skeleton	<ul style="list-style-type: none"> <li>Discuss the cartilagenous stage of vertebral column</li> <li>Discuss the bony stage of vertebral column</li> <li>Describe development of ribs and sternum.</li> <li>Correlate the clinical conditions</li> <li>Understand the preventive and curative health care measures</li> <li>Practice the principles of Bioethics</li> <li>Apply strategic use of AI in health care</li> <li>Read relevant research article</li> </ul>	Must know  Must know Must know Should know Should know  Nice to know Nice to know Nice to know	C2  C2 C2 C3  C3 C3 C3	<ul style="list-style-type: none"> <li>KLM Embryology Developing Human 11<sup>th</sup> Edition</li> <li>USMLE Q Bank Step 1 (Volume 1) 2023-2024</li> </ul>
Development of limbs	<ul style="list-style-type: none"> <li>Enlist different stages of limb development</li> <li>Discuss early and late stage of limb development</li> <li>Correlate congenital anomalies of limb development</li> <li>Correlate the clinical conditions</li> <li>Understand the preventive and curative health care measures</li> <li>Practice the principles of Bioethics</li> <li>Apply strategic use of AI in health care</li> </ul>	Must know Must know  Should know Should know Should know  Nice to know  Nice to know	C1 C2  C3 C3 C3  C3  C3	<ul style="list-style-type: none"> <li>Developing Human 11<sup>th</sup> Edition</li> <li>USMLE Q Bank Step 1 (Volume 1) 2023-2024</li> </ul>
Development Of Muscles	<ul style="list-style-type: none"> <li>Discuss development of skeletal muscle with special reference to myotomes, pharyngeal arch muscles and limb muscle along with limb skeleton.</li> <li>Describe development of smooth and cardiac muscles with anomalies.</li> <li>Correlate the clinical conditions</li> <li>Understand the preventive and curative health care measures</li> <li>Practice the principles of Bioethics</li> <li>Apply strategic use of AI in health care</li> </ul>	Must know  Must know  Should know Should know Nice to know Nice to know Nice to know	C2 C2 C3  C3 C3 C3 C3 C3	<ul style="list-style-type: none"> <li>Developing Human 11<sup>th</sup> Edition</li> <li>USMLE Q Bank Step 1 (Volume 1) 2023-2024</li> </ul>

## Small Group Discussion (SGDs)

Topic	Learning Objectives Students Should Be Able To	Calgary Gauge	Learning Domain	Learning Resources
<b>Gross Anatomy</b>				
Hip Bone-I	<ul style="list-style-type: none"> <li>• Demonstrate the anatomical position</li> <li>• Identify bony features of ilium.</li> <li>• Describe the muscular, ligamentous, and capsular attachments.</li> <li>• Discuss the ventral and dorsal auricular surfaces, ossification.</li> <li>• Correlate the clinical conditions</li> <li>• Understand the preventive and curative health care measures</li> <li>• Practice the principles of Bioethics</li> <li>• Apply strategic use of AI in health care</li> <li>• Read relevant research article</li> </ul>	Must know Must know Must know  Must know  Should know Should know Nice to know Nice to know Nice to know	P C1 C2  C2  C3 C3 C3 C3 C3	<ul style="list-style-type: none"> <li>• Clinically oriented anatomy edition 10</li> <li>• USMLE Q Bank Step 1 (Volume 1) 2023-2034</li> </ul>
Hip Bone-II	<ul style="list-style-type: none"> <li>• Demonstrate the anatomical position</li> <li>• Identify bony features of pubis and ischium.</li> <li>• Describe the muscular, ligamentous, and capsular attachments.</li> <li>• Discuss the ventral and dorsal auricular surfaces, ossification.</li> <li>• Correlate the clinical conditions</li> <li>• Understand the preventive and curative health care measures</li> <li>• Practice the principles of Bioethics</li> <li>• Apply strategic use of AI in health care</li> </ul>	Must know Must know Must know  Must know  Should know Should know Nice to know Nice to know Nice to know	P C1 C2  C2  C3 C3 C3 C3 C3	<ul style="list-style-type: none"> <li>• Clinically oriented anatomy edition 10</li> <li>• USMLE Q Bank Step 1 (Volume 1) 2023-2034</li> </ul>
Femur	<ul style="list-style-type: none"> <li>• Demonstrate the anatomical position of bone</li> <li>• Demonstrate different parts</li> <li>• Describe proximal and distal articulations</li> <li>• State angle of femoral torsion.</li> <li>• Correlate the clinical conditions</li> <li>• Understand the preventive and curative health care measures</li> <li>• Practice the principles of Bioethics</li> <li>• Apply strategic use of AI in health care</li> <li>• Read relevant research article</li> </ul>	Must know Must know Must know Should know Should know Should know Nice to know Nice to know Nice to know	P C1 C2 C1 C3 C3 C3 C3 C3	<ul style="list-style-type: none"> <li>• Clinically oriented anatomy edition 10</li> <li>• USMLE Q Bank Step 1 (Volume 1) 2023-2034</li> </ul>
Femur and Patella	<ul style="list-style-type: none"> <li>• Demonstrate the anatomical position of bones</li> <li>• Describe muscle attachment and ossification</li> <li>• Discuss fractures with special reference to the fracture of neck of femur in old age.</li> <li>• Describe anatomy of patella and factors responsible for its stability.</li> <li>• Enumerate different bursae related to patella</li> <li>• Correlate the clinical conditions</li> <li>• Understand the preventive and curative health care measures</li> <li>• Practice the principles of Bioethics</li> <li>• Apply strategic use of AI in health care</li> </ul>	Must know Must know Must know  Must know  Must know Should know Should know Nice to know Nice to know Nice to know	P C2 C2  C2  C1 C3 C3 C3 C3 C3	<ul style="list-style-type: none"> <li>• Clinically oriented anatomy edition 10</li> <li>• USMLE Q Bank Step 1 (Volume 1) 2023-2034</li> </ul>
Anterolateral Compartment of Thigh (Muscles)	<ul style="list-style-type: none"> <li>• Describe the origin and insertion of muscles in anterior compartment of thigh.</li> <li>• Describe the origin and insertion of muscles in lateral compartment of thigh.</li> <li>• Discuss the femoral triangle and adductor canal with contents</li> <li>• Identify these muscles.</li> <li>• Correlate the clinical conditions</li> <li>• Understand the preventive and curative health care measures</li> <li>• Practice the principles of Bioethics</li> <li>• Apply strategic use of AI in health care</li> <li>• Read relevant research article</li> </ul>	Must know  Must know  Must know  Must know Should know Should know Nice to know Nice to know Nice to know	C2  C2  C2 C1 C3 C3 C3 C3	<ul style="list-style-type: none"> <li>• Clinically oriented anatomy edition 10</li> <li>• USMLE Q Bank Step 1 (Volume 1) 2023-2034</li> </ul>
Anterolateral compartment of thigh (Neurovascular organization)	<ul style="list-style-type: none"> <li>• Describe the nerves and vessels of anterolateral compartment of thigh</li> <li>• Discuss various relation of vessels and nerves in anterolateral compartment of thigh</li> <li>• Identify these structures</li> <li>• Map the outline of femoral artery in a simulated patient / model</li> <li>• Correlate the clinical conditions</li> <li>• Understand the preventive and curative health care measures</li> <li>• Practice the principles of Bioethics</li> <li>• Apply strategic use of AI in health care</li> <li>• Read relevant research article</li> </ul>	Must know  Must know  Must know  Should know Should know Nice to know Nice to know Nice to know	C2 C2 C1 P  C3 C3 C3 C3	<ul style="list-style-type: none"> <li>• Clinically oriented anatomy edition 10</li> <li>• USMLE Q Bank Step 1 (Volume 1) 2023-2034</li> </ul>
	<ul style="list-style-type: none"> <li>• Describe the muscles of medial compartment of thigh</li> <li>• Discuss origin, insertion and nerve supply of medial compartment</li> <li>• Describe the course relations and branches of obturator nerve.</li> </ul>	Must know Must know  Must know	C2 C2  C2	<ul style="list-style-type: none"> <li>• Clinically oriented anatomy edition 10</li> </ul>

Medial Compartment of thigh	<ul style="list-style-type: none"> <li>Correlate the clinical conditions</li> <li>Understand the preventive and curative health care measures</li> <li>Practice the principles of Bioethics</li> <li>Apply strategic use of AI in health care</li> <li>Read relevant research article</li> </ul>	Should know Should know Nice to know Nice to know Nice to know	C3 C3 C3 C3 C3	<ul style="list-style-type: none"> <li>USMLE Q Bank Step 1 (Volume 1) 2023-2034</li> </ul>
Gluteal Region (Muscles)	<ul style="list-style-type: none"> <li>Tabulate the he various muscles of gluteal region with origin, insertion, action nerve supply.</li> <li>Enlist various structures undercover of gluteal maximus i.e. muscles, vessels, nerves, bones and joints, ligaments, bursae.</li> <li>Understand the preventive and curative health care measures</li> <li>Practice the principles of Bioethics</li> <li>Apply strategic use of AI in health care</li> <li>Read relevant research article</li> </ul>	Must know Must know  Should know Nice to know Nice to know Nice to know	C2 C1  C3 C3 C3 C3	<ul style="list-style-type: none"> <li>Clinically oriented anatomy edition 10</li> <li>USMLE Q Bank Step 1 (Volume 1) 2023-2034</li> </ul>
Gluteal Region (Neurovascular organization)	<ul style="list-style-type: none"> <li>Describe trochanteric anastomosis and cruciate anastomosis.</li> <li>Enumerate the structures passing through greater sciatic foraman.</li> <li>Discuss the formation course relations, branches, distribution of sciatic nerve with applied anatomy..</li> <li>Correlate the clinical conditions</li> <li>Understand the preventive and curative health care measures</li> <li>Practice the principles of Bioethics</li> <li>Apply strategic use of AI in health care</li> <li>Read relevant research article</li> </ul>	Must know Must know  Should know  Should know Nice to know Nice to know Nice to know Nice to know	C2 C1  C2  C3 C3 C3 C3 C3	<ul style="list-style-type: none"> <li>Clinically oriented anatomy edition 10</li> <li>USMLE Q Bank Step 1 (Volume 1) 2023-2034</li> </ul>
Posterior Compartment of Thigh (Muscles)	<ul style="list-style-type: none"> <li>Enlist the Hamstring muscles</li> <li>Discuss origin insertion, nerve supply and actions</li> <li>Identify the muscles</li> <li>Correlate the clinical conditions</li> <li>Understand the preventive and curative health care measures</li> <li>Practice the principles of Bioethics</li> <li>Apply strategic use of AI in health care</li> <li>Read relevant research article</li> </ul>	Must know Must know Must know Should know Should know Nice to know Nice to know Nice to know	C1 C2 C1 C3 C3 C3 C3 C3	<ul style="list-style-type: none"> <li>Clinically oriented anatomy edition 10</li> <li>USMLE Q Bank Step 1 (Volume 1) 2023-2034</li> </ul>
Posterior Compartment of thigh (Neurovascular Organization)	<ul style="list-style-type: none"> <li>Describe the nerves and vessels of posterior compartment of thigh</li> <li>Discuss course, relations, distribution and branches of neurovascular structures of posterior compartment</li> <li>Identify these structures</li> <li>Correlate the clinical conditions</li> <li>Understand the preventive and curative health care measures</li> <li>Practice the principles of Bioethics</li> <li>Apply strategic use of AI in health care</li> <li>Read relevant research article</li> </ul>	Must know Must know  Must know Should know Should know Nice to know Nice to know Nice to know	C2 C2  C1 C3 C3 C3 C3 C3	<ul style="list-style-type: none"> <li>Clinically oriented anatomy edition 10</li> <li>USMLE Q Bank Step 1 (Volume 1) 2023-2034</li> </ul>
Hip Joint	<ul style="list-style-type: none"> <li>Describe the type of joint</li> <li>Describe articular surfaces,</li> <li>Describe capsular attachments.</li> <li>Discuss synovial membrane and its folding.</li> <li>Enlist ligaments and their attachments</li> <li>Discuss movements possible at hip joint and muscles producing them</li> <li>Describe blood supply and nerve supply.</li> <li>Correlate the clinical conditions</li> <li>Understand the preventive and curative health care measures</li> <li>Practice the principles of Bioethics</li> <li>Apply strategic use of AI in health care</li> <li>Read relevant research article</li> </ul>	Must know Must know Must know Must know Must know Must know  Must know Should know Should know Nice to know Nice to know Nice to know	C2 C2 C2 C2 C1 C2  C2 C3 C3 C3 C3 C3	<ul style="list-style-type: none"> <li>Clinically oriented anatomy edition 10</li> <li>USMLE Q Bank Step 1 (Volume 1) 2023-2034</li> </ul>
Tibia	<ul style="list-style-type: none"> <li>Identify bone</li> <li>Demonstrate its side.</li> <li>Demonstrate its normal anatomical position.</li> <li>Describe bony features.</li> <li>Discuss attachment of muscle and ligament</li> <li>Describe articular surfaces</li> <li>Identify nutrient foramen</li> <li>Describe its ossification</li> <li>Correlate the clinical conditions</li> <li>Understand the preventive and curative health care measures</li> <li>Practice the principles of Bioethics</li> <li>Apply strategic use of AI in health care</li> </ul>	Must know Must know Must know Must know Must know Must know Must know Should know Should know Nice to know Nice to know Nice to know	C1 P P C2 C2 C2 C1 C2 C3 C3 C3 C3	<ul style="list-style-type: none"> <li>Clinically oriented anatomy edition 10</li> <li>USMLE Q Bank Step 1 (Volume 1) 2023-2034</li> </ul>
Fibula	<ul style="list-style-type: none"> <li>Identify bone</li> <li>Demonstrate its side.</li> <li>Demonstrate its normal anatomical position.</li> <li>Describe bony features.</li> <li>Discuss attachment of muscles and ligaments</li> <li>Describe articular surfaces</li> <li>Identify nutrient foramen</li> <li>Describe its ossification</li> <li>Correlate the clinical conditions</li> <li>Understand the preventive and curative health care measures</li> <li>Practice the principles of Bioethics</li> <li>Apply strategic use of AI in health care</li> </ul>	Must know Must know Must know Must know Must know Must know Must know Should know Should know Nice to know Nice to know Nice to know	C1 P P C2 C2 C2 C1 C2 C3 C3 C3 C3	<ul style="list-style-type: none"> <li>Clinically oriented anatomy edition 10</li> <li>USMLE Q Bank Step 1 (Volume 1) 2023-2034</li> </ul>

Popliteal Fossa	<ul style="list-style-type: none"> <li>Identify surface landmarks</li> <li>Enlist contents</li> <li>Discuss boundaries, roof and floor</li> <li>Map the outline of popliteal artery in a simulated patient / model</li> <li>Correlate the clinical conditions</li> <li>Understand the preventive and curative health care measures</li> <li>Practice the principles of Bioethics</li> <li>Apply strategic use of AI in health care</li> <li>Read relevant research article</li> </ul>	<p>Must know Must know Must know Must know</p> <p>Should know Should know Nice to know Nice to know Nice to know</p>	<p>C1 C1 C2 P</p> <p>C3 C3 C3 C3 C3</p>	<ul style="list-style-type: none"> <li>Clinically oriented anatomy edition 10</li> <li>USMLE Q Bank Step 1 (Volume 1) 2023-2034</li> </ul>
Knee Joint	<ul style="list-style-type: none"> <li>State type of joint</li> <li>Describe its articular surfaces</li> <li>Demonstrate capsular attachments,</li> <li>Enlist extra capsular and intracapsular ligaments and their attachments</li> <li>Demonstrate the movements possible at knee joint and muscles producing them.</li> <li>Describe the concept of locking and unlocking of knee joint</li> <li>Describe blood supply and nerve supply of joint</li> <li>Correlate the clinical conditions</li> <li>Understand the preventive and curative health care measures</li> <li>Practice the principles of Bioethics</li> <li>Apply strategic use of AI in health care</li> <li>Read relevant research article</li> </ul>	<p>Must know Must know Must know Must know Must know</p> <p>Must know</p> <p>Must know Should know Should know Nice to know Nice to know Nice to know</p>	<p>C1 C2 P C1</p> <p>P</p> <p>C2 C2 C3 C3 C3 C3</p>	<ul style="list-style-type: none"> <li>Clinically oriented anatomy edition 10</li> <li>USMLE Q Bank Step 1 (Volume 1) 2023-2034</li> </ul>
Anterior Compartment of Leg (Muscles and Neurovascular Organization)	<ul style="list-style-type: none"> <li>Demonstrate surface landmarks</li> <li>Discuss superficial fascia &amp; deep fascia, their contents including retinecula</li> <li>Describe Origin, insertion, nerve supply and action of all muscles of anterior compartment of leg</li> <li>Identify different structures in compartment</li> <li>Correlate the clinical conditions</li> <li>Understand the preventive and curative health care measures</li> <li>Practice the principles of Bioethics</li> <li>Apply strategic use of AI in health care</li> <li>Read relevant research article</li> </ul>	<p>Must know Must know</p> <p>Must know</p> <p>Must know Should know Should know Nice to know Nice to know Nice to know</p>	<p>P C2</p> <p>C2 C1 C3 C3 C3 C3 C3</p>	<ul style="list-style-type: none"> <li>Clinically oriented anatomy edition 10</li> <li>USMLE Q Bank Step 1 (Volume 1) 2023-2034</li> </ul>
Radiology / Cross Sectional Anatomy	<ul style="list-style-type: none"> <li>Demonstrate major landmarks of thigh and anterior compartment of leg on radiographs</li> <li>Identify the structures present at different levels of cross sections Upper 3<sup>rd</sup> of thigh Mid shaft of femur Lower 3<sup>rd</sup> of thigh Upper part of patella Distal part of patella Through tibial condyles</li> <li>Correlate the clinical conditions</li> </ul>	<p>Must know</p> <p>Must know</p> <p>Should know</p>	<p>P</p> <p>C2</p> <p>C3</p>	<ul style="list-style-type: none"> <li>Clinically oriented anatomy edition 10</li> <li>USMLE Q Bank Step 1 (Volume 1) 2023-2034</li> </ul>

HISTOLOGY SKILL LABORATORY (SKL)

Topic	At The End Of The Practical The Students Should Be Able To	Calgary Gauge	Learning Domain	Learning Resources
Histology				
Skeletal muscles	• Identify slide under microscope	Should know	P	• DiFiore’s Atlas of histology with clinical correlation, 11 <sup>th</sup> edition, chapter 6
	• Illustrate histological structure of skeletal muscle	Must know	C2	
	• Write two points of identification	Must know	C1	
	• Write two points of identification	Must know	C1	
	• Focus the slide	Should know	P	
Cardiac and smooth muscles	• Identify slide under microscope	Should know	P	• DiFiore’s Atlas of histology 11 <sup>th</sup> edition, chapter 6
	• Illustrate histological structure of cardiac and smooth muscles	Must know	C2	
	• Write two points of identification	Must know	C1	
	• Differentiate between cardiac and smooth muscles	Must know	C2	
	• Focus the slide	Should know	P	
Thick skin	• Identify slide under microscope	Should know	P	• DiFiore’s Atlas of histology 11 <sup>th</sup> edition, chapter 10
	• Illustrate microscopic structure of thick skin	Must know	C2	
	• Discuss the structure of thick skin	Must know	C1	
	• Write two points of identification	Must know	C1	
	• Focus the slide	Should know	P	
Thin skin	• Identify slide under microscope	Should know	P	• DiFiore’s Atlas of histology 11 <sup>th</sup> edition, chapter 10
	• Illustrate microscopic structure of thin skin	Must know	C2	
	• Write two points of identification	Must know	C1	
	• Focus the slide	Should know	P	

**TOS for LMS Assessment of MSK-II Module of  
First Year MBBS, Batch -52 (Session 2024-25)**

1<sup>ST</sup> LMS Assessment for the first year MBBS for the MSK-II Module will be held on -----(Monday) from 7:00pm to 7:30pm. Details of topics are mentioned in the table below:

S No.	Domain of Teaching Activity	Topic	No.of MCQs	Cognitive Domain		
				C1	C2	C3
1.	LGIS	<b>Embryology</b> Development of Axial Skeleton Development of limbs <b>General Anatomy</b> General Anatomy of Skin <b>Histology</b> Histology of Skin Skin appendages	05	1	2	2
		Anterolateral compartment of thigh (Neurovascular organization) Medial Compartment of thigh Gluteal Region	02	1	1	-
		Skin	05	1	2	2
2.	SGD/Dissection	<b>Embryology</b> Development of Axial Skeleton Development of limbs <b>General Anatomy</b> General Anatomy of Skin <b>Histology</b> Histology of Skin Skin appendages	13	3	4	6
3.	Practical	Anterolateral compartment of thigh (Neurovascular organization) Medial Compartment of thigh Gluteal Region	05	1	2	2
4.	TOTAL		30			

Learning Resources:

- **Embryology** :- KLM Embryology Developing Human 11<sup>th</sup> Edition
- **Histology** :-Junqueira's Basic Histology 18th Edition
- **Gross Anatomy** :- KLM clinically oriented anatomy edition 10
- **USMLE Q Bank Step 1** (Volume 1) 2023-2034
- **UWORLD Step 1** (Volume 3) 2023-2024

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**TOS for LMS Assessment of MSK-II Module Of  
First Year MBBS, Batch -52 (Session 2024-25)**

2<sup>ND</sup> LMS Assessment for the first year MBBS for the Foundation Module will be held on -----(Monday) from 7:00pm to 7:30pm. Details of topics are mentioned in the table below:

S No.	Domain of Teaching Activity	Topic	No. of MCQs	Cognitive Domain		
				C1	C2	C3
1.	LGIS	<b>Genera Anatomy</b> Muscles (general Anatomy)	05	1	2	2
		<b>Histology</b> Histology of Muscles	05	1	1	-
2.	SGD/Dissection	Hip Bone Femur / Patella Anterolateral compartment of thigh(Muscles )	15	3	4	6
3.	Practical	Skeletal Muscles	05	1	2	2
4.	TOTAL		30			

Learning Resources:

- **Embryology** :- KLM Embryology Developing Human 11<sup>th</sup> Edition
- **Histology** :-Junqueira's Basic Histology 18th Edition
- **Gross Anatomy** :- KLM clinically oriented anatomy edition 10
- **USMLE Q Bank Step 1** (Volume 1) 2023-2034
- **UWORLD Step 1** (Volume 3) 2023-2024

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# Hematology and Immunity Module – I

## Learning Objectives

### Large Group Interactive Session (LGIS)

Topic	At the End of The Session Students Should Be Able To:	Calgary Gauge	Learning Domain	Learning Resources
Histology				
Lymph node	<ul style="list-style-type: none"> <li>Classify lymphoid tissue</li> </ul>	Must know	C2	<ul style="list-style-type: none"> <li>Junqueira's Basic Histology 18th Edition chapter 14</li> <li>USMLE Q Bank Step 1 (Volume 1) 2023-2034</li> </ul>
	<ul style="list-style-type: none"> <li>Define diffuse lymphoid tissue, nodular lymphoid tissue and lymphoid organs</li> </ul>	Must know	C1	
	<ul style="list-style-type: none"> <li>Discuss the histological features of lymph node</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Enlist functions of lymph node</li> </ul>	Must know	C1	
	<ul style="list-style-type: none"> <li>Understand the supporting elements of lymph node</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Describe filtration through lymph node</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Discuss importance of high endothelial venule in lymph node</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Discuss the clinical correlation of lymph node</li> </ul>	Should know	C3	
	<ul style="list-style-type: none"> <li>Correlate the clinical conditions</li> </ul>	Should know	C3	
	<ul style="list-style-type: none"> <li>Understand the preventive and curative health care measures</li> </ul>	Should know	C3	
	<ul style="list-style-type: none"> <li>Practice the principles of Bioethics</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Apply strategic use of AI in health care</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Read a research article</li> </ul>	Nice to know	C3	
Thymus & Tonsil	<ul style="list-style-type: none"> <li>Describe the location and functions of thymus</li> </ul>	Must know	C1	<ul style="list-style-type: none"> <li>Junqueira's Basic Histology 18th Edition chapter 14</li> <li>USMLE Q Bank Step 1 (Volume 1) 2023-2034</li> </ul>
	<ul style="list-style-type: none"> <li>Enumerate different types of reticulo-epithelial cells</li> </ul>	Must know	C1	
	<ul style="list-style-type: none"> <li>Describe microscopic structure of thymus</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Compare the histological structure of thymus and other lymphoid organs</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Discuss blood thymus barrier</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Describe general histological structure of tonsils</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Differentiate palatine, lingual, and pharyngeal tonsils histologically</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Discuss the clinical correlation of thymus</li> </ul>	Should know	C3	
	<ul style="list-style-type: none"> <li>Correlate the clinical conditions</li> </ul>	Should know	C3	
	<ul style="list-style-type: none"> <li>Understand the preventive and curative health care measures</li> </ul>	Should know	C3	
	<ul style="list-style-type: none"> <li>Practice the principles of Bioethics</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Read a research article</li> </ul>	Nice to know	C3	



Spleen	● Describe the location and functions of spleen	Should know	C2	<ul style="list-style-type: none"><li>• Junqueira's Basic Histology 18th Edition chapter 14</li><li>• USMLE Q Bank Step 1 (Volume 1) 2023-2034</li></ul>
	● Describe microscopic structure of spleen	Should know	C2	
	● Differentiate between red and white pulp of spleen	Should know	C2	
	● Discuss blood circulation through spleen	Should know	C2	
	● Discuss the clinical correlation of spleen	Must know	C3	
	● Correlate the clinical conditions	Must know	C3	
	● Understand the preventive and curative health care measures	Must know	C3	
	● Practice the principles of Bioethics	Nice to know	C3	
	● Read a research article	Nice to know	C3	
Embryology				
Development of Pharyngeal arches & pouches	● Define pharyngeal arches and pouches	Must know	C1	<ul style="list-style-type: none"><li>• Junqueira's Basic Histology 18th Edition chapter 14</li><li>• USMLE Q Bank Step 1 (Volume 1) 2023-2034</li></ul>
	● Discuss the components of pharyngeal arches and pouches	Must know	C2	
	● Describe the development and fate of each pharyngeal arch and pouches	Must know	C2	
	● Discuss the clinical correlation of pharyngeal arches and pouches	Should know	C3	
	● Correlate the clinical conditions	Must know	C3	
	● Understand the preventive and curative health care measures	Should know	C3	
	● Practice the principles of Bioethics	Nice to know	C3	
	● Read a research article	Nice to know	C3	

## Small Group Discussion (SGDs)

Topic	At the End Of The Session Students Should Be Able To:	Calgary Gauge	Learning Domains	Learning Resources
<b>Gross Anatomy</b>				
Posterior Compartment of Leg (muscles) and flexor retinaculum	• Illustrate cutaneous innervation	Must know	C2	<ul style="list-style-type: none"> <li>Clinically oriented anatomy edition 10</li> <li>USMLE Q Bank Step 1 (Volume 1) 2023-2034</li> </ul>
	• Describe superficial fascia & deep fascia.	Must know	C2	
	• Discuss superficial and deep muscle groups in posterior compartment	Must know	C2	
	• Tabulate origin, insertion, nerve supply and action of all muscles of posterior compartment of leg	Must know	C2	
	• Discuss ruptured calcaneal tendon, calcaneal bursitis and accessory soleus muscle	Should know	C3	
	• Correlate the clinical conditions	Should know	C3	
	• Understand the preventive and curative health care measures	Should know	C3	
	• Practice the principles of Bioethics	Nice to know	C3	
	• Apply strategic use of AI in health care	Nice to know	C3	
	• Read a research article	Nice to know	C3	
Posterior Compartment of Leg (Neurovascular organization)	• Describe origin, course relations, branches and tributaries of neurovascular bundle	Must know	C2	<ul style="list-style-type: none"> <li>Clinically oriented anatomy edition 10</li> <li>USMLE Q Bank Step 1 (Volume 1) 2023-2034</li> </ul>
	• Discuss superficial veins i.e long and short saphenous veins	Must know	C2	
	• Palpate the posterior tibial pulse	Must know	C3	
	• Correlate the clinical conditions	Should know	C3	
	• Understand the preventive and curative health care measures	Should know	C3	
	• Practice the principles of Bioethics	Nice to know	C3	
	• Apply strategic use of AI in health care	Nice to know	C3	
	• Read a research article	Nice to know	C3	
Bones of Foot	• Enumerate the bones of foot	Must know	C1	<ul style="list-style-type: none"> <li>Clinically oriented anatomy edition 10</li> <li>USMLE Q Bank Step 1 (Volume 1) 2023-2034</li> </ul>
	• Identify different bones of foot	Must know	C1	
	• Discuss bony features and muscle attachment	Must know	C2	
	• Discuss fracture of metatarsals and os trigonum, avascular necrosis of head of talus	Should know	C3	
	• Correlate the clinical conditions	Should know	C3	
	• Understand the preventive and curative health care measures	Should know	C3	
	• Practice the principles of Bioethics	Nice to know	C3	

Dorsum of foot	• Apply strategic use of AI in health care	Nice to know	C3	<ul style="list-style-type: none"> <li>Clinically oriented anatomy edition 10</li> <li>USMLE Q Bank Step 1 (Volume 1) 2023-2034</li> </ul>
	• Read a research article	Nice to know	C3	
	• Tabulate muscle on the dorsal aspect of foot	Must know	C2	
	• Describe blood supply and nerve supply	Must know	C2	
	• Discuss cutaneous innervation of dorsum of foot	Must know	C2	
	• Palpate the dorsalis pedis artery on dorsum of foot	Should know	C3	
	• Discuss other clinical related to the dorsum of the foot	Should know	C3	
	• Correlate the clinical conditions	Should know	C3	
	• Understand the preventive and curative health care measures	Should know	C3	
	• Practice the principles of Bioethics	Nice to know	C3	
	• Apply strategic use of AI in health care	Nice to know	C3	
	• Read a research article	Nice to know	C3	
Ankle Joint	• Describe the articular surfaces of ankle joint	Must know	C2	<ul style="list-style-type: none"> <li>Clinically oriented anatomy edition 10</li> <li>USMLE Q Bank Step 1 (Volume 1) 2023-2034</li> </ul>
	• Describe the attachment of capsule	Must know	C2	
	• Enumerate the ligaments	Must know	C1	
	• Discuss the movements possible at ankle joint and muscles producing them	Must know	C2	
	• Discuss ankle sprain	Should know	C3	
	• Discuss different types of ankle injuries	Should know	C3	
	• Correlate the clinical conditions	Should know	C3	
	• Understand the preventive and curative health care measures	Should know	C3	
	• Practice the principles of Bioethics	Nice to know	C3	
	• Apply strategic use of AI in health care	Nice to know	C3	
	• Read a research article	Nice to know	C3	
Joints of Foot	• Classify the joints of foot	Must know	C2	<ul style="list-style-type: none"> <li>Clinically oriented anatomy edition 10</li> <li>USMLE Q Bank Step 1 (Volume 1) 2023-2034</li> </ul>
	• Discuss the articular surfaces, joint capsules, ligaments, movements and muscles producing movements	Must know	C2	
	• Discuss major ligaments in detail	Must know	C2	
	• Discuss tibial nerve entrapment	Should know	C3	
	• Discuss club foot, claw foot and other clinical conditions	Should know	C3	
	• Correlate the clinical conditions	Should know	C3	
	• Understand the preventive and curative health care measures	Should know	C3	
	• Practice the principles of Bioethics	Nice to know	C3	
	• Apply strategic use of AI in health care	Nice to know	C3	
	• Read a research article	Nice to know	C3	

Sole of foot (Muscles)	• Identify Surface landmarks	Should know	C1	<ul style="list-style-type: none"> <li>• Clinically oriented anatomy edition 10</li> <li>• USMLE Q Bank Step 1 (Volume 1) 2023-2034</li> </ul>
	• Describe cutaneous innervation of sole of foot	Must know	C2	
	• Describe Plantar aponeurosis its attachments	Must know	C2	
	• Discuss flexor retinaculum	Must know	C2	
	• Discuss muscles in different layers of foot with origin, insertion, nerve supply and actions	Must know	C2	
	• Correlate the clinical conditions	Should know	C3	
	• Understand the preventive and curative health care measures	Should know	C3	
	• Practice the principles of Bioethics	Should know	C3	
	• Apply strategic use of AI in health care	Nice to know	C3	
	• Read a research article	Nice to know	C3	
Sole of foot (Neurovascular Organization)	• Enlist nerves and arteries present in sole of foot	Must know	C1	<ul style="list-style-type: none"> <li>• Clinically oriented anatomy edition 10</li> <li>• USMLE Q Bank Step 1 (Volume 1) 2023-2034</li> </ul>
	• Discuss route and relations of neurovascular bundle in sole of foot	Must know	C2	
	• Describe the formation of vascular arches of foot along with clinical	Should know	C2, C3	
	• Discuss plantar fasciitis	Should know	C3	
	• Correlate the clinical conditions	Should know	C3	
	• Understand the preventive and curative health care measures	Should know	C3	
	• Practice the principles of Bioethics	Must know	C3	
	• Apply strategic use of AI in health care	Must know	C3	
	• Read a research article	Must know	C3	
Arches of Foot and Gait Cycle	• Classify the arches of foot	Must know	C2	<ul style="list-style-type: none"> <li>• Clinically oriented anatomy edition 10</li> <li>• USMLE Q Bank Step 1 (Volume 1) 2023-2034</li> </ul>
	• Describe different components of arches of foot	Must know	C2	
	• Discuss stability factors of arches of foot	Must know	C2	
	• Discuss pes planus (flat foot), club foot and other clinical	Should know	C3	
	• Discuss gait cycle and its stages	Must know	C2	
	• Correlate the clinical conditions	Should know	C3	
	• Understand the preventive and curative health care measures	Should know	C3	
	• Practice the principles of Bioethics	Nice to know	C3	
	• Apply strategic use of AI in health care	Nice to know	C3	
	• Read a research article	Nice to know	C3	
Thymus, Tonsils	• Describe location of thymus and tonsils	Must know	C2	<ul style="list-style-type: none"> <li>• Clinically oriented anatomy edition 10</li> </ul>
	• Describe blood supply, venous drainage and lymphatic drainage of thymus and tonsils	Must know	C2	
	• Enumerate functions of thymus and tonsils	Must know	C1	
	• Correlate the clinical conditions	Should know	C3	

	• Understand the preventive and curative health care measures	Should know	C3	• USMLE Q Bank Step 1 (Volume 1) 2023-2034
	• Practice the principles of Bioethics	Nice to know	C3	
	• Apply strategic use of AI in health care	Nice to know	C3	
	• Read a research article	Nice to know	C3	
Spleen	• Discuss the location of spleen	Must know	C2	• Clinically oriented anatomy edition 10 • USMLE Q Bank Step 1 (Volume 1) 2023-2034
	• Enumerate anatomical relations of spleen	Must know	C1	
	• Discuss blood supply, venous drainage and lymphatic drainage of spleen	Must know	C2	
	• Correlate the clinical conditions	Should know	C3	
	• Understand the preventive and curative health care measures	Should know	C3	
	• Practice the principles of Bioethics	Nice to know	C3	
	• Apply strategic use of AI in health care	Nice to know	C3	
	• Read a research article	Nice to know	C3	
Radiology, Surface Anatomy & Cross Sectional Anatomy	• Identify different structures on radiographs	Should know	C3	• Clinically oriented anatomy edition 10 • USMLE Q Bank Step 1 (Volume 1) 2023-2034
	• Demonstrate the surface anatomy of various structures present in posterior compartment of leg and foot	Should know	P	
	• Demonstrate the surface anatomy of spleen, thymus and tonsils	Should know	P	
	• Discuss the Cross-Sectional anatomy at the level of leg & foot	Should know	C2	
	• Correlate the clinical conditions	Should know	C3	
	• Understand the preventive and curative health care measures	Should know	C3	
	• Practice the principles of Bioethics	Nice to know	C3	
	• Apply strategic use of AI in health care	Nice to know	C3	
	• Read a research article	Nice to know	C3	

### Histology Skill Laboratory (SKL)

Topic	At the End of The Session Students Should Be Able To:	Calgary Gauge	Learning Domains	Learning Resources
<b>Histology</b>				
Lymph node	• Identify lymph node under microscope	Should know	P	<ul style="list-style-type: none"> <li>• DiFiore's Atlas of histology 11<sup>th</sup> edition, chapter 9</li> <li>• USMLE Q Bank Step 1 (Volume 1) 2023-2034</li> </ul>
	• Focus the slide	Should know	P	
	• Draw the histological structure of lymph node	Must know	C2	
	• Enlist two identification points of lymph node	Must know	C1	
Thymus	• Identify the slide of thymus under light microscope	Should know	P	<ul style="list-style-type: none"> <li>• DiFiore's Atlas of histology 11<sup>th</sup> edition, chapter 9</li> <li>• USMLE Q Bank Step 1 (Volume 1) 2023-2034</li> </ul>
	• Focus the slide	Should know	P	
	• Draw the histological structure of thymus	Must know	C2	
	• Enlist two identifications points of thymus	Must know	C1	
Spleen	• Identify the slide of spleen under light microscope	Should know	P	<ul style="list-style-type: none"> <li>• DiFiore's Atlas of histology 11<sup>th</sup> edition, chapter 9</li> <li>• USMLE Q Bank Step 1 (Volume 1) 2023-2034</li> </ul>
	• Focus the slide	Should know	P	
	• Draw histological structure of spleen,	Must know	C2	
	• Enlist two identification points of spleen	Must know	C1	
Tonsils	• Identify the slide of tonsils under light microscope	Should know	P	<ul style="list-style-type: none"> <li>• DiFiore's Atlas of histology 11<sup>th</sup> edition, chapter 9</li> <li>• USMLE Q Bank Step 1 (Volume 1) 2023-2034</li> </ul>
	• Focus the slide	Should know	P	
	• Draw histological structure of tonsils	Must know	C2	
	• Write two identification points of tonsils	Must know	C1	

**TOS for LMS Assessment of Hematology & Immunity Module-I**  
**First Year MBBS, Batch-52 (Session 2024-25)**

1<sup>st</sup> LMS Assessment for the first year MBBS for the Blood & Immunity Module will be held on ----- from 7:00pm to 7:30pm. Detail of topics are mentioned in the table below:

S No.	Domain of Teaching Activity	Topic	No.of MCQs	Cognitive Domain		
				C1	C2	C3
1.	LGIS	<b>Embryology</b> Development of lymph node	05	1	2	2
		<b>Histology</b> Lymph node	05	1	2	2
2.	SGD	Ankle Joint (Ankle Sprain) Joints of Foot	15	5	4	6
3.	Practical	Lymph Node	05	1	2	2
4.	<b>Total</b>		30			

Learning Resources:

- **Embryology** :- KLM Embryology Developing Human 11<sup>th</sup> Edition
- **Histology** :-Junqueira's Basic Histology 18th Edition
- **Gross Anatomy** :- KLM clinically oriented anatomy edition 10
- **USMLE Q Bank Step 1** (Volume 1) 2023-2034
- **UWORLD Step 1** (Volume 3) 2023-2024

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## TOS For LMS Assessment of Hematology & Immunity Module-I First Year MBBS, Batch -52 (Session 2024-25)

2<sup>nd</sup> LMS Assessment for the first year MBBS for the Blood & Immunity Module will be held on -----  
from 7:00pm to 7:30pm. Detail of topics are mentioned in the table below:

S No.	Domain of Teaching Activity	Topic	No.of MCQs	Cognitive Domain		
				C1	C2	C3
5.	LGIS	<b>Embryology</b> Development of pharyngeal arches	05	1	2	2
		<b>Histology</b> Tonsils	05	1	2	2
6.	SGD	Posterior Compartment of Leg Flexor Retinaculum Bones of the foot	15	5	4	6
7.	Practical	Lymph Node	05	1	2	2
8.	<b>Total</b>		30			

### Learning Resources:

- **Embryology** :- KLM Embryology Developing Human 11<sup>th</sup> Edition
- **Histology** :-Junqueira's Basic Histology 18th Edition
- **Gross Anatomy** :- KLM clinically oriented anatomy edition 10
- **USMLE Q Bank Step 1** (Volume 1) 2023-2034
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# Cardiovascular System Module -I

## Learning Objectives

### Large Group Interactive Session (LGIS)

Topic	Learning Objectives At The End Of Lecture Students Should Be Able To	Calgary Gauge	Learning Domain	Learning Resource
General Anatomy				
General Organization	• Describe general organization of cardiovascular system	Must know	C2	• Clinically oriented anatomy edition 10 chapter 1 • USMLE Q Bank Step 1 (Volume 1) 2023-2034
	• Describe different types of circulations	Must know	C2	
	• Discuss general structural patterns of arteries and veins	Must know	C2	
	• Classify capillaries	Must know	C1	
	• Explain bio - functional importance and location of continuous, fenestrated and sinusoidal capillaries	Must know	C2	
	• Discuss related clinicals		C3	
	• To understand the Biophysiological aspects	Nice to Know	C3	
	• Able to focus on provision of curative and preventive health care measures	Nice to Know	C3	
	• Practice the principles of Bioethics	Nice to Know	C3	
	• Apply strategic use of AI in health care	Nice to Know	C3	
	• How to read relevant research article	Nice to Know	C3	
Classification of vessels	• Classify arteries on the basis of function and size	Must know	C1	• Clinically oriented anatomy edition 10 chapter 1 • USMLE Q Bank Step 1 (Volume 1) 2023-2034
	• Classify veins on the basis of function and size	Must know	C1	
	• Describe differences between arteries and veins	Must know	C2	
	• Define anastomosis and discuss different types of	Must know	C2	
	• Differentiate between anatomic end arteries and functional end arteries giving example	Must know	C2	
	• Discuss related clinicals	Should know	C3	
	• To understand the Biophysiological aspects	Must know	C3	
	• Able to focus on provision of curative and preventive health care measures	Nice to Know	C3	
	• Practice the principles of Bioethics	Nice to Know	C3	
	• Apply strategic use of AI in health care	Nice to Know	C3	
	• How to read relevant research article	Nice to Know	C3	
Histology				
Arteries and Veins	• Describe general histological structure of arteries and veins	Must know	C2	• Junqueira's Basic Histology 18th Edition chapter 11 • USMLE Q Bank Step 1 (Volume 1) 2023-2034
	• Tabulate histological differences between arterioles, medium sized arteries, and large arteries	Must know	C2	
	• Discuss related clinicals	Must know	C3	
	• To understand the Biophysiological aspects	Should know	C3	
	• Able to focus on provision of curative and preventive health care measures	Nice to Know	C3	
	• Practice the principles of Bioethics	Nice to Know	C3	
	• Apply strategic use of AI in health care	Nice to Know	C3	

	<ul style="list-style-type: none"><li>• How to read relevant research article</li></ul>	Nice to Know	C3	
Capillaries	<ul style="list-style-type: none"><li>• Differentiate between continuous, fenestrated and sinusoidal capillaries</li></ul>	Must know	C2	<ul style="list-style-type: none"><li>• Junqueira's Basic Histology 18th Edition chapter 11</li><li>• USMLE Q Bank Step 1 (Volume 1) 2023-2034</li></ul>
	<ul style="list-style-type: none"><li>• Enlist bio functions of endothelium</li></ul>	Must know	C2	
	<ul style="list-style-type: none"><li>• Discuss related clinicals</li></ul>	Should know	C2	
	<ul style="list-style-type: none"><li>• To understand the Biophysiological aspects</li></ul>	Must know	C3	
	<ul style="list-style-type: none"><li>• Able to focus on provision of curative and preventive health care measures</li></ul>	Nice to Know	C3	
	<ul style="list-style-type: none"><li>• Practice the principles of Bioethics</li></ul>	Nice to Know	C3	
	<ul style="list-style-type: none"><li>• Apply strategic use of AI in health care</li></ul>	Nice to Know	C3	
	<ul style="list-style-type: none"><li>• How to Read How to read relevant research article</li></ul>	Nice to Know	C3	
Tunics of Heart & Lymphatic System	<ul style="list-style-type: none"><li>• Describe histological details of endocardium, myocardium and epicardium</li></ul>	Must know	C3	<ul style="list-style-type: none"><li>• Junqueira's Basic Histology 18th Edition chapter 11</li><li>• USMLE Q Bank Step 1 (Volume 1) 2023-2034</li></ul>
	<ul style="list-style-type: none"><li>• Tabulate differences between blood capillaries and lymphatic capillaries</li></ul>	Must know	C2	
	<ul style="list-style-type: none"><li>• Discuss biophysiological aspects of Heart &amp; Lymphatic System</li></ul>	Must know	C2	
	<ul style="list-style-type: none"><li>• To understand the Biophysiological aspects</li></ul>	Must know	C3	
	<ul style="list-style-type: none"><li>• Able to focus on provision of curative and preventive health care measures</li></ul>	Nice to Know	C3	
	<ul style="list-style-type: none"><li>• Practice the principles of Bioethics</li></ul>	Nice to Know	C3	
	<ul style="list-style-type: none"><li>• Apply strategic use of AI in health care</li></ul>	Nice to Know	C3	
	<ul style="list-style-type: none"><li>• How to Read How to read relevant research article</li></ul>	Nice to Know	C3	
Embryology				
Development of Veins	<ul style="list-style-type: none"><li>• Recall the process of vasculogenesis</li></ul>	Must know	C2	<ul style="list-style-type: none"><li>• The Developing Human 8<sup>th</sup> edition, chapter 13</li><li>• USMLE Q Bank Step 1 (Volume 1) 2023-2034</li></ul>
	<ul style="list-style-type: none"><li>• Describe venous drainage of embryo</li></ul>	Must know	C2	
	<ul style="list-style-type: none"><li>• Enlist derivatives of vitelline veins</li></ul>	Must know	C1	
	<ul style="list-style-type: none"><li>• Discuss role cardinal veins</li></ul>	Must know	C2	
	<ul style="list-style-type: none"><li>• Describe Development of inferior vena cava</li></ul>	Must know	C2	
	<ul style="list-style-type: none"><li>• Discuss related Congenital abnormalities</li></ul>	Should know	C3	
	<ul style="list-style-type: none"><li>• To understand the Biophysiological aspects</li></ul>	Must know	C3	
	<ul style="list-style-type: none"><li>• Able to focus on provision of curative and preventive health care measures</li></ul>	Nice to Know	C3	
	<ul style="list-style-type: none"><li>• Practice the principles of Bioethics</li></ul>	Nice to Know	C3	
	<ul style="list-style-type: none"><li>• Apply strategic use of AI in health care</li></ul>	Nice to Know	C3	
	<ul style="list-style-type: none"><li>• How to read relevant research article</li></ul>	Nice to Know	C3	
Aortic Arches and derivatives	<ul style="list-style-type: none"><li>• Describe development and transformation of aortic arches</li></ul>	Must know	C2	<ul style="list-style-type: none"><li>• The Developing Human 8<sup>th</sup> edition, chapter 13</li><li>• USMLE Q Bank Step 1 (Volume 1)</li></ul>
	<ul style="list-style-type: none"><li>• Enlist derivatives of 1-6th aortic arches</li></ul>	Must know	C1	
	<ul style="list-style-type: none"><li>• Discuss formation of intersegmental arteries</li></ul>	Must know	C2	
	<ul style="list-style-type: none"><li>• Describe sources and formation of coronary arteries</li></ul>	Must know	C2	
	<ul style="list-style-type: none"><li>• Discuss development of aorta Related Congenital abnormalities</li></ul>	Should know	C3	
	<ul style="list-style-type: none"><li>• To understand the Biophysiological aspects</li></ul>	Must know	C3	

	<ul style="list-style-type: none"> <li>• Able to focus on provision of curative and preventive health care measures</li> </ul>	Nice to Know	C3	2023-2034
	<ul style="list-style-type: none"> <li>• Practice the principles of Bioethics</li> </ul>	Nice to Know	C3	
	<ul style="list-style-type: none"> <li>• Apply strategic use of AI in health care</li> </ul>	Nice to Know	C3	
	<ul style="list-style-type: none"> <li>• How to read relevant research article</li> </ul>	Nice to Know	C3	
Formation, Position and Partitioning of heart tube	<ul style="list-style-type: none"> <li>• Discuss establishment of cardiogenin field</li> </ul>	Must know	C2	<ul style="list-style-type: none"> <li>• The Developing Human 8<sup>th</sup> edition, chapter 13</li> <li>• USMLE Q Bank Step 1 (Volume 1) 2023-2034</li> </ul>
	<ul style="list-style-type: none"> <li>• Describe formation and position of heart tube in developing embryo</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>• Discuss formation of cardiac loop</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>• Describe development of sinus venosus</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>• Explain importance of septum spurium</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>• Describe development of cardiac septa</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>• Discuss different methods of septum formation</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>• Explain septum formation in right atrium</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>• Describe development and differentiation of atria</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>• Discuss related congenital abnormalities</li> </ul>	Should know	C3	
	<ul style="list-style-type: none"> <li>• To understand the Biophysiological aspects</li> </ul>	Must know	C3	
	<ul style="list-style-type: none"> <li>• Able to focus on provision of curative and preventive health care measures</li> </ul>	Nice to Know	C3	
	<ul style="list-style-type: none"> <li>• Practice the principles of Bioethics</li> </ul>	Nice to Know	C3	
	<ul style="list-style-type: none"> <li>• Apply strategic use of AI in health care</li> </ul>	Nice to Know	C3	
	<ul style="list-style-type: none"> <li>• How to read relevant research article</li> </ul>	Nice to Know	C3	
Formation and partitioning of Ventricles	<ul style="list-style-type: none"> <li>• Discuss formation of septum in atrioventricular canal</li> </ul>	Must know	C2	<ul style="list-style-type: none"> <li>• The Developing Human 8<sup>th</sup> edition, chapter 13</li> <li>• USMLE Q Bank Step 1 (Volume 1) 2023-2034</li> </ul>
	<ul style="list-style-type: none"> <li>• Describe formation of atrioventricular valves</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>• Explain septum formation in truncusarteriosis &amp; conuscardis</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>• Describe septum formation in ventricles Discuss formation of semilunar valves</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>• Discuss development of conducting system of heart</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>• Discuss related Congenital abnormalities</li> </ul>	Should know	C3	
	<ul style="list-style-type: none"> <li>• To understand the Biophysiological aspects</li> </ul>	Must know	C3	
	<ul style="list-style-type: none"> <li>• Able to focus on provision of curative and preventive health care measures</li> </ul>	Nice to Know	C3	
	<ul style="list-style-type: none"> <li>• Practice the principles of Bioethics</li> </ul>	Nice to Know	C3	
	<ul style="list-style-type: none"> <li>• Apply strategic use of AI in health care</li> </ul>	Nice to Know	C3	
Fetal circulation	<ul style="list-style-type: none"> <li>• How to read relevant research article</li> </ul>	Nice to Know	C3	<ul style="list-style-type: none"> <li>• The Developing Human 8<sup>th</sup> edition, chapter 13</li> </ul>
	<ul style="list-style-type: none"> <li>• Describe fetal circulation in detail</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>• Discuss role of foramen ovale, ductus arteriosis and ductus venosis in fetal circulation and their fate</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>• Differentiate between fetal and postnatal circulation</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>• Discuss related Congenital abnormalities</li> </ul>	Should know	C3	
	<ul style="list-style-type: none"> <li>• To understand the Biophysiological aspects</li> </ul>	Must know	C3	
	<ul style="list-style-type: none"> <li>• Able to focus on provision of curative and preventive health care measures</li> </ul>	Nice to Know	C3	
	<ul style="list-style-type: none"> <li>• Practice the principles of Bioethics</li> </ul>	Nice to Know	C3	
	<ul style="list-style-type: none"> <li>• Apply strategic use of AI in health care</li> </ul>	Nice to Know	C3	

## Small Group Discussion (SGDS)

Topic	Learning Objectives At the end of lecture students should be able to	Calgary Gauge	Learning Domain	Learning Resources
<b>General Anatomy</b>				
Thoracic Wall / Thoracic Vertebra	• Define thorax	Must know	C1	<ul style="list-style-type: none"> <li>Clinically oriented anatomy edition 10</li> <li>USMLE Q Bank Step 1 (Volume 1) 2023-2034</li> </ul>
	• Discuss components and shape of thoracic cavity.	Must know	C2	
	• Discuss the applied and the related clinical anatomy	Must know	C2	
	• Classify Ribs	Must know	C1	
	• Describe ribs (side determination, features, attachments, relations, types and ossification.	Must know	C2	
	• Correlate the clinical conditions	Should know	C3	
	• To understand the Biophysiological aspects of Thoracic wall	Must know	C3	
	• Able to focus on provision of curative and preventive health care measures	Nice to Know	C3	
	• Practice the principles of Bioethics	Nice to Know	C3	
	• Apply strategic use of AI in health care	Nice to Know	C3	
	• Read relevant research article	Nice to Know	C3	
Mediastinum	• Discuss the boundaries and division of mediastinum	Must know	C2	<ul style="list-style-type: none"> <li>Clinically oriented anatomy edition 10</li> <li>USMLE Q Bank Step 1 (Volume 1) 2023-2034</li> </ul>
	• Enumerate the contents of anterior mediastinum.	Must know	C1	
	• Correlate the clinical conditions	Should know	C3	
	• To understand the Biophysiological aspects of Mediastinum	Must know	C3	
	• Able to focus on provision of curative and preventive health care measures	Must know	C3	
	• Map Arch of Aorta, Brachiocephalic artery on SP/Model	Should know	P	
	• Practice the principles of Bioethics	Nice to Know	C3	
	• Apply strategic use of AI in health care	Nice to Know	C3	
	• Read relevant research article	Nice to Know	C3	
Pericardium	• Describe the gross features of fibrous pericardium with its blood and nerve supply	Must know	C2	<ul style="list-style-type: none"> <li>Clinically oriented anatomy edition 10</li> <li>USMLE Q Bank Step 1 (Volume 1) 2023-2034</li> </ul>
	• Describe the gross features of serous pericardium with its blood and nerve supply	Must know	C2	
	• Describe transverse and oblique pericardial sinus	Must know	C2	
	• Describe the Clinical Significance of the Transverse Pericardial Sinus	Must know	C3	
	• Define Pericarditis and Pericardial Effusion	Must know	C1	
	• Correlate the clinical conditions	Should know	C3	

	<ul style="list-style-type: none"> <li>To understand the Biophysiological aspects of Pericardium</li> </ul>	Nice to Know	C3	
	<ul style="list-style-type: none"> <li>Able to focus on provision of curative and preventive health care measures</li> </ul>	Nice to Know	C3	
	<ul style="list-style-type: none"> <li>Map Pericardium on SP/Model</li> </ul>	Nice to Know	C3	
	<ul style="list-style-type: none"> <li>Practice the principles of Bioethics</li> </ul>	Nice to Know	C3	
	<ul style="list-style-type: none"> <li>Apply strategic use of AI in health care</li> </ul>	Nice to Know	C3	
	<ul style="list-style-type: none"> <li>Read relevant research article</li> </ul>	Nice to Know	C3	
Heart (External features)	<ul style="list-style-type: none"> <li>Demonstrate Position and orientation of heart.</li> </ul>	Should know	P	<ul style="list-style-type: none"> <li>Clinically oriented anatomy edition 10</li> <li>USMLE Q Bank Step 1 (Volume 1) 2023-2034</li> </ul>
	<ul style="list-style-type: none"> <li>Describe borders and surfaces of the heart.</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Demonstrate the external features of the heart</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Correlate the clinical conditions</li> </ul>	Should know	C3	
	<ul style="list-style-type: none"> <li>To understand the Biophysiological aspects of Heart(External Feature)</li> </ul>	Must know	C3	
	<ul style="list-style-type: none"> <li>Able to focus on provision of curative and preventive health care measures</li> </ul>	Nice to Know	C3	
	<ul style="list-style-type: none"> <li>Practice the principles of Bioethics</li> </ul>	Nice to Know	C3	
	<ul style="list-style-type: none"> <li>Apply strategic use of AI in health care</li> </ul>	Nice to Know	C3	
	<ul style="list-style-type: none"> <li>Read relevant research article</li> </ul>	Nice to Know	C3	
	<ul style="list-style-type: none"> <li>Use HEC digital library</li> </ul>	Nice to Know	C3	
Heart (Internal features)	<ul style="list-style-type: none"> <li>Differentiate between muscular and smooth part.</li> </ul>	Nice to Know	C2	<ul style="list-style-type: none"> <li>Clinically oriented anatomy edition 10</li> <li>USMLE Q Bank Step 1 (Volume 1) 2023-2034</li> </ul>
	<ul style="list-style-type: none"> <li>Identify the various openings, important features in inter-atrial septum.</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Identify S.A node</li> </ul>	Must know	C1	
	<ul style="list-style-type: none"> <li>Discuss internal features of left atrium, inter atrial septum, mitral valve and pulmonary veins.</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Discuss importance of modulator band.</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Identify mitral valve, interventricular septum, aortic vestibule, aortic valve.</li> </ul>	Must know	C3	
	<ul style="list-style-type: none"> <li>Correlate the clinical conditions</li> </ul>	Should know	C3	
	<ul style="list-style-type: none"> <li>To understand the Biophysiological aspects of Heart (Internal features)</li> </ul>	Must know	C3	
	<ul style="list-style-type: none"> <li>Able to focus on provision of curative and preventive health care measures</li> </ul>	Must know	C3	
	<ul style="list-style-type: none"> <li>Map Cardiac valves on SP/Model</li> </ul>	Should know	P	
	<ul style="list-style-type: none"> <li>Practice the principles of Bioethics</li> </ul>	Nice to Know	C3	
	<ul style="list-style-type: none"> <li>Apply strategic use of AI in health care</li> </ul>	Nice to Know	C3	
	<ul style="list-style-type: none"> <li>Read relevant research article</li> </ul>	Nice to Know	C3	
	<ul style="list-style-type: none"> <li>Use HEC digital library</li> </ul>	Nice to Know	C3	
Heart	<ul style="list-style-type: none"> <li>Coronary Atherosclerosis</li> </ul>	Must know	C1	<ul style="list-style-type: none"> <li>Clinically oriented anatomy edition 10</li> </ul>
	<ul style="list-style-type: none"> <li>Myocardial Infarction</li> </ul>	Must know	C1	
	<ul style="list-style-type: none"> <li>Angina Pectoris</li> </ul>	Must know	C1	

(Clinical Correlations)	• Coronary Angioplasty	Must know	C1	• USMLE Q Bank Step 1 (Volume 1) 2023-2034
	• Correlate the clinical conditions	Should know	C2	
	• To understand the Biophysiological aspects of Heart (Clinical Correlations)	Must know	C3	
	• Able to focus on provision of curative and preventive health care measures	Nice to Know	C3	
	• Practice the principles of Bioethics	Nice to Know	C3	
	• Apply strategic use of AI in health care	Nice to Know	C3	
	• Read relevant research article	Nice to Know	C3	
Vasculature of heart	• Describe the origin of coronary arteries	Must know	C2	• Clinically oriented anatomy edition 10 • USMLE Q Bank Step 1 (Volume 1) 2023-2034
	• Identify course branches and distribution of right coronary arteries and left coronary artery,	Must know	C1	
	• Discuss the concept of right and left dominance.	Must know	C2	
	• Describe the venous drainage of heart.	Must know	C2	
	• Correlate the clinical conditions	Should know	C3	
	• To understand the Biophysiological aspects of Vasculature of heart	Must know	C3	
	• Able to focus on provision of curative and preventive health care measures	Nice to Know	C3	
	• Practice the principles of Bioethics	Nice to Know	C3	
	• Apply strategic use of AI in health care	Nice to Know	C3	
	• Read relevant research article	Nice to Know	C3	
Innervation of Heart	• Describe the formation of superficial and deep cardiac plexus.	Must know	C2	• Clinically oriented anatomy edition 10 • USMLE Q Bank Step 1 (Volume 1) 2023-2034
	• Correlate the clinical conditions	Should know	C3	
	• To understand the Biophysiological aspects of Innervation of Heart	Must know	C3	
	• Able to focus on provision of curative and preventive health care measures	Nice to Know	C3	
	• Practice the principles of Bioethics	Nice to Know	C3	
	• Apply strategic use of AI in health care	Nice to Know	C3	
	• Read relevant research article	Nice to Know	C3	
Superior mediastinum (Trachea, Esophagus, Ascending Aorta)	• Enumerate the structure of superior mediastinum	Must know	C1	• Clinically oriented anatomy edition 10 • USMLE Q Bank Step 1 (Volume 1) 2023-2034
	• Describe great vessels in superior mediastinum	Must know	C2	
	• Correlate the clinical conditions	Should know	C3	
	• To understand the Biophysiological aspects of Superior Mediastinum	Must know	C3	
	• Able to focus on provision of curative and preventive health care measures	Must know	C3	
	• Map Ascending Aorta on SP/Model	Should know	P	
	• Practice the principles of Bioethics	Nice to Know	C3	

	<ul style="list-style-type: none"> <li>• Apply strategic use of AI in health care</li> </ul>	Nice to Know	C3	
	<ul style="list-style-type: none"> <li>• Read relevant research article</li> </ul>	Nice to Know	C3	
Posterior mediastinum (Boundaries and Structures)	<ul style="list-style-type: none"> <li>• Identify structures in posterior mediastinum</li> </ul>	Must know	C1	<ul style="list-style-type: none"> <li>• Clinically oriented anatomy edition 10</li> <li>• USMLE Q Bank Step 1 (Volume 1) 2023-2034</li> </ul>
	<ul style="list-style-type: none"> <li>• Describe anatomy of structure in Posterior mediastinum</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>• Identify course, relations and branches of descending aorta.</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>• Correlate the clinical conditions</li> </ul>	Should know	C2	
	<ul style="list-style-type: none"> <li>• To understand the Biophysiological aspects of Posterior mediastinum</li> </ul>	Must know	C3	
	<ul style="list-style-type: none"> <li>• Able to focus on provision of curative and preventive health care measures</li> </ul>	Must know	C3	
	<ul style="list-style-type: none"> <li>• Map Descending Thoracic Aorta on SP/Model</li> </ul>	Should know	P	
	<ul style="list-style-type: none"> <li>• Practice the principles of Bioethics</li> </ul>	Nice to Know	C3	
	<ul style="list-style-type: none"> <li>• Apply strategic use of AI in health care</li> </ul>	Nice to Know	C3	
	<ul style="list-style-type: none"> <li>• Read relevant research article</li> </ul>	Nice to Know	C3	
Posterior mediastinum (Azygos system)	<ul style="list-style-type: none"> <li>• Describe formation, course and clinical importance of azygos system of veins</li> </ul>	Must know	C3	<ul style="list-style-type: none"> <li>• Clinically oriented anatomy edition 10</li> <li>• USMLE Q Bank Step 1 (Volume 1) 2023-2034</li> </ul>
	<ul style="list-style-type: none"> <li>• Describe formation and importance of hemiazygos vein</li> </ul>	Must know	C1	
	<ul style="list-style-type: none"> <li>• Correlate the clinical conditions</li> </ul>	Should know	C3	
	<ul style="list-style-type: none"> <li>• To understand the Biophysiological aspects of Posterior mediastinum</li> </ul>	Must know	C3	
	<ul style="list-style-type: none"> <li>• Able to focus on provision of curative and preventive health care measures</li> </ul>	Nice to Know	C3	
	<ul style="list-style-type: none"> <li>• Practice the principles of Bioethics</li> </ul>	Nice to Know	C3	
	<ul style="list-style-type: none"> <li>• Apply strategic use of AI in health care</li> </ul>	Nice to Know	C3	
	<ul style="list-style-type: none"> <li>• Read relevant research article</li> </ul>	Nice to Know	C3	
Cross sectional Anatomy/ Radiology	<ul style="list-style-type: none"> <li>• Identify the surfaces present at different levels of cross sections</li> </ul>	Should know	P	<ul style="list-style-type: none"> <li>• Clinically oriented anatomy edition 10</li> <li>• USMLE Q Bank Step 1 (Volume 1) 2023-2034</li> </ul>
	<ul style="list-style-type: none"> <li>• Manubriosternal Joint/Angle of Louis</li> </ul>	Should know	P	
	<ul style="list-style-type: none"> <li>• Upper body of Sternum</li> </ul>	Should know	P	
	<ul style="list-style-type: none"> <li>• Section between T 7 , T 8 Thoracic vertebrae</li> </ul>	Should know	P	
	<ul style="list-style-type: none"> <li>• Section between T 8 , T 9 Thoracic vertebrae</li> </ul>	Should know	P	
	<ul style="list-style-type: none"> <li>• Section between T 9 , T 10 Thoracic vertebrae</li> </ul>	Should know	P	
	<ul style="list-style-type: none"> <li>• How to access HEC digital library</li> </ul>	Nice to Know	C3	
	<ul style="list-style-type: none"> <li>• Correlate the clinical conditions</li> </ul>	Should know	C2	
	<ul style="list-style-type: none"> <li>• Able to focus on provision of curative and preventive health care measures</li> </ul>	Nice to Know	C3	
	<ul style="list-style-type: none"> <li>• Practice the principles of Bioethics</li> </ul>	Nice to Know	C3	
	<ul style="list-style-type: none"> <li>• Apply strategic use of AI in health care</li> </ul>	Nice to Know	C3	
	<ul style="list-style-type: none"> <li>• Read relevant research article</li> </ul>	Nice to Know	C3	

## Histology Skill Laboratory (SKL)

Topic	Learning Objectives At The End Of Practical Students Should Be Able To	Calgary Guage	Learning Domain	Learning Resource
<b>Histology</b>				
Elastic Arteries	<ul style="list-style-type: none"> <li>identify characteristic histological features of tunica intima, tunica media and tunica adventitia of elastic arteries under microscope</li> </ul>	Should know	P1	<ul style="list-style-type: none"> <li>DiFiore's Atlas of histology 11<sup>th</sup> edition, chapter</li> </ul>
	<ul style="list-style-type: none"> <li>Illustrate histological structure of elastic artery</li> </ul>	Must know	C1	
	<ul style="list-style-type: none"> <li>Write two points of identification</li> </ul>	Must know	C1	
	<ul style="list-style-type: none"> <li>To read relevant research article</li> </ul>	Nice to Know	C3	
Muscular Arteries Small Arteries	<ul style="list-style-type: none"> <li>identify characteristic histological features of tunica intima, tunica media and tunica adventitia of muscular and small sized arteries under microscope</li> </ul>	Should know	P1	<ul style="list-style-type: none"> <li>DiFiore's Atlas of histology 11<sup>th</sup> edition, chapter</li> </ul>
	<ul style="list-style-type: none"> <li>Illustrate histological structure of Muscular and small sized artery</li> </ul>	Must know	C1	
	<ul style="list-style-type: none"> <li>Write two points of identification</li> </ul>	Must know	C1	
	<ul style="list-style-type: none"> <li>Differentiate between three types of arteries on histology slides</li> </ul>	Must know	C1	
	<ul style="list-style-type: none"> <li>To read relevant research article</li> </ul>	Nice to Know	C3	
Large Vein	<ul style="list-style-type: none"> <li>Identify characteristic histological features of tunica intima, tunica media and tunica adventitia of large vein under microscope</li> </ul>	Should know	P1	<ul style="list-style-type: none"> <li>DiFiore's Atlas of histology 11<sup>th</sup> edition, chapter</li> </ul>
	<ul style="list-style-type: none"> <li>Illustrate histological structure of large vein</li> </ul>	Must know	C1	
	<ul style="list-style-type: none"> <li>Write two points of identification</li> </ul>	Must know	C1	
	<ul style="list-style-type: none"> <li>To read relevant research article</li> </ul>	Must know	C3	
Medium and small sized vein	<ul style="list-style-type: none"> <li>Identify characteristic histological features of tunica intima, tunica media and tunica adventitia of medium and small sized vein under microscope</li> </ul>	Should know	P1	<ul style="list-style-type: none"> <li>DiFiore's Atlas of histology 11<sup>th</sup> edition, chapter</li> </ul>
	<ul style="list-style-type: none"> <li>Illustrate histological structure of medium and small sized vein</li> </ul>	Must know	C1	
	<ul style="list-style-type: none"> <li>Write two points of identification Differentiate between three types of veins on histology slides</li> </ul>	Must know	C1	
	<ul style="list-style-type: none"> <li>To read relevant research article</li> </ul>	Nice to Know	C3	
Capillaries	<ul style="list-style-type: none"> <li>Classify capillaries on the basis of histological structure and function</li> </ul>	Must know	C1	<ul style="list-style-type: none"> <li>DiFiore's Atlas of histology 11<sup>th</sup> edition, chapter</li> </ul>
	<ul style="list-style-type: none"> <li>Enlist sites of continuous, fenestrated and sinusoidal capillaries</li> </ul>	Must know	C1	
	<ul style="list-style-type: none"> <li>Elaborate characteristic histological features of tunica intima, tunica media and tunica adventitia of capillaries</li> </ul>	Must know	C1	
	<ul style="list-style-type: none"> <li>Draw and label histological structure of each type of capillaries</li> </ul>	Must know	C1	
	<ul style="list-style-type: none"> <li>Write two points of identification</li> </ul>	Must know	C1	
	<ul style="list-style-type: none"> <li>To read relevant research article</li> </ul>	Nice to Know	C3	



**TOS for LMS Assessment of Cardiovascular Module-I**  
**First Year MBBS, Batch -52 (Session 2024-25)**

1<sup>ST</sup> LMS Assessment for the first year MBBS for the CVS Module will be held on ----- from 7:00pm to 7:30pm. Detail of topics are mentioned in the table below:

S No.	Domain of Teaching Activity	Topic	No.of MCQs	Cognitive Domain		
				C1	C2	C3
1.	LGIS	<b>Embryology</b> Development of Venous System Aortic Arches and derivatives	05	1	2	2
		<b>General Anatomy</b> General Organization of CVS Classification of vessels	05	1	2	2
2.	SGD	Thoracic Wall / Thoracic Vertebra Mediastinum Pericardium / Cardiac tamponade Heart (External Features)	15	5	4	6
3.	Practical	Elastic arteries	05	1	2	2
4.	<b>Total</b>		30			

Learning Resources:

- **Embryology** :- KLM Embryology Developing Human 11<sup>th</sup> Edition
- **Histology** :-Junqueira's Basic Histology 18th Edition
- **Gross Anatomy** :- KLM clinically oriented anatomy edition 10
- **USMLE Q Bank Step 1** (Volume 1) 2023-2034
- **UWORLD Step 1** (Volume 3) 2023-2024

Dr. Ayesha Yousaf  
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Dean Basic Sciences  
Rawalpindi Medical University  
Rawalpindi

**TOS for LMS Assessment of Cardiovascular Module-I**  
**First Year MBBS, Batch -52 (Session 2024-25)**

2nd LMS Assessment for the first year MBBS for the CVS Module will be held on ----- from 7:00pm to 7:30pm. Detail of topics are mentioned in the table below:

S No.	Domain of Teaching Activity	Topic	No.of MCQs	Cognitive Domain		
				C1	C2	C3
1.	LGIS	<b>Embryology</b> Formation, Position and Partitioning of heart tube Formation and partitioning of Ventricles Fetal Circulation	05	1	2	2
		<b>Histology</b> Arteries and Veins Capillaries Tunics of heart & Lymphatic System	05	1	2	2
2.	SGD	Heart (Internal Features) Vasculature of Heart (Coarctation of Aorta) Innervation of Heart Superior Mediastinum (Trachea, Esophagus Ascending Aorta)	15	5	4	6
3.	Practical	Medium & Small Sized Arteries	05	1	2	2
4.	<b>Total</b>		30			

Learning Resources:

- **Embryology** :- KLM Embryology Developing Human 11<sup>th</sup> Edition
- **Histology** :-Junqueira's Basic Histology 18th Edition
- **Gross Anatomy** :- KLM clinically oriented anatomy edition 10
- **USMLE Q Bank Step 1** (Volume 1) 2023-2034
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# Respiration Module-1

## Learning Objectives

### Large Group Interactive Session (LGIS)

Topic	Learning Objectives At the end of lecture students should be able to	Importance	Learning Domain	Learning Resource
<b>Histology</b>				
Nasal and Olfactory Mucosa	• Explain division of the respiratory system	Should know	C2	<ul style="list-style-type: none"> <li>• Junqueira's Basic Histology 18th Edition chapter 17</li> <li>• <b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li> </ul>
	• Describe different functions of respiratory system.	Should know	C2	
	• Describe details of respiratory epithelium	Should know	C2	
	• Discuss microscopic structure of vestibule	Should know	C2	
	• Describe structural specialization in mucosa of nasal cavity proper	Should know	C2	
	• Appreciate differences between respiratory mucosa and olfactory mucosa	Should know	C1	
	• Describe the features of olfactory mucosa	Should know	C2	
	• Discuss clinical correlation	Must know	C3	
	• Understand the curative and preventive health care measures	Nice to know	C3	
	• Practice the principles of bioethics	Nice to know	C3	
	• Apply the strategic use of artificial intelligence in healthcare	Nice to know	C3	
	• Read relevant research article	Nice to know	C3	
	• Use HEC digital library	Nice to know	C3	
Larynx and Trachea	• Describe microscopic structure of paranasal sinuses	Nice to know	C2	<ul style="list-style-type: none"> <li>• Junqueira's Basic Histology 18th Edition chapter 17</li> <li>• <b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li> <li>• </li> </ul>
	• Describe general histological organization of respiratory system	Should know	C2	
	• Appreciate different histological layers of nasopharynx	Should know	C1	
	• Describe histological structure of laryngeal cartilages	Should know	C2	
	• Discuss components of tracheal wall	Should know	C2	
	• Describe the related clinicals	Must know	C3	
	• Understand the curative and preventive health care measures.	Nice to know	C3	
	• Practice the principles of bioethics	Nice to know	C3	
	• Apply the strategic use of artificial intelligence in healthcare	Nice to know	C3	
	• Read relevant research article	Nice to know	C3	
	• Use HEC digital library	Nice to know	C3	
Tracheobronchial tree	• Describe division of bronchial tree	Should know	C2	
	• Discuss microscopic structure of extra and intra pulmonary bronchi	Should know	C2	
	• Describe histological structure of bronchioles	Should know	C2	
	• Appreciate differences between bronchi and bronchioles Discuss microscopic structure of terminal bronchioles	Should know	C1	

	<ul style="list-style-type: none"><li>• Appreciate the significance of Clara cells with their functions</li></ul>	Should know	C2	
	<ul style="list-style-type: none"><li>• Discuss other cells present in terminal bronchioles</li></ul>	Should know	C2	
	<ul style="list-style-type: none"><li>• Describe the microscopic structure of respiratory bronchioles</li></ul>	Should know	C2	
	<ul style="list-style-type: none"><li>• Describe differences between respiratory and terminal bronchioles Describe characteristics of alveolar ducts</li></ul>	Should know	C2	
	<ul style="list-style-type: none"><li>• Describe related clinicals</li></ul>	Must know	C3	
	<ul style="list-style-type: none"><li>• Understand the curative and preventive health care measures.</li></ul>	Nice to know	C3	
	<ul style="list-style-type: none"><li>• Practice the principles of bioethics</li></ul>	Nice to know	C3	
	<ul style="list-style-type: none"><li>• Apply the strategic use of artificial intelligence in healthcare</li></ul>	Nice to know	C3	
	<ul style="list-style-type: none"><li>• Read relevant research article</li></ul>	Nice to know	C3	
	<ul style="list-style-type: none"><li>• Use HEC digital library</li></ul>	Nice to know	C3	
Lungs	<ul style="list-style-type: none"><li>• Describe histological structure of alveolar ducts and their functions</li></ul>	Should know	C2	<ul style="list-style-type: none"><li>• Junqueira's Basic Histology 18th Edition chapter 17</li><li>• <b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li></ul>
	<ul style="list-style-type: none"><li>• Identify type I and type II alveolar cells</li></ul>	Should know	C1	
	<ul style="list-style-type: none"><li>• Describe histological structure of interalveolar septum</li></ul>	Should know	C2	
	<ul style="list-style-type: none"><li>• Discuss role of alveolar macrophages</li></ul>	Should know	C2	
	<ul style="list-style-type: none"><li>• Describe Blood – Air barrier in detail</li></ul>	Should know	C2	
	<ul style="list-style-type: none"><li>• Discuss histology of pleura in detail</li></ul>	Should know	C2	
	<ul style="list-style-type: none"><li>• Describe related clinicals</li></ul>	Must know	C3	
	<ul style="list-style-type: none"><li>• Understand the curative and preventive health care measures.</li></ul>	Nice to know	C3	
	<ul style="list-style-type: none"><li>• Practice the principles of bioethics</li></ul>	Nice to know	C3	
	<ul style="list-style-type: none"><li>• Apply the strategic use of artificial intelligence in healthcare</li></ul>	Nice to know	C3	
	<ul style="list-style-type: none"><li>• Read relevant research article</li></ul>	Nice to know	C3	
	<ul style="list-style-type: none"><li>• Use HEC digital library</li></ul>	Nice to know	C3	
Embryology				
Nose and Paranasal sinuses	<ul style="list-style-type: none"><li>• Describe role of pharyngeal arches in development of nose</li></ul>	Should know	C2	<ul style="list-style-type: none"><li>• Developing Human 11<sup>th</sup> Edition</li><li>• USMLE Q Bank Step 1 (Volume 1) 2023-2024</li></ul>
	<ul style="list-style-type: none"><li>• Describe development of nose and paranasal sinuses</li></ul>	Should know	C2	
	<ul style="list-style-type: none"><li>• Describe the Congenital anomalies of nose and paranasal sinuses</li></ul>	Must know	C2	
	<ul style="list-style-type: none"><li>• Understand the curative and preventive health care measures.</li></ul>	Nice to know	C3	
	<ul style="list-style-type: none"><li>• Practice the principles of bioethics</li></ul>	Nice to know	C3	
	<ul style="list-style-type: none"><li>• Apply the strategic use of artificial intelligence in healthcare</li></ul>	Nice to know	C3	
	<ul style="list-style-type: none"><li>• Read relevant research article</li></ul>	Nice to know	C3	
	<ul style="list-style-type: none"><li>• Use HEC digital library</li></ul>	Nice to know	C3	
	<ul style="list-style-type: none"><li>• Describe formation of respiratory primordium</li></ul>	Should know	C2	

Larynx & Trachea	• Describe the role of pharyngeal arches in development of larynx	Should know	C2	<ul style="list-style-type: none"> <li>Developing Human 11<sup>th</sup> Edition</li> <li>USMLE Q Bank Step 1 (Volume 1) 2023-2024</li> </ul>
	• Discuss formation of laryngotracheal diverticulum	Should know	C2	
	• Describe formation of trachea esophageal septum and its importance	Should know	C2	
	• Describe Congenital defects associated with development of Trachea	Must know	C3	
	• Describe formation and division of respiratory buds	Should know	C2	
	Understand the curative and preventive health care measures.	Nice to know	C3	
	Practice the principles of bioethics	Nice to know	C3	
	Apply the strategic use of artificial intelligence in healthcare	Nice to know	C3	
	Read relevant research article	Nice to know	C3	
	Use HEC digital library	Nice to know	C3	
Lungs	• Discuss development of bronchi and bronchopulmonary segments	Should know	C2	<ul style="list-style-type: none"> <li>Developing Human 11<sup>th</sup> Edition</li> <li>USMLE Q Bank Step 1 (Volume 1) 2023-2024</li> </ul>
	• Describe development of pleural cavities	Should know	C2	
	• Discuss process of maturation of lungs	Should know	C2	
	• Enlist different stages of lung maturation	Should know	C1	
	• Explain the production and significance of Surfactant	Should know	C2	
	• Describe role of fetal breathing movements in maturation of lungs	Should know	C2	
	• Discuss postnatal development of lungs	Should know	C2	
	• Describe congenital anomalies associated with lungs	Must know	C3	
	• Understand the curative and preventive health care measures.	Nice to know	C3	
	• Practice the principles of bioethics	Nice to know	C3	
	• Apply the strategic use of artificial intelligence in healthcare	Nice to know	C3	
	• Read relevant research article	Nice to know	C3	
	• Use HEC digital library	Nice to know	C3	
Diaphragm	• Describe the development of diaphragm	Should know	C2	<ul style="list-style-type: none"> <li>Developing Human 11<sup>th</sup> Edition</li> <li>USMLE Q Bank Step 1 (Volume 1) 2023-2024</li> </ul>
	• Elaborate formation of septum transversum and its role in development of diaphragm	Should know	C2	
	• Discuss congenital defects associated with diaphragm	Should know	C3	
	• Understand the curative and preventive health care measures.	Nice to know	C3	
	• Practice the principles of bioethics	Nice to know	C3	
	• Apply the strategic use of artificial intelligence in healthcare	Nice to know	C3	
	• Read relevant research article	Nice to know	C3	
	• Use HEC digital library	Nice to know	C3	

## Small Group Discussion (SGDs)

Topic	Learning Objectives At the end of lecture students should be able to	Importance	Learning Domain	Learning Resource
<b>Gross Anatomy</b>				
Nose & Paranasal Sinuses	• Describe anatomy of nasal cavity	Must know	C2	<ul style="list-style-type: none"> <li>Clinical Oriented Anatomy by Keith L. Moore.8<sup>TH</sup> Edition. Clavicle (Chapter 3, Page143,153,154).</li> <li><a href="https://www.youtube.com/watch?v=Ykfzt-olaYs">https://www.youtube.com/watch?v=Ykfzt-olaYs</a></li> <li>USMLE Q Bank Step 1 (Volume 1) 2023-2024</li> </ul>
	• Describe the blood supply and the site of anastomosis in the nose.	Must know	C2	
	• Discuss the nerve supply of nose	Must know	C2	
	• Discuss the applied and the related clinical.	Must know	C3	
	• Define and enumerate para nasal sinuses.	Must know	C1	
	• Discuss the shape, location and their point of openings.	Must know	C2	
	• Clinical significance with surgical interventions.	Should know	C3	
	• Understand the curative and preventive health care measures.	Nice to know	C3	
	• Practice the principles of bioethics	Nice to know	C3	
	• Apply the strategic use of artificial intelligence in healthcare	Nice to know	C3	
	• Read relevant research article	Nice to know	C3	
	• Use HEC digital library	Nice to know	C3	
Larynx & Trachea	• Enumerate the components of larynx	Must know	C1	<ul style="list-style-type: none"> <li>Clinical Oriented Anatomy by Keith L. Moore.8<sup>TH</sup> Edition. Clavicle (Chapter 3, Page143,153,154).</li> <li><a href="https://www.youtube.com/watch?v=Ykfzt-olaYs">https://www.youtube.com/watch?v=Ykfzt-olaYs</a></li> <li>USMLE Q Bank Step 1 (Volume 1) 2023-2024</li> </ul>
	• Describe paired and unpaired cartilages of larynx Describe Intrinsic and extrinsic muscles of larynx (origin, insertion nerve supply and action).	Must know	C2	
	• Describe Intrinsic and extrinsic membrane (attachments and structure piercing the membranes).	Must know	C2	
	• Discuss the movements of vocal cords and their effects on the voice and respiration.	Must know	C2	
	• Discuss the blood supply and nerve supply of larynx.	Must know	C2	
	• Discuss the applied and the related clinical.	Must know	C3	
	• Describe the level of commencement of trachea, its termination and the tracheal cartilages.	Must know	C2	
	• State the level of division of trachea	Must know	C1	
	• Describe in detail the nerve supply and blood supply of trachea.	Must know	C2	
	• Discuss the applied and the related clinicals.	Must know	C3	
	• Map outline of trachea on simulated patient/model	Must know	P+A	
	• Map outline of larynx on simulated patient/model	Must know	P+A	
	• Map outline of right and left bronchus on simulated patient/model	Should know	P+A	
	• Understand the curative and preventive health care measures.	Nice to know	C3	
	• Practice the principles of bioethics	Nice to know	C3	

	<ul style="list-style-type: none"> <li>• Apply the strategic use of artificial intelligence in healthcare</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>• Read relevant research article</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>• Use HEC digital library</li> </ul>	Nice to know	C3	
Overview of Thoracic wall	<ul style="list-style-type: none"> <li>• Enumerate the bones of the thorax.</li> </ul>	Must know	C1	<ul style="list-style-type: none"> <li>• Clinical Oriented Anatomy by Keith L. Moore.8<sup>TH</sup> Edition. Clavicle (Chapter 3, Page143,153,154). <a href="https://www.youtube.com/watch?v=Ykfzt-olaYs">https://www.youtube.com/watch?v=Ykfzt-olaYs</a></li> <li>• USMLE Q Bank Step 1 (Volume 1) 2023-2024</li> </ul>
	<ul style="list-style-type: none"> <li>• Describe and classify the typical ribs (side determination, features, attachments, relations, types and ossification.</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>• Discuss the applied and the related clinical.</li> </ul>	Should know	C3	
	<ul style="list-style-type: none"> <li>• Understand the curative and preventive health care measures.</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>• Practice the principles of bioethics</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>• Apply the strategic use of artificial intelligence in healthcare</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>• Read relevant research article</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>• Use HEC digital library</li> </ul>	Nice to know	C3	
Skeleton of thoracic wall (Ribs)	<ul style="list-style-type: none"> <li>• Describe and classify the atypical ribs (side determination, features, attachments, relations, types and ossification.</li> </ul>	Must know	C2	<ul style="list-style-type: none"> <li>• Clinical Oriented Anatomy by Keith L. Moore.8<sup>TH</sup> Edition. Clavicle (Chapter 3, Page143,153,154). <a href="https://www.youtube.com/watch?v=Ykfzt-olaYs">https://www.youtube.com/watch?v=Ykfzt-olaYs</a></li> <li>• USMLE Q Bank Step 1 (Volume 1) 2023-2024</li> </ul>
	<ul style="list-style-type: none"> <li>• Differentiate between typical and atypical ribs.</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>• Discuss costal cartilages and their attachments.</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>• Discuss the applied and the related clinicals.</li> </ul>	Should know	C3	
	<ul style="list-style-type: none"> <li>• Understand the curative and preventive health care measures.</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>• Practice the principles of bioethics</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>• Apply the strategic use of artificial intelligence in healthcare</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>• Read relevant research article</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>• Use HEC digital library</li> </ul>	Nice to know	C3	
Skeleton of thoracic wall (Sternum)	<ul style="list-style-type: none"> <li>• Identify different parts of sternum.</li> </ul>	Must know	C1	<ul style="list-style-type: none"> <li>• Clinical Oriented Anatomy by Keith L. Moore.8<sup>TH</sup> Edition. Clavicle (Chapter 3, Page143,153,154). <a href="https://www.youtube.com/watch?v=Ykfzt-olaYs">https://www.youtube.com/watch?v=Ykfzt-olaYs</a></li> <li>• USMLE Q Bank Step 1 (Volume 1) 2023-2024</li> </ul>
	<ul style="list-style-type: none"> <li>• Describe the bony features, attachments ossification of sternum</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>• Discuss the related applied and clinicals.</li> </ul>	Should know	C3	
	<ul style="list-style-type: none"> <li>• Understand the curative and preventive health care measures.</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>• Practice the principles of bioethics</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>• Apply the strategic use of artificial intelligence in healthcare</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>• Read relevant research article</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>• Use HEC digital library</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>• Classify the joints of the thorax.</li> </ul>	Must know	C2	<ul style="list-style-type: none"> <li>• Clinical Oriented Anatomy by Keith</li> </ul>
	<ul style="list-style-type: none"> <li>• Discuss the type, ligaments and relations of the joints of the thorax (Manubriosternal, xiphisternal,</li> </ul>	Must know	C2	

Joints of thoracic wall	costovertebral, costotransverse, costochondral, chondrosternal, interchondral and intervertebral joints).			L. Moore.8 <sup>TH</sup> Edition. Clavicle (Chapter 3, Page143,153,154). <a href="https://www.youtube.com/watch?v=Ykfzt-olaYs">https://www.youtube.com/watch?v=Ykfzt-olaYs</a>
	• Discuss the components functions of the intervertebral disc.	Must know	C2	
	• Discuss the related applied and clinicals.	Should know	C3	
	• Understand the curative and preventive health care measures.	Nice to know	C3	
	• Practice the principles of bioethics	Nice to know	C3	
	• Apply the strategic use of artificial intelligence in healthcare	Nice to know	C3	
	• Read relevant research article	Nice to know	C3	
	• Use HEC digital library	Nice to know	C3	
Thoracic apertures	• Discuss the boundaries, shape and structure passing through superior thoracic aperture (viscera, blood vessels, nerve and muscles)	Must know	C2	<ul style="list-style-type: none"> <li>Clinical Oriented Anatomy by Keith L. Moore.8<sup>TH</sup> Edition. Clavicle (Chapter 3, Page143,153,154).  <a href="https://www.youtube.com/watch?v=Ykfzt-olaYs">https://www.youtube.com/watch?v=Ykfzt-olaYs</a></li> <li>USMLE Q Bank Step 1 (Volume 1) 2023-2024</li> </ul>
	• Describe the thoracic inlet syndrome.	Must know	C3	
	• Describe related clinicals	Must know	C3	
	• Discuss the boundaries, shape and structures passing through the inferior thoracic aperture.	Must know	C2	
	• Understand the curative and preventive health care measures.	Should know	C3	
	• Practice the principles of bioethics	Nice to know	C3	
	• Apply the strategic use of artificial intelligence in healthcare	Nice to know	C3	
	• Read relevant research article	Nice to know	C3	
Intercostal spaces / Movements of thoracic wall	• Discuss the thoracic wall.	Nice to know	C2	<ul style="list-style-type: none"> <li>Clinical Oriented Anatomy by Keith L. Moore.8<sup>TH</sup> Edition. Clavicle (Chapter 3, Page143,153,154).  <a href="https://www.youtube.com/watch?v=Ykfzt-olaYs">https://www.youtube.com/watch?v=Ykfzt-olaYs</a></li> <li>USMLE Q Bank Step 1 (Volume 1) 2023-2024</li> </ul>
	• Describe the intercostals muscles (origin, insertion, direction of fibers, nerve supply and actions.	Must know	C2	
	• Discuss in detail the formation, branches, distribution and the related clinical of the intercostals nerves.	Must know	C3	
	• Map outline of internal thoracic artery on simulated patient/model	Must know	P+A	
	• Explain the formation, course, relations, distribution and branches of the thoracic sympathetic trunk.	Must know	C2	
	• Differentiate between the typical and atypical intercostals space.	Must know	C1	
	• Compare the typical and atypical intercostals space.	Must know	C2	
	• Describe the types and axis of movements of vertebral column (flexion, extension, lateral flexion and rotation).	Must know	C2	
	• Define the respiratory movements on the basis of principles, factors and the different types (pump handle, bucket handle and piston).	Must know	C1	
	• Discuss the related physiological and pathological changes occurring (related to age movement etc).	Must know	C2	



	• Understand the curative and preventive health care measures.	Nice to know	C3	
	• Practice the principles of bioethics	Nice to know	C3	
	• Apply the strategic use of artificial intelligence in healthcare	Nice to know	C3	
	• Read relevant research article	Nice to know	C3	
	• Use HEC digital library	Nice to know	C3	
Diaphragm	• Describe the small and large openings in the diaphragm (vertebral level, location, formation, structures passing through and effects on the openings and structures by the diaphragmatic contraction).	Must know	C2	<ul style="list-style-type: none"> <li>Clinical Oriented Anatomy by Keith L. Moore.8<sup>TH</sup> Edition. Clavicle (Chapter 3, Page143,153,154). <a href="https://www.youtube.com/watch?v=Ykfzt-olaYs">https://www.youtube.com/watch?v=Ykfzt-olaYs</a></li> </ul>
	• Discuss related clinical aspects	Should know	C3	
	• Understand the curative and preventive health care measures.	Nice to know	C3	
	• Practice the principles of bioethics	Nice to know	C3	
	• Apply the strategic use of artificial intelligence in healthcare	Nice to know	C3	
	• Read relevant research article	Nice to know	C3	
	• Use HEC digital library	Nice to know	C3	
Vessels and lymphatics of thoracic wall	• Explain the arterial supply of intercostals space (anterior / posterior, parent vessels, branches, course, relations and termination).	Must know	C2	<ul style="list-style-type: none"> <li>Clinical Oriented Anatomy by Keith L. Moore.8<sup>TH</sup> Edition. Clavicle (Chapter 3, Page143,153,154). <a href="https://www.youtube.com/watch?v=Ykfzt-olaYs">https://www.youtube.com/watch?v=Ykfzt-olaYs</a></li> <li>USMLE Q Bank Step 1 (Volume 1) 2023-2024</li> </ul>
	• Differentiate between the arterial supply of typical and atypical intercostal space with the related clinicals.	Must know	C3	
	• Explain the venous drainage of the inercostal spaces (anterior / posterior, parent vessels, tributaries, course, relations and termination).	Must know	C2	
	• Differentiate between the venous drainage of typical and atypical intercostal space with the related clinicals	Must know	C3	
	• Map outline of pulmonary trunk on simulated patient/model	Must know	P+A	
	• Map the outline of thoracic duct on simulated patient/model	Should know	P+A	
	• Understand the curative and preventive health care measures.	Nice to know	C3	
	• Practice the principles of bioethics	Nice to know	C3	
	• Apply the strategic use of artificial intelligence in healthcare	Nice to know	C3	
	• Read relevant research article	Nice to know	C3	
	• Use HEC digital library	Nice to know	C3	
Innervation of Thoracic Wall	• Discuss the origin of intercostal nerves.	Must know	C2	<ul style="list-style-type: none"> <li>Clinical Oriented Anatomy by Keith L. Moore.8<sup>TH</sup> Edition. Clavicle</li> </ul>
	• Discuss course of nerves.	Must know	C2	
	• Discuss branches and related area supplied by these nerves	Must know	C2	
	• Discuss related clinical	Should know	C3	

	• Understand the curative and preventive health care measures.	Nice to know	C3	(Chapter 3, Page143,153,154). <a href="https://www.youtube.com/watch?v=Ykfzt-olaYs">https://www.youtube.com/watch?v=Ykfzt-olaYs</a> • USMLE Q Bank Step 1 (Volume 1) 2023-2024
	• Practice the principles of bioethics	Nice to know	C3	
	• Apply the strategic use of artificial intelligence in healthcare	Nice to know	C3	
	• Read relevant research article	Nice to know	C3	
	• Use HEC digital library	Nice to know	C3	
Pleura	• Discuss visceral and parietal pleura	Must know	C2	• Clinical Oriented Anatomy by Keith L. Moore.8 <sup>TH</sup> Edition. Clavicle (Chapter 3, Page143,153,154). <a href="https://www.youtube.com/watch?v=Ykfzt-olaYs">https://www.youtube.com/watch?v=Ykfzt-olaYs</a> • USMLE Q Bank Step 1 (Volume 1) 2023-2024
	• Discuss the pleural recesses and pleural cavity.	Must know	C2	
	• Describe the nerve and blood supply of pleura.	Must know	C2	
	• Discuss the applied and the related clinicals.	Must know	C3	
	• Map outline of parietal pleura on simulated patient/model	Should know	P+A	
	• Understand the curative and preventive health care measures.	Nice to know	C3	
	• Practice the principles of bioethics	Nice to know	C3	
	• Apply the strategic use of artificial intelligence in healthcare	Nice to know	C3	
	• Read relevant research article	Nice to know	C3	
	• Use HEC digital library	Nice to know	C3	
Lungs	• Identify the features of right and left lung.	Must know	C1	• Clinical Oriented Anatomy by Keith L. Moore.8 <sup>TH</sup> Edition. Clavicle (Chapter 3, Page143,153,154). <a href="https://www.youtube.com/watch?v=Ykfzt-olaYs">https://www.youtube.com/watch?v=Ykfzt-olaYs</a> • USMLE Q Bank Step 1 (Volume 1) 2023-2024
	• Discuss the bronchopulmonary segments and their clinical significance	Must know	C3	
	• Discuss and differentiate between the root of lung and the hilum of lung.	Must know	C2	
	• Describe the nerve plexuses related to the lungs.	Must know	C2	
	• Explain the blood supply of lungs	Must know	C2	
	• Discuss the applied and the related clinicals.	Must know	C3	
	• Map the outline of lungs on simulated patient/model	Should know	P+A	
	• Understand the curative and preventive health care measures.	Nice to know	C3	
	• Practice the principles of bioethics	Nice to know	C3	
	• Apply the strategic use of artificial intelligence in healthcare	Nice to know	C3	
	• Read relevant research article	Nice to know	C3	
	• Use HEC digital library	Nice to know	C3	
Surface Marking/Cross sectional Anatomy	• Identify heart borders	Must know	P1	• Clinical Oriented Anatomy by Keith L. Moore.8 <sup>TH</sup> Edition. Clavicle (Chapter 3, Page143,153,154). <a href="https://www.youtube.com/watch?v=Ykfzt-olaYs">https://www.youtube.com/watch?v=Ykfzt-olaYs</a>
	• aortic knuckle,	Must know	P1	
	• costophrenic angles,	Must know	P1	
	• cardio phrenic angles,	Must know	P1	
	• domes of diaphragm,	Must know	P1	
	• counting of ribs	Must know	P1	
	• Oesophagus	Should know	P1	
	• Understand the curative and preventive health care measures.	Nice to know	C3	

	• Practice the principles of bioethics	Nice to know	C3	
	• Apply the strategic use of artificial intelligence in healthcare	Nice to know	C3	
	• Read relevant research article	Nice to know	C3	
	• Use HEC digital library	Nice to know	C3	

## Histology Skill Laboratory (SKL)

Topic	Learning Objectives At The End Of Practical Students Should Be Able To	importance	Learning Domain	Learning Resources
<b>Histology</b>				
Olfactory /Nasal mucosa	<ul style="list-style-type: none"> <li>Identify microscopic structure of respiratory and nasal mucosa under microscope.</li> </ul>	Should know	P1	<ul style="list-style-type: none"> <li>DiFiore's Atlas of histology 11<sup>th</sup> edition, chapter 8</li> </ul>
	<ul style="list-style-type: none"> <li>Illustrate histological structures of olfactory / nasal mucosa</li> </ul>	Should know	C1	
	<ul style="list-style-type: none"> <li>Write two points of identification</li> </ul>	Should know	C1	
	<ul style="list-style-type: none"> <li>Read relevant research article</li> </ul>	Should know	C3	
	<ul style="list-style-type: none"> <li>Use HEC digital library</li> </ul>	Should know		
Epiglottis	<ul style="list-style-type: none"> <li>Identify types of cells and epithelium of epiglottis under microscope</li> </ul>	Should know	P1	<ul style="list-style-type: none"> <li>DiFiore's Atlas of histology 11<sup>th</sup> edition, chapter 8</li> </ul>
	<ul style="list-style-type: none"> <li>Illustrate histological structures of epiglottis.</li> </ul>	Should know	C1	
	<ul style="list-style-type: none"> <li>Write two points of identification</li> </ul>	Should know	C1	
	<ul style="list-style-type: none"> <li>Relevant research articles</li> </ul>	Should know	C3	
	<ul style="list-style-type: none"> <li>Use HEC digital library</li> </ul>	Should know	C3	
Trachea	<ul style="list-style-type: none"> <li>Identify microscopic structures of trachea.</li> </ul>	Should know	P1	<ul style="list-style-type: none"> <li>DiFiore's Atlas of histology 11<sup>th</sup> edition, chapter 8</li> <li>USMLE Q Bank Step 1 (Volume 1) 2023-2024</li> </ul>
	<ul style="list-style-type: none"> <li>Illustrate microscopic structure of trachea.</li> </ul>	Should know	C1	
	<ul style="list-style-type: none"> <li>Write two points of identification</li> </ul>	Should know	C1	
	<ul style="list-style-type: none"> <li>Relevant research articles</li> </ul>	Should know	C3	
	<ul style="list-style-type: none"> <li>Use HEC digital library</li> </ul>	Should know	C3	
Lungs	<ul style="list-style-type: none"> <li>Identify microscopic structure of, bronchi, terminal bronchiole, respiratory bronchiole, alveoli, alveolar duct of the respiratory tract on the basis of</li> <li>Types of epithelial cells present</li> <li>Relative amount of gland, cartilage, smooth muscles and connective tissue fibers present in wall of the tubes.</li> </ul>	Should know	P1	<ul style="list-style-type: none"> <li>DiFiore's Atlas of histology 11<sup>th</sup> edition, chapter 8</li> </ul>
	<ul style="list-style-type: none"> <li>Illustrate microscopic structure of different layers of respiratory passages.</li> </ul>	Should know	C1	
	<ul style="list-style-type: none"> <li>Write points of identification of each part</li> </ul>	Should know	C1	
	<ul style="list-style-type: none"> <li>Relevant research articles</li> </ul>	Should know	C3	
	<ul style="list-style-type: none"> <li>Use HEC digital library</li> </ul>	Should know	C3	

**TOS for LMS Assessment of Respiration Module-I**  
**First Year MBBS, Batch -52 (Session 2024-25)**

1<sup>st</sup> LMS Assessment for the first year MBBS for the Respiration Module will be held on -----(Monday)  
from 7:00pm to 7:30pm. Details of topics are mentioned in the table below:

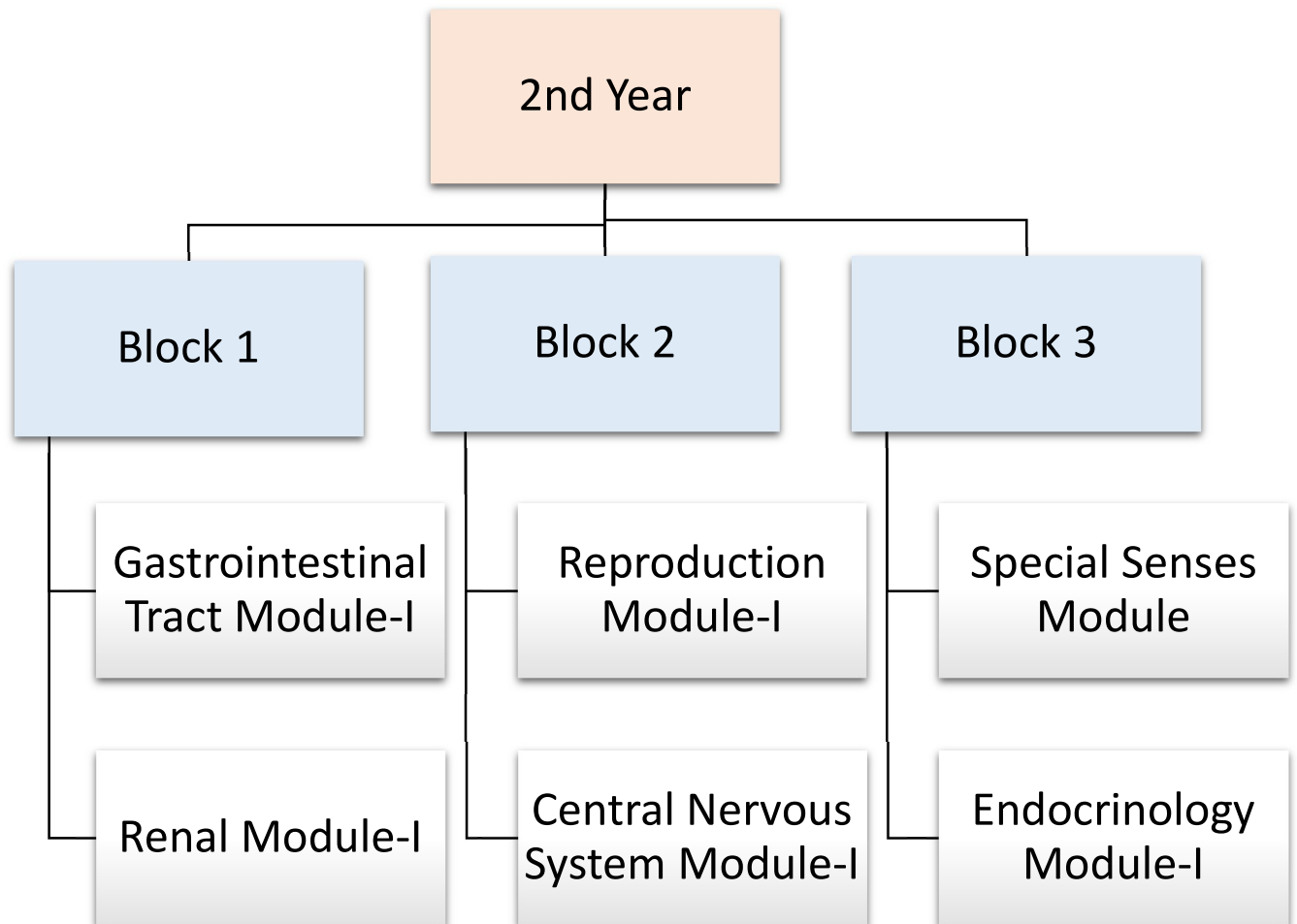
S No.	Domain of Teaching Activity	Topic	No.of MCQs	Cognitive Domain		
				C1	C2	C3
1.	LGIS	<b>Embryology</b> Development of Nose & Paranasal Sinuses Development of Trachea & Larynx	05	1	2	2
		<b>Histology</b> Histology of Respiratory System I Histology of Respiratory System II	05	1	2	2
2.	SGD/Dissection	Nose & Paranasal Sinuses Larynx & Trachea Overview of Thoracic wall Skeleton Of Thoracic Wall(Ribs) Joints Of Thoracic Wall Thoracic Apertures	15	5	4	6
3.	Practical	Olfactory nasal mucosa/Epiglottis	05	1	2	2
4.	TOTAL			30		

Learning Resources:

- **Embryology** :- KLM Embryology Developing Human 11<sup>th</sup> Edition
- **Histology** :-Junqueira's Basic Histology 18th Edition
- **Gross Anatomy** :- KLM clinically oriented anatomy edition 10
- **USMLE Q Bank Step 1** (Volume 1) 2023-2034
- **UWORLD Step 1** (Volume 3) 2023-2024

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## 2<sup>nd</sup> Year Module Breakdown



# Gastrointestinal Tract Module-I

## Learning Objectives

### Large Group Interactive Session (LGIS)

Topic	Learning Objectives At the end of lecture students should be able to	Calgary Gauge	Learning Domain	References
<b>Embryology</b>				
Tongue	• Describe the development of pharyngeal apparatus	Must know	C2	<ul style="list-style-type: none"> <li>• <b>Embryology</b> :- KLM Embryology Developing Human 11<sup>th</sup> Edition</li> <li>• <b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li> <li>• <b>UWORLD Step 1</b> (Volume 3) 2023-2024</li> </ul>
	• Enlist the sources for development of different parts of tongue.	Must know	C1	
	• Explain the development of tongue along with its nerve supply.	Must know	C2	
	• Describe the congenital anomalies associated with tongue	Should know	C2	
	• Describe the developmental basis of physiological and biochemical mechanisms involved in perception and transmission of taste sensation	Should know	C2	
	• Correlate with the clinical conditions	Should know	C3	
	• Understand curative and preventive health care measures	Nice to know	C3	
	• Practice the principles of bioethics	Nice to know	C3	
	• Apply strategic use of A.I in health care	Nice to know	C3	
	• Read relevant research articles	Nice to know	C3	
Body cavities I & II	• Use HEC digital library	Nice to know	C3	
	• Enumerate different body cavities	Must know	C1	<ul style="list-style-type: none"> <li>• <b>Embryology</b> :- KLM Embryology Developing Human 11<sup>th</sup> Edition</li> <li>• <b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li> <li>• <b>UWORLD Step 1</b> (Volume 3) 2023-2024</li> </ul>
	• Describe division of embryonic body cavity	Must know	C2	
	• Discuss formation and significance of pleuropericardial membranes and pleuroperitoneal membranes	Must know	C2	
	• Describe muscular ingrowth from Lateral body walls	Must know	C2	
	• Correlate with the clinical conditions	Should know	C3	
	• Understand curative and preventive health care measures	Nice to know	C3	
	• Practice the principles of bioethics	Nice to know	C3	
	• Apply strategic use of A.I in health care measures.	Nice to know	C3	
	• Read relevant research articles.	Nice to know	C3	
	• Use HEC digital library	Nice to know	C3	
Salivary glands	• Explain different stages of development of salivary glands	Must know	C2	<ul style="list-style-type: none"> <li>• <b>Embryology</b> :- KLM Embryology Developing Human 11<sup>th</sup> Edition</li> <li>• <b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li> <li>• <b>UWORLD Step 1</b> (Volume 3) 2023-2024</li> </ul>
	• Enlist the source for development of different type of salivary gland	Must know	C1	
	• Explain development of its nerve supply	Must know	C2	
	• Describe the congenital anomalies associated with salivary glands	Should know	C2	
	• Correlate with the clinical conditions	Should know	C3	

	• Understand curative and preventive health care measures	Nice to know	C3	<ul style="list-style-type: none"> <li>• <b>Embryology</b> :- KLM Embryology Developing Human 11<sup>th</sup> Edition</li> <li>• <b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li> </ul>
	• Practice the principles of bioethics	Nice to know	C3	
	• Apply strategic use of A.I in health care	Nice to know	C3	
	• Read relevant research articles	Nice to know	C3	
	• Use HEC digital library	Nice to know	C3	
Esophagus	• Discuss the formation of tracheoesophageal septum and its importance	Must know	C2	<ul style="list-style-type: none"> <li>• <b>Embryology</b> :- KLM Embryology Developing Human 11<sup>th</sup> Edition</li> <li>• <b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li> <li>• <b>UWORLD Step 1</b> (Volume 3) 2023-2024</li> </ul>
	• Describe salient features of esophageal development	Must know	C2	
	• Describe congenital anomalies of esophagus	Must know	C2	
	• Describe the developmental basis for the physiological and biochemical mechanisms involved in the process of swallowing	Must know	C2	
	• Correlate with the clinical conditions	Should know	C3	
	• Understand curative and preventive health care measures	Nice to know	C3	
	• Practice the principles of bioethics	Nice to know	C3	
	• Apply strategic use of A.I in health care	Nice to know	C3	
	• Read relevant research articles	Nice to know	C3	
	• Use of HEC digital library	Nice to know	C3	
Stomach	• Explain the development of stomach	Must know	C2	<ul style="list-style-type: none"> <li>• <b>Embryology</b> :- KLM Embryology Developing Human 11<sup>th</sup> Edition</li> <li>• <b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li> <li>• <b>UWORLD Step 1</b> (Volume 3) 2023-2024</li> </ul>
	• Discuss rotations and positional shifts of stomach & their effect on nerve supply and peritoneal attachments	Must know	C2	
	• Explain formation of omental bursa.	Must know	C2	
	• Describe congenital anomalies of stomach	Must know	C2	
	• Describe the developmental basis for the physiological and biochemical mechanisms involved in the process of digestion in the stomach	Must know	C2	
	• Discuss pernicious anemia	Should know		
	• Correlate with the clinical conditions	Should know	C3	
	• Understand curative and preventive health care measures	Nice to know	C3	
	• Practice the principles of bioethics	Nice to know	C3	
	• Apply strategic use of A.I in health care	Nice to know	C3	
	• Read relevant research articles	Nice to know	C3	
	• Use of HEC digital library	Nice to know	C3	
Liver	• Describe formation of hepatic diverticulum	Must know	C2	<ul style="list-style-type: none"> <li>• <b>Embryology</b> :- KLM Embryology Developing Human 11<sup>th</sup> Edition</li> <li>• <b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li> </ul>
	• Describe histogenesis of liver during intrauterine life	Must know	C2	
	• Describe formation of various ligaments of liver.	Must know	C2	
	• Discuss congenital abnormalities of liver	Should know	C3	



	<ul style="list-style-type: none"> <li>Describe the developmental basis for the physiological and biochemical mechanisms involved in the process of detoxification in the liver</li> </ul>	Should know	C2	<ul style="list-style-type: none"> <li><b>UWORLD Step 1</b> (Volume 3) 2023-2024</li> </ul>
	<ul style="list-style-type: none"> <li>Correlate with the clinical conditions</li> </ul>	Should know	C3	
	<ul style="list-style-type: none"> <li>Understand curative and preventive health care measures</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Practice the principles of bioethics</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Apply strategic use of A.I in health care</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Read relevant research articles</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Use of HEC digital library</li> </ul>	Nice to know	C3	
Gall bladder, pancreas and Biliary apparatus	<ul style="list-style-type: none"> <li>Discuss development of Gall bladder</li> </ul>	Must know	C2	<ul style="list-style-type: none"> <li><b>Embryology :-</b> KLM Embryology Developing Human 11<sup>th</sup> Edition</li> <li><b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li> <li><b>UWORLD Step 1</b> (Volume 3) 2023-2024</li> </ul>
	<ul style="list-style-type: none"> <li>Describe /congenital anomalies of gall bladder</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Discuss development and congenital anomalies of pancreas</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Describe development of extrahepatic biliary apparatus and its parts with abnormalities</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Describe the developmental basis for the physiological and biochemical mechanisms involved in the process of production of bile and pancreatic secretions</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Correlate with the clinical conditions</li> </ul>	Should know	C3	
	<ul style="list-style-type: none"> <li>Understand curative and preventive health care measures</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Practice the principles of bioethics</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Apply strategic use of A.I in health care</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Read relevant research articles</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Use of HEC digital library</li> </ul>	Nice to know	C3	
Small intestine	<ul style="list-style-type: none"> <li>Describe development of mid gut, midgut loop and rotation of midgut loop.</li> </ul>	Must know	C2	<ul style="list-style-type: none"> <li><b>Embryology :-</b> KLM Embryology Developing Human 11<sup>th</sup> Edition</li> <li><b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li> <li><b>UWORLD Step 1</b> (Volume 3) 2023-2024</li> </ul>
	<ul style="list-style-type: none"> <li>Explain physiological umbilical hernia and return of mid gut to abdomen.</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Describe fixation of intestines and transformations in peritoneal dispositions after mid gut loop return.</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Describe congenital anomalies and clinical correlation of mid gut development.</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Correlate with the clinical conditions</li> </ul>	Should know	C3	
	<ul style="list-style-type: none"> <li>Understand curative and preventive health care measures.</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Practice the principles of bioethics.</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Apply strategic use of A.I in health care</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Read relevant research articles</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Use HEC digital library</li> </ul>	Nice to know	C3	
Large intestine	<ul style="list-style-type: none"> <li>Enlist parts of large intestine.</li> </ul>	Must know	C1	<ul style="list-style-type: none"> <li><b>Embryology :-</b> KLM Embryology Developing Human 11<sup>th</sup> Edition</li> <li><b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li> </ul>
	<ul style="list-style-type: none"> <li>Describe partitioning of cloaca and cloacal membrane.</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Describe development of anal canal.</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Describe congenital anomalies of large intestine.</li> </ul>	Must know	C3	
	<ul style="list-style-type: none"> <li>Correlate with the clinical conditions</li> </ul>	Should know	C3	

	<ul style="list-style-type: none"><li>• Understand curative and preventive health care measures.</li></ul>	Nice to know	C3	<ul style="list-style-type: none"><li>• <b>UWORLD Step 1</b> (Volume 3) 2023-2024</li></ul>
	<ul style="list-style-type: none"><li>• Practice the principles of bioethics</li></ul>	Nice to know	C3	
	<ul style="list-style-type: none"><li>• Apply strategic use of A.I in health care</li></ul>	Nice to know	C3	
	<ul style="list-style-type: none"><li>• Read relevant research articles</li></ul>	Nice to know	C3	
	<ul style="list-style-type: none"><li>• Use HEC digital library</li></ul>	Nice to know	C3	
<b>Histology</b>				
Tongue	<ul style="list-style-type: none"><li>• Discuss surfaces of tongue with their histological features</li></ul>	Must know	C2	<ul style="list-style-type: none"><li>• <b>Histology :-Junqueira's Basic Histology 18th Edition USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li><li>• <b>UWORLD Step 1</b> (Volume 3) 2023-2024</li></ul>
	<ul style="list-style-type: none"><li>• Describe different papillae of tongue with their location &amp; features</li></ul>	Must know	C2	
	<ul style="list-style-type: none"><li>• Explain histological features of taste buds</li></ul>	Must know	C2	
	<ul style="list-style-type: none"><li>• Discuss leukoplakia and oral thrush</li></ul>	Should know	C2	
	<ul style="list-style-type: none"><li>• Correlate with the clinical conditions</li></ul>	Should know	C3	
	<ul style="list-style-type: none"><li>• Understand curative and preventive health care measures.</li></ul>	Nice to know	C3	
	<ul style="list-style-type: none"><li>• Practice the principles of bioethics</li></ul>	Nice to know	C3	
	<ul style="list-style-type: none"><li>• Apply strategic use of A.I in health care</li></ul>	Nice to know	C3	
	<ul style="list-style-type: none"><li>• Read relevant research articles</li></ul>	Nice to know	C3	
	<ul style="list-style-type: none"><li>• Use HEC digital library</li></ul>	Nice to know	C3	
Salivary glands	<ul style="list-style-type: none"><li>• Enlist major salivary glands</li></ul>	Must know	C1	<ul style="list-style-type: none"><li>• <b>Histology :-Junqueira's Basic Histology 18th Edition USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li><li>• <b>UWORLD Step 1</b> (Volume 3) 2023-2024</li></ul>
	<ul style="list-style-type: none"><li>• Explain histological structure of salivary glands</li></ul>	Must know	C2	
	<ul style="list-style-type: none"><li>• Discuss different cells forming parenchyma of salivary glands</li></ul>	Must know	C2	
	<ul style="list-style-type: none"><li>• Discuss histology of duct system</li></ul>	Must know	C2	
	<ul style="list-style-type: none"><li>• Differentiate between major salivary glands on histological basis</li></ul>	Must know	C2	
	<ul style="list-style-type: none"><li>• Discuss effects of viral infections on salivary glands</li></ul>	Should know	C3	
	<ul style="list-style-type: none"><li>• Correlate with the clinical conditions</li></ul>	Should know	C3	
	<ul style="list-style-type: none"><li>• Understand curative and preventive health care measures.</li></ul>	Nice to know	C3	
	<ul style="list-style-type: none"><li>• Practice the principles of bioethics</li></ul>	Nice to know	C3	
	<ul style="list-style-type: none"><li>• Apply strategic use of A.I in health care</li></ul>	Nice to know	C3	
	<ul style="list-style-type: none"><li>• Read relevant research articles</li></ul>	Nice to know	C3	
	<ul style="list-style-type: none"><li>• Use HEC digital library</li></ul>	Nice to know	C3	
General organization of GIT	<ul style="list-style-type: none"><li>• Describe the developmental basis of physiological and biochemical mechanisms involved in perception and transmission of taste sensation</li></ul>	Must know	C2	<ul style="list-style-type: none"><li>• <b>Histology :-Junqueira's Basic Histology 18th Edition USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li><li>• <b>UWORLD Step 1</b> (Volume 3) 2023-2024</li></ul>
	<ul style="list-style-type: none"><li>• Describe the histological characteristics of each layer with functional significance</li></ul>	Must know	C2	
	<ul style="list-style-type: none"><li>• Discuss associated clinical (megacolon, chagas disease)</li></ul>	Should know	C3	
	<ul style="list-style-type: none"><li>• Correlate with the clinical conditions</li></ul>	Should know	C3	

	<ul style="list-style-type: none"> <li>• Understand curative and preventive health care measures.</li> <li>• Practice the principles of bioethics</li> <li>• Apply strategic use of A.I in health care</li> <li>• Read relevant research articles</li> <li>• Use HEC digital library</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>• Practice the principles of bioethics</li> <li>• Apply strategic use of A.I in health care</li> <li>• Read relevant research articles</li> <li>• Use HEC digital library</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>• Understand curative and preventive health care measures.</li> <li>• Practice the principles of bioethics</li> <li>• Apply strategic use of A.I in health care</li> <li>• Read relevant research articles</li> <li>• Use HEC digital library</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>• Understand curative and preventive health care measures.</li> <li>• Practice the principles of bioethics</li> <li>• Apply strategic use of A.I in health care</li> <li>• Read relevant research articles</li> <li>• Use HEC digital library</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>• Understand curative and preventive health care measures.</li> <li>• Practice the principles of bioethics</li> <li>• Apply strategic use of A.I in health care</li> <li>• Read relevant research articles</li> <li>• Use HEC digital library</li> </ul>	Nice to know	C3	
Esophagus	<ul style="list-style-type: none"> <li>• Describe the histological layers of esophagus.</li> <li>• Compare between various portions of esophagus histologically.</li> <li>• Discuss GERD</li> <li>• Correlate with the clinical conditions</li> <li>• Understand curative and preventive health care measures.</li> <li>• Practice the principles of bioethics</li> <li>• Apply strategic use of A.I in health care</li> <li>• Read relevant research articles</li> <li>• Use HEC digital library</li> </ul>	Must know Must know Should know Should know Nice to know Nice to know Nice to know Nice to know Nice to know	C2 C2 C2 C3 C3 C3 C3 C3 C3	<ul style="list-style-type: none"> <li>• <b>Histology :-</b>Junqueira's Basic Histology 18th Edition <b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li> <li>• <b>UWORLD Step 1</b> (Volume 3) 2023-2024</li> </ul>
Stomach	<ul style="list-style-type: none"> <li>• Describe the histological layers of different parts of stomach</li> <li>• Describe histological differences of different parts of the gastric glands</li> <li>• Describe the structure and function of different cells of gastric glands</li> <li>• Explain clinical conditions associated with stomach histologically</li> <li>• Discuss pernicious anemia</li> <li>• Correlate with the clinical conditions</li> <li>• Understand curative and preventive health care measures.</li> <li>• Practice the principles of bioethics</li> <li>• Apply strategic use of A.I in health care</li> <li>• Read relevant research articles</li> <li>• Use HEC digital library</li> </ul>	Must know Must know Must know Must know Should know Should know Nice to know Nice to know Nice to know Nice to know Nice to know	C2 C2 C2 C2 C2 C3 C3 C3 C3 C3 C3	<ul style="list-style-type: none"> <li>• <b>Histology :-</b>Junqueira's Basic Histology 18th Edition <b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li> <li>• <b>UWORLD Step 1</b> (Volume 3) 2023-2024</li> </ul>
Liver	<ul style="list-style-type: none"> <li>• Discuss in detail the histological organization of liver</li> <li>• Explain the structure of liver lobule, portal triads&amp; hepatic acinus and its functional importance</li> <li>• Discuss histological features of hepatocytes.</li> <li>• Explain Hepatic cords, central vein, portal triad, hepatic venules, hepatic arterioles, bile duct &amp; liver sinusoids.</li> <li>• Discuss the blood supply of the liver.</li> <li>• Explain different cells of the liver tissue</li> <li>• Describe clinical aspects of liver on histological grounds</li> <li>• Discuss cirrhosis, fatty liver</li> <li>• Discuss jaundice</li> <li>• Correlate with the clinical conditions</li> </ul>	Must know Must know Must know Must know Must know Must know Must know Should know Should know Should know	C2 C2 C2 C2 C2 C2 C3 C2 C2 C3	<ul style="list-style-type: none"> <li>• <b>Histology :-</b>Junqueira's Basic Histology 18th Edition <b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li> <li>• <b>UWORLD Step 1</b> (Volume 3) 2023-2024</li> </ul>

	<ul style="list-style-type: none"> <li>• Understand curative and preventive health care measures.</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>• Practice the principles of bioethics</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>• Apply strategic use of A.I in health care</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>• Read relevant research articles</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>• Use HEC digital library</li> </ul>	Nice to know	C3	
Pancreas & Gall Bladder	<ul style="list-style-type: none"> <li>• Differentiate between exocrine and endocrine pancreas.</li> </ul>	Must know	C2	<ul style="list-style-type: none"> <li>• <b>Histology :-</b>Junqueira's Basic Histology 18th Edition <b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li> <li>• <b>UWORLD Step 1</b> (Volume 3) 2023-2024</li> </ul>
	<ul style="list-style-type: none"> <li>• Discuss the cellular structure and function of exocrine pancreatic acinus and ducts.</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>• Discuss acute &amp; chronic pancreatitis and pancreatic cancer</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>• Explain the histological features of the gallbladder.</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>• Discuss cholelithiasis</li> </ul>	Should know	C2	
	<ul style="list-style-type: none"> <li>• Correlate with the clinical conditions</li> </ul>	Should know	C2	
	<ul style="list-style-type: none"> <li>• Understand curative and preventive health care measures.</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>• Practice the principles of bioethics</li> </ul>	Nice to know	C2	
	<ul style="list-style-type: none"> <li>• Apply strategic use of A.I in health care</li> </ul>	Nice to know	C2	
	<ul style="list-style-type: none"> <li>• Read relevant research articles</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>• Use HEC digital library</li> </ul>	Nice to know	C3	
Small Intestine	<ul style="list-style-type: none"> <li>• Differentiate the histological features of duodenum, jejunum and ileum</li> </ul>	Must know	C2	<ul style="list-style-type: none"> <li>• <b>Histology :-</b>Junqueira's Basic Histology 18th Edition <b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li> <li>• <b>UWORLD Step 1</b> (Volume 3) 2023-2024</li> </ul>
	<ul style="list-style-type: none"> <li>• Discuss the location and function of villi, crypts of Lieberkühn and microvilli in different parts of small intestine</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>• Discuss different cells lining the epithelium of small intestine</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>• Discuss histological aspects of celiac disease and crohn disease</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>• Correlate with the clinical conditions</li> </ul>	Should know	C2	
	<ul style="list-style-type: none"> <li>• Understand curative and preventive health care measures.</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>• Practice the principles of bioethics</li> </ul>	Nice to know	C2	
	<ul style="list-style-type: none"> <li>• Apply strategic use of A.I in health care</li> </ul>	Nice to know	C2	
	<ul style="list-style-type: none"> <li>• Read relevant research articles</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>• Use HEC digital library</li> </ul>	Nice to know	C3	
Large Intestine I	<ul style="list-style-type: none"> <li>• Describe histological features of parts of large intestine.</li> </ul>	Must know	C2	<ul style="list-style-type: none"> <li>• <b>Histology :-</b>Junqueira's Basic Histology 18th Edition <b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li> <li>• <b>UWORLD Step 1</b> (Volume 3) 2023-2024</li> </ul>
	<ul style="list-style-type: none"> <li>• Discuss cells lining the epithelium</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>• Explain concept of tenia coli.</li> </ul>	Must know	C3	
	<ul style="list-style-type: none"> <li>• Differentiate histological structure of the large intestine from the small intestine.</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>• Correlate with the clinical conditions</li> </ul>	Should know	C2	
	<ul style="list-style-type: none"> <li>• Understand curative and preventive health care measures.</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>• Practice the principles of bioethics</li> </ul>	Nice to know	C2	
	<ul style="list-style-type: none"> <li>• Apply strategic use of A.I in health care</li> </ul>	Nice to know	C2	
	<ul style="list-style-type: none"> <li>• Read relevant research articles</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>• Use HEC digital library</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>• Describe histological features of parts of large intestine.</li> </ul>	Must know	C2	<ul style="list-style-type: none"> <li>• <b>Histology :-</b>Junqueira's Basic Histology 18th</li> </ul>

Large Intestine II	• Correlate with the clinical conditions	Should know	C2	• Edition <b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034 • <b>UWORLD Step 1</b> (Volume 3) 2023-2024
	• Understand curative and preventive health care measures.	Nice to know	C3	
	• Practice the principles of bioethics	Nice to know	C3	
	• Apply strategic use of A.I in health care	Nice to know	C3	
	• Read relevant research articles	Nice to know	C3	
	• Use HEC digital library	Nice to know	C3	

## Small Group Discussion (SGD)

Topic	Learning Objectives At the end of lecture students should be able to	Importance	Learning Domain	References
Topographical organization of Gastrointestinal tract	• Enlist components of gastrointestinal tract	Must know	C2	<ul style="list-style-type: none"> <li>• <b>Gross Anatomy :-</b> KLM clinically oriented anatomy edition 10</li> <li>• <b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li> <li>• <b>UWORLD Step 1</b> (Volume 3) 2023-2024</li> </ul>
	• Mark the planes dividing the abdomen into nine quadrants	Must know	C2	
	• Enumerate the parts of GIT lying in the various quadrants	Must know	C1	
	• Correlate with the clinical conditions	Should know	C3	
	• Understand curative and preventive health care measures.	Nice to Know	C2	
	• Practice the principles of bioethics	Nice to Know	C3	
	• Apply strategic use of A.I in health care	Nice to Know	C3	
	• Read relevant research articles	Nice to Know	C3	
	• Use HEC digital library	Nice to Know	C3	
Oral Cavity, tongue and salivary glands,	• Define the boundaries of oral cavity	Must know	C2	<ul style="list-style-type: none"> <li>• <b>Gross Anatomy :-</b> KLM clinically oriented anatomy edition 10</li> <li>• <b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li> <li>• <b>UWORLD Step 1</b> (Volume 3) 2023-2024</li> </ul>
	• Tabulate the Extrinsic and Intrinsic muscles of the tongue, anatomical location and clinical importance of tongue	Must know	C2	
	• Brief Introduction of salivary glands with their anatomical location	Must know	C2	
	• Correlate with the clinical conditions	Should know	P	
	• Understand curative and preventive health care measures.	Nice to Know	P	
	• Practice the principles of bioethics	Nice to Know	C2	
	• Apply strategic use of A.I in health care	Nice to Know	C3	
	• Read relevant research articles	Nice to Know	C3	
	• Use HEC digital library	Nice to Know	C3	
Anterolateral abdominal wall	• Explain the layers of abdominal wall.	Must know	C2	<ul style="list-style-type: none"> <li>• <b>Gross Anatomy :-</b> KLM clinically oriented anatomy edition 10</li> <li>• <b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li> <li>• <b>UWORLD Step 1</b> (Volume 3) 2023-2024</li> </ul>
	• Explain the fascia and muscles of abdominal wall.	Must know	C2	
	• Describe nerve supply of anterior and lateral abdominal wall.	Must know	C2	
	• Explain the segmental sympathetic supplies	Must know	P	
	• Correlate the Anatomical knowledge with Abdominal Hernias	Must know	P	
	• Correlate with the clinical conditions	Should know	C2	
	• Understand curative and preventive health care measures.	Nice to Know	C3	
	• Practice the principles of bioethics	Nice to Know	C3	
	• Apply strategic use of A.I in health care	Nice to Know	C3	
	• Read relevant research articles	Nice to Know	C3	
	• Use HEC digital library	Nice to Know	C3	
Rectus sheath,	• Describe Formation of rectus sheath	Must know	C2	<ul style="list-style-type: none"> <li>• <b>Gross Anatomy :-</b> KLM clinically oriented anatomy edition 10</li> <li>• <b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li> <li>• <b>UWORLD Step 1</b> (Volume 3) 2023-2024</li> </ul>
	• Enlist contents of rectus sheath	Must know	C2	
	• Correlate with the clinical conditions	Should know	C2	
	• Understand curative and preventive health care measures.	Nice to Know	C3	
	• Practice the principles of bioethics	Nice to Know	C3	
	• Apply strategic use of A.I in health care	Nice to Know	C3	
	• Read relevant research articles	Nice to Know	C3	

	<ul style="list-style-type: none"> <li>• Use HEC digital library</li> </ul>	Nice to Know	C3	
Inguinal Region & Inguinal Hernias	<ul style="list-style-type: none"> <li>• Describe Walls of Inguinal Canal</li> </ul>	Must know	C2	<ul style="list-style-type: none"> <li>• <b>Gross Anatomy :-</b> KLM clinically oriented anatomy edition 10</li> <li>• <b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li> <li>• <b>UWORLD Step 1</b> (Volume 3) 2023-2024</li> </ul>
	<ul style="list-style-type: none"> <li>• Explain Deep &amp; Superficial Inguinal Ring</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>• Enumerate Structures passing through the inguinal canal</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>• Enlist Coverings of spermatic cord</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>• Explain Mechanics of the inguinal Canal</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>• Describe boundaries of Hassalbach's triangle</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>• Define hernia</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>• Differentiate indirect from direct inguinal hernia</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>• Map outline of inguinal canal on simulated patient /model</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>• Correlate with the clinical conditions</li> </ul>	Should know	C3	
	<ul style="list-style-type: none"> <li>• Understand curative and preventive health care measures.</li> </ul>	Nice to Know	C3	
	<ul style="list-style-type: none"> <li>• Practice the principles of bioethics</li> </ul>	Nice to Know	C2	
	<ul style="list-style-type: none"> <li>• Apply strategic use of A.I in health care</li> </ul>	Nice to Know	C3	
	<ul style="list-style-type: none"> <li>• Read relevant research articles</li> </ul>	Nice to Know	C3	
	<ul style="list-style-type: none"> <li>• Use HEC digital library</li> </ul>	Nice to Know	C3	
Testes, scrotum	<ul style="list-style-type: none"> <li>• Define Anatomy of Testes and Scrotum</li> </ul>	Must know	C2	<ul style="list-style-type: none"> <li>• <b>Gross Anatomy :-</b> KLM clinically oriented anatomy edition 10</li> <li>• <b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li> <li>• <b>UWORLD Step 1</b> (Volume 3) 2023-2024</li> </ul>
	<ul style="list-style-type: none"> <li>• Differentiate between Protective Coverings of Testes &amp; scrotum</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>• Enumerate Nerve &amp; blood supply of these Structures</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>• Discuss the parts of epididymis</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>• Discuss Spermatocoele, Varicocoele,</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>• Hematocoele, hydrocoele, Testicular torsion</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>• Correlate with the clinical conditions</li> </ul>	Must know	P	
	<ul style="list-style-type: none"> <li>• Understand curative and preventive health care measures.</li> </ul>	Must know	P	
	<ul style="list-style-type: none"> <li>• Practice the principles of bioethics</li> </ul>	Should know	C2	
	<ul style="list-style-type: none"> <li>• Apply strategic use of A.I in health care</li> </ul>	Nice to Know	C3	
	<ul style="list-style-type: none"> <li>• Read relevant research articles</li> </ul>	Nice to Know	C3	
	<ul style="list-style-type: none"> <li>• Use HEC digital library</li> </ul>	Nice to Know	C3	
Peritoneum & Peritoneal Cavity	<ul style="list-style-type: none"> <li>• Define peritoneum</li> </ul>	Must know	C2	<ul style="list-style-type: none"> <li>• <b>Gross Anatomy :-</b> KLM clinically oriented anatomy edition 10</li> <li>• <b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li> <li>• <b>UWORLD Step 1</b> (Volume 3) 2023-2024</li> </ul>
	<ul style="list-style-type: none"> <li>• Explain the different folds of peritoneum.</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>• Describe greater and lesser sacs</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>• Discuss vertical tracings of peritoneum</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>• Correlate with the clinical conditions</li> </ul>	Must know	P	
	<ul style="list-style-type: none"> <li>• Understand curative and preventive health care measures.</li> </ul>	Must know	P	
	<ul style="list-style-type: none"> <li>• Practice the principles of bioethics</li> </ul>	Should know	C2	
	<ul style="list-style-type: none"> <li>• Apply strategic use of A.I in health care</li> </ul>	Nice to Know	C3	
Subdivisions of Peritoneal Cavity	<ul style="list-style-type: none"> <li>• Describe arrangement of peritoneum in transverse &amp; Longitudinal section of abdomen</li> </ul>	Must know	C2	<ul style="list-style-type: none"> <li>• <b>Gross Anatomy :-</b> KLM clinically oriented anatomy edition 10</li> <li>• <b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li> </ul>
	<ul style="list-style-type: none"> <li>• Describe arrangement of peritoneum in transverse section of male pelvis</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>• Explain arrangement of peritoneum in transverse section of female pelvis</li> </ul>	Must know	C2	

	<ul style="list-style-type: none"> <li>Explain the layers, folds, recesses and compartments of peritoneum with their clinical importance</li> </ul>	Must know	C2	<b>UWORLD Step 1</b> (Volume 3) 2023-2024
	<ul style="list-style-type: none"> <li>Describe peritonitis</li> </ul>	Must know	P	
	<ul style="list-style-type: none"> <li>Enumerate the signs and symptoms of peritonitis</li> </ul>	Must know	P	
	<ul style="list-style-type: none"> <li>Treat peritonitis by antibiotics and peritoneal dialysis</li> </ul>	Should know	C2	
	<ul style="list-style-type: none"> <li>Correlate with the clinical conditions</li> </ul>	Nice to Know	C3	
	<ul style="list-style-type: none"> <li>Understand curative and preventive health care measures.</li> </ul>	Nice to Know	C3	
	<ul style="list-style-type: none"> <li>Practice the principles of bioethics</li> </ul>	Nice to Know	C3	
	<ul style="list-style-type: none"> <li>Apply strategic use of A.I in health care</li> </ul>	Nice to Know	C3	
	<ul style="list-style-type: none"> <li>Read relevant research articles</li> </ul>	Nice to Know	C3	
Esophagus	<ul style="list-style-type: none"> <li>Discuss gross features of abdominal part of esophagus</li> </ul>	Must know	C2	<ul style="list-style-type: none"> <li><b>Gross Anatomy :-</b> KLM clinically oriented anatomy edition 10</li> <li><b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li> <li><b>UWORLD Step 1</b> (Volume 3) 2023-2024</li> </ul>
	<ul style="list-style-type: none"> <li>Enumerate their peritoneal &amp; visceral relations.</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Explain blood supply, lymphatic drainage &amp; nerve supply of esophagus</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Discuss Esophageal varices</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Correlate with the clinical conditions</li> </ul>	Must know	P	
	<ul style="list-style-type: none"> <li>Understand curative and preventive health care measures.</li> </ul>	Must know	P	
	<ul style="list-style-type: none"> <li>Practice the principles of bioethics</li> </ul>			
	<ul style="list-style-type: none"> <li>Apply strategic use of A.I in health care</li> </ul>	Nice to Know	C3	
	<ul style="list-style-type: none"> <li>Read relevant research articles</li> </ul>	Nice to Know	C3	
Stomach	<ul style="list-style-type: none"> <li>Explain gross features of stomach.</li> </ul>	Must know	C2	<ul style="list-style-type: none"> <li><b>Gross Anatomy :-</b> KLM clinically oriented anatomy edition 10</li> <li><b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li> <li><b>UWORLD Step 1</b> (Volume 3) 2023-2024</li> </ul>
	<ul style="list-style-type: none"> <li>Discuss blood supply, lymphatic drainage &amp; nerve supply of stomach</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Explain peritoneal &amp; visceral relations of stomach</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Discuss greater and lesser omentum</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Describe formation and boundaries of epiploic foramen</li> </ul>	Must know	P	
	<ul style="list-style-type: none"> <li>Map outline of stomach on simulated patient /model</li> </ul>	Must know	P	
	<ul style="list-style-type: none"> <li>Correlate with the clinical conditions</li> </ul>	Should know	C2	
	<ul style="list-style-type: none"> <li>Understand curative and preventive health care measures.</li> </ul>	Nice to Know	C3	
	<ul style="list-style-type: none"> <li>Practice the principles of bioethics</li> </ul>	Nice to Know	C3	
	<ul style="list-style-type: none"> <li>Apply strategic use of A.I in health care</li> </ul>	Nice to Know	C3	
	<ul style="list-style-type: none"> <li>Read relevant research articles</li> </ul>	Nice to Know	C3	
Small Intestine (Duodenum)	<ul style="list-style-type: none"> <li>Describe the different parts of duodenum with their anatomical differences</li> </ul>	Must know	C2	<ul style="list-style-type: none"> <li><b>Gross Anatomy :-</b> KLM clinically oriented anatomy edition 10</li> <li><b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li> <li><b>UWORLD Step 1</b> (Volume 3) 2023-2024</li> </ul>
	<ul style="list-style-type: none"> <li>Enumerate the relations of different parts of duodenum</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Discuss its clinical importance</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Map outline of duodenum on simulated patient /model</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Correlate with the clinical conditions</li> </ul>	Should know	C2	
	<ul style="list-style-type: none"> <li>Understand curative and preventive health care measures.</li> </ul>	Nice to Know	C3	
	<ul style="list-style-type: none"> <li>Practice the principles of bioethics</li> </ul>	Nice to Know	C3	



	<ul style="list-style-type: none"> <li>• Apply strategic use of A.I in health care</li> <li>• Read relevant research articles</li> </ul>	Nice to Know	C3	
		Nice to Know	C3	
Small Intestine (Jejunum and Ileum)	• Describe jejunum and ileum with their anatomical features	Must know	C2	<ul style="list-style-type: none"> <li>• <b>Gross Anatomy :-</b> KLM clinically oriented anatomy edition 10</li> <li>• <b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li> <li>• <b>UWORLD Step 1</b> (Volume 3) 2023-2024</li> </ul>
	• Discuss mesentery and its attachment	Must know	C2	
	• Discuss its clinical importance	Must know	C2	
	• Correlate with the clinical conditions	Must know	C2	
	• Understand curative and preventive health care measures.	Should know	C2	
	• Practice the principles of bioethics	Nice to Know	C3	
	• Apply strategic use of A.I in health care	Nice to Know	C3	
	• Read relevant research articles	Nice to Know	C3	
Large Intestine & Appendix	• Enlist various parts of large intestine	Must know	C2	<ul style="list-style-type: none"> <li>• <b>Gross Anatomy :-</b> KLM clinically oriented anatomy edition 10</li> <li>• <b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li> <li>• <b>UWORLD Step 1</b> (Volume 3) 2023-2024</li> </ul>
	• Demonstrate gross anatomical features of different parts of large intestine	Must know	C2	
	• Enlist intra and retroperitoneal parts of large intestine	Must know	C2	
	• Discuss gross features of caecum	Must know	C2	
	• Describe gross anatomy of appendix	Must know	C2	
	• Enlist different anatomical positions of vermiform appendix.	Must know	C2	
	• Mark McBurney's point	Should know	C2	
	• Demonstrate McBurney's incision	Nice to Know	C3	
	• Discuss common features, differential diagnosis of acute appendicitis and appendicectomy	Must know	C2	
	• Map outline of Transverse and descending colon on simulated patient /model	Must know	C2	
	• Correlate with the clinical conditions	Should know	C2	
	• Understand curative and preventive health care measures.	Nice to Know	C2	
	• Practice the principles of bioethics	Nice to Know	C3	
	• Apply strategic use of A.I in health care	Nice to Know	C3	
	• Read relevant research articles	Nice to Know	C3	
Liver, Portal hypertension, Portosystemic Anastomosis	• Describe the anatomical structure of liver.	Must know	C2	<ul style="list-style-type: none"> <li>• <b>Gross Anatomy :-</b> KLM clinically oriented anatomy edition 10</li> <li>• <b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li> <li>• <b>UWORLD Step 1</b> (Volume 3) 2023-2024</li> </ul>
	• Describe the lobes, surfaces and segments of liver	Must know	C2	
	• Describe peritoneal reflections, ligaments and bare area of liver.	Must know	C2	
	• Enumerate visceral relations of liver.	Must know	C2	
	• Enlist the structures in porta hepatis.	Must know	C2	
	• Discuss Sub hepatic abscess & Live Biopsy	Must know	C2	
	• Discuss formation, course and parts of portal vein	Must know	C2	
	• Enumerate relations and tributaries of portal vein	Must know	C3	
	• Define portal hypertension	Must know	C2	
	• Describe sites of the portocaval anastomosis and their clinical significance	Must know	C2	
	• Explain role of portocaval shunts Map outline of liver on simulated patient /model	Must know	C2	
	• Correlate with the clinical conditions	Should know	C2	
	• Understand curative and preventive health care measures.	Nice to Know	C2	

	<ul style="list-style-type: none"> <li>Practice the principles of bioethics</li> <li>Apply strategic use of A.I in health care</li> <li>Read relevant research articles</li> </ul>	Nice to Know	C3	
		Nice to Know	C3	
		Nice to Know	C3	
Gallbladder and Biliary apparatus	Describe location & size of gall bladder	Must know	C2	<ul style="list-style-type: none"> <li><b>Gross Anatomy :-</b> KLM clinically oriented anatomy edition 10</li> <li><b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li> <li><b>UWORLD Step 1</b> (Volume 3) 2023-2024</li> </ul>
	Enumerate relations of gallbladder.	Must know	C2	
	Describe clinical conditions related to gallbladder	Must know	C2	
	Enlist different components of Extra-hepatic biliary System	Must know	C2	
	Discuss the right & left hepatic ducts, common hepatic duct, cystic ducts, bile duct	Must know	C2	
	Explain differences between Intra & Extra Hepatic Biliary Systems.	Must know	C2	
	Discuss clinical related with biliary apparatus	Should know	C2	
	Discuss accessory hepatic ducts Map outline of gallbladder & Bile duct on simulated patient /model	Nice to Know	C3	
	Correlate with the clinical conditions	Should know	C2	
	Understand curative and preventive health care measures.	Nice to Know	C2	
	Practice the principles of bioethics	Nice to Know	C3	
	Apply strategic use of A.I in health care	Nice to Know	C3	
	Read relevant research articles	Nice to Know	C3	
Spleen	Discuss anatomical location and features of spleen with its blood supply, and lymphatic drainage	Must know	C2	<ul style="list-style-type: none"> <li><b>Gross Anatomy :-</b> KLM clinically oriented anatomy edition 10</li> <li><b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li> <li><b>UWORLD Step 1</b> (Volume 3) 2023-2024</li> </ul>
	Explain Rupture of spleen & its effects	Must know	C2	
	Map outline of spleen on simulated patient /model	Must know	C2	
	Correlate with the clinical conditions	Should know	C2	
	Understand curative and preventive health care measures.	Nice to Know	C2	
	Practice the principles of bioethics	Nice to Know	C2	
	Apply strategic use of A.I in health care	Nice to Know	C2	
	Read relevant research articles	Nice to Know	C3	
Pancreas	Recall location, shape, dimensions and extent of pancreas	Must know	C2	<ul style="list-style-type: none"> <li><b>Gross Anatomy :-</b> KLM clinically oriented anatomy edition 10</li> <li><b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li> <li><b>UWORLD Step 1</b> (Volume 3) 2023-2024</li> </ul>
	Discuss parts, ducts and relations of pancreas	Must know	C2	
	Describe arterial supply of pancreas	Must know	C2	
	Explain applied aspects of pancreas	Must know	C2	
	Map outline of pancreas on simulated patient/ model	Must know	C2	
	Map outline of spleen on simulated patient /model	Must know	C2	
	Correlate with the clinical conditions	Should know	C2	
	Understand curative and preventive health care measures.	Nice to Know	C2	
	Practice the principles of bioethics	Nice to Know	C2	
	Apply strategic use of A.I in health care	Nice to Know	C2	
Vasculature of GIT	Describe the position and the vertebral levels of aorta in the abdomen.	Must know	C2	

	<ul style="list-style-type: none"> <li>Enlist the main branches of the aorta and its territories.</li> <li>Explain the applied anatomy of the aorta</li> <li>Explain origin, course, branches and distribution of celiac trunk</li> <li>Map outline of abdominal aorta, coeliac trunk, superior &amp; inferior mesenteric artery on simulated patient/ model</li> <li>Correlate with the clinical conditions</li> <li>Understand curative and preventive health care measures.</li> <li>Practice the principles of bioethics</li> <li>Apply strategic use of A.I in health care</li> </ul>	Must know	C2	<ul style="list-style-type: none"> <li><b>Gross Anatomy :-</b> KLM clinically oriented anatomy edition 10</li> <li><b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li> <li><b>UWORLD Step 1</b> (Volume 3) 2023-2024</li> </ul>
Nerve supply and Lymphatic drainage of GIT	<ul style="list-style-type: none"> <li>Discuss enteric nervous system with formation of plexuses and its parasympathetic role</li> <li>Enlist the types of lymph nodes draining the abdomen</li> <li>Describe lymphatic drainage of GIT with special reference to lymphatic trunks, cisterna chyli &amp; the thoracic duct</li> <li>Correlate with the clinical conditions</li> <li>Understand curative and preventive health care measures.</li> <li>Practice the principles of bioethics</li> <li>Apply strategic use of A.I in health care</li> </ul>	Must know	C2	<ul style="list-style-type: none"> <li><b>Gross Anatomy :-</b> KLM clinically oriented anatomy edition 10</li> <li><b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li> <li><b>UWORLD Step 1</b> (Volume 3) 2023-2024</li> </ul>
Cross Sectional Anatomy	<ul style="list-style-type: none"> <li>Identify different viscera located at different levels of vertebral column; T10, T11, T12, L1, L2</li> <li>Correlate with the clinical conditions</li> <li>Understand curative and preventive health care measures.</li> <li>Practice the principles of bioethics</li> <li>Apply strategic use of A.I in health care</li> </ul>	Must know	C2	<ul style="list-style-type: none"> <li><b>Gross Anatomy :-</b> KLM clinically oriented anatomy edition 10</li> <li><b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li> <li><b>UWORLD Step 1</b> (Volume 3) 2023-2024</li> </ul>
Rectum	<ul style="list-style-type: none"> <li>Discuss the location and extent of rectum</li> <li>Describe the internal and external features of rectum</li> <li>Discuss peritoneal reflections rectouterine, rectovesical fossae and their clinical significance</li> <li>Enumerate relations of rectum</li> <li>Discuss blood supply, nerve supply, venous and lymphatic drainage</li> <li>Describe the basis and features of rectal prolapsed</li> <li>Correlate with the clinical conditions</li> <li>Understand curative and preventive health care measures.</li> <li>Practice the principles of bioethics</li> <li>Apply strategic use of A.I in health care</li> </ul>	Must know	C2	<ul style="list-style-type: none"> <li><b>Gross Anatomy :-</b> KLM clinically oriented anatomy edition 10</li> <li><b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li> <li><b>UWORLD Step 1</b> (Volume 3) 2023-2024</li> </ul>
Anal canal	<ul style="list-style-type: none"> <li>Discuss location and extent of anal canal</li> <li>Describe external and internal features of Anal Canal</li> <li>Discuss features of anal sphincters</li> </ul>	Must know	C2	<ul style="list-style-type: none"> <li><b>Gross Anatomy :-</b> KLM clinically oriented anatomy edition 10</li> </ul>

	• Tabulate relations of the anal canal with the surrounding structures	Must know	C2	<ul style="list-style-type: none"> <li>• <b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li> <li>• <b>UWORLD Step 1</b> (Volume 3) 2023-2024</li> </ul>
	• Describe the Blood supply, venous and lymphatic drainage & innervations of anal canal	Must know	C2	
	• Discuss anal continence	Must know	C2	
	• Differentiate between internal and external hemorrhoids	Must know	C2	
	• Correlate with the clinical conditions	Should know	C2	
	• Understand curative and preventive health care measures.	Nice to Know	C2	
	• Practice the principles of bioethics	Nice to Know	C2	
	• Apply strategic use of A.I in health care	Nice to Know	C2	
Radiological Anatomy	• Identify structures on a normal X-ray abdomen	Should know	C2	<ul style="list-style-type: none"> <li>• <b>Gross Anatomy :-</b> KLM clinically oriented anatomy edition 10</li> <li>• <b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li> <li>• <b>UWORLD Step 1</b> (Volume 3) 2023-2024</li> </ul>
	• Appreciate Air fluid shadows.	Should know	C2	
	• Mark anatomical landmarks.	Should know	C2	
	• Correlate with the clinical conditions	Should know	C2	
	• Understand curative and preventive health care measures.	Nice to Know	C2	
	• Practice the principles of bioethics	Nice to Know	C2	
	• Apply strategic use of A.I in health care	Nice to Know	C2	
	• Read relevant research articles	Nice to Know	C3	

## Practical/Skill Lab (SKL)

Topic	At the end of practical students should be able to	Calgary Gauge	Learning Domain	Learning o
Tongue & salivary glands	• Focus & Identify slides of tongue & glands under microscope	Must know	P	<ul style="list-style-type: none"> <li><b>Histology :-</b> Junqueira's Basic Histology 18th Edition <b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li> </ul>
	• Illustrate histological structure of tongue & salivary glands	Should know	C2	
	• Write two points of identification	Must know	C1	
Esophagus	• Focus & Identify slide of Esophagus under microscope	Must know	P	
	• Illustrate histological structure of Esophagus	Should know	C2	
	• Write two points of identification	Must know	C1	
Stomach	• Focus & Identify slide of Stomach under microscope	Must know	P	
	• Illustrate histological structure of Stomach	Should know	C2	
	• Write two points of identification	Must know	C1	
	• Differentiate mucosa of cardiac, fundus, body and pyloric end of stomach	Should know	C2	
Liver, Gall bladder & Pancreas	• Focus & Identify slides of Liver, Gall bladder & Pancreas under microscope	Must know	P	
	• Illustrate histological structures of Liver, Gallbladder & Pancreas	Should know	C2	
	• Write two points of identification	Must know	C1	
Small Intestine	• Focus & Identify slide of small intestine under microscope	Must know	P	
	• Illustrate histological structure of small intestine	Should know	C2	
	• Write two points of identification	Must know	C1	
Large Intestine	• Focus & Identify slide of Large Intestine under microscope	Must know	P	
	• Illustrate histological structure of large intestine	Should know	C2	
	• Write two points of identification	Must know	C1	

**TOS for LMS Assessment of Gastrointestinal Tract Module-I**  
**2<sup>nd</sup> Year MBBS, Batch -50 (Session 2023-24)**

LMS based Assessment for GIT Module will be held on \_\_\_\_\_, Monday from 9:00pm to 9:30 pm.  
 Detail of topics are mentioned in the table below:

S No.	Domain of Teaching and Learning Activity	Topic	No. of MCQs	Cognitive Domain		
				C1	C2	C3
5.	LGIS	<b>Embryology</b>	4	1	1	2
		Development of liver & biliary apparatus				
		Development of small intestine	4	1	1	2
		<b>Histology</b>				
		Histology of liver				
		Histology of small intestine.				
6.	SGD	Small intestine (Duodenum)	20	5	5	10
		Small intestine (Jejunum & ileum)				
		Liver -I CBL -Liver & portal Hypertension				
		Liver II (Functional Segment )				
7.	Practical	Histology of liver & Gall bladder	2	0	1	1

MCQS= 30

Learning Resources:

- **Embryology** :- KLM Embryology Developing Human 11<sup>th</sup> Edition
- **Histology** :-Junqueira's Basic Histology 18th Edition
- **Gross Anatomy** :- KLM clinically oriented anatomy edition 10
- **USMLE Q Bank Step 1** (Volume 1) 2023-2034
- **UWORLD Step 1** (Volume 3) 2023-2024

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**TOS for LMS Assessment of Gastrointestinal Tract Module-I**  
**2<sup>nd</sup> Year MBBS, BATCH -50 (SESSION 2023-24)**

LMS based Assessment for GIT Module will be held on 23-03-2024, Monday from 9:00pm to 9:30 pm.

Detail of topics are mentioned in the table below:

S No.	Domain of Teaching and Learning Activity	Topic	No. of MCQs	Cognitive Domain		
				C1	C2	C3
1.	LGIS	<b>Embryology</b> Development of large intestine	4	1	1	2
		<b>Histology</b> Histology of Large intestine	4	1	1	2
2.	SGD	Spleen Pancreas Large intestine Vasculature of GIT (Blood supply ,Venous drainage	20	5	5	10
3.	Practical	Histology of Small intestine	2	0	1	1

MCQS= 30 MCQS

Learning Resources:

- **Embryology** :- KLM Embryology Developing Human 11<sup>th</sup> Edition
- **Histology** :-Junqueira's Basic Histology 18th Edition
- **Gross Anatomy** :- KLM clinically oriented anatomy edition 10
- **USMLE Q Bank Step 1** (Volume 1) 2023-2034
- **UWORLD Step 1** (Volume 3) 2023-2024

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# Renal Module-I

## Learning Objectives

### Large Group Interactive Session (LGIS)

Topic	Learning Objectives At The End of The Lecture the Student Should Be Able To	Calgary gauge	Learning Domain	References
<b>EMBRYOLOGY</b>				
Kidney & ureter	<ul style="list-style-type: none"> <li>Enumerate the derivatives of intermediate mesoderm, urogenital and gonadal ridges.</li> </ul>	Should know	C1	1.KLM Embryology Developing Human 11 <sup>th</sup> Edition 2. USMLE Q Bank Step 1 (Volume 1) 2023-2034 3.UWORLD Step 1 (Volume 3) 2023-2024
	<ul style="list-style-type: none"> <li>Describe the stages of development of human kidneys</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Describe the molecular regulation of kidney development.</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Correlate positional changes of the kidney with its blood supply</li> </ul>	Must know	C1	
	<ul style="list-style-type: none"> <li>Describe different stages of development of ureter from ureteric bud and metanephrogenicblastema.</li> </ul>	Must know	C1	
	<ul style="list-style-type: none"> <li>Understand the bio-physiological aspects of kidney &amp; ureter development</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Enumerate Congenital anomalies of kidney and ureter.</li> </ul>	Should know	C3	
	<ul style="list-style-type: none"> <li>Correlate the clinical conditions(polycystic kidney, horseshoe shaped kidney)</li> </ul>	Should know	C3	
	<ul style="list-style-type: none"> <li>Understand the preventive and curative health care measures</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Practice the principles of Bioethics</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Apply strategic use of AI in health care</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Read relevant research article</li> </ul>	Nice to know	C3	
Urinary bladder & urethra	<ul style="list-style-type: none"> <li>Describe the development of urinary bladder</li> </ul>	Must know	C2	1.Embryology: - KLM Embryology Developing Human 11 <sup>th</sup> Edition 2. USMLE Q Bank Step 1 (Volume 1) 2023-2034 3. UWORLD Step 1 (Volume 3) 2023-2024
	<ul style="list-style-type: none"> <li>Understand the bio-physiological aspects of bladder development</li> </ul>	Should know	C2	
	<ul style="list-style-type: none"> <li>Discuss the parts of urethra in males and females</li> </ul>	Must know	C2	



	<ul style="list-style-type: none"> <li>Describe development of male urethra</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Describe development of female urethra</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Discuss the anomalies related to urethra &amp; bladder development</li> </ul>	Should know	C3	
<b>HISTOLOGY</b>				
kidney I (Cortex & Medulla)	<ul style="list-style-type: none"> <li>Discuss the structural components of the nephron.</li> </ul>	Must know	C2	1.Histology:-Junqueira's Basic Histology 18th Edition 2.USMLE Q Bank Step 1 (Volume 1) 2023-2034 3.UWORLD Step 1 (Volume 3) 2023-2024
	<ul style="list-style-type: none"> <li>Discuss the histology of filtration barrier.</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Understand the bio-physiological aspects of filtration</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Distinguish the key microscopic components of the renal cortex and medulla.</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Differentiate the histological appearance of proximal tubule, loop of Henley, distal convoluted tubule and collecting duct.</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Correlate the clinical conditions</li> </ul>	Should know	C3	
	<ul style="list-style-type: none"> <li>Understand the preventive and curative health care measures</li> </ul>	Nice to know	C2	
	<ul style="list-style-type: none"> <li>Practice the principles of Bioethics</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Apply strategic use of AI in health care</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Read relevant research article</li> </ul>	Nice to know	C3	
kidney II (Collecting System)	<ul style="list-style-type: none"> <li>Enumerate the component cells of the juxta glomerular apparatus.</li> </ul>	Must know	C1	1.Histology :-Junqueira's Basic Histology 18th Edition 2.USMLE Q Bank Step 1 (Volume 1) 2023-2034 3.UWORLD Step 1 (Volume 3) 2023-2024
	<ul style="list-style-type: none"> <li>Discuss the component cells of the juxtaglomerular apparatus</li> </ul>	Must know	C1	
	<ul style="list-style-type: none"> <li>Discuss the effect of diabetes &amp; hypertension on glomerular filtration rate</li> </ul>	Should know	C2	
	<ul style="list-style-type: none"> <li>Understand the effect of hypertension on renin angiotensin release</li> </ul>	Should know	C3	
Urinary Bladder	<ul style="list-style-type: none"> <li>Describe histological characteristics of urinary bladder.</li> </ul>	Must know	C2	1.Histology :-Junqueira's Basic Histology 18th Edition 2.USMLE Q Bank Step 1 (Volume 1) 2023-2034 3.UWORLD Step 1 (Volume 3) 2023-2024
	<ul style="list-style-type: none"> <li>Explain the concept of umbrella cells and Uroplakins.</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Explain the concept of internalization</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Understand the bio-physiological effects of urinary epithelium</li> </ul>	Should know	C2	

	<ul style="list-style-type: none"> <li>Compare the histological changes of empty and full bladder.</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Correlate the clinical conditions</li> </ul>	Should know	C2	
	<ul style="list-style-type: none"> <li>Understand the preventive and curative health care measures</li> </ul>	Nice to Know	C2	
	<ul style="list-style-type: none"> <li>Practice the principles of Bioethics</li> </ul>	Nice to Know	C2	
	<ul style="list-style-type: none"> <li>Apply strategic use of AI in health care</li> </ul>	Nice to Know	C2	
	<ul style="list-style-type: none"> <li>Read relevant research article</li> </ul>	Nice to Know	C2	
Ureter & urethra	<ul style="list-style-type: none"> <li>Describe the microscopic structure of ureter</li> </ul>	Must know	C2	1. Histology :-Junqueira's Basic Histology 18th Edition 2.USMLE Q Bank Step 1 (Volume 1) 2023-2034 3.UWORLD Step 1 (Volume 3) 2023-2024
	<ul style="list-style-type: none"> <li>Discuss the histological features of urethra</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Distinguish the transition in epithelium in different types of urethra</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Correlate the clinical conditions</li> </ul>	Should know	C3	
	<ul style="list-style-type: none"> <li>Understand the preventive and curative health care measures</li> </ul>	Nice to Know	C3	
	<ul style="list-style-type: none"> <li>Practice the principles of Bioethics</li> </ul>	Nice to Know	C3	
	<ul style="list-style-type: none"> <li>Apply strategic use of AI in health care</li> </ul>	Nice to Know	C3	
	<ul style="list-style-type: none"> <li>Read relevant research article</li> </ul>	Nice to Know	C3	

## Anatomy Small Group Discussion (SGDs)

Topics	Learning Objectives Students Should Be Able To	Calgary gauge	Learning Domain	References
Posterior abdominal wall I (Fascia & Muscles)	<ul style="list-style-type: none"> <li>Describe the fascia of posterior abdominal wall</li> </ul>	Must know	C2	<ul style="list-style-type: none"> <li>❖ Clinical Oriented Anatomy by Keith L. Moore.8<sup>TH</sup> Edition. (Chapter 5, Page 537-541).</li> <li>❖ <a href="https://www.youtube.com/watch?v=5ZnlcZrC-XY">https://www.youtube.com/watch?v=5ZnlcZrC-XY</a></li> </ul>
	<ul style="list-style-type: none"> <li>Tabulate the muscles of posterior abdominal wall with reference to, origin, insertion, nerve supply and action.</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Describe the relations of Psoas major muscle.</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Correlate the clinical conditions (Psoas Abscess)</li> </ul>	Should know	C3	
	<ul style="list-style-type: none"> <li>Understand the preventive and curative health care measures</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Map Root of mesentery on SP/Model</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Practice the principles of Bioethics</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Apply Strategic use of AI in health care</li> </ul>	Nice to know	C3	
Posterior abdominal wall II (Nerves)	<ul style="list-style-type: none"> <li>Trace the nerves present on posterior abdominal wall</li> </ul>	Must know	C2	<ul style="list-style-type: none"> <li>❖ Clinical Oriented Anatomy by Keith L. Moore.8<sup>TH</sup> Edition. (Chapter 5, Page 527-532).</li> <li>❖ <a href="https://www.youtube.com/watch?v=5ZnlcZrC-XY">https://www.youtube.com/watch?v=5ZnlcZrC-XY</a></li> </ul>
	<ul style="list-style-type: none"> <li>DI Discuss the formation of nerves</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Discuss the formation of lumbosacral plexus</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Correlate the clinical conditions (Lumbar symphathectomy)</li> </ul>	Should know	C3	
	<ul style="list-style-type: none"> <li>Understand the preventive and curative health care measures</li> </ul>	Nice to Know	C3	
	<ul style="list-style-type: none"> <li>Practice the principles of Bioethics</li> </ul>	Nice to Know	C3	
	<ul style="list-style-type: none"> <li>Apply Strategic use of AI in health care</li> </ul>	Nice to Know	C3	
	<ul style="list-style-type: none"> <li>Read relevant research articles</li> </ul>	Nice to Know	C3	
Posterior abdominal wall III (vessels) & Lumbar Vertebrae	<ul style="list-style-type: none"> <li>Enlist branches of Abdominal Aorta.</li> </ul>	Must know	C1	<ul style="list-style-type: none"> <li>❖ Clinical Oriented Anatomy by Keith L. Moore.8<sup>TH</sup> Edition. (Chapter 5, Page 541-544, 544-547).</li> <li><a href="https://www.youtube.com/watch?v=pSDYIPzNg4s">https://www.youtube.com/watch?v=pSDYIPzNg4s</a></li> </ul>
	<ul style="list-style-type: none"> <li>Describe the tributaries of inferior vena cava.</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Describe lymph nodes of posterior abdominal wall with emphasis on lumbar and intestinal trunk.</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Differentiate between typical and atypical lumbar vertebrae.</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Identify different parts of lumbar vertebrae.</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Discuss the attachments of lumbar vertebrae.</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Correlate the clinical conditions (abdominal aortic aneurysm)</li> </ul>	Should know	C3	
	<ul style="list-style-type: none"> <li>Understand the preventive and curative health care measures</li> </ul>	Should know	C3	

	<ul style="list-style-type: none"> <li>Map Abdominal aorta, Inferior Vena cava &amp; Portal vein on simulated patient (SP)/Model</li> </ul>	Should know	C3	
	<ul style="list-style-type: none"> <li>Practice the principles of Bioethics</li> </ul>	Nice to Know	C3	
	<ul style="list-style-type: none"> <li>Apply Strategic use of AI in health care</li> </ul>	Nice to Know	C3	
	<ul style="list-style-type: none"> <li>Read relevant research articles</li> </ul>	Nice to Know	C3	
Kidney	<ul style="list-style-type: none"> <li>Discuss the site and extent of kidneys</li> </ul>	Must know	C2	❖ Clinical Oriented Anatomy by Keith L. Moore.8TH Edition. (Chapter 5, Page 515-517,523-524).  <a href="https://www.youtube.com/watch?v=ZVIVquVYGDo">https://www.youtube.com/watch?v=ZVIVquVYGDo</a>
	<ul style="list-style-type: none"> <li>Differentiate right from left kidney</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Understand the bio-physiological aspects of kidney</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Discuss the renal capsule and its role in support of kidney.</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Describe the structure of cortex and medulla</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Describe peritoneal relationship of both kidneys.</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Describe visceral relationship of both kidneys</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Explain blood supply of both kidneys with emphasis on renal artery.</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Discuss the venous drainage of both kidneys.</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Correlate the clinical conditions (perinephric abscess, nephroptosis, renal cysts and renal colic)</li> </ul>	Should know	C3	
	<ul style="list-style-type: none"> <li>Understand the preventive and curative health care measures</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Map the kidney on the back (Morrison's Parrallogram) on SP/Model</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Practice the principles of Bioethics</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Apply Strategic use of AI in health care</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Read relevant research articles</li> </ul>	Nice to know	C3	
Ureter	<ul style="list-style-type: none"> <li>Discuss extent and course of ureter in abdomen and pelvis in males and females</li> </ul>	Must know	C2	❖ Clinical Oriented Anatomy by Keith L. Moore.8TH Edition. (Chapter 5, Page 517-518,525).  <a href="https://www.youtube.com/watch?v=1P0utMb5nkg">https://www.youtube.com/watch?v=1P0utMb5nkg</a>
	<ul style="list-style-type: none"> <li>Explain peritoneal reflections of ureter in both sexes.</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Describe relations of ureter.</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Describe the arterial, venous and lymphatic drainage of ureter.</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Correlate the clinical conditions (ureteric colic)</li> </ul>	Should know	C3	

	<ul style="list-style-type: none"> <li>Understand the preventive and curative health care measures</li> </ul>	Should know	C3	
	<ul style="list-style-type: none"> <li>Map Ureter from the back on SP/Model</li> </ul>	Nice to Know	C3	
	<ul style="list-style-type: none"> <li>Practice the principles of Bioethics</li> </ul>	Nice to Know	C3	
	<ul style="list-style-type: none"> <li>Apply Strategic use of AI in health care</li> </ul>	Nice to Know	C3	
	<ul style="list-style-type: none"> <li>Read relevant research articles</li> </ul>	Nice to Know	C3	
Supra renal gland	<ul style="list-style-type: none"> <li>Describe the location &amp; visceral relations of right and left supra renal glands</li> </ul>	Must know	C2	❖ Clinical Oriented Anatomy by Keith L. Moore.8TH Edition. (Chapter 5, Page 519-523).  <a href="https://www.youtube.com/watch?v=iE8nCvLaGM4">https://www.youtube.com/watch?v=iE8nCvLaGM4</a>
	<ul style="list-style-type: none"> <li>Understand the bio-physiological aspects of kidney</li> </ul>	Should know	C2	
	<ul style="list-style-type: none"> <li>Discuss supra renal cortex and medulla</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Discuss vessels and nerves of supra renal gland</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Correlate the clinical conditions</li> </ul>	Should know	C3	
	<ul style="list-style-type: none"> <li>Understand the preventive and curative health care measure</li> </ul>	Nice to Know	C3	
	<ul style="list-style-type: none"> <li>Practice the principles of Bioethics</li> </ul>	Nice to Know	C3	
	<ul style="list-style-type: none"> <li>Apply Strategic use of AI in health care</li> </ul>	Nice to Know	C3	
	<ul style="list-style-type: none"> <li>Read relevant research articles</li> </ul>	Nice to Know	C3	
Urinary bladder	<ul style="list-style-type: none"> <li>Interpret size and extent of urinary bladder in different ages and states.</li> </ul>	Must know	C2	❖ Clinical Oriented Anatomy by Keith L. Moore.8TH Edition. (Chapter 6, Page 591-595).  <a href="https://www.youtube.com/watch?v=tGouMldaQgU">https://www.youtube.com/watch?v=tGouMldaQgU</a>
	<ul style="list-style-type: none"> <li>Discuss the peritoneal and visceral relationships of urinary bladder(bladder bed)</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Understand the bio-physiological aspects of kidney</li> </ul>	Should know	C2	
	<ul style="list-style-type: none"> <li>Discuss the trigone of urinary bladder</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Elaborate nerve supply of urinary bladder</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Correlate the clinical conditions (urinary incontinence, suprapubiccystotomy and atonic bladder</li> </ul>	Should know	C3	
	<ul style="list-style-type: none"> <li>Understand the preventive and curative health care measures</li> </ul>	Nice to Know	C3	

	<ul style="list-style-type: none"> <li>Practice the principles of Bioethics</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Apply Strategic use of AI in health care</li> </ul>	Must know	C3	
	<ul style="list-style-type: none"> <li>Read relevant research article</li> </ul>	Nice to know	C3	
Urethra	<ul style="list-style-type: none"> <li>Describe different parts of male and female urethra.</li> </ul>	Must know	C2	❖ Clinical Oriented Anatomy by Keith L. Moore.8TH Edition. (Chapter 6, Page 595). <a href="https://www.youtube.com/watch?v=EQUdo392wg0">https://www.youtube.com/watch?v=EQUdo392wg0</a>
	<ul style="list-style-type: none"> <li>Explain blood supply, innervation and lymphatics of urethra in both sexes</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Discuss the clinically significant differences between male and female urethra</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Correlate the clinical conditions</li> </ul>	Should know	C3	
	<ul style="list-style-type: none"> <li>Understand the preventive and curative health care measures</li> </ul>	Should know	C3	
	<ul style="list-style-type: none"> <li>Practice the principles of Bioethics</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Apply Strategic use of AI in health care</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Read relevant research articles</li> </ul>	Nice to know	C3	
Cross Sectional Anatomy	<ul style="list-style-type: none"> <li>Identify different structures at different levels of vertebral column; L2, L3, L4, L5</li> </ul>	Must know	C2	<ul style="list-style-type: none"> <li>Gross Anatomy :- KLM clinically oriented anatomy edition 10</li> <li>USMLE Q Bank Step 1 (Volume 1) 2023-2034</li> <li>UWORLD Step 1 (Volume 3) 2023-2024</li> </ul>
	<ul style="list-style-type: none"> <li>Correlate the clinical conditions at the given level</li> </ul>	Should know	C3	
	<ul style="list-style-type: none"> <li>Understand the preventive and curative health care measures</li> </ul>	Nice to Know	C3	
	<ul style="list-style-type: none"> <li>Practice the principles of Bioethics</li> </ul>	Nice to Know	C3	
	<ul style="list-style-type: none"> <li>Apply Strategic use of AI in health care</li> </ul>	Nice to Know	C3	
	<ul style="list-style-type: none"> <li>Read relevant research articles</li> </ul>	Nice to Know	C3	
Radiology	<ul style="list-style-type: none"> <li>Identify structures on a normal X-ray abdomen</li> </ul>	Must know	C2	<ul style="list-style-type: none"> <li>Gross Anatomy :- KLM clinically oriented anatomy edition 10</li> <li>USMLE Q Bank Step 1 (Volume 1) 2023-2034</li> <li>UWORLD Step 1 (Volume 3) 2023-2024</li> </ul>
	<ul style="list-style-type: none"> <li>Identify kidney and its associated structures on contrast studies.</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Appreciate filling defects.</li> </ul>	Should know	C2	
	<ul style="list-style-type: none"> <li>Mark anatomical landmarks.</li> </ul>	Must know	C2	

	<ul style="list-style-type: none"> <li>Understand the preventive and curative health care measures</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Practice the principles of Bioethics</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Apply Strategic use of AI in health care</li> </ul>	Nice to Know	C3	
	<ul style="list-style-type: none"> <li>Read relevant research articles</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Correlate the clinical conditions</li> </ul>	Nice to know	C3	

### Practical's Skill Laboratory (SKL)

Topic	At The End Of Practical Students Should Be Able To	Calgary gauge	Learning Domain	Teaching Strategy	Assessment Tool
Kidney	<ul style="list-style-type: none"><li>Identify the histological slide of kidney.</li></ul>	Must know	C3	1.Histology Junqueira's Basic Histology 18th Edition	
	<ul style="list-style-type: none"><li>Illustrate the histological structure of Kidney.</li></ul>	Should know	C2	2.USMLE Q Bank Step 1 (Volume 1) 2023-2034	
	<ul style="list-style-type: none"><li>Enlist two points of identification.</li></ul>	Must know	C2	3.UWORLD Step 1 (Volume 3) 2023-2024	
	<ul style="list-style-type: none"><li>Focus the slide</li></ul>	Should know	C3		
Ureter	<ul style="list-style-type: none"><li>Identify the histological slide of ureter</li></ul>	Must know	C2	1.Histology Junqueira's Basic Histology 18th Edition	
	<ul style="list-style-type: none"><li>Illustrate the histological structure of ureter.</li></ul>	Should know	C2	2.USMLE Q Bank Step 1 (Volume 1) 2023-2034	
	<ul style="list-style-type: none"><li>Enlist two points of identification.</li></ul>	Must know	C1	3.UWORLD Step 1 (Volume 3) 2023-2024	
	<ul style="list-style-type: none"><li>Focus the slide</li></ul>	Should know	C3		
Urinary bladder	<ul style="list-style-type: none"><li>Identify the histological slide of urinary bladder.</li></ul>	Must know	P	Histology: -Junqueira's Basic Histology 18th Edition 2.USMLE Q Bank Step 1 (Volume 1) 2023-2034 3.UWORLD Step 1 (Volume 3) 2023-2024	



**TOS for LMS Assessment of Renal Module-I**  
**2<sup>nd</sup> Year MBBS, Batch -50 (Session 2023-24)**

LMS based Assessment for Renal Module will be held on Monday from 9 pm to 9:30 pm Detail of topics are mentioned in the table below:

S No.	Domain of Teaching and Learning Activity	Topic	No. of MCQs	Cognitive Domain		
				C1	C2	C3
1.	LGIS	<b>Embryology</b> Development of Kidney & Ureter Development of Urinary bladder & Urethra	04	1	1	2
		<b>Histology</b> Kidney	04	1	1	2
2.	SGD	Fascia, Muscles & Nerves of Posterior abdominal wall Vessels of Posterior abdominal wall, Lumbar Vertebrae Kidney Ureter Urinary Bladder Suprarenal gland & Urethra	14	4	4	6
3.	Practical	Histology of Kidney Histology of Ureter	02	0	1	1
4.	SDL	Posterior abdominal wall Ureter	02	0	1	1
5.	CBL	Kidney failure Ureteric Stone	02	0	1	1
6.	PBL	Road side accident leading to Acute Kidney injury (Failure)	02	0	1	1

MCQS= 30 MCQS

Learning Resources:

- **Embryology** :- KLM Embryology Developing Human 11<sup>th</sup> Edition
- **Histology** :-Junqueira's Basic Histology 18th Edition
- **Gross Anatomy** :- KLM clinically oriented anatomy edition 10
- **USMLE Q Bank Step 1** (Volume 1) 2023-2034
- **UWORLD Step 1** (Volume 3) 2023-2024

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**TOS for LMS Assessment of Renal Module-I**  
**2<sup>nd</sup> Year MBBS, Batch -50 (Session 2023-24)**

LMS based Assessment for Renal Module will be held on Monday from 9 pm to 9:30 pm.  
 Detail of topics are mentioned in the table below:

S No.	Domain of Teaching and Learning Activity	Topic	No. of MCQs	Cognitive Domain		
				C1	C2	C3
1.	LGIS	<b>Histology</b> Ureter, Urinary bladder & Urethra	08	2	2	4
2.	SGD	Suprarenal gland & Urethra Radiographs Lumbar Region Cross-sectional Anatomy	14	4	4	6
3.	Practical	Histology of Urinary Bladder	02	0	1	1
4.	SDL	Suprarenal gland & Urethra	02	0	1	1
5.	PBL	Renal colic	04	1	1	2

MCQS= 30 MCQS

Learning Resources:

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# Reproduction Module-I

## Learning Objectives

### Large Group Interactive Session (LGIS)

Topic	Learning Objectives At the end of lecture students should be able to	Importance	Learning Domain	References
<b>Embryology</b>				
Testis	<ul style="list-style-type: none"> <li>Recall the time of early sex differentiation and genes involved in it.</li> </ul>	Must know	C2	<ul style="list-style-type: none"> <li><b>Embryology</b> :- KLM Embryology Developing Human 11<sup>th</sup> Edition</li> <li><b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li> <li><b>UWORLD Step 1</b> (Volume 3) 2023-2024</li> </ul>
	<ul style="list-style-type: none"> <li>Explain the development of male gonads and formation of testis.</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Describe the descent of testis.</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Describe the concepts of chromosomal determination of sex, primordial germ cells and indifferent gonads.</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Describe histogenesis of interstitial cells of leydig and seminiferous tubules.</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Correlate with the clinical conditions</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Understand curative and preventive health care measures.</li> </ul>	Must know	C3	
	<ul style="list-style-type: none"> <li>Practice the principles of bioethics.</li> </ul>	Should know	P	
	<ul style="list-style-type: none"> <li>Apply strategic use of A.I in health care.</li> </ul>	Should know	C3	
Male external genitalia	<ul style="list-style-type: none"> <li>Read relevant research article</li> </ul>	Nice to know	C3	<ul style="list-style-type: none"> <li><b>Embryology</b> :- KLM Embryology Developing Human 11<sup>th</sup> Edition</li> <li><b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li> <li><b>UWORLD Step 1</b> (Volume 3) 2023-2024</li> </ul>
	<ul style="list-style-type: none"> <li>Explain the different stages and further development of external genitalia.</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Discuss the related clinical like ambiguous genitalia, Androgen insensitivity syndrome, hypospadias, epispadias, bifid penis, micropenis</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Understand curative and preventive health care measures.</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Practice the principles of bioethics.</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Apply strategic use of A.I in health care.</li> </ul>	Must know	C2	
Uterus and uterine tubes	<ul style="list-style-type: none"> <li>Read relevant research article.</li> </ul>	Must know	C2	<ul style="list-style-type: none"> <li><b>Embryology</b> :- KLM Embryology Developing Human 11<sup>th</sup> Edition</li> <li><b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li> <li><b>UWORLD Step 1</b> (Volume 3) 2023-2024</li> </ul>
	<ul style="list-style-type: none"> <li>Describe role of paramesonephric ducts, uterovaginal primordium in development of uterine tubes</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Discuss the role of paramesonephric ducts and uterovaginal primordium in the development of uterus.</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Discuss the related clinicals like bicornuate uterus, unicornuate uterus, double uterus.</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Understand curative and preventive health care measures.</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Practice the principles of bioethics.</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Apply strategic use of A.I in health care.</li> </ul>	Must know	C2	
Ovary	<ul style="list-style-type: none"> <li>Read relevant research article</li> </ul>	Must know	C3	<ul style="list-style-type: none"> <li><b>Embryology</b> :- KLM Embryology</li> </ul>
	<ul style="list-style-type: none"> <li>Recall the process of oogenesis in female.</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Explain the different steps involved in early oogenesis.</li> </ul>	Must know	C2	

	<ul style="list-style-type: none"><li>Explain the ovarian and menstrual cycle and phases.</li></ul>	Must know	C2	<ul style="list-style-type: none"><li>Developing Human 11<sup>th</sup> Edition</li><li><b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li><li><b>UWORLD Step 1</b> (Volume 3) 2023-2024</li></ul>
	<ul style="list-style-type: none"><li>Explain the hormonal changes occurring during reproductive cycle.</li></ul>	Must know	C2	
	<ul style="list-style-type: none"><li>Describe role of paramesonephric ducts, uterovaginal primordium in development of ovary</li></ul>	Must know	C2	
	<ul style="list-style-type: none"><li>Describe the descent of ovaries.</li></ul>	Must know	C2	
	<ul style="list-style-type: none"><li>Understand curative and preventive health care measures</li></ul>	Must know	C3	
	<ul style="list-style-type: none"><li>Practice the principles of bioethics.</li></ul>	Should know	P	
	<ul style="list-style-type: none"><li>Apply strategic use of A.I in health care</li></ul>	Should know	C3	
	<ul style="list-style-type: none"><li>Read a relevant research article</li></ul>	Nice to know	C3	
Vagina	<ul style="list-style-type: none"><li>Discuss the developmental stages of vagina and female external genitalia</li></ul>	Must know	C2	<ul style="list-style-type: none"><li><b>Embryology</b> :- KLM Embryology Developing Human 11<sup>th</sup> Edition</li><li><b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li><li><b>UWORLD Step 1</b> (Volume 3) 2023-2024</li></ul>
	<ul style="list-style-type: none"><li>Enlist different congenital anomalies of female reproductive system.</li></ul>	Must know	C3	
	<ul style="list-style-type: none"><li>Describe different syndromes and gene defects associated with congenital anomalies</li></ul>	Should know	C3	
	<ul style="list-style-type: none"><li>Understand curative and preventive health care measures</li></ul>	Nice to know	C3	
	<ul style="list-style-type: none"><li>Practice the principles of bioethics.</li></ul>	Nice to know	C3	
	<ul style="list-style-type: none"><li>Apply strategic use of A.I in health care</li></ul>	Nice to know	C3	
	<ul style="list-style-type: none"><li>Read a relevant research article</li></ul>	Must know	C3	
<b>Histology</b>				
Testis	<ul style="list-style-type: none"><li>Discuss germ cells at different steps of spermatogenesis in the seminiferous tubule.</li></ul>	Must know	C2	<ul style="list-style-type: none"><li><b>Histology</b> :-Junqueira's Basic Histology 18th Edition</li><li><b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li><li><b>UWORLD Step 1</b> (Volume 3) 2023-2024</li></ul>
	<ul style="list-style-type: none"><li>Describe histology of Sertoli cells and Leydig cells.</li></ul>			
	<ul style="list-style-type: none"><li>Explain their roles in the production of sperm and regulation of the male reproductive system.</li></ul>	Must know	C2	
	<ul style="list-style-type: none"><li>Understand the bio-physiological aspects of spermatogenesis.</li></ul>	Must know	C2	
	<ul style="list-style-type: none"><li>Discuss the related clinicals like orchitis, male infertility, testicular cancers, and cryptorchidism.</li></ul>	Must know	C2	
	<ul style="list-style-type: none"><li>Correlate with the clinical conditions</li></ul>	Must know	C2	
	<ul style="list-style-type: none"><li>Understand curative and preventive health care measures.</li></ul>	Should know	C3	
	<ul style="list-style-type: none"><li>Practice the principles of bioethics.</li></ul>	Nice to know	P	
	<ul style="list-style-type: none"><li>Apply strategic use of A.I in health care.</li></ul>	Nice to know	C3	
	<ul style="list-style-type: none"><li>Read relevant research article</li></ul>	Nice to know	C3	
Male genital ducts	<ul style="list-style-type: none"><li>Describe the histological organization of epididymis, ductus deferens and ejaculatory ducts.</li></ul>	Must know	C2	<ul style="list-style-type: none"><li><b>Histology</b> :-Junqueira's Basic Histology 18th Edition</li></ul>

	<ul style="list-style-type: none"> <li>Describe the epithelium and microscopic features of epididymis, ductus deferens and ejaculatory ducts.</li> </ul>	Must know	C3	<ul style="list-style-type: none"> <li><b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li> <li><b>UWORLD Step 1</b> (Volume 3) 2023-2024</li> </ul>
	<ul style="list-style-type: none"> <li>Understand the bio-physiological aspects of epithelium of ducts.</li> </ul>	Should know	P	
	<ul style="list-style-type: none"> <li>Discuss the related clinical like vasectomy, epididymitis.</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Understand curative and preventive health care measures.</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Practice the principles of bioethics.</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Apply strategic use of A.I in health care.</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Read relevant research article</li> </ul>	Nice to know	C3	
Accessory male reproductive glands	<ul style="list-style-type: none"> <li>Describe the histological organization of prostate gland, seminal vesicles and bulbourethral glands.</li> </ul>	Must know	C2	<ul style="list-style-type: none"> <li><b>Histology :-Junqueira's Basic Histology 18th Edition</b></li> <li><b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li> <li><b>UWORLD Step 1</b> (Volume 3) 2023-2024</li> </ul>
	<ul style="list-style-type: none"> <li>Describe microscopic features of these glands.</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Discuss the related clinical like prostatitis.</li> </ul>	Should know	C3	
	<ul style="list-style-type: none"> <li>Understand curative and preventive health care measures.</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Practice the principles of bioethics.</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Apply strategic use of A.I in health care.</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Read relevant research article</li> </ul>	Nice to know	C3	
Uterus and uterine tubes	<ul style="list-style-type: none"> <li>Recollect knowledge of histological features of endometrium in various phases</li> </ul>	Must know	C2	<ul style="list-style-type: none"> <li><b>Histology :-Junqueira's Basic Histology 18th Edition</b></li> <li><b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li> <li><b>UWORLD Step 1</b> (Volume 3) 2023-2024</li> </ul>
	<ul style="list-style-type: none"> <li>Discuss microanatomy of layers of uterus</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Describe parts of uterine tubes</li> </ul>	Should know	C3	
	<ul style="list-style-type: none"> <li>Explain microscopic features of all parts of uterine tubes.</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Discuss the related clinicals like endometriosis, tubal ligation, salpingitis, and cervical cancers</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Understand curative and preventive health care measures.</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Practice the principles of bioethics.</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Apply strategic use of A.I in health care.</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Read relevant research article.</li> </ul>	Nice to know	C3	
Ovary and Vagina	<ul style="list-style-type: none"> <li>Discuss the stages of follicular growth (primordial, primary, secondary, tertiary), as</li> </ul>	Must know	C2	

	well as the changes that occur in the follicular wall.			<ul style="list-style-type: none"> <li>• <b>Histology :-</b>Junqueira's Basic Histology 18th Edition</li> <li>• <b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li> <li>• <b>UWORLD Step 1</b> (Volume 3) 2023-2024</li> </ul>
	• Discuss ovarian cycle and menstrual cycle.	Must know	C2	
	• Describe the histological features of corpus luteum of mensuration and pregnancy.	Must know	C2	
	• Discuss the related clinicals like PCOS, Follicular cyst, hemorrhagic cyst.	Should know	C3	
	• Discuss histological structure of vagina.	Must know	C2	
	• Understand the bio-physiological aspects of vaginal epithelial cells.	Nice to know	C3	
	• Discuss the related clinical like vaginitis, squamous cell carcinoma of vagina.	Nice to know	C3	
	• Understand curative and preventive health care measures.	Nice to know	C3	
	• Practice the principles of bioethics.	Nice to know	C3	
	• Apply strategic use of A.I in health care.	Nice to know	C3	
	• Read relevant research article	Nice to know	C3	

## Small Group Discussion (SGD)

Topic	Learning Objectives At the end of lecture students should be able to	Importance	Learning Domain	References
<b>Embryology</b>				
Sacrum	• Identify the bone	Must know	C2	<ul style="list-style-type: none"> <li>Clinical Oriented Anatomy by Keith L. Moore. 6TH Edition. (Chapter 4, Page 451).</li> <li><a href="https://www.youtube.com/watch?v=93c9nlxbMUw">https://www.youtube.com/watch?v=93c9nlxbMUw</a></li> <li><a href="https://www.youtube.com/watch?v=PuOE-PI1eps">https://www.youtube.com/watch?v=PuOE-PI1eps</a></li> </ul>
	• Place the bone in anatomical position	Must know	C2	
	• Demonstrate anatomical features on bone	Must know	C2	
	• Discuss attachments and relations on bone	Must know	C2	
	• Discuss important clinical anatomy of bone	Should know	C2	
	• Understand curative and preventive health care measures	Nice to Know	C3	
	• Practice the principles of bioethics.	Nice to Know	C3	
	• Apply strategic use of A.I in health care	Nice to Know	C3	
	• Read a relevant research article	Nice to Know	C3	
Bony pelvis	• Identify type of pelvis	Must know	C2	<ul style="list-style-type: none"> <li>Clinical Oriented Anatomy by Keith L. Moore. 6TH Edition. (Chapter 4, Page 451).</li> <li><a href="https://www.youtube.com/watch?v=93c9nlxbMUw">https://www.youtube.com/watch?v=93c9nlxbMUw</a></li> <li><a href="https://www.youtube.com/watch?v=PuOE-PI1eps">https://www.youtube.com/watch?v=PuOE-PI1eps</a></li> </ul>
	• Place pelvis in anatomical position	Must know	C2	
	• Demonstrate different diameters of each type	Must know	C2	
	• Differentiate bony features of each type	Must know	C2	
	• Clinical importance of each type	Should know	C2	
	• Understand curative and preventive health care measures	Nice to Know	C3	
	• Practice the principles of bioethics.	Nice to Know	C3	
	• Apply strategic use of A.I in health care	Nice to Know	C3	
	• Read a relevant research article	Nice to Know	C3	
Pelvic Peritoneum and its contents	• Identify viscera present in pelvis	Must know	C2	<ul style="list-style-type: none"> <li>Clinical Oriented Anatomy by Keith L. Moore. 6TH Edition. (Chapter 3, Page 338-349).</li> <li><a href="https://www.youtube.com/watch?v=F2-5tX_CMIQ">https://www.youtube.com/watch?v=F2-5tX_CMIQ</a></li> <li><a href="https://www.youtube.com/watch?v=3Z0XBCyXb3Y">https://www.youtube.com/watch?v=3Z0XBCyXb3Y</a></li> </ul>
	• Demonstrate peritoneal reflections on pelvic viscera	Must know	C2	
	• Discuss pouches formed by peritoneum	Must know	C2	
	• Discuss clinical anatomy of pelvic peritoneum and pelvic viscera	Must know	C3	
	• Understand curative and preventive health care measures	Should know	C2	
	• Practice the principles of bioethics.	Nice to Know	C3	
	• Apply strategic use of A.I in health care	Nice to Know	C3	
	• Read a relevant research article	Nice to Know	C3	
Pelvic diaphragm	• Identify the muscles forming pelvic diaphragm	Must know	C2	
	• Demonstrate the attachments and nerve supply of muscles of pelvic diaphragm	Must know	C2	<ul style="list-style-type: none"> <li>Clinical Oriented Anatomy by Keith L. Moore. 6TH Edition. (Chapter 3, Page 338-349).</li> </ul>
	• Locate the structures piercing the pelvic diaphragm	Must know	C2	

	<ul style="list-style-type: none"> <li>Discuss clinical anatomy of pelvic diaphragm</li> </ul>	Must know	C3	<ul style="list-style-type: none"> <li><a href="https://www.youtube.com/watch?v=P3BBAMWm2Eo">https://www.youtube.com/watch?v=P3BBAMWm2Eo</a></li> <li><a href="https://www.youtube.com/watch?v=3Z0XBCyXb3Y">https://www.youtube.com/watch?v=3Z0XBCyXb3Y</a></li> </ul>
	<ul style="list-style-type: none"> <li>Understand curative and preventive health care measures</li> </ul>	Should know	C2	
	<ul style="list-style-type: none"> <li>Practice the principles of bioethics.</li> </ul>	Nice to Know	C3	
	<ul style="list-style-type: none"> <li>Apply strategic use of A.I in health care</li> </ul>	Nice to Know	C3	
	<ul style="list-style-type: none"> <li>Read a relevant research article</li> </ul>	Nice to Know	C3	
Male external genitalia	<ul style="list-style-type: none"> <li>Identify the anatomical structures of external genitalia</li> </ul>	Must know	C2	<ul style="list-style-type: none"> <li>Clinical Oriented Anatomy by Keith L. Moore.6TH Edition. (Chapter 3, Page 338-349).</li> <li><a href="https://www.youtube.com/watch?v=P3BBAMWm2Eo">https://www.youtube.com/watch?v=P3BBAMWm2Eo</a></li> <li><a href="https://www.youtube.com/watch?v=3Z0XBCyXb3Y">https://www.youtube.com/watch?v=3Z0XBCyXb3Y</a></li> </ul>
	<ul style="list-style-type: none"> <li>Demonstrate anatomical position of testis</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Enlist layers of scrotum with its neurovasculature</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Discuss clinical anatomy of scrotum</li> </ul>	Must know	C3	
	<ul style="list-style-type: none"> <li>Understand curative and preventive health care measures</li> </ul>	Should know	C2	
	<ul style="list-style-type: none"> <li>Practice the principles of bioethics.</li> </ul>	Nice to Know	C3	
	<ul style="list-style-type: none"> <li>Apply strategic use of A.I in health care</li> </ul>	Nice to Know	C3	
	<ul style="list-style-type: none"> <li>Read a relevant research article</li> </ul>	Nice to Know	C3	
Testis	<ul style="list-style-type: none"> <li>Identify the structure</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Demonstrate anatomical position of testis</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Discuss layers and structure of testis</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Discuss important clinical anatomy related to testis</li> </ul>	Must know	C3	
	<ul style="list-style-type: none"> <li>Understand curative and preventive health care measures</li> </ul>	Should know	C2	
	<ul style="list-style-type: none"> <li>Practice the principles of bioethics.</li> </ul>	Nice to Know	C3	
	<ul style="list-style-type: none"> <li>Apply strategic use of A.I in health care</li> </ul>	Nice to Know	C3	
	<ul style="list-style-type: none"> <li>Read a relevant research article</li> </ul>	Nice to Know	C3	
Male genital ducts	<ul style="list-style-type: none"> <li>Describe the anatomical position of vas deferens, seminal vesicles, ejaculatory ducts on model</li> </ul>	Must know	C2	<ul style="list-style-type: none"> <li>Clinical Oriented Anatomy by Keith L. Moore.6TH Edition. (Chapter 3, Page 376 - 381).</li> <li><a href="https://www.youtube.com/watch?v=N66sAZH1VA8">https://www.youtube.com/watch?v=N66sAZH1VA8</a></li> <li><a href="https://www.youtube.com/watch?v=ai7MjQvenKs">https://www.youtube.com/watch?v=ai7MjQvenKs</a></li> </ul>
	<ul style="list-style-type: none"> <li>Discuss the anatomical relations of vas deferens, seminal vesicles, ejaculatory ducts</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Discuss clinical anatomy</li> </ul>	Must know	C3	
	<ul style="list-style-type: none"> <li>Understand curative and preventive health care measures</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Practice the principles of bioethics.</li> </ul>	Should know	C2	
	<ul style="list-style-type: none"> <li>Apply strategic use of A.I in health care</li> </ul>	Nice to Know	C3	
	<ul style="list-style-type: none"> <li>Read a relevant research article</li> </ul>	Nice to Know	C3	
Prostate	<ul style="list-style-type: none"> <li>Identify the position of prostate</li> </ul>	Must know	C2	<ul style="list-style-type: none"> <li>Clinical Oriented Anatomy by Keith L. Moore.6TH Edition.</li> </ul>
	<ul style="list-style-type: none"> <li>Demonstrate the anatomical features and relations of prostate</li> </ul>	Must know	C2	



	• Discuss clinical anatomy	Must know	C3	(Chapter 3, Page 376 - 381). • <a href="https://www.youtube.com/watch?v=93Ayq248u_8">https://www.youtube.com/watch?v=93Ayq248u_8</a> <a href="https://www.youtube.com/watch?v=ai7MjQvenKs">https://www.youtube.com/watch?v=ai7MjQvenKs</a>
	• Understand curative and preventive health care measures	Must know	C2	
	• Practice the principles of bioethics.	Should know	C2	
	• Apply strategic use of A.I in health care	Nice to Know	C3	
	• Read a relevant research article	Nice to Know	C3	
Ovaries	• Identify the site of ovarian fossa	Must know	C2	• Clinical Oriented Anatomy by Keith L. Moore.6TH Edition. (Chapter 3, Page 376 - 381). • <a href="https://www.youtube.com/watch?v=93Ayq248u_8">https://www.youtube.com/watch?v=93Ayq248u_8</a> <a href="https://www.youtube.com/watch?v=ai7MjQvenKs">https://www.youtube.com/watch?v=ai7MjQvenKs</a>
	• Discuss anatomical relations of ovary	Must know	C2	
	• Discuss neurovasculature and hormonal effects of ovaries	Must know	C2	
	• Discuss important clinical anatomy of ovary	Must know	C3	
	• Understand curative and preventive health care measures	Should know	C2	
	• Practice the principles of bioethics.	Nice to Know	C3	
	• Apply strategic use of A.I in health care	Nice to Know	C3	
	• Read a relevant research article	Nice to Know	C3	
Fallopian tubes, Uterus	• Identify the location of structures in pelvis	Must know	C2	• Clinical Oriented Anatomy by Keith L. Moore.6TH Edition. (Chapter 3, Page 376 - 381). • <a href="https://www.youtube.com/watch?v=93Ayq248u_8">https://www.youtube.com/watch?v=93Ayq248u_8</a> <a href="https://www.youtube.com/watch?v=ai7MjQvenKs">https://www.youtube.com/watch?v=ai7MjQvenKs</a>
	• Demonstrate anatomical relations of these structures	Must know	C2	
	• Discuss normal positions of uterus with its ligaments	Must know	C2	
	• Discuss its neurovasculature	Must know	C2	
	• Discuss important clinical anatomy of fallopian tubes, uterus and uterine tube	Should know	C2	
	• Understand curative and preventive health care measures	Nice to Know	C3	
	• Practice the principles of bioethics.	Nice to Know	C3	
	• Apply strategic use of A.I in health care	Nice to Know	C3	
	• Read a relevant research article	Nice to Know	C3	
Cervix	• Discuss anatomy of cervix	Must know	C2	• Clinical Oriented Anatomy by Keith L. Moore.6TH Edition. (Chapter 3, Page 376 - 381). • <a href="https://www.youtube.com/watch?v=93Ayq248u_8">https://www.youtube.com/watch?v=93Ayq248u_8</a> <a href="https://www.youtube.com/watch?v=ai7MjQvenKs">https://www.youtube.com/watch?v=ai7MjQvenKs</a>
	• Describe anatomical relations of cervix	Must know	C2	
	• Describe its neurovasculature	Must know	C2	
	• Understand curative and preventive health care measures	Must know	C3	
	• Practice the principles of bioethics.	Should know	C2	
	• Apply strategic use of A.I in health care	Nice to Know	C3	
	• Read a relevant research article	Nice to Know	C3	
Ischio-anal fossa	• Discuss the dimensions, boundaries and recesses	Must know	C2	• Clinical Oriented Anatomy by Keith L. Moore.6TH Edition.
	• Describe the contents of Ischio anal fossa	Must know	C2	
	• Describe pudendal canal and its contents	Must know	C2	

	<ul style="list-style-type: none"> <li>Discuss important clinical anatomy of structures</li> </ul>	Must know	C2	(Chapter 3, Page 376 - 381). <ul style="list-style-type: none"> <li><a href="https://www.youtube.com/watch?v=93Ayq248u_8">https://www.youtube.com/watch?v=93Ayq248u_8</a></li> <li><a href="https://www.youtube.com/watch?v=ai7MjQvenKs">https://www.youtube.com/watch?v=ai7MjQvenKs</a></li> </ul>
	<ul style="list-style-type: none"> <li>Understand curative and preventive health care measures</li> </ul>	Should know	C2	
	<ul style="list-style-type: none"> <li>Practice the principles of bioethics.</li> </ul>	Nice to Know	C3	
	<ul style="list-style-type: none"> <li>Apply strategic use of A.I in health care</li> </ul>	Nice to Know	C3	
	<ul style="list-style-type: none"> <li>Read a relevant research article</li> </ul>	Nice to Know	C3	
Urogenital diaphragm	<ul style="list-style-type: none"> <li>Discuss the formation of diaphragm</li> </ul>	Must know	C2	<ul style="list-style-type: none"> <li>Clinical Oriented Anatomy by Keith L. Moore.6TH Edition. (Chapter 3, Page 376 - 381).</li> <li><a href="https://www.youtube.com/watch?v=93Ayq248u_8">https://www.youtube.com/watch?v=93Ayq248u_8</a></li> <li><a href="https://www.youtube.com/watch?v=ai7MjQvenKs">https://www.youtube.com/watch?v=ai7MjQvenKs</a></li> </ul>
	<ul style="list-style-type: none"> <li>Identify the relations and contents of diaphragm</li> </ul>	Must know	C1	
	<ul style="list-style-type: none"> <li>Discuss organs piercing urogenital diaphragm</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Discuss important clinical anatomy related to diaphragm</li> </ul>	Should know	C2	
	<ul style="list-style-type: none"> <li>Understand curative and preventive health care measures</li> </ul>	Nice to Know	C3	
	<ul style="list-style-type: none"> <li>Practice the principles of bioethics.</li> </ul>	Nice to Know	C3	
	<ul style="list-style-type: none"> <li>Apply strategic use of A.I in health care</li> </ul>	Nice to Know	C3	
	<ul style="list-style-type: none"> <li>Read a relevant research article</li> </ul>	Nice to Know	C3	
Perineum & Superficial perineal pouches	<ul style="list-style-type: none"> <li>Identify boundaries and divisions of perineum</li> </ul>	Must know	C2	<ul style="list-style-type: none"> <li>Clinical Oriented Anatomy by Keith L. Moore.6TH Edition. (Chapter 3, Page 376 - 381).</li> <li><a href="https://www.youtube.com/watch?v=93Ayq248u_8">https://www.youtube.com/watch?v=93Ayq248u_8</a></li> <li><a href="https://www.youtube.com/watch?v=ai7MjQvenKs">https://www.youtube.com/watch?v=ai7MjQvenKs</a></li> </ul>
	<ul style="list-style-type: none"> <li>Discuss formation of perineal pouches</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Discuss in detail the contents of superficial perineal pouches in male and female</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Discuss important clinical anatomy related to superficial perineal pouches</li> </ul>	Should know	C2	
	<ul style="list-style-type: none"> <li>Understand curative and preventive health care measures</li> </ul>	Nice to Know	C3	
	<ul style="list-style-type: none"> <li>Practice the principles of bioethics.</li> </ul>	Nice to Know	C3	
	<ul style="list-style-type: none"> <li>Apply strategic use of A.I in health care</li> </ul>	Nice to Know	C3	
	<ul style="list-style-type: none"> <li>Read a relevant research article</li> </ul>	Nice to Know	C3	
Deep perineal pouches	<ul style="list-style-type: none"> <li>Discuss in detail the contents of deep perineal pouches in male and female</li> </ul>	Must know	C2	<ul style="list-style-type: none"> <li>Clinical Oriented Anatomy by Keith L. Moore.6TH Edition. (Chapter 3, Page 376 - 381).</li> <li><a href="https://www.youtube.com/watch?v=93Ayq248u_8">https://www.youtube.com/watch?v=93Ayq248u_8</a></li> <li><a href="https://www.youtube.com/watch?v=ai7MjQvenKs">https://www.youtube.com/watch?v=ai7MjQvenKs</a></li> </ul>
	<ul style="list-style-type: none"> <li>Discuss important clinical anatomy related to deep perineal pouches.</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Understand curative and preventive health care measures</li> </ul>	Should know	C2	
	<ul style="list-style-type: none"> <li>Practice the principles of bioethics.</li> </ul>	Nice to Know	C3	
	<ul style="list-style-type: none"> <li>Apply strategic use of A.I in health care</li> </ul>	Nice to Know	C3	
	<ul style="list-style-type: none"> <li>Read a relevant research article</li> </ul>	Nice to Know	C3	
Blood supply of pelvis and perineum	<ul style="list-style-type: none"> <li>Identify major blood vessels &amp; nerves of pelvis and perineum</li> </ul>	Must know	C1	<ul style="list-style-type: none"> <li>Clinical Oriented Anatomy by Keith L. Moore.6TH Edition. (Chapter 3, Page 376 - 381).</li> </ul>
	<ul style="list-style-type: none"> <li>Demonstrate anatomical relationships</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Describe important clinical anatomy related to blood vessels of pelvis and perineum</li> </ul>	Should know	C2	

	• Understand curative and preventive health care measures	Nice to Know	C3	<ul style="list-style-type: none"> <li>• <a href="https://www.youtube.com/watch?v=93Ayq248u_8">https://www.youtube.com/watch?v=93Ayq248u_8</a></li> <li>• <a href="https://www.youtube.com/watch?v=ai7MjQvenKs">https://www.youtube.com/watch?v=ai7MjQvenKs</a></li> </ul>
	• Practice the principles of bioethics.	Nice to Know	C3	
	• Apply strategic use of A.I in health care	Nice to Know	C3	
	• Read a relevant research article	Nice to Know	C3	
Lymphatic drainage of pelvis and perineum	• Identify major lymphatic vessels of pelvis and perineum	Must know	C1	<ul style="list-style-type: none"> <li>• Clinical Oriented Anatomy by Keith L. Moore.6TH Edition. (Chapter 3, Page 376 - 381).</li> <li>• <a href="https://www.youtube.com/watch?v=93Ayq248u_8">https://www.youtube.com/watch?v=93Ayq248u_8</a></li> <li>• <a href="https://www.youtube.com/watch?v=ai7MjQvenKs">https://www.youtube.com/watch?v=ai7MjQvenKs</a></li> </ul>
	• Discuss lymphatic drainage of pelvis and perineum	Must know	C2	
	• Discuss important clinical anatomy	Should know	C2	
	• Understand curative and preventive health care measures	Nice to Know	C3	
	• Practice the principles of bioethics.	Nice to Know	C3	
	• Apply strategic use of A.I in health care	Nice to Know	C3	
	• Read a relevant research article	Nice to Know	C3	
Sacral and Coccygeal plexus	• Identify various branches of sacral and coccygeal plexus	Must know	C1	<ul style="list-style-type: none"> <li>• Clinical Oriented Anatomy by Keith L. Moore.6TH Edition. (Chapter 3, Page 376 - 381).</li> <li>• <a href="https://www.youtube.com/watch?v=93Ayq248u_8">https://www.youtube.com/watch?v=93Ayq248u_8</a></li> <li>• <a href="https://www.youtube.com/watch?v=ai7MjQvenKs">https://www.youtube.com/watch?v=ai7MjQvenKs</a></li> </ul>
	• Discuss anatomical relations	Must know	C2	
	• Describe root values of each branch of plexus and its related applied	Should know	C2	
	• Understand curative and preventive health care measures	Nice to Know	C3	
	• Practice the principles of bioethics.	Nice to Know	C3	
	• Apply strategic use of A.I in health care	Nice to Know	C3	
	• Read a relevant research article	Nice to Know	C3	

## Practical/Skill Lab (SKL)

Topics	At The End of Demonstration Student Should Be Able To	Calgary Gauge	Learning Domains	References
Testis, Epididymis, Ductus deferens	<ul style="list-style-type: none"> <li>Identify the histological slide of testis, Ductus deferens and epididymis</li> </ul>	Must know	P	1.Histology Junqueira's Basic Histology 18th Edition 2.USMLE Q Bank Step 1 (Volume 1) 2023-2034 3.UWORLD Step 1 (Volume 3) 2023-2024
	<ul style="list-style-type: none"> <li>Illustrate the microscopic picture of testis, Ductus deferens and epididymis</li> </ul>	Should know	C2	
	<ul style="list-style-type: none"> <li>Enlist two points of identification of each</li> </ul>	Must know	C1	
	<ul style="list-style-type: none"> <li>Read relevant research article</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Use digital library</li> </ul>	Nice to know	C3	
Seminal vesicles, prostate	<ul style="list-style-type: none"> <li>Identify the histological slide of seminal vesicles and prostate</li> </ul>	Must know	P	1.Histology Junqueira's Basic Histology 18th Edition 2.USMLE Q Bank Step 1 (Volume 1) 2023-2034 3.UWORLD Step 1 (Volume 3) 2023-2024
	<ul style="list-style-type: none"> <li>Illustrate the microscopic picture of seminal vesicles and prostate</li> </ul>	Should know	C2	
	<ul style="list-style-type: none"> <li>Enlist two points of identification of each</li> </ul>	Must know	C1	
	<ul style="list-style-type: none"> <li>Read relevant research article</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Use digital library</li> </ul>	Nice to know	C3	
Ovary	<ul style="list-style-type: none"> <li>Identify the histological slide of ovary</li> </ul>	Must know	P	1.Histology Junqueira's Basic Histology 18th Edition 2.USMLE Q Bank Step 1 (Volume 1) 2023-2034 3.UWORLD Step 1 (Volume 3) 2023-2024
	<ul style="list-style-type: none"> <li>Illustrate the microscopic picture of ovary</li> </ul>	Should know	C2	
	<ul style="list-style-type: none"> <li>Enlist two points of identification</li> </ul>	Must know	C1	
	<ul style="list-style-type: none"> <li>Read relevant research article</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Use digital library</li> </ul>	Nice to know	C3	
Uterus, uterine tubes	<ul style="list-style-type: none"> <li>Identify the histological slide of Uterus and uterine tubes</li> </ul>	Must know	P	1.Histology Junqueira's Basic Histology 18th Edition 2.USMLE Q Bank Step 1 (Volume 1) 2023-2034 3.UWORLD Step 1 (Volume 3) 2023-2024
	<ul style="list-style-type: none"> <li>Illustrate the microscopic picture of Uterus and uterine tubes</li> </ul>	Should know	C2	
	<ul style="list-style-type: none"> <li>Enlist two points of identification of each</li> </ul>	Must know	C1	
	<ul style="list-style-type: none"> <li>Read relevant research article</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Use digital library</li> </ul>	Nice to know	C3	

**TOS for LMS Assessment of Reproduction Module-I**  
**2<sup>nd</sup> Year MBBS, Batch -50 (Session 2023-24)**

LMS based Assessment for Reproduction Module will be held on 03-06-2024 Monday from 9 pm to 9:30 pm. Detail of topics are mentioned in the table below:

S No.	Domain of Teaching and Learning Activity	Topic	No. of MCQs	Cognitive Domain		
				C1	C2	C3
1.	LGIS	<b>Embryology</b> Testis Genital Ducts, Prostate and Accessory glands Uterus & Uterine tubes	04	1	1	2
		<b>Histology</b> Testis Genital Ducts, Prostate and Accessory glands Uterus & Uterine tubes	04	1	1	2
2.	SGD	Sacrum, Bony Pelvis & Joints of Pelvis Pelvic Fascia, Pelvic Peritoneum, Pelvic Diaphragm Testis & Scrotum Prostate	16	4	4	8
3.	Practical	Testis, Epididymis, Ductus deferens	02	0	1	1
4.	CBL	Benign Prostatic Hyperplasia	02	0	1	1
5.	PBL	Unraveling PCOS; A complex journey	02	0	1	1

MCQS= 30

Learning Resources:

- **Embryology** :- KLM Embryology Developing Human 11<sup>th</sup> Edition
- **Histology** :-Junqueira's Basic Histology 18th Edition
- **Gross Anatomy** :- KLM clinically oriented anatomy edition 10
- **USMLE Q Bank Step 1** (Volume 1) 2023-2034
- **UWORLD Step 1** (Volume 3) 2023

Dr. Ayesha Yousaf  
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Dean Basic Sciences  
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Rawalpindi

**TOS for LMS Assessment of Reproduction Module-I**  
**2<sup>nd</sup> Year MBBS, Batch -50 (Session 2023-24)**

LMS based Assessment for Reproduction Module will be held on 10-06-2024 Monday from 9 pm to 9:30 pm. Detail of topics are mentioned in the table below:

S No.	Domain of Teaching and Learning Activity	Topic	No. of MCQs	Cognitive Domain		
				C1	C2	C3
1.	LGIS	<b>Embryology</b> Uterus & Uterine tubes Ovary & Vagina	04	1	1	2
		<b>Histology</b> Uterus & Uterine tubes Ovary & Vagina	04	1	1	2
2.	SGD	Male internal genital organs Female internal genital organs Ischioanal Fossa	16	4	4	8
3.	Practical	Seminal vesicles & Prostate	02	0	1	1
4.	CBL	PCOS	02	0	1	1
5.	PBL	Ectopic Pregnancy	02	0	1	1

MCQS= 30

Learning Resources:

- **Embryology** :- KLM Embryology Developing Human 11<sup>th</sup> Edition
- **Histology** :-Junqueira's Basic Histology 18th Edition
- **Gross Anatomy** :- KLM clinically oriented anatomy edition 10
- **USMLE Q Bank Step 1** (Volume 1) 2023-2034
- **UWORLD Step 1** (Volume 3) 2023-2024

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Dean Basic Sciences  
Rawalpindi Medical University  
Rawalpindi

# Central Nervous System (CNS) Module

## Small Group Discussion (SGD)

Topic	At The End Of The Session Student Should Be Able To	Calgary Gauge	Learning Domain	References
General Anatomy Nervous System	<ul style="list-style-type: none"> <li>Discuss the major divisions of nervous system</li> </ul>	Must know	C2	<ul style="list-style-type: none"> <li>General Anatomy by Tassaduq Hussain 19<sup>th</sup> edition</li> <li>USMLE Q Bank Step 1 (Volume 1) 2023-2024</li> <li>UWORLD Step 1 ( Volume 3) 2023-2024</li> </ul>
	<ul style="list-style-type: none"> <li>Differentiate between neurons and neuroglia</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>List the neuroglia and their functions</li> </ul>	Must know	C1	
	<ul style="list-style-type: none"> <li>Describe myelination of nerve fibers</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Describe the structure of a peripheral nerve and reflex action</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Describe degeneration and regeneration of nerves</li> </ul>	Should know	C2	
	<ul style="list-style-type: none"> <li>Correlate the clinical conditions associated with it</li> </ul>	Should know	C3	
	<ul style="list-style-type: none"> <li>Focus on provision of curative and preventive health care measures</li> </ul>	Should know	C3	
	<ul style="list-style-type: none"> <li>Practice principle of bioethics</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Apply strategic use of AI in health care</li> </ul>	Nice to know	C3	
Embryology Early development of Skull & Central Nervous System	<ul style="list-style-type: none"> <li>Read relevant research article</li> </ul>	Nice to know	C3	<ul style="list-style-type: none"> <li>KLM Embryology Developing Human</li> <li>USMLE Q Bank Step 1 (Volume 1) 2023-2024</li> <li>UWORLD Step 1 ( Volume 3) 2023-2024</li> </ul>
	<ul style="list-style-type: none"> <li>Describe the process of development of neurocranium and viscerocranium</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Describe formation of neural tube, neuropores and their closure</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Describe histogenesis and Cytodifferentiation within the neural tube.</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Describe the brain flexures and their derivatives</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Describe role of neuroblasts forming efferent and afferent rows.</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Correlate the clinical conditions associated with it</li> </ul>	Should know	C3	
	<ul style="list-style-type: none"> <li>Focus on provision of curative and preventive health care measures</li> </ul>	Should know	C3	
	<ul style="list-style-type: none"> <li>Practice principle of bioethics</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Apply strategic use of AI in health care</li> </ul>	Nice to know	C3	
Embryology Development of spinal cord	<ul style="list-style-type: none"> <li>Read relevant research article</li> </ul>	Nice to know	C3	<ul style="list-style-type: none"> <li>KLM Embryology Developing Human</li> <li>USMLE Q Bank Step 1 (Volume 1) 2023-2024</li> <li>UWORLD Step 1 ( Volume 3) 2023-2024</li> </ul>
	<ul style="list-style-type: none"> <li>Describe the significance of ventricular, mantle and marginal layers of developing spinal cord.</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Enumerate derivatives of alar and basal plates in developing spinal cord</li> </ul>	Must know	C1	
	<ul style="list-style-type: none"> <li>Describe the process of myelination of nerve fibers.</li> </ul>	Must know	C2	

	<ul style="list-style-type: none"> <li>Describe role of neural crest cells in development of spinal ganglia.</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Explain positional changes of spinal cord</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Discuss congenital anomalies due to neural tube defects and abnormal histogenesis</li> </ul>	Should know	C3	
	<ul style="list-style-type: none"> <li>Focus on provision of curative and preventive health care measures</li> </ul>	Should know	C3	
	<ul style="list-style-type: none"> <li>Practice principle of bioethics</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Apply strategic use of AI in health care</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Read relevant research article</li> </ul>	Nice to know	C3	
General Anatomy Autonomic Nervous System	<ul style="list-style-type: none"> <li>Enlist the components of peripheral and autonomic nervous system</li> </ul>	Must know	C1	<ul style="list-style-type: none"> <li>General Anatomy by Tassaduq Hussain 19<sup>th</sup> edition</li> <li>USMLE Q Bank Step 1 (Volume 1) 2023-2024</li> <li>UWORLD Step 1 (Volume 3) 2023-2024</li> </ul>
	<ul style="list-style-type: none"> <li>Tabulate differences between sympathetic and parasympathetic nervous system</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Describe effects of sympathetic and parasympathetic nervous system on various parts of the body</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Discuss the anatomical basis of autonomic injuries such as Horner's syndrome, Urinary bladder dysfunction, Rectal distention, Erectile dysfunction and Argyll Robertson pupil.</li> </ul>	Should know	C3	
	<ul style="list-style-type: none"> <li>Focus on provision of curative and preventive health care measures</li> </ul>	Should know	C3	
	<ul style="list-style-type: none"> <li>Practice principle of bioethics</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Read relevant research article</li> </ul>	Nice to know	C3	
Histology Meninges, Choroid Plexus Peripheral Nervous System and Ganglia	<ul style="list-style-type: none"> <li>Describe the histological structure of meninges and choroid plexus</li> </ul>	Must know	C2	<ul style="list-style-type: none"> <li>Junqueira's Basic Histology 18<sup>th</sup> Edition</li> <li>USMLE Q Bank Step 1 (Volume 1) 2023-2024</li> <li>UWORLD Step 1 (Volume 3) 2023-2024</li> </ul>
	<ul style="list-style-type: none"> <li>Discuss the histological structure of myelinated and unmyelinated nerve fibres.</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Discuss the histological structure of sensory and autonomic ganglia</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Discuss the principles of neuroplasticity and regeneration</li> </ul>	Should know	C2	
	<ul style="list-style-type: none"> <li>Correlate the clinical conditions associated with it</li> </ul>	Should know	C3	
	<ul style="list-style-type: none"> <li>Focus on provision of curative and preventive health care measures</li> </ul>	Should know	C3	
	<ul style="list-style-type: none"> <li>Practice principle of bioethics</li> </ul>	Nice to know	C3	



	<ul style="list-style-type: none"> <li>Read relevant research article</li> </ul>	Nice to know	C3	
Embryology Development of Rhombencephalon	<ul style="list-style-type: none"> <li>Describe the development of Myelencephalon</li> </ul>	Must know	C2	<ul style="list-style-type: none"> <li>KLM Embryology Developing Human</li> <li>USMLE Q Bank Step 1 (Volume 1) 2023-2024</li> <li>UWORLD Step 1 (Volume 3) 2023-2024</li> </ul>
	<ul style="list-style-type: none"> <li>Describe the arrangement of neuroblasts in Metencephalon</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Describe the development of Metencephalon</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Describe the arrangement of neuroblasts in Metencephalon</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Correlate the clinical conditions associated with it</li> </ul>	Should know	C3	
	<ul style="list-style-type: none"> <li>Focus on provision of curative and preventive health care measures</li> </ul>	Should know	C3	
	<ul style="list-style-type: none"> <li>Practice principle of bioethics</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Read relevant research article</li> </ul>	Nice to know	C3	
Histology Spinal cord and Cerebellum	<ul style="list-style-type: none"> <li>Describe the histological structure of spinal cord</li> </ul>	Must know	C2	<ul style="list-style-type: none"> <li>Junqueira's Basic Histology 18<sup>th</sup> Edition</li> <li>USMLE Q Bank Step 1 (Volume 1) 2023-2024</li> <li>UWORLD Step 1 (Volume 3) 2023-2024</li> </ul>
	<ul style="list-style-type: none"> <li>Describe the histological structure of cerebellum</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Discuss cells in each layer along with its histological morphology</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Illustrate the cross-sectional view of spinal cord and cerebellum</li> </ul>	Must know	C3	
	<ul style="list-style-type: none"> <li>Correlate the clinical conditions associated with it</li> </ul>	Should know	C3	
	<ul style="list-style-type: none"> <li>Focus on provision of curative and preventive health care measures</li> </ul>	Should know	C3	
	<ul style="list-style-type: none"> <li>Practice principle of bioethics</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Read relevant research article</li> </ul>	Nice to know	C3	
Embryology Development of Mesencephalon and Prosencephalon	<ul style="list-style-type: none"> <li>Describe the development of Mesencephalon</li> </ul>	Must know	C2	<ul style="list-style-type: none"> <li>KLM Embryology Developing Human</li> <li>USMLE Q Bank Step 1 (Volume 1) 2023-2024</li> <li>UWORLD Step 1 (Volume 3) 2023-2024</li> </ul>
	<ul style="list-style-type: none"> <li>Describe the arrangement of neuroblasts in mesencephalon</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Describe the development of pituitary gland</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Discuss the anatomical basis of pharyngeal hypophysis and craniopharyngiomas</li> </ul>	Should know	C3	
	<ul style="list-style-type: none"> <li>Discuss the anatomical basis of birth defects such as encephalocele, microencephaly, Arnold Chiari malformation</li> </ul>	Should know	C3	
	<ul style="list-style-type: none"> <li>Focus on provision of curative and preventive health care measures</li> </ul>	Should know	C3	

	<ul style="list-style-type: none"> <li>Practice principle of bioethics</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Read relevant research article</li> </ul>	Nice to know	C3	
Histology Cerebrum	<ul style="list-style-type: none"> <li>Describe the histological structure of cerebrum</li> </ul>	Must know	C2	<ul style="list-style-type: none"> <li>Junqueira's Basic Histology 18<sup>th</sup> Edition</li> <li>USMLE Q Bank Step 1 (Volume 1) 2023-2024</li> <li>UWORLD Step 1 (Volume 3) 2023-2024</li> </ul>
	<ul style="list-style-type: none"> <li>Correlate the clinical conditions associated with it</li> </ul>	Should know	C3	
	<ul style="list-style-type: none"> <li>Focus on provision of curative and preventive health care measures</li> </ul>	Should know	C3	
	<ul style="list-style-type: none"> <li>Practice principle of bioethics</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Read relevant research article</li> </ul>	Nice to know	C3	
Embryology Development of Peripheral and Autonomic nervous system	<ul style="list-style-type: none"> <li>Describe the development of cranial nerves</li> </ul>	Must know	C2	<ul style="list-style-type: none"> <li>KLM Embryology Developing Human</li> <li>USMLE Q Bank Step 1 (Volume 1) 2023-2024</li> <li>UWORLD Step 1 (Volume 3) 2023-2024</li> </ul>
	<ul style="list-style-type: none"> <li>Describe the development of spinal nerves</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Describe the development of sympathetic nervous system</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Describe the development of parasympathetic nervous system</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Correlate the clinical conditions associated with it</li> </ul>	Should know	C3	
	<ul style="list-style-type: none"> <li>Focus on provision of curative and preventive health care measures</li> </ul>	Should know	C3	
	<ul style="list-style-type: none"> <li>Practice principle of bioethics</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Read relevant research article</li> </ul>	Nice to know	C3	

## Practical/Skill Lab (SKL)

Practical	At The End Of This Skill Lab, Should Be Able To Illustrate:	Calgary Gauge	Learning Domain	References
Ganglia	<ul style="list-style-type: none"> <li>Identify the microscopic features of ganglia</li> </ul>	Must know	P	1. Histology Junqueira's Basic Histology 18th Edition 2. USMLE Q Bank Step 1 (Volume 1) 2023-2034 3. UWORLD Step 1 (Volume 3) 2023-2024
	<ul style="list-style-type: none"> <li>Illustrate histological picture of ganglia</li> </ul>	Should know	C2	
	<ul style="list-style-type: none"> <li>List two points of identification</li> </ul>	Must know	C1	
Peripheral nerve	<ul style="list-style-type: none"> <li>Identify the microscopic features of peripheral nerve on given histological slide</li> </ul>	Must know	P	1. Histology Junqueira's Basic Histology 18th Edition 2. USMLE Q Bank Step 1 (Volume 1) 2023-2034 3. UWORLD Step 1 (Volume 3) 2023-2024
	<ul style="list-style-type: none"> <li>Illustrate histological picture of peripheral nerve</li> </ul>	Should know	C2	
	<ul style="list-style-type: none"> <li>List two points of identification</li> </ul>	Must know	C1	
Spinal cord	<ul style="list-style-type: none"> <li>Identify histological slide of spinal cord</li> </ul>	Must know	P	1. Histology Junqueira's Basic Histology 18th Edition 2. USMLE Q Bank Step 1 (Volume 1) 2023-2034 3. UWORLD Step 1 (Volume 3) 2023-2024
	<ul style="list-style-type: none"> <li>Illustrate histological picture of spinal cord</li> </ul>	Should know	C2	
	<ul style="list-style-type: none"> <li>List two points of identification</li> </ul>	Must know	C1	
Cerebellum	<ul style="list-style-type: none"> <li>Identify the microscopic features of cerebellum</li> </ul>	Must know	P	1. Histology Junqueira's Basic Histology 18th Edition 2. USMLE Q Bank Step 1 (Volume 1) 2023-2034 3. UWORLD Step 1 (Volume 3) 2023-2024
	<ul style="list-style-type: none"> <li>Illustrate histological picture of cerebellum</li> </ul>	Should know	C2	
	<ul style="list-style-type: none"> <li>List two points of identification</li> </ul>	Must know	C1	

**TOS for LMS Assessment of CNS Module-I**  
**2<sup>nd</sup> Year MBBS, Batch -50 (Session 2023-24)**

LMS Assessment for the second year MBBS for the CNS Module will be held on 05-08-2024 (Monday) from 9:00pm to 9:30pm. Detail of topics are mentioned in the table below:

S No.	Domain of Teaching And Learning Activity	Topic	Number of MCQS	Cognitive Domain		
				C1	C2	C3
1.	LGIS	<b>Embryology</b> Early development of CNS Development of spinal cord	04	1	1	2
		<b>General Anatomy</b> General anatomy of nervous system Autonomic nervous system	04	1	1	2
		<b>Histology</b> Nil				
2.	SGD	Cranial fossae (Anterior, Middle & Posterior) Meninges Dural venous sinuses Cisterns Spinal cord (Ascending tracts)	20	5	5	10
3.	Practical	Peripheral nerve	02		1	1

MCQS= 30 MCQS

Learning Resources:

- **Embryology:-** KLM Embryology Developing Human
- **Histology:-** Junqueira's Basic Histology 18<sup>th</sup> Edition
- **Gross Anatomy:-** Snell's Neuroanatomy
- **USMLE Q Bank Step 1** (Volume 1) 2023-2024
- **UWORLD Step 1** ( Volume 3) 2023-2024

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**TOS for LMS Assessment of CNS Module-I**  
**2<sup>nd</sup> Year MBBS, Batch -50 (Session 2023-24)**

LMS Assessment for the second year MBBS for the CNS Module will be held on 12-08-2024 (Monday) from 9:00pm to 9:30pm. Details of topics are mentioned in the table below:

S No.	Domain of Teaching And Learning Activity	Topic	No. of MCQS	Cognitive Domain		
				C1	C2	C3
9.	LGIS	<b>Embryology</b> Development of Rhombencephalon	04	1	1	2
		<b>General Anatomy</b> Nil	04	1	1	2
		<b>Histology</b> Histology of spinal cord Histology of peripheral nerve				
10.	SGD/Dissection	Spinal cord descending tracts Spinal cord lesions Medulla oblongata Pons Midbrain Fourth ventricle	20	5	5	10
11.	Practical	Ganglia	02	0	1	1

MCQS= 30 MCQS

Learning Resources:

- **Embryology:-** KLM Embryology Developing Human
- **Histology:-** Junqueira's Basic Histology 18<sup>th</sup> Edition
- **Gross Anatomy:-** Snell's Neuroanatomy
- **USMLE Q Bank Step 1** (Volume 1) 2023-2024
- **UWORLD Step 1** (Volume3) 2023-20

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**TOS for LMS Assessment of CNS Module-I**  
**2<sup>nd</sup> Year MBBS, Batch -50 (Session 2023-24)**

LMS Assessment for the second year MBBS for the CNS Module will be held on 19-08-2024(Monday) from 9:00pm to 9:30pm. Details of topics are mentioned in the table below:

S No.	Domain of Teaching And Learning Activity	Topic	No. of MCQs	Cognitive Domain		
				C1	C2	C3
1.	LGIS	<b>Embryology</b> Development of Mesencephalon Development of Prosencephalon	04	1	1	2
		<b>General Anatomy</b> Nil <b>Histology</b> Histology of Cerebellum	04	1	1	2
2.	SGD/Dissection	Cerebellum Thalamus, Epithalamus & Subthalamus Hypothalamus Cortical areas, layers & lesions of Cerebrum	18	4	4	10
3.	Practical	Spinal cord	02	0	1	1
4.	CBL	Cystic Astrocytoma of Cerebellum	02	0	1	1

MCQS= 30 MCQS

Learning Resources:

- **Embryology:-** KLM Embryology Developing Human
- **Histology:-** Junqueira's Basic Histology 18<sup>th</sup> Edition
- **Gross Anatomy:-** Snell's Neuroanatomy
- **USMLE Q Bank Step 1** (Volume 1) 2023-2024
- **UWORLD Step 1** (Volume 3) 2023-2024

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# Special Senses Module

## Learning Objectives

### Large Group Interactive Session (LGIS)

Topics	At the end of lecture students should be able to:	Learning Domains	Calgary Gauge	References
<b>Embryology</b>				
Development of Pharyngeal apparatus	<ul style="list-style-type: none"> <li>Define the pharyngeal arch apparatus.</li> </ul>	C1	Must know	<ul style="list-style-type: none"> <li><b>Embryology</b> :- KLM Embryology Developing Human 11<sup>th</sup> Edition</li> <li><b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li> <li><b>UWORLD Step 1</b> (Volume 3) 2023-2024</li> </ul>
	<ul style="list-style-type: none"> <li>Describe components of pharyngeal arches.</li> </ul>	C2	Must know	
	<ul style="list-style-type: none"> <li>Enlist derivatives of each of pharyngeal arch.</li> </ul>	C1	Must know	
	<ul style="list-style-type: none"> <li>Describe the development of pharyngeal grooves and pharyngeal membranes.</li> </ul>	C1	Must know	
	<ul style="list-style-type: none"> <li>Enlist the derivatives of pharyngeal pouches and clefts.</li> </ul>	C1	Must know	
	<ul style="list-style-type: none"> <li>Enlist common birth defects associated with pharyngeal apparatus.</li> </ul>	C3	Must know	
	<ul style="list-style-type: none"> <li>Explain the embryological basis of these defects.</li> </ul>	C3	Must know	
	<ul style="list-style-type: none"> <li>Understand the bio-physiological aspects of arches.</li> </ul>	C3	Should know	
	<ul style="list-style-type: none"> <li>Correlate with the clinical conditions.</li> </ul>	C3	Nice to know	
	<ul style="list-style-type: none"> <li>Understand provision of curative and preventive health care measures.</li> </ul>	C3	Nice to know	
	<ul style="list-style-type: none"> <li>Practice principles of bioethics.</li> <li>Apply strategic use of AI in health care.</li> </ul>	C3	Nice to know	
	<ul style="list-style-type: none"> <li>Read relevant research article.</li> </ul>	C3	Nice to know	
Development of face, nasal cavities	<ul style="list-style-type: none"> <li>Describe the developmental stages of face.</li> </ul>	C2	Must know Must know	<ul style="list-style-type: none"> <li><b>Embryology</b> :- KLM Embryology Developing Human 11<sup>th</sup> Edition</li> <li><b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li> <li><b>UWORLD Step 1</b> (Volume 3) 2023-2024</li> </ul>
	<ul style="list-style-type: none"> <li>Discuss the role of neural crest cells in development of facial skeleton and pharyngeal arch derivatives.</li> </ul>	C2 C3	Must know Must know	
	<ul style="list-style-type: none"> <li>Describe the molecular regulation of facial development.</li> </ul>	C2	Should know	
	<ul style="list-style-type: none"> <li>Discuss the congenital anomalies of face.</li> </ul>	C3	Should know	
	<ul style="list-style-type: none"> <li>Describe the development of nasal cavities and paranasal sinuses.</li> </ul>	C3	Should know	
	<ul style="list-style-type: none"> <li>Understand the bio-physiological aspects of face &amp; nasal cavities</li> </ul>	C2	Should know	
	<ul style="list-style-type: none"> <li>Correlate with the clinical conditions</li> </ul>	C3	Should know	
	<ul style="list-style-type: none"> <li>Understand provision of curative and preventive health care measures.</li> </ul>	C3	Nice to know	

	<ul style="list-style-type: none"> <li>Practice principles of bioethics</li> </ul>	C3	Nice to know	
	<ul style="list-style-type: none"> <li>.Apply strategic use of AI in health care.</li> </ul>	C3	Nice to know	
	<ul style="list-style-type: none"> <li>Read relevant research article.</li> </ul>	C3	Nice to know	
Development of palate	<ul style="list-style-type: none"> <li>Discuss the development of primary and secondary palate.</li> </ul>	C2	Must know	<ul style="list-style-type: none"> <li><b>Embryology :-</b> KLM Embryology Developing Human 11<sup>th</sup> Edition <b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li> <li><b>UWORLD Step 1</b> (Volume 3) 2023-2024</li> </ul>
	<ul style="list-style-type: none"> <li>Enlist the different varieties of cleft palate.</li> </ul>	C1	Must know	
	<ul style="list-style-type: none"> <li>Discuss the etiology of cleft lip and cleft palate.</li> </ul>	C3	Must know	
	<ul style="list-style-type: none"> <li>Describe embryological basis of craniofacial anomalies.</li> </ul>	C2	Must know	
	<ul style="list-style-type: none"> <li>Understand the bio-physiological aspects of Palate.</li> </ul>	C3	Should know	
	<ul style="list-style-type: none"> <li>Correlate with the clinical conditions</li> </ul>	C3	Should know	
	<ul style="list-style-type: none"> <li>Understand provision of curative and preventive health care measures.</li> </ul>	C3	Nice to know	
	<ul style="list-style-type: none"> <li>Practice principles of bioethics.</li> </ul>	C3	Nice to know	
	<ul style="list-style-type: none"> <li>Apply strategic use of AI in health care.</li> </ul>	C3	Nice to know	
	<ul style="list-style-type: none"> <li>Read relevant research article.</li> </ul>	C3	Nice to know	
Development of Eye I (Optic Cup & Retina)	<ul style="list-style-type: none"> <li>Describe the different embryological sources of development of eye.</li> </ul>	C2	Must know	<ul style="list-style-type: none"> <li><b>Embryology :-</b> KLM Embryology Developing Human 11<sup>th</sup> Edition <b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li> <li><b>UWORLD Step 1</b> (Volume 3) 2023-2024</li> </ul>
	<ul style="list-style-type: none"> <li>Describe development of eye field on rostral neural tube.</li> </ul>	C2	Must know	
	<ul style="list-style-type: none"> <li>Enlist derivatives of optic cup and development of retina.</li> </ul>	C2	Must know	
	<ul style="list-style-type: none"> <li>Recall the differentiation of optic grooves and optic vesicle.</li> </ul>	C2	Must know	
	<ul style="list-style-type: none"> <li>Discuss transformation of optic vesicles into optic cup.</li> </ul>	C2	Must know	
	<ul style="list-style-type: none"> <li>Describe development of retina.</li> </ul>	C2	Must know	
	<ul style="list-style-type: none"> <li>Correlate with the clinical conditions.</li> </ul>	C2	Should know	
	<ul style="list-style-type: none"> <li>Understand provision of curative and preventive health care measures.</li> </ul>	C2	Nice to know	
	<ul style="list-style-type: none"> <li>Practice principles of bioethics.</li> </ul>	C2	Nice to know	
	<ul style="list-style-type: none"> <li>Apply strategic use of AI in health care.</li> </ul>	C2	Nice to know	
	<ul style="list-style-type: none"> <li>Read relevant research article.</li> </ul>	C2	Nice to know	
Development of Eye II (Congenital defects)	<ul style="list-style-type: none"> <li>Describe formation of optic stalk.</li> </ul>	C2	Must know	<b>Embryology :-</b> KLM Embryology Developing Human 11 <sup>th</sup> Edition
	<ul style="list-style-type: none"> <li>Explain induction of optic placodes and lens primordia</li> </ul>	C1	Must know	
	<ul style="list-style-type: none"> <li>.Enumerate neural crest cell and mesenchymal derived eye structures.</li> </ul>	C1	Must know	



	<ul style="list-style-type: none"><li>Enlist the molecular regulation of eye development.</li></ul>	C2	Must know	<ul style="list-style-type: none"><li><b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li><li><b>UWORLD Step 1</b> (Volume 3) 2023-2024</li></ul>
	<ul style="list-style-type: none"><li>Discuss birth defects of the eye.</li></ul>	C3	Should know	
	<ul style="list-style-type: none"><li>Correlate with the clinical conditions.</li></ul>	C3	Should know	
	<ul style="list-style-type: none"><li>Understand provision of curative and preventive health care measures.</li></ul>	C3	Nice to know	
	<ul style="list-style-type: none"><li>Practice principles of bioethics.</li></ul>	C3	Nice to know	
	<ul style="list-style-type: none"><li>Apply strategic use of AI in health care.</li></ul>	C3	Nice to know	
	<ul style="list-style-type: none"><li>Read relevant research article.</li></ul>	C3	Nice to know	
Development of Ear	<ul style="list-style-type: none"><li>Explain the development of optic placodes, otic pit, otic vesicle and otic capsule.</li></ul>	C2	Must know	<ul style="list-style-type: none"><li><b>Embryology :-</b> KLM Embryology Developing Human 11<sup>th</sup> Edition <b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li><li><b>UWORLD Step 1</b> (Volume 3) 2023-2024</li></ul>
	<ul style="list-style-type: none"><li>Enlist derivatives of otic vesicle and otic capsule.</li></ul>	C2	Must know	
	<ul style="list-style-type: none"><li>Describe development of middle ear cavity and Eustachian tube from tubotympanic recess.</li></ul>	C2	Must know	
	<ul style="list-style-type: none"><li>Describe the development of auditory ossicles, tympanic membrane and mastoid antrum.</li></ul>	C1	Must know	
	<ul style="list-style-type: none"><li>Discuss development of external acoustic meatus</li></ul>	C3	Must know	
	<ul style="list-style-type: none"><li>Enlist commom congenital anomalies associated with ear development</li></ul>	C3	Should know	
	<ul style="list-style-type: none"><li>Describe the embryological basis of these anomalies</li></ul>	C3	Nice to know	
	<ul style="list-style-type: none"><li>Correlate with the clinical conditions</li></ul>	C3	Nice to know	
	<ul style="list-style-type: none"><li>Understand provision of curative and preventive health care measures.</li></ul>	C3	Nice to know	
	<ul style="list-style-type: none"><li>Practice principles of bioethics.</li></ul>	C3	Nice to know	
	<ul style="list-style-type: none"><li>Apply strategic use of AI in health care.</li></ul>	C3	Nice to know	
	<ul style="list-style-type: none"><li>Read relevant research article.</li></ul>	C3		
Histology				
Ear	<ul style="list-style-type: none"><li>Describe the structural differences between outer, middle and inner ear.</li></ul>	C2	Must know	<ul style="list-style-type: none"><li><b>Histology :-</b> Junqueira's Basic Histology 18th Edition <b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li><li><b>UWORLD Step 1</b></li></ul>
	<ul style="list-style-type: none"><li>Discuss the functions of different parts of ear.</li></ul>	C2 C2	Must know	
	<ul style="list-style-type: none"><li>Distinguish the auditory part of inner ear from the vestibular system.</li></ul>	C2	Must know	
	<ul style="list-style-type: none"><li>Discuss their roles in hearing &amp; balance</li></ul>	C2	Must know	
	<ul style="list-style-type: none"><li>Describe the fuction of sensory hair cells.</li></ul>	C2 C3	Must know	
	<ul style="list-style-type: none"><li>Describe the appearance and function of spinal ganglia.</li></ul>	C3	Must know	

	<ul style="list-style-type: none"> <li>Understand the bio-physiological aspects of hearing</li> </ul>	C3	Should know	(Volume 3) 2023-2024 <ul style="list-style-type: none"> <li></li> </ul>
	<ul style="list-style-type: none"> <li>Correlate with the clinical conditions.</li> </ul>	C3	Should know	
	<ul style="list-style-type: none"> <li>Understand provision of curative and</li> </ul>	C3	Nice to know	
	<ul style="list-style-type: none"> <li>Preventive health care measures.</li> <li>Practice principles of bioethics.</li> </ul>	C3	Nice to know	
	<ul style="list-style-type: none"> <li>Apply strategic use of AI in health care.</li> </ul>	C3	Nice to know	
	<ul style="list-style-type: none"> <li>Read relevant research article.</li> </ul>	C3	Nice to know	
Eye I (Fibrous & Vascular coat)	<ul style="list-style-type: none"> <li>Discuss the histology of different coats of the eyeball.</li> </ul>	C2	Must know	<ul style="list-style-type: none"> <li><b>Histology :-</b> Junqueira's Basic Histology 18th Edition <b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li> <li><b>UWORLD Step 1</b> (Volume 3) 2023-2024</li> </ul>
	<ul style="list-style-type: none"> <li>Describe histological sections of sclera &amp; Cornea</li> </ul>	C2	Must know	
	Describe the histology of choroid ciliary body and iris.	C2	Must know	
	<ul style="list-style-type: none"> <li>Discuss histological sections of accessory structures of the eye.</li> </ul>	C2	Must know	
	<ul style="list-style-type: none"> <li>Discuss the histological details of lens chamber &amp; Vitreous body</li> </ul>	C2	Must know	
	<ul style="list-style-type: none"> <li>Understand the bio-physiological aspects of vision</li> </ul>	C2	Must know	
	<ul style="list-style-type: none"> <li>Correlate with the clinical conditions like glaucoma, cataract.</li> </ul>	C3	Should know	
	<ul style="list-style-type: none"> <li>understand provision of curative and</li> </ul>	C3	Nice to know	
	<ul style="list-style-type: none"> <li>Preventive health care measures.</li> <li>Practice principles of bioethics.</li> </ul>	C3	Nice to know Nice to know	
	<ul style="list-style-type: none"> <li>Apply strategic use of AI in health care.</li> </ul>	C3	Nice to know	
	<ul style="list-style-type: none"> <li>Read relevant research article.</li> </ul>	C3	Nice to know	
Eye II (Retina & Photoreceptors)	<ul style="list-style-type: none"> <li>Describe layers of retina</li> </ul>	C2	Must know	<ul style="list-style-type: none"> <li><b>iHistology :-</b> Junqueira' <b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li> <li><b>UWORLD Step 1</b> (Volume 3) 2023-2024</li> <li>s Basic Histology 18th Edition</li> </ul>
	<ul style="list-style-type: none"> <li>Discuss retinal pigment epithelium</li> </ul>	C2	Must know	
	<ul style="list-style-type: none"> <li>Discuss histology&amp; functions of neuronal retina.</li> </ul>	C2	Must know	
	<ul style="list-style-type: none"> <li>Describe photoreceptors &amp; rod cells.</li> </ul>	C2	Must know	
	<ul style="list-style-type: none"> <li>Understand the bio-physiological aspects of Palate.</li> </ul>	C3	Must know	
	<ul style="list-style-type: none"> <li>Correlate with the clinical conditions like retinal detachment</li> </ul>	C2	Should know	
	<ul style="list-style-type: none"> <li>Understands provision of curative and preventive health care measure</li> </ul>	C3	Nice to know	
	<ul style="list-style-type: none"> <li>Practice principles of bioethics.</li> </ul>	C3	Nice to know	
	<ul style="list-style-type: none"> <li>Apply strategic use of AI in health care.</li> </ul>	C3	Nice to know	
	<ul style="list-style-type: none"> <li>Read relevant research article.</li> </ul>	C3	Nice to know	

## Small Group Discussion (SGD)

Topics	At the end of lecture students should be able to:	Learning Domains	Calgary Gauge	References
Facial & Superior Aspect of Cranium (Norma Frontalis & Verticalis.)	<ul style="list-style-type: none"> <li>Define boundaries of Norma frontalis and verticalis.</li> </ul>	C1	Must know	<ul style="list-style-type: none"> <li>Clinical Oriented Anatomy by Keith L. Moore.6TH Edition. (Chapter 7, Page 823-8291).</li> <li><a href="https://youtu.be/rr3-V7Qhf8E">https://youtu.be/rr3-V7Qhf8E</a></li> <li><a href="https://youtu.be/35Y71cRBqs8">https://youtu.be/35Y71cRBqs8</a></li> <li><b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li> <li><b>UWORLD Step 1</b> (Volume 3) 2023-2024</li> </ul>
	<ul style="list-style-type: none"> <li>Enumerate their muscle attachment.</li> </ul>	C1	Must know	
	<ul style="list-style-type: none"> <li>Describe and features of its structure</li> </ul>	C2	Must know	
	<ul style="list-style-type: none"> <li>Correlate with the clinical conditions.</li> </ul>	C3	Should know	
	<ul style="list-style-type: none"> <li>Understand provision of curative and preventive health care measures.</li> </ul>	C3	Nice to know	
	<ul style="list-style-type: none"> <li>Practice principles of bioethics</li> </ul>	C3	Nice to know	
	<ul style="list-style-type: none"> <li>Apply strategic use of AI in health care</li> </ul>	C3	Nice to know	
External Surface of Cranial Base ( Norma Basalis)	<ul style="list-style-type: none"> <li>Describe bones forming the base of skull</li> </ul>	C2	Must know	<ul style="list-style-type: none"> <li>Clinical Oriented Anatomy by Keith L. Moore.6TH Edition. (Chapter 7, P829-836).</li> <li><a href="https://youtu.be/6ZjJPLOJ0N8">https://youtu.be/6ZjJPLOJ0N8</a></li> <li><a href="https://youtu.be/75lLaDFJTP4">https://youtu.be/75lLaDFJTP4</a></li> <li><a href="https://youtu.be/fteiKT_wQDE">https://youtu.be/fteiKT_wQDE</a> <b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li> <li><b>UWORLD Step 1</b> (Volume 3) 2023-2024</li> </ul>
	<ul style="list-style-type: none"> <li>Explain the details of anterior, middle and posterior part of base of skull</li> </ul>	C2	Must know	
	<ul style="list-style-type: none"> <li>Identify different foramina and structures passing through them.</li> </ul>	C1	Must know	
	<ul style="list-style-type: none"> <li>Explain the attachments and relations of base of skull.</li> </ul>	C2	Must know	
	<ul style="list-style-type: none"> <li>Fracture of cranial base</li> </ul>	C2	Must know	
	<ul style="list-style-type: none"> <li>Head injuries and intracranial hemorrhage</li> </ul>	C3	Must know	
	<ul style="list-style-type: none"> <li>Correlate with the clinical conditions</li> </ul>	C3	Should know	
	<ul style="list-style-type: none"> <li>Understand provision of curative and preventive health care measures.</li> </ul>	C3	Nice to know	
	<ul style="list-style-type: none"> <li>Practice principles of bioethics</li> </ul>	C3	Nice to know	
	<ul style="list-style-type: none"> <li>Apply strategic use of AI in health care</li> </ul>	C3	Nice to know	
	<ul style="list-style-type: none"> <li>Read relevant research article</li> </ul>	C3	Nice to know	
Lateral & Occipital Aspect of Cranium (Norma Lateralis. & Occipitalis)	<ul style="list-style-type: none"> <li>Enlist various bones in normal lateralis. Describe the cranial and facial subdivision. Define external acoustic meatus,</li> </ul>	C1	Must know	<ul style="list-style-type: none"> <li>Clinical Oriented Anatomy by Keith L. Moore.6TH Edition. (Chapter 7, Page 827-829).</li> <li><a href="https://youtu.be/tkpzPMXzwiM">https://youtu.be/tkpzPMXzwiM</a></li> <li><a href="https://youtu.be/9Msvtw5CjFY">https://youtu.be/9Msvtw5CjFY</a> <b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li> <li><b>UWORLD Step 1</b> (Volume 3) 2023-2024</li> </ul>
	<ul style="list-style-type: none"> <li>Discuss attachments of mastoid and styloid process.</li> </ul>	C2	Must know	
	<ul style="list-style-type: none"> <li>Explain the boundaries of Norma occipitalis.</li> </ul>	C2	Must know	
	<ul style="list-style-type: none"> <li>Identify different foramina and structures passing through them at the base.</li> </ul>	C1	Must know	
	<ul style="list-style-type: none"> <li>Explain its attachments and relations.</li> </ul>	C2	Must know	
	<ul style="list-style-type: none"> <li>Correlate with the clinical conditions</li> </ul>	C3	Should know	
	<ul style="list-style-type: none"> <li>Understand provision of curative and preventive health care measures.</li> </ul>	C3	Nice to know	

	<ul style="list-style-type: none"> <li>Practice principles of bioethics</li> <li>Apply strategic use of AI in health care</li> <li>Read relevant research article</li> </ul>	C3	Nice to know	
	<ul style="list-style-type: none"> <li>Describe the anatomical features of mandible</li> <li>Describe parts of mandible</li> <li>Explain structural features of each part</li> <li>Enlist attachments of each part</li> <li>Describe blood and nerve supply of mandible.</li> <li>Interpret applied anatomy of mandible.</li> <li>Correlate with the clinical conditions</li> <li>understand provision of curative and preventive health care measures.</li> <li>Practice principles of bioethics</li> <li>Apply strategic use of AI in health care</li> <li>Read relevant research article</li> </ul>	C2	Must know	Clinical Oriented Anatomy by Keith L. Moore.6TH Edition. <a href="https://youtu.be/_lHosB-c_fQ">https://youtu.be/_lHosB-c_fQ</a> <a href="https://youtu.be/Qc0ysewMJg4">https://youtu.be/Qc0ysewMJg4</a> <b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034 <b>UWORLD Step 1</b> (Volume 3) 2023-2024
Mandible		C2	Must know	
		C2	Must know	
		C2	Must know	
		C1	Must know	
		C2	Must know	
		C3	Must know	
		C3	Should know	
		C3	Nice to know	
		C3	Nice to know	
		C3	Nice to know	
	<ul style="list-style-type: none"> <li>Discuss the temporomandibular joint, its type, formation and neurovascular supply.</li> <li>Describe the movement's axis and muscles involved.</li> <li>Correlate clinically disorders of the temporo- mandibular joint.</li> <li>Correlate with the clinical conditions</li> <li>Understand provision of curative and preventive health care measures.</li> <li>Practice principles of bioethics</li> <li>Apply strategic use of AI in health care</li> <li>Read relevant research article</li> </ul>	C2	Must know	<ul style="list-style-type: none"> <li>Clinical Oriented Anatomy by Keith L. Moore.6TH Edition. (Chapter 7, Page 916-920).</li> <li><a href="https://youtu.be/6tJsi5oghNY">https://youtu.be/6tJsi5oghNY</a></li> <li><a href="https://youtu.be/0BKU04QLzV0">https://youtu.be/0BKU04QLzV0</a> <b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li> <li><b>UWORLD Step 1</b> (Volume 3) 2023-2024</li> </ul>
Temporomandibular joint (TMJ)		C2	Must know	
		C3	Must know	
		C3	Should know	
		C3	Nice to know	
		C3	Nice to know	
		C3	Nice to know	
		C3	Nice to know	
	<ul style="list-style-type: none"> <li>Discuss limits of face.</li> <li>Tabulate the muscles of face. (Superficial and deep) origin, insertion, nerve supply and action.</li> <li>Discuss their role in facial expression.</li> <li>Describe facial nerve palsy upper and lower motor neuron.</li> <li>Discuss nerve supply of face.</li> <li>Discuss superficial and deep vasculature of face.</li> <li>Map the outline of facial artery and vein on simulated patient / model.</li> <li>Correlate with the clinical conditions</li> </ul>	C2	Must know	<ul style="list-style-type: none"> <li><b>Gross Anatomy :-</b> KLM clinically oriented anatomy edition 10</li> <li><b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li> <li><b>UWORLD Step 1</b> (Volume 3) 2023-2024</li> <li><b>Gross Anatomy :-</b> KLM clinically oriented anatomy edition 10</li> </ul>
Face		C2	Must know	
		C2	Must know	
		C3	Must know	
		C1	Must know	
		C1	Must know	
		P+A	Must know	
		C3	Should know	

	<ul style="list-style-type: none"> <li>Understand provision of curative and preventive health care measures.</li> <li>Practice principles of bioethics</li> <li>Apply strategic use of AI in health care</li> <li>Read relevant research article</li> </ul>	C3	Nice to know	<ul style="list-style-type: none"> <li><b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li> <li><b>UWORLD Step 1</b> (Volume 3) 2023-2024</li> </ul>
Scalp and temple	<ul style="list-style-type: none"> <li>Explain the extent of scalp</li> <li>Describe the Scalp layers, nerves &amp; vessels</li> <li>Discuss the clinical correlates like scalp injuries and scalp wounds.</li> <li>Correlate with the clinical conditions</li> <li>Understand provision of curative and preventive health care measures.</li> <li>Practice principles of bioethics</li> <li>Apply strategic use of AI in health care</li> <li>Read relevant research article</li> </ul>	C2	Must know	<ul style="list-style-type: none"> <li><b>Gross Anatomy :-</b> KLM clinically oriented anatomy edition 10</li> <li><b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li> <li><b>UWORLD Step 1</b> (Volume 3) 2023-2024</li> </ul>
Orbit	<ul style="list-style-type: none"> <li>Discuss its location, surfaces and borders</li> <li>Describe its muscular and ligamentous attachment.</li> <li>Describe eyeball movements in relation to recti and oblique muscles.</li> <li>Discuss role of levator palpebrae superioris</li> <li>Discuss clinical correlations of different coats of eyeball.</li> <li>Explain extent and subdivisions of pharynx</li> <li>Correlate with the clinical conditions</li> <li>Understand provision of curative and preventive health care measures.</li> <li>Practice principles of bioethics</li> <li>Apply strategic use of AI in health care</li> <li>Read relevant research article</li> </ul>	C2	Must know	<ul style="list-style-type: none"> <li>Clinical Oriented Anatomy by Keith L. Moore. 6TH Edition. (Chapter 7, Page 889-906).</li> <li><a href="https://youtu.be/HKEA4p5k66U">https://youtu.be/HKEA4p5k66U</a></li> <li><a href="https://youtu.be/Oz4kGGiJNrA">https://youtu.be/Oz4kGGiJNrA</a></li> <li><b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li> <li><b>UWORLD Step 1</b> (Volume 3) 2023-2024</li> </ul>
Eyeball	<ul style="list-style-type: none"> <li>Describe anatomy of eyeball with suspensory apparatus.</li> <li>Discuss different coats of eyeball with their nerve and blood supply.</li> <li>Discuss refractive media and compartments of eyeball.</li> <li>Correlate with the clinical conditions</li> <li>Understand provision of curative and preventive health care measures.</li> <li>Practice principles of bioethics</li> <li>Apply strategic use of AI in health care</li> <li>Read relevant research article</li> </ul>	C2	Must know	<ul style="list-style-type: none"> <li><b>Gross Anatomy :-</b> KLM clinically oriented anatomy edition 10</li> <li><b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li> <li><b>UWORLD Step 1</b> (Volume 3) 2023-2024</li> </ul>
	<ul style="list-style-type: none"> <li>Discuss the different components of lacrimal apparatus</li> </ul>	C2	Must know	

Eyelid & lacrimal app	• Describe the lacrimal gland and its neurovascular supply	C2	Must know	<ul style="list-style-type: none"> <li>• <b>Gross Anatomy :-</b> KLM clinically oriented anatomy edition 10</li> <li>• <b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li> <li>• <b>UWORLD Step 1</b> (Volume 3) 2023-2024</li> </ul>
	• Correlate with the clinical conditions	C3	Should know	
	• understand provision of curative and preventive health care measures.	C3	Nice to know	
	• Practice principles of bioethics	C3	Nice to know	
	• Apply strategic use of AI in health care	C3	Nice to know	
	• Read relevant research article	C3	Nice to know	
Parotid & Temporal Region	• Describe boundaries of parotid region.	C2	Must know	<ul style="list-style-type: none"> <li>• <b>Gross Anatomy :-</b> KLM clinically oriented anatomy edition 10</li> <li>• <b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li> <li>• <b>UWORLD Step 1</b> (Volume 3) 2023-2024</li> </ul>
	• Discuss surfaces, innervation and relations of parotid gland.	C2	Must know	
	• Understand the bio-physiological aspects of arches	C2	Must know	
	• Map the outline of parotid gland and duct on simulated patient / model.	P+As	Must know	
	• Correlate with the clinical conditions	C3	Should know	
	• understand provision of curative and preventive health care measures.	C3	Nice to know	
	• Practice principles of bioethics	C3	Nice to know	
	• Apply strategic use of AI in health care	C3	Nice to know	
	• Read relevant research article	C3	Nice to know	
Infra temporal Fossa	• Discuss the boundaries and contents of temporal region.	C2	Must know	<ul style="list-style-type: none"> <li>• Clinical Oriented Anatomy by Keith L. Moore.6TH Edition. (Chapter 7, Page 916-926).</li> <li>• <a href="https://youtu.be/z2GlluoOtMY">https://youtu.be/z2GlluoOtMY</a></li> <li>• <a href="https://youtu.be/ixCCX46XWHA">https://youtu.be/ixCCX46XWHA</a></li> <li>• <b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li> <li>• <b>UWORLD Step 1</b> (Volume 3) 2023-2024</li> </ul>
	• Describe the temporalis muscle and its relations	C2	Must know	
	• Enumerate the boundaries and contents of infratemporal region.	C1	Must know	
	• Discuss muscles of mastication	C2	Must know	
	• Correlate with the clinical conditions	C3	Should know	
	• understand provision of curative and preventive health care measures.	C3	Nice to know	
	• Practice principles of bioethics	C3	Nice to know	
	• Apply strategic use of AI in health care	C3	Nice to know	
	• Read relevant research article	C3	Nice to know	
Pterygopalatine Fossa	• Discuss the boundaries and contents of pterygopalatine fossa.	C2	Must know	<ul style="list-style-type: none"> <li>• Clinical Oriented Anatomy by Keith L. Moore.6TH Edition. (Chapter 7, Page 951-954)</li> <li>• <a href="https://youtu.be/9taW-Th3ycc">https://youtu.be/9taW-Th3ycc</a></li> <li>• <b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li> <li>• <b>UWORLD Step 1</b> (Volume 3) 2023-2024</li> </ul>
	• Discuss the communications of pterygopalatine fossa.	C2	Must know	
	• Understand the bio-physiological aspects of arches	C2	Must know	
	• Correlate with the clinical conditions	C3	Should know	
	• understand provision of curative and preventive health care measures	C3	Nice to know	
	• Practice principles of bioethics	C3	Nice to know	
	• Apply strategic use of AI in health care	C3	Nice to know	
	• Read relevant research article	C3	Nice to know	

				<a href="https://youtu.be/o_JbDynMZjo">://youtu.be/o_JbDynMZjo</a>
External & Middle Ear	• Describe parts of the ear.	C2	Must know	<ul style="list-style-type: none"> <li>• Clinical Oriented Anatomy by Keith L. Moore. 6TH Edition. (Chapter 7, Page 966-973).</li> <li>• <a href="https://youtu.be/VRLm7cpmZSk">https://youtu.be/VRLm7cpmZSk</a></li> <li>• <a href="https://youtu.be/unDpXREPPA">https://youtu.be/unDpXREPPA</a></li> <li>• <b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li> <li>• <b>UWORLD Step 1</b> (Volume 3) 2023-2024</li> </ul>
	• Discuss walls and contents of external and middle ear,	C2	Must know	
	• Discuss their blood and nerve supply.	C2	Must know	
	• Explain pharyngeal tube, mastoid antrum and air cells.	C2	Must know	
	• Relation of chorda tympani and facial nerve.	C1	Must know	
	• Discuss Mastoiditis and tubal blockage	C3	Must know	
	• Correlate with the clinical conditions	C3	Should know	
	• understand provision of curative and preventive health care measures	C3	Nice to know	
	• Practice principles of bioethics	C3	Nice to know	
	• Apply strategic use of AI in health care	C3	Nice to know	
	• Read relevant research article	C3	Nice to know	
Inner Ear	• Discuss membranous and bony labyrinth.	C2	Must know	<ul style="list-style-type: none"> <li>• <b>Gross Anatomy :-</b> KLM clinically oriented anatomy edition 10</li> <li>• <b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li> <li>• <b>UWORLD Step 1</b> (Volume 3) 2023-2024</li> </ul>
	• Describe internal acoustic meatus.	C2	Must know	
	• Explain the course of 7th and 8th cranial nerve in detail.	C2	Must know	
	• Correlate with the clinical conditions	C3	Should know	
	• understand provision of curative and preventive health care measures	C3	Nice to know	
	• Practice principles of bioethics	C3	Nice to know	
	• Apply strategic use of AI in health care	C3	Nice to know	
	• Read relevant research article	C3	Nice to know	
Nose & Paranasal Sinuses	• Discuss anatomy and location of paranasal air sinuses separately.	C2	Must know	<ul style="list-style-type: none"> <li>• <b>Gross Anatomy :-</b> KLM clinically oriented anatomy edition 10</li> <li>• <b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li> <li>• <b>UWORLD Step 1</b> (Volume 3) 2023-2024</li> </ul>
	• Define & list names of paranasal sinuses	C1	Must know	
	• Describe their blood and nerve supply	C2	Must know	
	• Describe functions of paranasal sinuses.	C2	Must know	
	• Discuss drainage of paranasal sinuses.	C2	Must know	
	• Identify carious sinuses in radiographs	C1	Must know	
	• Describe anatomy of external nose and features of nasal septum, side and anatomical position.	C2	Must know	
	• Describe details of olfactory receptors and formation of olfactory nerve.	C2	Must know	
	• Discuss blood and nerve supply of external nose and nasal septum.	C2	Must know	
	• Explain functions of nose.	C2	Must know	
	• Discuss in detail clinical correlates of external nose and nasal septum. Lateral nasal wall and their importance.	C2	Should know	
	• Discuss on clinical importance of nasal cavity.	C3	Should know	
	• Correlate with the clinical conditions	C3	Should know	
	• understand provision of curative and preventive health care measures	C3	Nice to know	

	• Practice principles of bioethics	C3	Nice to know	
	• Apply strategic use of AI in health care	C3	Nice to know	
	• Read relevant research article	C3	Nice to know	



## Practical/Skill Lab (SKL)

Topics	At the End of Demonstration Student Should Be Able To	Learning Domains	Importance	References
Cornea	<ul style="list-style-type: none"> <li>Identify the histological slide cornea.</li> </ul>	P	Must know	<ul style="list-style-type: none"> <li><b>Histology :-</b>Junqueira's Basic Histology 18th Edition</li> <li><b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li> <li><b>UWORLD Step 1</b> (Volume 3) 2023-2024</li> </ul>
	<ul style="list-style-type: none"> <li>Illustrate the microscopic picture of Cornea.</li> </ul>	C2	Should know	
	<ul style="list-style-type: none"> <li>Enlist two points of identification of each</li> </ul>	C1	Must know	
	<ul style="list-style-type: none"> <li>Read a relevant research article</li> </ul>	C3	Nice to know	
Retina	<ul style="list-style-type: none"> <li>Identify the histological slide of retina.</li> </ul>	P	Must know	<ul style="list-style-type: none"> <li><b>Histology :-</b>Junqueira's Basic Histology 18th Edition</li> <li><b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li> <li><b>UWORLD Step 1</b> (Volume 3) 2023-2024</li> </ul>
	<ul style="list-style-type: none"> <li>Illustrate the microscopic picture of retina</li> </ul>	C2	Should know	
	<ul style="list-style-type: none"> <li>Enlist two points of identification</li> </ul>	C1	Must know	
	<ul style="list-style-type: none"> <li>Read a relevant research article</li> </ul>	C3	Nice to know	
Ear	<ul style="list-style-type: none"> <li>Identify the histological slide of ear</li> </ul>	P	Must know	<ul style="list-style-type: none"> <li><b>Histology :-</b>Junqueira's Basic Histology 18th Edition</li> <li><b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li> <li><b>UWORLD Step 1</b> (Volume 3) 2023-2024</li> </ul>
	<ul style="list-style-type: none"> <li>Illustrate the microscopic picture of ear</li> </ul>	C1	Should know	
	<ul style="list-style-type: none"> <li>Enlist two points of identification of each</li> </ul>	C1	Must know	
	<ul style="list-style-type: none"> <li>Read a relevant research article</li> </ul>	C3	Nice to know	

**TOS for LMS Assessment of Special Senses Module-I**  
**2<sup>nd</sup> Year MBBS, Batch -50 (Session 2023-24)**

LMS based Assessment for special senses module will be held on 23-09-2024 (Wednesday) from 11:30pm to 12:00pm. Detail of topics are mentioned in the table below:

S No.	Domain of Teaching and Learning Activity	Topic	No. of MCQs	Cognitive Domain		
				C1	C2	C3
1.	LGIS	<b>Embryology</b> Development of Eye-I	4	1	1	2
		<b>Histology</b> Histology of eye1	4	1	1	2
2.	SGD	Facial and superior aspect of cranium (Norma frontalis & Norma verticalis), Norma Basalis, scalp ,Mandible, Temporomandibular joint	18	5	5	8
3.	Practical	Histology of cornea.	2	0	1	1
4.	CBL	Extra Dural hemorrhage.	2	0	1	1

MCQS= 30

Learning Resources:

- **Embryology** :- KLM Embryology Developing Human 11<sup>th</sup> Edition
- **Histology** :-Junqueira's Basic Histology 18th Edition
- **Gross Anatomy** :- KLM clinically oriented anatomy edition 10
- **USMLE Q Bank Step 1** (Volume 1) 2023-2034
- **UWORLD Step 1** (Volume 3) 2023-2024

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# Endocrinology Module

## Learning Objectives

### Large Group Interactive Session (LGIS)

Topic	Learning Objectives At the end of lecture students should be able to	Calgary Gauge	Learning Domain	References
<b>Histology</b>				
Pituitary and pineal glands	<ul style="list-style-type: none"> <li>Describe histological structure of pituitary and pineal gland</li> </ul>	Must know	C2	<b>Histology</b> :-Junqueira's Basic Histology 18th Edition  <b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034 <b>UWORLD Step 1</b> (Volume 3) 2023-2024LGIS
	<ul style="list-style-type: none"> <li>Enumerate different cells present in both glands</li> </ul>	Must know	C1	
	<ul style="list-style-type: none"> <li>Discuss bio-physiological aspects related to their secretions</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Correlate with the clinical conditions</li> </ul>	Should know	C3	
	<ul style="list-style-type: none"> <li>Focus on provision of curative and preventive health care measures</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Practice principles of bioethics</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Apply strategic use of AI in health care</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Read relevant research article</li> </ul>			
Thyroid and parathyroid glands	<ul style="list-style-type: none"> <li>Describe histological structure of thyroid and parathyroid gland</li> </ul>	Must know	C2	<b>Histology</b> :-Junqueira's Basic Histology 18th Edition  <b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034 <b>UWORLD Step 1</b> (Volume 3) 2023-2024LGIS
	<ul style="list-style-type: none"> <li>Enumerate different cells present in both glands</li> </ul>	Must know	C1	
	<ul style="list-style-type: none"> <li>Discuss bio-physiological aspects related to their secretions</li> </ul>	Must know	C2	
	<ul style="list-style-type: none"> <li>Correlate with the clinical conditions</li> </ul>	Should know	C3	
	<ul style="list-style-type: none"> <li>focus on provision of curative and preventive health care measures</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Practice principles of bioethics</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Apply strategic use of AI in health care</li> </ul>	Nice to know	C3	
	<ul style="list-style-type: none"> <li>Read relevant research article</li> </ul>			
Adrenal gland	<ul style="list-style-type: none"> <li>Describe histological structure of adrenal gland.</li> </ul>	Must know	C2	<b>Histology</b> :-Junqueira's Basic Histology 18th Edition <b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034 <b>UWORLD Step 1</b>
	<ul style="list-style-type: none"> <li>Enumerate different cells present in gland</li> </ul>	Must know	C1	
	<ul style="list-style-type: none"> <li>Discuss bio-physiological aspects related to secretions.</li> </ul>	Must know	C2	

	<ul style="list-style-type: none"><li>Correlate with the clinical conditions</li></ul>	Should know	C3	(Volume 3) 2023-2024 LGIS
	<ul style="list-style-type: none"><li>focus on provision of curative and preventive health care measures</li></ul>	Nice to know	C3	
	<ul style="list-style-type: none"><li>Practice principles of bioethics</li></ul>	Nice to know	C3	
	<ul style="list-style-type: none"><li>Apply strategic use of AI in health care</li></ul>	Nice to know	C3	
	<ul style="list-style-type: none"><li>Read relevant research article</li></ul>			
Embryology				
Pituitary and pineal glands	<ul style="list-style-type: none"><li>Describe stages of development of pituitary and pineal glands</li></ul>	Must know	C2	Embryology :- KLM Embryology Developing Human 11 <sup>th</sup> Edition  USMLE Q Bank Step 1 (Volume 1) 2023-2034 UWORLD Step 1 (Volume 3) 2023-2024
	<ul style="list-style-type: none"><li>Enumerate structures involved in development of glands</li></ul>	Must know	C1	
	<ul style="list-style-type: none"><li>Discuss congenital abnormalities related to development of glands</li></ul>	Must know	C2	
	<ul style="list-style-type: none"><li>Correlate with the clinical conditions</li></ul>	Should know	C3	
	<ul style="list-style-type: none"><li>focus on provision of curative and preventive health care measures</li></ul>	Nice to know	C3	
	<ul style="list-style-type: none"><li>Practice principles of bioethics</li></ul>	Nice to know	C3	
	<ul style="list-style-type: none"><li>Apply strategic use of AI in health care</li></ul>	Nice to know	C3	
	<ul style="list-style-type: none"><li>Read relevant research article</li></ul>			
Thyroid and parathyroid glands	<ul style="list-style-type: none"><li>Describe a stage of development of thyroid and parathyroid glands</li></ul>	Must know	C2	Embryology Developing Human 11 <sup>th</sup> Edition USMLE Q Bank Step 1 (Volume 1) 2023-2034 UWORLD Step 1 (Volume 3) 2023-2024
	<ul style="list-style-type: none"><li>Enumerate structures involved in development of glands</li></ul>	Must know	C1	
	<ul style="list-style-type: none"><li>Discuss congenital abnormalities associated with their development</li></ul>	Must know	C2	
	<ul style="list-style-type: none"><li>Correlate with the clinical conditions</li></ul>	Should know	C3	
	<ul style="list-style-type: none"><li>focus on provision of curative and preventive health care measures</li></ul>	Nice to know	C3	
	<ul style="list-style-type: none"><li>Practice principles of bioethics</li></ul>	Nice to know	C3	
	<ul style="list-style-type: none"><li>Apply strategic use of AI in health care</li></ul>	Nice to know	C3	
	<ul style="list-style-type: none"><li>Read relevant research article</li></ul>			
Adrenal gland	<ul style="list-style-type: none"><li>Describe stages of development of adrenal glands</li></ul>	Must know	C2	Embryology :- KLM Embryology Developing Human 11 <sup>th</sup> Edition USMLE Q Bank Step 1 (Volume 1) 2023-2034 UWORLD Step 1 (Volume 3) 2023-2024
	<ul style="list-style-type: none"><li>Enumerate structures involved in the development of gland.</li></ul>	Must know	C1	
	<ul style="list-style-type: none"><li>Discuss congenital abnormalities associated with its development.</li></ul>	Must know	C2	
	<ul style="list-style-type: none"><li>Correlate with the clinical conditions</li></ul>	Should know	C3	
	<ul style="list-style-type: none"><li>focus on provision of curative and preventive health care measures</li></ul>	Nice to know	C3	

	• Practice principles of bioethics	Nice to know	C3	
	• Apply strategic use of AI in health care	Nice to know	C3	
	• Read relevant research article	Nice to know	C3	

## Small Group Discussion (SGD)

Topic	Learning Objectives At the end of lecture students should be able to	Importance	Learning Domain	References
Bones of neck Hyoid Bone Cervical vertebrae	• Describe the borders and surfaces of body and the two cornuas of hyoid bone.	Must know	C2	<ul style="list-style-type: none"> <li><b>Gross Anatomy :-</b> KLM Clinical Oriented Anatomy by Keith L. Moore. 6TH Edition. (Chapter 8, Page 982-985).</li> <li><a href="https://youtu.be/Mrtt9s72a7I?si=-ICPt14ihH7g0tKE">https://youtu.be/Mrtt9s72a7I?si=-ICPt14ihH7g0tKE</a></li> <li><a href="https://youtu.be/4Q244XGveyQ?si=TH6IM2Jf43P_SBv3">https://youtu.be/4Q244XGveyQ?si=TH6IM2Jf43P_SBv3</a></li> <li><a href="https://teachmeanatomy.info/neck/bones/hyoid-bone/">https://teachmeanatomy.info/neck/bones/hyoid-bone/</a></li> <li><b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li> <li><b>UWORLD Step 1</b> (Volume 3) 2023-2024</li> </ul>
	• Discuss the attachments on the hyoid bone.	Must know	C2	
	• Discuss the related applied of hyoid.	Must know	C2	
	• Describe anatomical features of cervical typical & atypical vertebrae.	Must know	C2	
	• Discuss the intervertebral joints & movements of cervical region of vertebral column.	Must know	C2	
	• Discuss the anatomical basis of cervical pain & injuries of cervical vertebral column	Must know	C2	
	• Correlate with the clinical conditions	Must know	C3	
	• Map the outline of hyoid bone on a simulated patient or model	Should know	P	
	• focus on provision of curative and preventive health care measures	Should know	C3	
	• Practice principles of bioethics	Nice to know	C3	
	• Apply strategic use of AI in health care	Nice to know	C3	
Fascias of Neck.	• Read relevant research article	Nice to know	C3	
	• Understand cervical subcutaneous tissue & platysma.	Must know	C2	<ul style="list-style-type: none"> <li>Clinical Oriented Anatomy by Keith L. Moore. 6TH Edition. (Chapter 8, P 989-992).</li> <li><a href="https://youtu.be/nSaaWPzG4Zk?si=Muj6xMLX8fYkPOie">https://youtu.be/nSaaWPzG4Zk?si=Muj6xMLX8fYkPOie</a></li> <li><a href="https://youtu.be/dEpCSJajCew?si=OM4WbKbS7Eodte4">https://youtu.be/dEpCSJajCew?si=OM4WbKbS7Eodte4</a></li> <li><a href="https://teachmeanatomy.info/neck/misc/fascial-layers/">https://teachmeanatomy.info/neck/misc/fascial-layers/</a></li> <li><b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li> <li><b>UWORLD Step 1</b> (Volume 3) 2023-2024</li> </ul>
	• Discuss the deep cervical fascia and the formation of layers due to its condensation.	Must know	C2	
	• Discuss the attachments and special features of the investing layer.	Must know	C2	
	• Describe the attachments and special features of prevertebral fascia.	Must know	C2	
	• Describe the attachments and special features of pretracheal fascia.	Must know	C2	
	• Discuss the carotid sheath formation, contents and relations.	Must know	C2	
	• Differentiate between the buccopharyngeal fascia and pharyngobasilar fascia.	Must know	C3	
	• Correlate with the anatomical basis of cervical pain & injuries of cervical vertebral column	Should know	P	
	• focus on provision of curative and preventive health care measures	Should know	C3	
	• Practice principles of bioethics	Nice to know	C3	
	• Apply strategic use of AI in health care	Nice to know	C3	
	Read relevant research article	Nice to know	C3	
	• Discuss the location, attachments & actions of SCM & trapezius.	Must know	C2	<ul style="list-style-type: none"> <li><b>Gross Anatomy :-</b> KLM clinically</li> </ul>

Superficial structures of the neck	• Describe boundaries & location of posterior cervical region.	Must know	C2	oriented anatomy edition 10 • <b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034 <b>UWORLD Step 1</b> (Volume 3) 2023-2024 SGD, Skill lab
	• Discuss suboccipital triangle of neck & its contents.	Must know	C2	
	• Discuss the location, attachments & actions of SCM & trapezius.	Must know	C2	
	• Describe boundaries & location of posterior cervical region.	Must know	C2	
	• Discuss the anatomical basis of cervical pain & injuries of cervical vertebral column	Must know	C2	
	• Correlate with the clinical conditions focus on provision of curative and preventive health care measures	Must know	C3	
	• Practice principles of bioethics	Should know	P	
	• Apply strategic use of AI in health care	Should know	C3	
	• Read relevant research article	Nice to know	C3	
lateral cervical region-(Muscles & triangles)	• Describe boundaries of posterior triangle.	Must know	C2	• Clinical Oriented Anatomy by Keith L. Moore.6TH Edition. (Chapter 8, Page 992-999). • <a href="https://youtu.be/bk9KA2nR7PA?si=jBEzEd-MWZ83ne6a">https://youtu.be/bk9KA2nR7PA?si=jBEzEd-MWZ83ne6a</a> • <a href="https://youtu.be/kPUwVJE_j0I?si=-Ozn5s_bZLuog-a">https://youtu.be/kPUwVJE_j0I?si=-Ozn5s_bZLuog-a</a> <a href="https://teachmeanatomy.info/neck/areas/posterior-triangle">https://teachmeanatomy.info/neck/areas/posterior-triangle</a> . <b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034 <b>UWORLD Step 1</b> (Volume 3) 2023-2024
	• Discuss the muscles in lateral cervical region. (splenius capitus, levator scapulae, middle scalene & posterior scalene.	Must know	C2	
	• Describe boundaries and contents of occipital triangle	Must know	C2	
	• Discuss boundaries and contents of subclavian triangle	Must know	C2	
	• Discuss the anatomical basis of cervical pain & injuries of cervical vertebral column	Must know	C2	
	• Correlate with the clinical conditions	Must know	C2	
	• Map the outline of triangles of neck (posterior, occipital and subclavian) on a simulated patient or model	Must know	C3	
	• focus on provision of curative and preventive health care measures	Should know	P	
	• Practice principles of bioethics	Should know	C3	
	• Apply strategic use of AI in health care	Nice to know	C3	
	• Read relevant research article	Nice to know	C3	
Anterior cervical region-(Muscles)	• Discuss the Muscles in anterior cervical region (suprahyoid muscle group & infrahyoid muscle group)	Must know	C2	• Clinical Oriented Anatomy by Keith L. Moore.6TH Edition. (Chapter 8, Page,999-1005). • <a href="https://youtu.be/hnLtAYvAMkw?si=EWZCqciSD2K91uo4">https://youtu.be/hnLtAYvAMkw?si=EWZCqciSD2K91uo4</a> • <a href="https://youtu.be/YOgE2pmXfZg?si=7hU-ZAw7wcaomUyI">https://youtu.be/YOgE2pmXfZg?si=7hU-ZAw7wcaomUyI</a> <a href="https://teachmeanatomy.info/neck/areas/anterior-triangle/">https://teachmeanatomy.info/neck/areas/anterior-triangle/</a> <b>USMLE Q Bank Step 1</b> (Volume 1)
	• Discuss the anatomical basis of torticollis	Must know	C3	
	• Correlate with the clinical conditions	Should know	C3	
	• focus on provision of curative and preventive health care measures	Nice to know	C3	
	• Practice principles of bioethics	Nice to know	C3	
	• Apply strategic use of AI in health care	Nice to know	C3	
	• Read relevant research article	Must know	C3	

				2023-2034 <b>UWORLD Step 1</b> (Volume 3) 2023-2024
Anterior Cervical Region-(Vessels of neck & Cervical plexus)	• Discuss arterial supply in anterior cervical region (carotid system of arteries )	Must know	C2	<ul style="list-style-type: none"> <li>• <b>Gross Anatomy :-</b> KLM clinically oriented anatomy edition 10</li> <li>• <b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li> <li>• <b>UWORLD Step 1</b> (Volume 3) 2023-2024</li> </ul>
	• Discuss venous drainage in anterior cervical region	Must know	C2	
	• Discuss formation of cervical plexus	Must know	C2	
	• Enumerate branches of cervical plexus	Must know	C2	
	• Discuss area of distribution	Must know	C2	
	• Correlate with the clinical conditions	Should know	C3	
	• Map the outline of carotid vessels and jugular vessels on a simulated patient or model.	Nice to know	P	
	• focus on provision of curative and preventive health care measures	Nice to know	C3	
	• Practice principles of bioethics	Nice to know	C3	
	• Apply strategic use of AI in health care	Nice to know	C3	
	• Read relevant research article	Nice to know	C3	
Submandibular Region	• Discuss the relations of digastric, mylohyoid and hyoglossus muscles.	Must know	C2	<ul style="list-style-type: none"> <li>• <b>Gross Anatomy :-</b> KLM clinically oriented anatomy edition 10</li> <li>• <b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li> <li>• <b>UWORLD Step 1</b> (Volume 3) 2023-2024</li> </ul>
	• Describe the gross features, relations, blood supply, lymphatic drainage and nerve supply of submandibular salivary gland.	Must know	C3	
	• Describe the details of Wharton's duct, its opening and related clinicopathological conditions	Should know	C3	
	• Describe the gross features, relations, blood supply, lymphatic drainage and nerve supply of sublingual salivary gland.	Nice to know	C3	
	• Tabulate the comparison of three salivary glands.	Nice to know	C3	
	• Describe the connections and branches with area of supply by the sub-mandibular ganglion.	Nice to know	C3	
	• Correlate with the clinical conditions	Nice to know	C3	
	• Map the outline for relevant structures on a simulated patient or model	Nice to know	C3	
	• focus on provision of curative and preventive health care measures	Must know	C3	
	• Practice principles of bioethics	Must know	C3	
	• Apply strategic use of AI in health care	Nice to know	C3	
	• Read relevant research article	Nice to know	C3	
Soft Palate	• Discuss the anatomy of soft palate along with attachment of muscles and their actions.	Must know	C2	<ul style="list-style-type: none"> <li>• Clinical Oriented Anatomy by Keith L. Moore.6TH Edition. (Chapter 8, Page 1021-1032).</li> </ul>
	• Describe boundaries of tonsillar fossa.	Must know	C2	
	• Correlate with the clinical conditions	Should know	C3	



	<ul style="list-style-type: none"> <li>• focus on provision of curative and preventive health care measures</li> <li>• Practice principles of bioethics</li> <li>• Apply strategic use of AI in health care</li> <li>• Read relevant research article</li> </ul>	Nice to know	C3	<a href="https://youtu.be/eBn3PMX0tfk?si=hCg37nm5DsR6T1_s">https://youtu.be/eBn3PMX0tfk?si=hCg37nm5DsR6T1_s</a> <a href="https://youtu.be/4SDEtzyJCVI?si=zWSHGf-prTqR1kqi">https://youtu.be/4SDEtzyJCVI?si=zWSHGf-prTqR1kqi</a> <b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034 <b>UWORLD Step 1</b> (Volume 3) 2023-2024
Deep structures of neck	<ul style="list-style-type: none"> <li>• Discuss prevertebral muscles (ant. vertebral muscles &amp; lateral vertebral muscles)</li> <li>• Correlate with the clinical conditions</li> <li>• focus on provision of curative and preventive health care measures</li> <li>• Practice principles of bioethics</li> <li>• Apply strategic use of AI in health care</li> <li>• Read relevant research article</li> </ul>	Must know Must know Should know Should know Nice to know Nice to know	C2 C3 C3 C3 C3 C3	<ul style="list-style-type: none"> <li>• <b>Gross Anatomy :-</b> KLM clinically oriented anatomy edition 10</li> <li>• <b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li> <li>• <b>UWORLD Step 1</b> (Volume 3) 2023-2024</li> </ul>
Root of Neck	<ul style="list-style-type: none"> <li>• Discuss arteries &amp; veins in root of neck.</li> <li>• Discuss nerve supply in root of neck.</li> <li>• Correlate with the clinical conditions</li> <li>• focus on provision of curative and preventive health care measures</li> <li>• Practice principles of bioethics</li> <li>• Apply strategic use of AI in health care</li> <li>• Read a relevant research article</li> </ul>	Must know Must know Should know Nice to know Nice to know Nice to know Nice to know	C2 C2 C3 C3 C3 C3 C3	<ul style="list-style-type: none"> <li>• <b>Gross Anatomy :-</b> KLM clinically oriented anatomy edition 10</li> <li>• <b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li> <li>• <b>UWORLD Step 1</b> (Volume 3) 2023-2024</li> </ul>
Thyroid and para thyroid glands	<ul style="list-style-type: none"> <li>• Discuss anatomy &amp; functions of thyroid &amp; parathyroid gland</li> <li>• Discuss blood supply of thyroid gland</li> <li>• Discuss lymphatic drainage &amp; nerve supply of thyroid gland</li> <li>• Correlate with the clinical conditions</li> <li>• Map the outline of thyroid gland on a simulated patient or model</li> <li>• focus on provision of curative and preventive health care measures</li> <li>• Practice principles of bioethics</li> <li>• Apply strategic use of AI in health care</li> <li>• Read a relevant research article</li> </ul>	Must know Must know Must know Should know Nice to know Nice to know Nice to know Nice to know Must know	C2 C2 C2 C3 P C3 C3 C3 C2	<ul style="list-style-type: none"> <li>• Clinical Oriented Anatomy by Keith L. Moore. 6TH Edition. (Chapter 8, Page 1018-1021).</li> <li>• <a href="https://youtu.be/7_Rd7IIEZPI?si=mhoplCBjHSUL6pwI">https://youtu.be/7_Rd7IIEZPI?si=mhoplCBjHSUL6pwI</a></li> <li>• <a href="https://youtu.be/ruOirrIc6oY?si=frzfEV7Lqb52Pp6Q">https://youtu.be/ruOirrIc6oY?si=frzfEV7Lqb52Pp6Q</a></li> <li>• <a href="https://teachmeanatomy.info/neck/viscera/thyroid-gland/">https://teachmeanatomy.info/neck/viscera/thyroid-gland/</a></li> <li>• <b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li> <li>• <b>UWORLD Step 1</b> (Volume 3) 2023-2024</li> </ul>
Larynx	<ul style="list-style-type: none"> <li>• Discuss larynx in detail with its cartilages and muscles.</li> <li>• Discuss blood supply of larynx</li> <li>• Discuss functions of larynx</li> </ul>	Must know Must know Must know	C2 C2 C2	<ul style="list-style-type: none"> <li>• <b>Gross Anatomy :-</b> KLM clinically oriented anatomy edition 10</li> </ul>

	• Discuss trachea (revisit).	Must know	C2	<ul style="list-style-type: none"> <li><b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li> <li><b>UWORLD Step 1</b> (Volume 3) 2023-2024</li> </ul>
	• Map the outline of laryngeal cartilages and trachea on a simulated patient or model.	Should know	P	
	• Correlate with the clinical conditions	Nice to know	C3	
	• focus on provision of curative and preventive health care measures	Nice to know	C3	
	• Practice principles of bioethics	Nice to know	C3	
	• Apply strategic use of AI in health care	Nice to know	C3	
	• Read a relevant research article.	Must know	C3	
Pharynx	• Tabulate muscles of pharynx with origin, insertion, nerve supply and actions	Must know	C2	<ul style="list-style-type: none"> <li><b>Gross Anatomy :-</b> KLM clinically oriented anatomy edition 10</li> <li><b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li> <li><b>UWORLD Step 1</b> (Volume 3) 2023-2024</li> </ul>
	• Discuss nerve supply of Pharynx	Must know	C2	
	• Discuss blood supply of larynx	Must know	C2	
	• Discuss esophagus (revisit)	Must know	C2	
	• Map the outline of oesphagus on a simulated patient or model	Should know	P	
	• Correlate with the clinical conditions	Should know	C3	
	• focus on provision of curative and preventive health care measures	Nice to know	C3	
	• Practice principles of bioethics	Nice to know	C3	
	• Apply strategic use of AI in health care	Nice to know	C3	
	• Read a relevant research article	Nice to know	C3	
Pancreas & Adrenal gland	• Describe location of pancreas & Adrenal gland	Must know	C2	<ul style="list-style-type: none"> <li><b>Gross Anatomy :-</b> KLM clinically oriented anatomy edition 10</li> <li><b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034</li> <li><b>UWORLD Step 1</b> (Volume 3) 2023-2024</li> </ul>
	• Enlist different parts of pancreas	Must know	C2	
	• Describe relations of pancreas	Must know	C2	
	• Discuss blood supply of pancreas	Must know	C2	
	• Discuss the clinical Anatomy of pancreas	Must know	C3	
	• Correlate with the clinical conditions	Should know	C3	
	• focus on provision of curative and preventive health care measures	Nice to know	C3	
	• Practice principles of bioethics	Nice to know	C3	
	• Apply strategic use of AI in health care	Nice to know	C3	
	• Read a relevant research article	Nice to know	C3	

## Practical/Skill Lab (SKL)

Topic	Learning Objectives At the end of practical students should be able to	Calgary Gauge	Learning Domain	References
Histology of pituitary gland	• Identify the histological slide of the pituitary gland	Must know	P	<ul style="list-style-type: none"> <li><b>Histology</b> :-Junqueira's Basic Histology 18th Edition <b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034 <b>UWORLD Step 1</b> (Volume 3) 2023-2024</li> </ul>
	• Illustrate the histological structure of the pituitary gland	Should know	C2	
	• Enlist two points of identification	Must know	C1	
Histology of adrenal gland	• Identify the histological slide of the adrenal gland	Must know	P	<ul style="list-style-type: none"> <li><b>Histology</b> :-Junqueira's Basic Histology 18th Edition <b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034 <b>UWORLD Step 1</b> (Volume 3) 2023-2024</li> </ul>
	• Illustrate the histological structure of the adrenal gland	Should know	C2	
	• Enlist two points of identification	Must know	C1	
Histology of thyroid and parathyroid gland	• Identify the histological slide of the thyroid and parathyroid gland	Must know	P	<ul style="list-style-type: none"> <li><b>Histology</b> :-Junqueira's Basic Histology 18th Edition <b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034 <b>UWORLD Step 1</b> (Volume 3) 2023-2024</li> </ul>
	• Illustrate the histological structure of the thyroid and parathyroid gland	Should know	C2	
	• Enlist two points of identification	Must know	C1	
Histology of pancreas	• Identify the histological slide of the pancreas	Must know	P	<ul style="list-style-type: none"> <li><b>Histology</b> :-Junqueira's Basic Histology 18th Edition <b>USMLE Q Bank Step 1</b> (Volume 1) 2023-2034 <b>UWORLD Step 1</b> (Volume 3) 2023-2024</li> </ul>
	• Illustrate the histological structure of the pancreas	Should know	C2	
	• Enlist two points of identification	Must know	C1	

## TOS for LMS Assessment of Endocrinology Module

### 2<sup>nd</sup> Year MBBS, Batch -50 (Session 2023-24)

LMS based Assessment for endocrinology Module will be held on Monday from 9:00pm to 9:30pm.  
Detail of topics are mentioned in the table below:

S No.	Domain of Teaching and Learning Activity	Topic	No. of MCQs	Cognitive Domain		
				C1	C2	C3
1.	LGIS	<b>Embryology</b> Development of pituitary&. pineal gland	4	1	1	2
		Development of thyroid and parathyroid gland <b>Histology</b> Histology of pituitary& pineal gland Histology of thyroid and para thyroid gland	4	1	1	2
2.	SGD	Bones of neck Hyoid bone& Cervical Vertebrae Superficial and deep fascia of the neck Lateral cervical region (Muscles) Lateral cervical region (Neurovascular Organization) Anterior cervical region (Anterior Triangles of neck)	18	5	5	8
3.	Practical	Histology of pituitary gland	2	0	1	1
4.	CBL	Superficial structures of neck (Sternocleidomastoid region of neck, posterior cervical region sub occipital triangle)	2	0	1	1

MCQS= 30

Learning Resources:

- **Embryology** :- KLM Embryology Developing Human 11<sup>th</sup> Edition
- **Histology** :-Junqueira's Basic Histology 18th Edition
- **Gross Anatomy** :- KLM clinically oriented anatomy edition 10
- **USMLE Q Bank Step 1** (Volume 1) 2023-2034
- **UWORLD Step 1** (Volume 3) 2023-2024

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