Course specification
Kafrelsheikh University
Faculty of Medicine
اعتماد توصيف مقررات الفرقة الثانية
Semester 3

اعتمادات المجالس الحاكمة:

مجلس إدارة وحدة ضمان الجودة	**جلسة رقم (٢) بتاريخ ٢٠٢٤/٩/٣٠**
مجلس الكلية:	**جلسة رقم (٦١) بتاريخ ٢٠٢٤/١٠/٧**

الإعتمادات:

مدير وحدة ضمان الجودة

عميد الكلية

Course Specifications

GIT 213

2025 /2026

1. Basic Information

Course Title	**Gastrointestinal system**			
Course Code	**GIT 213**			
Department/s participating in delivery of the course	**Medical Physiology Department** **Anatomy and embryology Department** **Histology and cell biology Department** **Medical Biochemistry Department**			
Number of credit points of the course = 6	**Theoretical**	**practical**	**Self-learning (Tasks/ Assignments/ incision academy**	**Total**
	2.4	1.2	2.4	6
Number of contact and non-contact hours of the course	**72**	**36**	**72**	180
Course Type	Obligatory			
Academic level at which the course is taught	Second year/1st semester			
Academic Program	M.B. Ch.B. 5+2 Program (credit points)			
Faculty	Kafrelsheikh Faculty of Medicine			
University	Kafrelsheikh University			
Name of Course Coordinator				
Course Specification Approval Date	7/10/2024			

Course Specification Approval **(Attach the decision/minutes of the department /committee/council ....)**	

2. Course Overview (Brief summary of scientific content)

By the end of the course, students will be able to demonstrate a comprehensive understanding of the structure and function of the gastrointestinal system, including the oral cavity, digestive glands, and the organs involved in digestion, absorption, and excretion. The course integrates anatomical, physiological, histological, and biochemical aspects to explain gastrointestinal functions and their regulation. It also aims to develop students' abilities to apply this integrated knowledge to analyze digestive processes and related clinical conditions, while promoting self-directed learning, critical thinking, and continuous professional development.

3. Course Learning Outcomes (CLOs)

Matrix of course learning outcomes CLOs with program outcomes POs (NARS/ARS)

	Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		**Course Learning Outcomes** **Upon completion of the course, the student will be able to:**
Code	**Text**	**Code**	**Text**
1.1	Take and record a structured, patient centered history	1.1.1	
1.2	Adopt an empathic and holistic approach to the patients and their problems	1.2.1	
1.3	Assess the mental state of the patient	1.3.1	
1.4	Perform appropriately-timed full physical examination of patients, appropriate to the age, gender, and clinical presentation of the patient while being culturally sensitive	1.4.1	
1.5	Prioritize issues to be addressed in a patient encounter	1.5.1	

1.6	Select the appropriate investigations and interpret their results taking into consideration cost/ effectiveness factors	1.6.1	
1.7	Recognize and respond to the complexity, uncertainty, and ambiguity inherent in medical practice	1.7.1	
1.8	Apply knowledge of the clinical and biomedical sciences relevant to the clinical problem at hand	1.8.1	Apply integrated anatomical and physiological knowledge of the gastrointestinal tract to interpret the structural and functional basis of common clinical conditions such as peptic ulcer, jaundice, and intestinal obstruction.
1.9	Retrieve, analyze, and evaluate relevant and current data from literature, using information technologies and library resources, in order to help solve a clinical problem based on evidence (EBM)	1.9.1	Retrieve current, relevant evidence on a selected GIT clinical question
1.10	Integrate the results of history, physical examination and laboratory test findings into a meaningful diagnostic formulation	1.10.1	
.11	Perform diagnostic and intervention procedures in a skillful and safe manner, adapting to unanticipated findings or changing clinical circumstances	1.11.1	
1.12	Adopt strategies and apply measures that promote patient safety	1.12.1	
1.13	Establish patient-centered management plans in partnership with the patient, his/her family and other health professionals as appropriate, using Evidence Based Medicine in management decision	1.13.1	
1.14	Respect patients' rights and involve them and/or their families/carers in management decisions	1.14.1	
1.15	Provide the appropriate care in cases of emergency, including cardio-pulmonary resuscitation, immediate life support measures and basic first aid procedures	1.15.1	
1.16	Apply the appropriate pharmacological and nonpharmacological approaches to alleviate pain and provide palliative care for seriously ill people, aiming to relieve their suffering and improve their quality of life	1.16.1	

1.17	Contribute to the care of patients and their families at the end of life, including management of symptoms, practical issues of law and certification	1.17.1	
2.1	Identify the basic determinants of health and principles of health improvement	2.1.1	Identify major determinants influencing gastrointestinal health, including nutrition, hygiene, infection control, and lifestyle factors, and relate them to principles of disease prevention and health promotion
2.2	Recognize the economic, psychological, social, and cultural factors that interfere with wellbeing	2.2.1	
2.3	Discuss the role of nutrition and physical activity in health	2.3.1	Discuss the impact of balanced nutrition and physical activity on maintaining gastrointestinal function, preventing digestive disorders, and promoting overall health
2.4	Identify the major health risks in his/her community, including demographic, occupational and environmental risks; endemic diseases, and prevalent chronic diseases	2.4.1	
2.5	Describe the principles of disease prevention, and empower communities, specific groups or individuals by raising their awareness and building their capacity	2.5.1	
2.6	Recognize the epidemiology of common diseases within his/her community and apply the systematic approaches useful in reducing the incidence and prevalence of those diseases	2.6.1	
2.7	Provide care for specific groups including pregnant women, newborns and infants, adolescents and the elderly	2.7.1	
2.8	Identify vulnerable individuals that may be suffering from abuse or neglect and take proper actions to safeguard their welfare	2.8.1	
3.1	Exhibit appropriate professional behaviors and relationships in all aspects of practice, demonstrating honesty, integrity, commitment, compassion, and respect	3.1.1	Demonstrate professional behavior, commitment, and respect toward colleagues, and instructors during learning and discussions related to gastrointestinal module.
3.2	Adhere to the professional standards and laws governing the practice, and abide by the national code of ethics issued by the Egyptian Medical Syndicate	3.2.1	

3.3	Respect the different cultural beliefs and values in the community they serve	3.3.1	
3.4	Treat all patients equally, and avoid stigmatizing any category regardless of their social, cultural or ethnic backgrounds, or their disabilities	3.4.1	
3.5	Ensure confidentiality and privacy of patients' information	3.5.1	
3.6	Recognize basics of medico-legal aspects of practice, malpractice and avoid common medical errors	3.6.1	
3.7	Recognize and manage conflicts of interest	3.7.1	
3.8	Refer patients to the appropriate health facility at the appropriate stage	3.8.1	
3.9	Identify and report any unprofessional and unethical behaviors or physical or mental conditions related to himself, colleagues or any other person that might jeopardize patients' safety	3.9.1	
4.1	Describe the normal structure of the body and its major organ systems and explain their functions	4.1.1	Describe the gross anatomy of the mouth, esophagus, stomach, intestines, liver, and pancreas, emphasizing their anatomical relations and blood supply.
		4.1.2	Describe the blood supply, nerve supply, and peritoneal relations of GIT organs
		4.1.3	Explain the physiological functions of digestive secretion, motility, absorption, and their neural and hormonal control mechanism
		4.1.4	Identify the microscopic structure of gastrointestinal mucosa, glands, and accessory organs using histological slides.
		4.1.5	Explain the physiological mechanism of defecation.
4.2	Explain the molecular, biochemical, and cellular mechanisms that are important in maintaining the body's homeostasis	4.2.1	Explain the biochemical pathways involved in digestion and absorption of carbohydrates, proteins, and lipids, and their regulation by hormones and enzymes.
		4.2.2	Discuss the metabolism of bilirubin and its clinical significance in jaundice.
4.3	Recognize and describe main developmental changes in humans and the effect of growth, development and aging on the individual and his family	4.3.1	Outline the embryological development of the gastrointestinal tract and common developmental anomalies.
4.4	Explain normal human behavior and apply theoretical frameworks of	4.4.1	

	psychology to interpret the varied responses of individuals, groups and societies to disease		
4.5	Identify various causes (genetic, developmental, metabolic, toxic, microbiologic, autoimmune, neoplastic, degenerative, and traumatic) of illness/disease and explain the ways in which they operate on the body (pathogenesis)	4.5.1	
4.6	Describe altered structure and function of the body and its major organ systems that are seen in various diseases and conditions	4.6.1	Describe histological and biochemical alterations of the GIT to common clinical conditions.
4.7	Describe drug actions: therapeutics and pharmacokinetics; side effects and interactions, including multiple treatments, long term conditions and non-prescribed medication; and effects on the population	4.7.1	
4.8	Demonstrate basic sciences specific practical skills and procedures relevant to future practice, recognizing their scientific basis, and interpret common diagnostic modalities	4.8.1	Demonstrate identification of GIT organs and major blood vessels on cadaveric specimens and anatomical models.
		4.8.2	Demonstrate identification of histological slides of stomach, small intestine, large intestine, and liver under the microscope, identifying characteristic features.
		4.8.3	Demonstrate interpretation of physiological experiments on gastric secretion, intestinal motility, and salivary reflexes.
		4.8.4	Apply the principle of biochemical estimation of serum bilirubin and liver enzymes and interpret results in health and disease.
5.1	Recognize the important role played by other health care professionals in patients' management	5.1.1	
5.2	Respect colleagues and other health care professionals and work cooperatively with them	5.2.1	
5.3	Implement strategies to promote understanding, manage differences, and resolve conflicts	5.3.1	
5.4	Apply leadership skills to enhance team functioning, the learning environment, and/or the health care delivery system	5.4.1	Participate effectively in group discussions and collaborative lab work demonstrating teamwork and responsibility.

5.5	Communicate effectively using written health records, electronic medical records, or other digital technology	5.5.1	
5.6	Evaluate his / her work and that of others using constructive feedback	5.6.1	
5.7	Recognize own personal and professional limits, and seek help from colleagues and supervisors when necessary	5.7.1	
5.8	Apply fundamental knowledge of health economics to ensure the efficiency and effectiveness of the health care system	5.8.1	
5.9	Use health informatics to improve the quality of patient care	5.9.1	
5.10	Document clinical encounters in an accurate, complete, timely, and accessible manner	5.10.1	
5.11	Improve the health service provision by applying a process of continuous quality improvement	5.11.1	
5.12	Demonstrate accountability to patients, society, and the profession	5.12.1	
6.1	Regularly reflect on and assess his / her performance using various performance indicators and information sources	6.1.1	Demonstrate self-reflection and critical evaluation of learning progress during practical sessions.
6.2	Develop, implement, monitor, and revise a personal learning plan to enhance professional practice	6.2.1	
6.3	Identify opportunities and use various resources for learning	6.3.1	Utilize e-learning resources, atlases, and digital histology slides to support understanding of GIT topics.
6.4	Engage in inter-professional activities and collaborative learning	6.4.1	
6.5	Recognize practice uncertainty and knowledge gaps in clinical and other professional encounters	6.5.1	
6.6	Effectively manage learning time and resources and set priorities	6.6.1	
6.7	Demonstrate an understanding of the scientific principles of research including its ethical aspects and scholarly inquiry and contribute to the work of a research study	6.7.1	

6.8	Critically appraise research studies and scientific papers in terms of integrity, reliability, and applicability	6.8.1	
6.9	Analyze and use numerical data including the use of basic statistical methods	6.9.1	
6.10	Summarize and present to professional and lay audiences the findings of relevant research and scholarly inquiry	6.10.1	

4. Teaching and Learning Methods

1. Interactive Lectures
2. Tutorial classes
3. Practical classes
4. Directed self learning.
5. Case Discussion

Course Schedule

NO. of the Week	Scientific content of the course (Course Topics)	Total Weekly Hours	Expected Number of the Learning Hours			
			Theoretical teaching (lectures/discussion groups/ .....)	Training Practical	Self-learning (Tasks/ Assignments/ Projects/ ...)	Others
1.	1. **Anatomy:** Development of the gut	45	3	1.5	18 h (Home study, tasks, assignments)	
	2. **Anatomy:** Mouth cavity and floor of the mouth		3	1.5		
	3. **Physiology:** Neural regulation of GIT		3	1.5		
	4. **Anatomy:** Salivary glands		3	1.5		
	5. **Physiology:** Hormonal regulation of GIT		3	1.5		
	6. **Histology:** Oral cavity		3	1.5		
2.	7. **Anatomy:** Esophagus and stomach	45	3	1.5	18 h (Home study, tasks, assignments) 18 h (Home study, tasks,	
	8. **Histology:** Stomach		3	1.5		
	9. **Physiology:** Gastrointestinal motility		3	1.5		
	10. **Anatomy:** Intestine		3	1.5		
	11. **Histology:** Small and large intestine		3	1.5		

	12. **Physiology:** GIT secretions		3	1.5		
3.	13. **Physiology:** Absorption	45	3	1.5	assignments) 18 h (Home study, tasks, assignments)	
	14. **Anatomy:** Liver and biliary tract		3	1.5		
	15. **Physiology:** Liver functions		3	1.5		
	16. **Biochemistry:** Metabolic function of liver		3	1.5		
	17. **Anatomy:** Rectum and anal canal		3	1.5		
	18. **Physiology:** Defecation		3	1.5		
4.	19. **Anatomy:** Blood and nerve supply of the gut	45	3	1.5	18 h (Home study, tasks, assignments)	
	20. **Physiology:** Pancreas		3	1.5		
	21. Revision		3	1.5		
	22. Revision		3	1.5		
	23. Revision		3	1.5		
	24. Revision		3	1.5		
		180	72	36	72	

5. Methods of Students' Assessment

No.	Assessment Methods*	Assessment Timing (Week Number)	Marks	Percentage of Total Course Marks
1)	Quiz (Semester work)	second week	-	0
2)	End Module exam	Fourth Week	18	20%
3)	Final Written Exam	16-20 Week	36	40%
4)	Final practical Exam	Fourth Week	27	30%
5)	Assignments/Portfolio	Throughout the Module	9	10%
	Total		90	100%

6. Learning Resources and Supportive Facilities *

Learning resources (books, scientific	**The Main (Essential) Reference for the Course** (must be written in full according to the scientific documentation method)	• Drake, R. L., Vogl, W., & Mitchell, A. W. M. (2024). Gray's Anatomy for Students (5th ed.). Elsevier. • **Hall, J. E., & Hall, M. E. (2020).** *Guyton and Hall Textbook of Medical Physiology* (14th ed.). Elsevier.

references, etc.) *		• **Junqueira, L. C., & Carneiro, J. (2023).** *Junqueira's Basic Histology: Text and Atlas* (16th ed.). McGraw-Hill Education. •
	Other References	**Murray, R. K., Bender, D. A., Botham, K. M., Kennelly, P. J., Rodwell, V. W., & Weil, P. A. (2023).** *Harper's Illustrated Biochemistry* (33rd ed.). McGraw-Hill Education
	Electronic Sources (Links must be added)	1. **Elsevier – Student Resources (Gray's Anatomy, Guyton & Hall, etc.)** https://www.elsevier.com/en-xm/student-life 2. **AccessMedicine – McGraw Hill Medical Library** *(for Harper's Biochemistry & Junqueira's Histology)* https://accessmedicine.mhmedical.com/ 3. **National Center for Biotechnology Information (NCBI) – Bookshelf** *(free access to physiology & biochemistry texts)* https://www.ncbi.nlm.nih.gov/books/ 4. **OpenStax – Anatomy and Physiology** *(free educational textbook resource)* https://openstax.org/details/books/anatomy-and-physiology 5. **Histology Guide – Virtual Microscopy Resource** *(for histology slides & structure identification)* https://www.histologyguide.com/ 6. **PubMed – Biomedical Literature Database** *(for updated scientific research in all related disciplines)* https://pubmed.ncbi.nlm.nih.gov/
	Learning Platforms (Links must be added)	1. Lecturio – Comprehensive video lectures and quizzes for medical sciences. https://www.lecturio.com/ 2. Visible Body – 3D interactive anatomy and physiology visualization. https://www.visiblebody.com/ 3. Kenhub – Interactive anatomy and histology tutorials with quizzes. https://www.kenhub.com/en/start 4. Labster – Virtual science labs for biochemistry and physiology experiments. https://www.labster.com/ 5. Osmosis – Integrated medical learning videos and flashcards. https://www.osmosis.org/
	Other (to be mentioned)	

Supportive facilities & equipment for teaching and learning *	**Devices/Instruments**	• Microscopes, prepared GIT histology slides, anatomical models of the oral cavity, stomach, intestines, liver, and pancreas, audiovisual systems, spirometer, spectrophotomete
	Supplies	• histological stains and reagents, microscope slides and cover slips, gloves, masks, lab coats, charts and diagrams, preserved specimens, disposable materials, disinfectants, and practical record sheets.
	Electronic Programs	Interactive e-learning platforms (ThinCi) and Microsoft teams.
	Skill Labs/ Simulators	
	Virtual Labs	
	Other (to be mentioned)	access to hospital clinics for hands-on clinical exposure

منسق المقرر	مدير البرنامج
Shiamaa ibrahim	هاني برج
	

Course Specifications

IBL 214

2025 /2026

1. Basic Information

Course Title	**Immune, blood, lymphatic**			
Course Code	**IBL 214**			
Department/s participating in delivery of the course	**Medical Physiology Department** **Anatomy and embryology Department** **Histology and cell biology Department** **Medical Biochemistry Department** **Medical Parasitology Department** **Microbiology immunology Department**			
Number of credit points of the course = 6	**Theoretical**	**Clinical**	**Self-learning (Tasks/ Assignments/ incision academy**	**Total**
	2.4	1.2	2.4	6
Number of contact and non-contact hours of the course	**72**	**36**	**72**	180
Course Type	Obligatory			
Duration	4 weeks			
Academic level at which the course is taught	Second year/1st semester			
Academic Program	M.B. Ch.B. 5+2 Program (credit points)			
Faculty	Kafrelsheikh Faculty of Medicine			
University	Kafrelsheikh University			
Name of Course Coordinator	Lamiaa Mohamed			
Course Specification Approval Date	7/10/2024			
Course Specification Approval **(Attach the decision/minutes of the department /committee/council ....)**				

2. Course Overview (Brief summary of scientific content)

By the end of the course, students will be able to demonstrate a comprehensive understanding of the structure and function of the blood, immune, and lymphatic systems, including the cellular and molecular components responsible for transport, defense, and homeostasis. The course integrates anatomical, physiological, histological, biochemical, microbiological, and immunological aspects to explain hematopoiesis, blood composition, immune responses, and lymphatic circulation. It also aims to develop students' abilities to apply this integrated scientific knowledge to interpret normal and abnormal hematological and immune functions, relate them to clinical conditions, and foster critical thinking, teamwork, and lifelong learning.

3. Course Learning Outcomes (CLOs)

Matrix of course learning outcomes CLOs with program outcomes POs (NARS/ARS)

	Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		**Course Learning Outcomes** **Upon completion of the course, the student will be able to:**
Code	**Text**	**Code**	**Text**
1.1	Take and record a structured, patient centered history	1.1.1	
1.2	Adopt an empathic and holistic approach to the patients and their problems	1.2.1	
1.3	Assess the mental state of the patient	1.3.1	
1.4	Perform appropriately-timed full physical examination of patients, appropriate to the age, gender, and clinical presentation of the patient while being culturally sensitive	1.4.1	
1.5	Prioritize issues to be addressed in a patient encounter	1.5.1	
1.6	Select the appropriate investigations and interpret their results taking into consideration cost/ effectiveness factors	1.6.1	Select relevant hematological and immunological investigations such as CBC, ESR, blood film, coagulation tests, and ELISA.
1.7	Recognize and respond to the complexity, uncertainty, and ambiguity inherent in medical practice	1.7.1	

1.8	Apply knowledge of the clinical and biomedical sciences relevant to the clinical problem at hand	1.8.1	Apply integrated anatomical, physiological, histological, and biochemical knowledge to explain hematopoiesis, immune responses, and pathogenesis of anemia and immune disorders.
		1.8.2	Apply microbiological and immunological knowledge to explain innate and adaptive immune mechanisms, including antigen presentation, antibody production, and immune memory.
		1.8.3	Apply knowledge of parasitology to describe the morphology, life cycle, and pathogenic mechanisms of blood and lymphatic parasites such as *Plasmodium*, *Trypanosoma*, and *Leishmania*.
1.9	Retrieve, analyze, and evaluate relevant and current data from literature, using information technologies and library resources, in order to help solve a clinical problem based on evidence (EBM)	1.9.1	
		1.9.2	
1.10	Integrate the results of history, physical examination and laboratory test findings into a meaningful diagnostic formulation	1.10.1	
.11	Perform diagnostic and intervention procedures in a skillful and safe manner, adapting to unanticipated findings or changing clinical circumstances	1.11.1	
1.12	Adopt strategies and apply measures that promote patient safety	1.12.1	
1.13	Establish patient-centered management plans in partnership with the patient, his/her family and other health professionals as appropriate, using Evidence Based Medicine in management decision	1.13.1	
1.14	Respect patients' rights and involve them and/or their families/carers in management decisions	1.14.1	
1.15	Provide the appropriate care in cases of emergency, including cardio-pulmonary resuscitation, immediate life support measures and basic first aid procedures	1.15.1	
1.16	Apply the appropriate pharmacological and nonpharmacological approaches to alleviate pain and provide palliative care for seriously ill people, aiming to	1.16.1	

	relieve their suffering and improve their quality of life		
1.17	Contribute to the care of patients and their families at the end of life, including management of symptoms, practical issues of law and certification	1.17.1	
2.1	Identify the basic determinants of health and principles of health improvement	2.1.1	Identify determinants affecting blood and immune health, such as nutrition, infection control, and environmental exposures.
		2.1.2	Identify determinants affecting transmission of parasitic infections (e.g., sanitation, vector control, socioeconomic factors).
2.2	Recognize the economic, psychological, social, and cultural factors that interfere with wellbeing	2.2.1	
2.3	Discuss the role of nutrition and physical activity in health	2.3.1	Discuss the role of balanced diet and micronutrients (iron, folate, vitamin B12) in maintaining normal hematopoiesis and immune defense.
2.4	Identify the major health risks in his/her community, including demographic, occupational and environmental risks; endemic diseases, and prevalent chronic diseases	2.4.1	
2.5	Describe the principles of disease prevention, and empower communities, specific groups or individuals by raising their awareness and building their capacity	2.5.1	
2.6	Recognize the epidemiology of common diseases within his/her community and apply the systematic approaches useful in reducing the incidence and prevalence of those diseases	2.6.1	
2.7	Provide care for specific groups including pregnant women, newborns and infants, adolescents and the elderly	2.7.1	
2.8	Identify vulnerable individuals that may be suffering from abuse or neglect and take proper actions to safeguard their welfare	2.8.1	
3.1	Exhibit appropriate professional behaviors and relationships in all aspects of practice, demonstrating honesty, integrity, commitment, compassion, and respect	3.1.1	Demonstrate teamwork, respect, and ethical behavior during laboratory and group work related to hematology and immunology.
3.2	Adhere to the professional standards and laws governing the practice, and	3.2.1	

	abide by the national code of ethics issued by the Egyptian Medical Syndicate		
3.3	Respect the different cultural beliefs and values in the community they serve	3.3.1	
3.4	Treat all patients equally, and avoid stigmatizing any category regardless of their social, cultural or ethnic backgrounds, or their disabilities	3.4.1	
3.5	Ensure confidentiality and privacy of patients' information	3.5.1	
3.6	Recognize basics of medico-legal aspects of practice, malpractice and avoid common medical errors	3.6.1	
3.7	Recognize and manage conflicts of interest	3.7.1	
3.8	Refer patients to the appropriate health facility at the appropriate stage	3.8.1	
3.9	Identify and report any unprofessional and unethical behaviors or physical or mental conditions related to himself, colleagues or any other person that might jeopardize patients' safety	3.9.1	
4.1	Describe the normal structure of the body and its major organ systems and explain their functions	4.1.1	Describe the gross anatomy of the spleen, thymus, and lymph nodes, and their relations to the immune and circulatory systems.
		4.1.2	Describe the microscopic structure of blood cells, bone marrow, and lymphoid organs using histological slides.
		4.1.3	Explain the physiological functions of blood (transport, defense, and hemostasis) and mechanisms of immune responses.
		4.1.4	Describe the cellular components of the immune system (T cells, B cells, macrophages) and their histological features within lymphoid organs.
4.2	Explain the molecular, biochemical, and cellular mechanisms that are important in maintaining the body's homeostasis	4.2.1	Explain the biochemical basis of hemoglobin synthesis, iron metabolism, and bilirubin degradation.
		4.2.2	Describe the molecular mechanisms of immune cell activation, antibody production, and cytokine signaling.
4.3	Recognize and describe main developmental changes in humans and	4.3.1	

	the effect of growth, development and aging on the individual and his family		
4.4	Explain normal human behavior and apply theoretical frameworks of psychology to interpret the varied responses of individuals, groups and societies to disease	4.4.1	
4.5	Identify various causes (genetic, developmental, metabolic, toxic, microbiologic, autoimmune, neoplastic, degenerative, and traumatic) of illness/disease and explain the ways in which they operate on the body (pathogenesis)	4.5.1	
4.6	Describe altered structure and function of the body and its major organ systems that are seen in various diseases and conditions	4.6.1	Describe structural and functional changes in blood and lymphoid organs to common diseases such as anemia, leukemia, and autoimmune disorders.
		4.6.3	Describe pathological effects of parasitic infections with changes in hematological and immune parameters (e.g., anemia in malaria, lymphadenopathy in leishmaniasis).
4.7	Describe drug actions: therapeutics and pharmacokinetics; side effects and interactions, including multiple treatments, long term conditions and non-prescribed medication; and effects on the population	4.7.1	
4.8	Demonstrate basic sciences specific practical skills and procedures relevant to future practice, recognizing their scientific basis, and interpret common diagnostic modalities	4.8.1	Demonstrate basic identification of blood cells and lymphoid tissues in prepared histological slides.
		4.8.2	Demonstrate basic identification of the principle of basic hematological tests (CBC, blood film, ESR, coagulation time).
		4.8.3	Demonstrate basic identification of hematological tests (CBC, blood film, ESR, coagulation time).
		4.8.4	Demonstrate the principle of physiological experiments related to hematopoiesis and hemostasis
		4.8.5	Demonstrate the principle of biochemical estimation of hemoglobin, serum iron, and bilirubin levels
		4.8.6	interpret the result of biochemical estimation of hemoglobin, serum iron, and bilirubin levels
		4.8.7	Perform interpretation of immunological laboratory tests (e.g., Widal, CRP, latex agglutination) and correlate findings with clinical conditions.

		4.8.6	Identify diagnostic stages of parasites in stained blood films and lymph node aspirates using microscopy.
5.1	Recognize the important role played by other health care professionals in patients' management	5.1.1	
5.2	Respect colleagues and other health care professionals and work cooperatively with them	5.2.1	
5.3	Implement strategies to promote understanding, manage differences, and resolve conflicts	5.3.1	
5.4	Apply leadership skills to enhance team functioning, the learning environment, and/or the health care delivery system	5.4.1	Participate effectively in team-based lab and tutorial activities demonstrating leadership and collaboration.
5.5	Communicate effectively using written health records, electronic medical records, or other digital technology	5.5.1	
5.6	Evaluate his / her work and that of others using constructive feedback	5.6.1	
5.7	Recognize own personal and professional limits, and seek help from colleagues and supervisors when necessary	5.7.1	
5.8	Apply fundamental knowledge of health economics to ensure the efficiency and effectiveness of the health care system	5.8.1	
5.9	Use health informatics to improve the quality of patient care	5.9.1	
5.10	Document clinical encounters in an accurate, complete, timely, and accessible manner	5.10.1	
5.11	Improve the health service provision by applying a process of continuous quality improvement	5.11.1	
5.12	Demonstrate accountability to patients, society, and the profession	5.12.1	
6.1	Regularly reflect on and assess his / her performance using various performance indicators and information sources	6.1.1	Reflect on individual performance during laboratory sessions and identify areas for improvement.
6.2	Develop, implement, monitor, and revise a personal learning plan to enhance professional practice	6.2.1	

6.3	Identify opportunities and use various resources for learning	6.3.1	Utilize e-learning platforms, virtual microscopy, and atlases to enhance understanding of hematology and immunology topics.
6.4	Engage in inter-professional activities and collaborative learning	6.4.1	
6.5	Recognize practice uncertainty and knowledge gaps in clinical and other professional encounters	6.5.1	
6.6	Effectively manage learning time and resources and set priorities	6.6.1	
6.7	Demonstrate an understanding of the scientific principles of research including its ethical aspects and scholarly inquiry and contribute to the work of a research study	6.7.1	
6.8	Critically appraise research studies and scientific papers in terms of integrity, reliability, and applicability	6.8.1	
6.9	Analyze and use numerical data including the use of basic statistical methods	6.9.1	
6.10	Summarize and present to professional and lay audiences the findings of relevant research and scholarly inquiry	6.10.1	

4. Teaching and Learning Methods

6. Interactive Lectures
7. Tutorial classes
8. Practical classes
9. Directed self learning.
10. Case Discussion

Course Schedule

NO. of the Week	Scientific content of the course (Course Topics)	Total Weekly Hours	Expected Number of the Learning Hours			
			Theoretical teaching (lectures/discussion groups/ .....)	Training Practical	Self-learning (Tasks/ Assignments/ Projects/ ...)	Others
1.	25. **Anatomy:** Spleen, thoracic duct, and lymph nodes – structure, relations, and vascular supply	**45**	**3**	**1.5**	**18 h (Home study, tasks, assignments)**	
	26. **Histology:** Blood, myeloid tissue, and		**3**	1.5		

	bone marrow organization					
	27. **Histology:** Structure of spleen, thymus, and lymph nodes – lymphoid tissue architecture		3	1.5		
	28. **Physiology:** Blood volume and components – regulation and functions		3	1.5		
	29. **Physiology:** Hematopoiesis and erythropoiesis – stages, control, and regulation		3	1.5		
	30. **Physiology:** RBCs – formation, function, and fate		3	1.5		
2.	31. **Physiology:** Hemostasis and coagulation – mechanisms and clinical relevance	**45**	3	1.5	**18 h (Home study, tasks, assignments) 18 h (Home study, tasks,**	
	32. **Physiology:** Natural anticoagulants and disorders of coagulation		3	1.5		
	33. **Biochemistry:** Structure and synthesis of hemoglobin; oxygen binding and variants		3	1.5		
	34. **Biochemistry:** Iron metabolism, hemoglobin degradation, and related disorders		3	1.5		
	35. **Biochemistry:** Folic acid, vitamin B12, and genetic disorders affecting Hb synthesis		3	1.5		
	36. **Microbiology / Immunology:** Overview of innate and adaptive immunity		3	1.5		

	– classification and cells involved					
3.	**37. Microbiology / Immunology:** Immune response to bacterial, viral, and fungal infections	**45**	**3**	1.5	**assignments) 18 h (Home study, tasks, assignments)**	
	38. Microbiology / Immunology: Complement system and cell-mediated immune response		**3**	1.5		
	39. Microbiology / Immunology: Hypersensitivity reactions – types and mechanisms		**3**	1.5		
	40. Microbiology / Immunology: Tumor immunology, tolerance, and autoimmune diseases		**3**	1.5		
	41. Microbiology / Immunology: Rheumatoid arthritis, SLE, vasculitis, and autoimmune liver disease		**3**	1.5		
	42. Microbiology / Immunology: Graft rejection, lymphadenopathy, immunodeficiency diseases, and AIDS		**3**	1.5		
4.	**43. Parasitology:** Blood parasites – malaria, trypanosomes, and toxoplasma	**45**	**3**	1.5	**18 h (Home study, tasks, assignments)**	
	44. **Parasitology:** Leishmaniasis and parasitic infections of the lymphatic system		**3**	1.5		
	45. Revision		**3**	1.5		
	46. Revision		**3**	1.5		
	47. Revision		**3**	1.5		
	48. Revision		**3**	1.5		
		180	**72**	**36**	**72**	

5. Methods of Students' Assessment

No.	Assessment Methods*	Assessment Timing (Week Number)	Marks	Percentage of Total Course Marks
1	Quiz (Semester work)	Second week	-	0
2	End Module exam	Fourth Week	18	20%
3	Final Written Exam	16-20 Week	36	40%
4	Final practical Exam	Fourth Week	27	30%
5	Assignments/Portfolio	Throughout the Module	9	10%
	Total		90	100%

6. Learning Resources and Supportive Facilities *

Learning resources (books, scientific references, etc.) *	**The Main (Essential) Reference for the Course** (must be written in full according to the scientific documentation method)	• Rodak, B. F., Fritsma, G. A., & Keohane, E. M. (2022). *Rodak's Hematology: Clinical Principles and Applications* (7th ed.). Elsevier.*:* • Abbas, A. K., Lichtman, A. H., & Pillai, S. (2023). *Cellular and Molecular Immunology* (11th ed.). Elsevier. •
	Other References	
	Electronic Sources (Links must be added)	7. **Elsevier – Student Resources (Gray's Anatomy, Guyton & Hall, etc.)** https://www.elsevier.com/en-xm/student-life 8. **AccessMedicine – McGraw Hill Medical Library** *(for Harper's Biochemistry & Junqueira's Histology)* https://accessmedicine.mhmedical.com/ 9. **National Center for Biotechnology Information (NCBI) – Bookshelf** *(free access to physiology & biochemistry texts)* https://www.ncbi.nlm.nih.gov/books/ 10. **OpenStax – Anatomy and Physiology** *(free educational textbook resource)* https://openstax.org/details/books/anatomy-and-physiology 11. **Histology Guide – Virtual Microscopy Resource** *(for histology slides & structure identification)* https://www.histologyguide.com/ 12. **PubMed – Biomedical Literature Database** *(for updated scientific research in all related disciplines)* https://pubmed.ncbi.nlm.nih.gov/

	Learning Platforms (Links must be added)	6. Lecturio – Comprehensive video lectures and quizzes for medical sciences. https://www.lecturio.com/ 7. Visible Body – 3D interactive anatomy and physiology visualization. https://www.visiblebody.com/ 8. Kenhub – Interactive anatomy and histology tutorials with quizzes. https://www.kenhub.com/en/start 9. Labster – Virtual science labs for biochemistry and physiology experiments. https://www.labster.com/ 10. Osmosis – Integrated medical learning videos and flashcards. https://www.osmosis.org/
	Other (to be mentioned)	
Supportive facilities & equipment for teaching and learning *	**Devices/Instruments**	• Microscopes, prepared GIT histology slides, anatomical models of the oral cavity, stomach, intestines, liver, and pancreas, audiovisual systems, spirometer, spectrophotomete
	Supplies	• histological stains and reagents, microscope slides and cover slips, gloves, masks, lab coats, charts and diagrams, preserved specimens, disposable materials, disinfectants, and practical record sheets.
	Electronic Programs	Interactive e-learning platforms (ThinCi) and Microsoft teams.
	Skill Labs/ Simulators	
	Virtual Labs	
	Other (to be mentioned)	access to hospital clinics for hands-on clinical exposure

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Lamiaa Mohamed	هاني برج

Course Specifications

MET 215

2025 /2026

1. Basic Information

Course Title	**Nutrition and metabolism**			
Course Code	**MET 215**			
Department/s participating in delivery of the course	**Medical Physiology Department** **Histology and cell biology Department** **Medical Biochemistry Department** **Community medicine and public health**			
Number of credit points of the course = 6	**Theoretical**	**Clinical**	**Self-learning (Tasks/ Assignments/ incision academy**	**Total**
	2.4	1.2	2.4	6
Number of contact and non-contact hours of the course	**72**	**36**	**72**	180
Course Type	Obligatory			
Academic level at which the course is taught	Second year/1st semester			
Academic Program	M.B. Ch.B. 5+2 Program (credit points)			
Faculty	Kafrelsheikh Faculty of Medicine			
University	Kafrelsheikh University			
Name of Course Coordinator	Asmaa anor			
Course Specification Approval Date	7/10/2024			
Course Specification Approval **(Attach the decision/minutes of the department /committee/council ....)**				

2. Course Overview (Brief summary of scientific content)

This module provides an integrated study of human metabolism and nutrition, focusing on energy balance, thermoregulation, and the biochemical pathways of carbohydrates, lipids, proteins, and vitamins. It links physiological regulation with biochemical processes, histological structure, and public health aspects of nutrition. Students will learn to apply this knowledge to understand metabolic functions, nutritional disorders, and their clinical implications, promoting critical thinking and lifelong learning in health sciences.

3. Course Learning Outcomes (CLOs)

Matrix of course learning outcomes CLOs with program outcomes POs (NARS/ARS)

	Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		**Course Learning Outcomes** **Upon completion of the course, the student will be able to:**
Code	**Text**	**Code**	**Text**
1.1	Take and record a structured, patient centered history	1.1.1	
1.2	Adopt an empathic and holistic approach to the patients and their problems	1.2.1	
1.3	Assess the mental state of the patient	1.3.1	
1.4	Perform appropriately-timed full physical examination of patients, appropriate to the age, gender, and clinical presentation of the patient while being culturally sensitive	1.4.1	
1.5	Prioritize issues to be addressed in a patient encounter	1.5.1	
1.6	Select the appropriate investigations and interpret their results taking into consideration cost/ effectiveness factors	1.6.1	Select basic biochemical and physiological investigations related to metabolism and nutrition such as blood glucose, lipid profile, and body temperature regulation tests.
1.7	Recognize and respond to the complexity, uncertainty, and ambiguity inherent in medical practice	1.7.1	

1.8	Apply knowledge of the clinical and biomedical sciences relevant to the clinical problem at hand	1.8.1	Apply integrated biochemical and physiological knowledge to explain energy metabolism, thermoregulation, and metabolic pathways of carbohydrates, lipids, and proteins.
		1.8.2	Correlate nutritional deficiencies (e.g., iron, vitamin B12, iodine) with their biochemical and clinical manifestations.
1.9	Retrieve, analyze, and evaluate relevant and current data from literature, using information technologies and library resources, in order to help solve a clinical problem based on evidence (EBM)	1.9.1	Retrieve up-to-date evidence from nutritional and metabolic studies to support problem-solving in metabolic and dietary disorders.
1.10	Integrate the results of history, physical examination and laboratory test findings into a meaningful diagnostic formulation	1.10.1	
1.11	Perform diagnostic and intervention procedures in a skillful and safe manner, adapting to unanticipated findings or changing clinical circumstances	1.11.1	
1.12	Adopt strategies and apply measures that promote patient safety	1.12.1	
1.13	Establish patient-centered management plans in partnership with the patient, his/her family and other health professionals as appropriate, using Evidence Based Medicine in management decision	1.13.1	
1.14	Respect patients' rights and involve them and/or their families/carers in management decisions	1.14.1	
1.15	Provide the appropriate care in cases of emergency, including cardio-pulmonary resuscitation, immediate life support measures and basic first aid procedures	1.15.1	
1.16	Apply the appropriate pharmacological and nonpharmacological approaches to alleviate pain and provide palliative care for seriously ill people, aiming to relieve their suffering and improve their quality of life	1.16.1	
1.17	Contribute to the care of patients and their families at the end of life, including management of symptoms, practical issues of law and certification	1.17.1	

2.1	Identify the basic determinants of health and principles of health improvement	2.1.1	Identify determinants influencing nutritional and metabolic health, including diet composition, energy balance, and lifestyle.
		2.1.2	
2.2	Recognize the economic, psychological, social, and cultural factors that interfere with wellbeing	2.2.1	
2.3	Discuss the role of nutrition and physical activity in health	2.3.1	Discuss the importance of balanced nutrition, micronutrients, and physical activity in maintaining optimal metabolic function and preventing obesity and malnutrition.
2.4	Identify the major health risks in his/her community, including demographic, occupational and environmental risks; endemic diseases, and prevalent chronic diseases	2.4.1	Identify major nutritional and metabolic disorders prevalent in the community (e.g., iron deficiency anemia, iodine deficiency, obesity) and their public health implications.
2.5	Describe the principles of disease prevention, and empower communities, specific groups or individuals by raising their awareness and building their capacity	2.5.1	Describe principles of nutritional disease prevention and community-based nutrition programs aimed at promoting healthy lifestyles.
2.6	Recognize the epidemiology of common diseases within his/her community and apply the systematic approaches useful in reducing the incidence and prevalence of those diseases	2.6.1	Recognize the epidemiology of common nutritional disorders and apply systematic approaches to reduce their incidence.
2.7	Provide care for specific groups including pregnant women, newborns and infants, adolescents and the elderly	2.7.1	
2.8	Identify vulnerable individuals that may be suffering from abuse or neglect and take proper actions to safeguard their welfare	2.8.1	
3.1	Exhibit appropriate professional behaviors and relationships in all aspects of practice, demonstrating honesty, integrity, commitment, compassion, and respect	3.1.1	Demonstrate teamwork, integrity, and respect during nutritional assessment and laboratory sessions.
3.2	Adhere to the professional standards and laws governing the practice, and abide by the national code of ethics issued by the Egyptian Medical Syndicate	3.2.1	
3.3	Respect the different cultural beliefs and values in the community they serve	3.3.1	
3.4	Treat all patients equally, and avoid stigmatizing any category regardless of	3.4.1	

	their social, cultural or ethnic backgrounds, or their disabilities		
3.5	Ensure confidentiality and privacy of patients' information	3.5.1	
3.6	Recognize basics of medico-legal aspects of practice, malpractice and avoid common medical errors	3.6.1	
3.7	Recognize and manage conflicts of interest	3.7.1	
3.8	Refer patients to the appropriate health facility at the appropriate stage	3.8.1	
3.9	Identify and report any unprofessional and unethical behaviors or physical or mental conditions related to himself, colleagues or any other person that might jeopardize patients' safety	3.9.1	
4.1	Describe the normal structure of the body and its major organ systems and explain their functions	4.1.1	Describe the gross and microscopic structure of the liver, gallbladder, and adipose tissue and relate them to their metabolic functions.
		4.1.2	Explain the physiological functions of adipose tissue and liver.
4.2	Explain the molecular, biochemical, and cellular mechanisms that are important in maintaining the body's homeostasis	4.2.1	Explain biochemical pathways of carbohydrate, lipid, protein, and vitamin metabolism and their regulation.
		4.2.2	Describe mechanisms of energy balance, thermoregulation, and their physiological control.
		4.2.3	Explain the concept of basal metabolic rate and its regulatory factors
		4.2.4	Describe the physiological control of body temperature.
4.3	Recognize and describe main developmental changes in humans and the effect of growth, development and aging on the individual and his family	4.3.1	
4.4	Explain normal human behavior and apply theoretical frameworks of psychology to interpret the varied responses of individuals, groups and societies to disease	4.4.1	
4.5	Identify various causes (genetic, developmental, metabolic, toxic, microbiologic, autoimmune, neoplastic, degenerative, and traumatic) of illness/disease and	4.5.1	Relate altered metabolic and nutritional states (e.g., diabetes mellitus, obesity, vitamin deficiencies) to their underlying biochemical and physiological mechanisms.

	explain the ways in which they operate on the body (pathogenesis)		
4.6	Describe altered structure and function of the body and its major organ systems that are seen in various diseases and conditions	4.6.1	Correlate histological and biochemical alterations in metabolic organs (liver, adipose tissue) with metabolic diseases such as fatty liver and malnutrition.
		4.6.3	
4.7	Describe drug actions: therapeutics and pharmacokinetics; side effects and interactions, including multiple treatments, long term conditions and non-prescribed medication; and effects on the population	4.7.1	
4.8	Demonstrate basic sciences specific practical skills and procedures relevant to future practice, recognizing their scientific basis, and interpret common diagnostic modalities	4.8.1	Demonstrate the principle of physiological measurements related to basal metabolic rate (BMR) and temperature regulation.
		4.8.2	Demonstrate biochemical estimation of glucose, lipids, and proteins.
		4.8.3	Demonstrate the principle of qualitative tests for carbohydrates, lipids, and proteins.
		4.8.4	Demonstrate assessment of nutritional status using anthropometric and biochemical parameters.
		4.8.5	interpret physiological measurements related to basal metabolic rate (BMR) and temperature regulation.
5.1	Recognize the important role played by other health care professionals in patients' management	5.1.1	
5.2	Respect colleagues and other health care professionals and work cooperatively with them	5.2.1	
5.3	Implement strategies to promote understanding, manage differences, and resolve conflicts	5.3.1	
5.4	Apply leadership skills to enhance team functioning, the learning environment, and/or the health care delivery system	5.4.1	
5.5	Communicate effectively using written health records, electronic medical records, or other digital technology	5.5.1	
5.6	Evaluate his / her work and that of others using constructive feedback	5.6.1	
5.7	Recognize own personal and professional limits, and seek help from	5.7.1	

	colleagues and supervisors when necessary		
5.8	Apply fundamental knowledge of health economics to ensure the efficiency and effectiveness of the health care system	5.8.1	
5.9	Use health informatics to improve the quality of patient care	5.9.1	
5.10	Document clinical encounters in an accurate, complete, timely, and accessible manner	5.10.1	
5.11	Improve the health service provision by applying a process of continuous quality improvement	5.11.1	
5.12	Demonstrate accountability to patients, society, and the profession	5.12.1	
6.1	Regularly reflect on and assess his / her performance using various performance indicators and information sources	6.1.1	Reflect on performance in practical and group activities and identify areas for improvement in metabolic and nutritional understanding.
6.2	Develop, implement, monitor, and revise a personal learning plan to enhance professional practice	6.2.1	
6.3	Identify opportunities and use various resources for learning	6.3.1	Utilize e-learning platforms, simulation labs, and nutritional databases to enhance learning in metabolism and nutrition
6.4	Engage in inter-professional activities and collaborative learning	6.4.1	
6.5	Recognize practice uncertainty and knowledge gaps in clinical and other professional encounters	6.5.1	
6.6	Effectively manage learning time and resources and set priorities	6.6.1	
6.7	Demonstrate an understanding of the scientific principles of research including its ethical aspects and scholarly inquiry and contribute to the work of a research study	6.7.1	
6.8	Critically appraise research studies and scientific papers in terms of integrity, reliability, and applicability	6.8.1	
6.9	Analyze and use numerical data including the use of basic statistical methods	6.9.1	

6.10	Summarize and present to professional and lay audiences the findings of relevant research and scholarly inquiry	6.10.1	

4. Teaching and Learning Methods

11. Interactive Lectures
12. Tutorial classes
13. Practical classes
14. Directed self learning.
15. Case Discussion

Course Schedule

NO. of the Week	Scientific content of the course (Course Topics)	Total Weekly Hours	Expected Number of the Learning Hours			
			Theoretical teaching (lectures/discussion groups/ .....)	Training Practical	Self-learning (Tasks/ Assignments/ Projects/ ...)	Others
1.	49. **Physiology:** Basal Metabolic Rate (BMR) and Specific Dynamic Action (SDA)	45	3	1.5	18 h (Home study, tasks, assignments)	
	50. **Physiology:** Temperature Regulation		3	1.5		
	51. **Biochemistry:** Introduction to Bioenergetics and Free Energy Changes		3	1.5		
	52. **Histology:** Adipose Connective Tissue		3	1.5		
	53. **Biochemistry:** Synthesis of ATP and Substrate-Level Phosphorylation		3	1.5		
	54. **Public Health:** Principles of Healthy Nutrition		3	1.5		
2.	55. **Biochemistry:** Oxidative Phosphorylation and Abnormalities of the Electron Transport Chain	45	3	1.5	18 h (Home study, tasks, assignments) 18 h (Home study, tasks,	
	56. **Physiology:** Energy Balance and Thermogenesis		3	1.5		

	57. **Public Health:** Assessment of Nutritional Status		3	1.5		
	58. **Biochemistry:** Glucose Absorption and Transport to Cells		3	1.5		
	59. **Biochemistry:** Glycolysis and its Clinical Correlations		3	1.5		
	60. **Histology:** Liver and Gallbladder		3	1.5		
3.	61. **Biochemistry:** Krebs Cycle and Gluconeogenesis	**45**	3	1.5	**assignments) 18 h (Home study, tasks, assignments)**	
	62. **Public Health:** Nutritional Disorders — Iron Deficiency, Iodine Deficiency, and Obesity		3	1.5		
	63. **Biochemistry:** Glycogen Metabolism and Hexose Monophosphate Pathway		3	1.5		
	64. **Biochemistry:** Lipid Digestion, Transport, and Fatty Acid Synthesis		3	1.5		
	65. **Biochemistry:** Lipolysis, Ketogenesis, and Clinical Correlations		3	1.5		
	66. **Biochemistry:** Protein Digestion, Nitrogen Balance, and Amino Acid Metabolism		3	1.5		
4.	67. **Biochemistry:** Fat-Soluble and Water-Soluble Vitamins — Functions and Deficiencies	**45**	3	1.5	**18 h (Home study, tasks, assignments)**	
	68. **Biochemistry:** Nucleotide Metabolism and Related Disorders		3	1.5		
	69. Revision		3	1.5		
	70. Revision		3	1.5		

	71. Revision		3	1.5		
	72. Revision		3	1.5		
		180	72	36	72	

5. Methods of Students' Assessment

No.	Assessment Methods*	Assessment Timing (Week Number)	Marks	Percentage of Total Course Marks
1	Quiz (Semester work)	Second week	-	0
2	End Module exam	Fourth Week	**18**	**20%**
3	Final Written Exam	16-20 Week	**36**	**40%**
4	Final practical Exam	Fourth Week	**27**	**30%**
5	Assignments/Portfolio	Throughout the Module	**9**	**10%**
	Total		**90**	**100%**

6. Learning Resources and Supportive Facilities *

Learning resources (books, scientific references, etc.) *	**The Main (Essential) Reference for the Course** (must be written in full according to the scientific documentation method)	• Whitney, E., & Rolfes, S. R. (2023). *Understanding nutrition* (16th ed.). Cengage Learning. • **Link:** Cengage Product Page • **Other References** • Byrd-Bredbenner, C., Moe, G., Berning, J., & Kelley, D. (2022). *Wardlaw's perspectives in nutrition* (12th ed.). McGraw-Hill Education. • **Link:** McGraw-Hill Product Page • United States Department of Agriculture (USDA) & Department of Health and Human Services (HHS). (2020). *Dietary Guidelines for Americans, 2020-2025* (9th ed.). • **Link:** DietaryGuidelines.gov
	Other References	• *The American Journal of Clinical Nutrition*. American Society for Nutrition. • **Link:** Official Journal Website • National Institutes of Health (NIH), Office of Dietary Supplements. (n.d.). *Dietary Supplement Fact Sheets*. • **Link:** ODS Fact Sheets
	Electronic Sources (Links must be added)	13. **AccessMedicine – McGraw Hill Medical Library** *(for Harper's Biochemistry & Junqueira's Histology)* https://accessmedicine.mhmedical.com/ 14. **National Center for Biotechnology Information (NCBI) – Bookshelf** *(free access to physiology & biochemistry texts)* https://www.ncbi.nlm.nih.gov/books/

		15. **OpenStax – Anatomy and Physiology** *(free educational textbook resource)* https://openstax.org/details/books/anatomy-and-physiology 16. **Histology Guide – Virtual Microscopy Resource** *(for histology slides & structure identification)* https://www.histologyguide.com/ 17. **PubMed – Biomedical Literature Database** *(for updated scientific research in all related disciplines)* https://pubmed.ncbi.nlm.nih.gov/
	Learning Platforms (Links must be added)	11. Lecturio – Comprehensive video lectures and quizzes for medical sciences. https://www.lecturio.com/ 12. Visible Body – 3D interactive anatomy and physiology visualization. https://www.visiblebody.com/ 13. Kenhub – Interactive anatomy and histology tutorials with quizzes. https://www.kenhub.com/en/start 14. Labster – Virtual science labs for biochemistry and physiology experiments. https://www.labster.com/ 15. Osmosis – Integrated medical learning videos and flashcards. https://www.osmosis.org/
	Other (to be mentioned)	
Supportive facilities & equipment for teaching and learning *	**Devices/Instruments**	• Microscopes, prepared histology slides, anatomical models, spirometer, spectrophotometer
	Supplies	• histological stains and reagents, microscope slides and cover slips,, and practical record sheets.
	Electronic Programs	Interactive e-learning platforms (ThinCi) and Microsoft teams.
	Skill Labs/ Simulators	
	Virtual Labs	
	Other (to be mentioned)	access to hospital clinics for hands-on clinical exposure

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Course Specifications

MSK 216

2025 /2026

1. Basic Information

Course Title	**Musculoskeletal system**			
Course Code	**MSK 216**			
Department/s participating in delivery of the course	**Medical Physiology Department** **Anatomy and embryology Department** **Histology and cell biology Department** **Medical Biochemistry Department**			
Number of credit points of the course = 6	**Theoretical**	**Practical**	**Self-learning (Tasks/ Assignments/ incision academy**	**Total**
	2.4	1.2	2.4	6
Number of contact and non-contact hours of the course	**72**	**36**	**72**	180
Course Type	Obligatory			
Duration	4 weeks			
Academic level at which the course is taught	Second year/1st semester			
Academic Program	M.B. Ch.B. 5+2 Program (credit points)			
Faculty	Kafrelsheikh Faculty of Medicine			
University	Kafrelsheikh University			
Name of Course Coordinator	Asmaa anor			
Course Specification Approval Date	7/10/2024			
Course Specification Approval **(Attach the decision/minutes of the department /committee/council ....)**				

2. Course Overview (Brief summary of scientific content)

By the end of the module, students will gain an integrated understanding of the musculoskeletal system, including the anatomy of bones, joints, and muscles, their histological structure, physiological mechanisms of muscle contraction, and biochemical aspects related to muscle and bone metabolism. The course emphasizes the correlation between structure and function and introduces common clinical and genetic disorders affecting the musculoskeletal system. It aims to develop students' analytical, practical, and problem-solving skills while promoting self-directed and lifelong learning.

3. Course Learning Outcomes (CLOs)

Matrix of course learning outcomes CLOs with program outcomes POs (NARS/ARS)

	Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		**Course Learning Outcomes** **Upon completion of the course, the student will be able to:**
Code	**Text**	**Code**	**Text**
1.1	Take and record a structured, patient centered history	1.1.1	
1.2	Adopt an empathic and holistic approach to the patients and their problems	1.2.1	
1.3	Assess the mental state of the patient	1.3.1	
1.4	Perform appropriately-timed full physical examination of patients, appropriate to the age, gender, and clinical presentation of the patient while being culturally sensitive	1.4.1	
		1.4.2	
		1.4.3	
		1.4.4	
1.5	Prioritize issues to be addressed in a patient encounter	1.5.1	
1.6	Select the appropriate investigations and interpret their results taking into consideration cost/ effectiveness factors	1.6.1	Interpret physiological recordings related to muscle contraction, fatigue, and reflex testing.

		1.6.2	interpret biochemical markers related to muscle injury (e.g., creatine kinase) and bone metabolism (e.g., calcium, alkaline phosphatase).
1.7	Recognize and respond to the complexity, uncertainty, and ambiguity inherent in medical practice	1.7.1	
1.8	Apply knowledge of the clinical and biomedical sciences relevant to the clinical problem at hand	1.8.1	Apply anatomical knowledge to explain upper limb movement mechanisms and predict effects of nerve or muscle injuries.
		1.8.2	Apply anatomical and functional concepts to interpret clinical presentations of lower limb conditions (e.g., sciatica, foot drop, fractures).
		1.8.3	Apply physiological principles to interpret muscle contraction, fatigue, and neuromuscular transmission relevant to movement and posture.
		1.8.4	Apply biochemical knowledge to explain molecular mechanisms of muscle energy metabolism and calcium regulation in muscle contraction
1.9	Retrieve, analyze, and evaluate relevant and current data from literature, using information technologies and library resources, in order to help solve a clinical problem based on evidence (EBM)	1.9.1	
		1.9.2	
1.10	Integrate the results of history, physical examination and laboratory test findings into a meaningful diagnostic formulation	1.10.1	
.11	Perform diagnostic and intervention procedures in a skillful and safe manner, adapting to unanticipated findings or changing clinical circumstances	1.11.1	
1.12	Adopt strategies and apply measures that promote patient safety	1.12.1	
1.13	Establish patient-centered management plans in partnership with the patient, his/her family and other health professionals as appropriate, using Evidence Based Medicine in management decision	1.13.1	
1.14	Respect patients' rights and involve them and/or their families/carers in management decisions	1.14.1	

1.15	Provide the appropriate care in cases of emergency, including cardio-pulmonary resuscitation, immediate life support measures and basic first aid procedures	1.15.1	
1.16	Apply the appropriate pharmacological and nonpharmacological approaches to alleviate pain and provide palliative care for seriously ill people, aiming to relieve their suffering and improve their quality of life	1.16.1	
1.17	Contribute to the care of patients and their families at the end of life, including management of symptoms, practical issues of law and certification	1.17.1	
2.1	Identify the basic determinants of health and principles of health improvement	2.1.1	Recognize the biochemical basis of calcium, phosphate, and vitamin D in maintaining bone health.
		2.1.2	
2.2	Recognize the economic, psychological, social, and cultural factors that interfere with wellbeing	2.2.1	
2.3	Discuss the role of nutrition and physical activity in health	2.3.1	Discuss the role of exercise and muscle activity in maintaining muscle tone, strength, and bone density.
2.4	Identify the major health risks in his/her community, including demographic, occupational and environmental risks; endemic diseases, and prevalent chronic diseases	2.4.1	
2.5	Describe the principles of disease prevention, and empower communities, specific groups or individuals by raising their awareness and building their capacity	2.5.1	
2.6	Recognize the epidemiology of common diseases within his/her community and apply the systematic approaches useful in reducing the incidence and prevalence of those diseases	2.6.1	
2.7	Provide care for specific groups including pregnant women, newborns and infants, adolescents and the elderly	2.7.1	
2.8	Identify vulnerable individuals that may be suffering from abuse or neglect and take proper actions to safeguard their welfare	2.8.1	

3.1	Exhibit appropriate professional behaviors and relationships in all aspects of practice, demonstrating honesty, integrity, commitment, compassion, and respect	3.1.1	Exhibit appropriate professional behaviors teamwork, integrity, and respect during anatomy dissection, physiology experiments, and laboratory work.
3.2	Adhere to the professional standards and laws governing the practice, and abide by the national code of ethics issued by the Egyptian Medical Syndicate	3.2.1	Adhere to institutional safety, ethics, and biosafety protocols during laboratory sessions.
3.3	Respect the different cultural beliefs and values in the community they serve	3.3.1	
3.4	Treat all patients equally, and avoid stigmatizing any category regardless of their social, cultural or ethnic backgrounds, or their disabilities	3.4.1	
3.5	Ensure confidentiality and privacy of patients' information	3.5.1	
3.6	Recognize basics of medico-legal aspects of practice, malpractice and avoid common medical errors	3.6.1	
3.7	Recognize and manage conflicts of interest	3.7.1	
3.8	Refer patients to the appropriate health facility at the appropriate stage	3.8.1	
3.9	Identify and report any unprofessional and unethical behaviors or physical or mental conditions related to himself, colleagues or any other person that might jeopardize patients' safety	3.9.1	
4.1	Describe the normal structure of the body and its major organ systems and explain their functions	4.1.1	Describe the gross structure of muscles, bones, joints, and nerves of the limbs and their functional relationships.
		4.1.2	Describe microscopic structures of skeletal muscle, compact bone, and cartilage.
		4.1.3	Explain the function of muscles in generating movement and maintaining posture.
		4.1.4	Describe surface anatomy of gluteal, thigh, leg, and foot regions.
		4.1.5	Identify normal microscopic features of skeletal muscle and bone
4.2	Explain the molecular, biochemical, and cellular mechanisms that are important in maintaining the body's homeostasis	4.2.1	Explain the role of neuromuscular transmission and feedback mechanisms in motor control.

		4.2.2	Describe biochemical pathways of energy production in muscle during rest, activity, and fatigue.
		4.2.3	Explain molecular mechanisms of bone mineralization and calcium homeostasis.
4.3	Recognize and describe main developmental changes in humans and the effect of growth, development and aging on the individual and his family	4.3.1	
4.4	Explain normal human behavior and apply theoretical frameworks of psychology to interpret the varied responses of individuals, groups and societies to disease	4.4.1	
4.5	Identify various causes (genetic, developmental, metabolic, toxic, microbiologic, autoimmune, neoplastic, degenerative, and traumatic) of illness/disease and explain the ways in which they operate on the body (pathogenesis)	4.5.1	explain how fractures, dislocations, and muscle or nerve injuries occur in relation to underlying anatomical basis.
		4.5.2	explain biochemical alterations (e.g., vitamin D deficiency, calcium imbalance) with various condition.
		4.5.3	Explain the physiological changes in muscle fatigue and atrophy resulting from immobilization or denervation.
4.6	Describe altered structure and function of the body and its major organ systems that are seen in various diseases and conditions	4.6.1	
4.7	Describe drug actions: therapeutics and pharmacokinetics; side effects and interactions, including multiple treatments, long term conditions and non-prescribed medication; and effects on the population	4.7.1	
4.8	Demonstrate basic sciences specific practical skills and procedures relevant to future practice, recognizing their scientific basis, and interpret common diagnostic modalities	4.8.1	Demonstrate recording and interpretation of skeletal muscle contractions and simple muscle twitch experiments
		4.8.2	Demonstrate the effects of fatigue, temperature, and repeated stimuli on muscle contraction.
		4.8.3	Demonstrate identification of microscopic slides of skeletal muscle and bone under the microscope.

		4.8.4	Demonstrate the ability to do biochemical tests for muscle and bone metabolism markers (e.g., calcium, phosphate, creatine kinase).
		4.8.5	Demonstrate identification of muscles, bones, nerves, and landmarks through dissection and models.
5.1	Recognize the important role played by other health care professionals in patients' management	5.1.1	
5.2	Respect colleagues and other health care professionals and work cooperatively with them	5.2.1	
5.3	Implement strategies to promote understanding, manage differences, and resolve conflicts	5.3.1	
5.4	Apply leadership skills to enhance team functioning, the learning environment, and/or the health care delivery system	5.4.1	
5.5	Communicate effectively using written health records, electronic medical records, or other digital technology	5.5.1	
5.6	Evaluate his / her work and that of others using constructive feedback	5.6.1	
5.7	Recognize own personal and professional limits, and seek help from colleagues and supervisors when necessary	5.7.1	
5.8	Apply fundamental knowledge of health economics to ensure the efficiency and effectiveness of the health care system	5.8.1	
5.9	Use health informatics to improve the quality of patient care	5.9.1	
5.10	Document clinical encounters in an accurate, complete, timely, and accessible manner	5.10.1	
5.11	Improve the health service provision by applying a process of continuous quality improvement	5.11.1	
5.12	Demonstrate accountability to patients, society, and the profession	5.12.1	
6.1	Regularly reflect on and assess his / her performance using various performance indicators and information sources	6.1.1	Recognize the importance of continuous learning to update knowledge about musculoskeletal anatomy, physiology, and pathology.

6.2	Develop, implement, monitor, and revise a personal learning plan to enhance professional practice	6.2.1	Identify gaps in understanding of skeletal and muscular structures and develop a self-learning plan using anatomical atlases and slides.
6.3	Identify opportunities and use various resources for learning	6.3.1	
6.4	Engage in inter-professional activities and collaborative learning	6.4.1	Engage in inter-professional activities to update knowledge about musculoskeletal anatomy, physiology, and pathology
6.5	Recognize practice uncertainty and knowledge gaps in clinical and other professional encounters	6.5.1	
6.6	Effectively manage learning time and resources and set priorities	6.6.1	

4. Teaching and Learning Methods

- Interactive Lectures
- Tutorial classes
- Practical classes
- Directed self learning.
- Case Discussion

Course Schedule

NO. of the Week	Scientific content of the course (Course Topics)	Total Weekly Hours	Expected Number of the Learning Hours			
			Theoretical teaching (lectures/discussion groups/ .....)	Training Practical	Self-learning (Tasks/ Assignments/ Projects/ ...)	Others
1.	73. **Anatomy:** Upper limb – bones, joints, and muscles	**45**	**3**	**1.5**	**18 h (Home study, tasks, assignments)**	
	74. **Physiology:** System for recording skeletal muscle response		**3**	1.5		
	75. **Histology:** Structure of skeletal muscle tissue (microscopic lab & slide data show)		**3**	1.5		
	76. **Biochemistry:** Genetic diagnosis of inherited muscular and bone disorders		**3**	1.5		
	77. **Anatomy:** Pectoral region and axilla		**3**	1.5		

	78. Physiology: Simple muscle twitch and its properties		**3**	1.5		
2.	**79. Histology:** Structure of compact and cancellous bone (microscopic lab & slide data show)	**45**	**3**	1.5	**18 h (Home study, tasks, assignments)**	
	80. Biochemistry: Vitamin D deficiency and its biochemical implications		**3**	1.5	**18 h (Home study, tasks,**	
	81. Anatomy: Shoulder and back		**3**	1.5		
	82. Physiology: Neuro-muscular transmission		**3**	1.5		
	83. Anatomy: Arm and cubital fossa		**3**	1.5		
	84. Physiology: Effect of temperature and fatigue on muscle contraction		**3**	1.5		
3.	**85. Anatomy:** Front and back of the forearm	**45**	**3**	1.5	**assignments) 18 h (Home study, tasks, assignments)**	
	86. Physiology: Genesis of tetanus and successive stimuli effects		**3**	1.5		
	87. Anatomy: Wrist region and hand		**3**	1.5		
	88. Anatomy: Nerves of the upper limb		**3**	1.5		
	89. Anatomy: Bones of the lower limb		**3**	1.5		
	90. Anatomy: Gluteal region and back of the thigh		**3**	1.5		
4.	**91. Anatomy:** Front and medial side of the thigh	**45**	**3**	1.5	**18 h (Home study, tasks, assignments)**	
	92. **Anatomy:** Spaces in the lower limb, leg, and sole		**3**	1.5		
	93. Revision		**3**	1.5		
	94. Revision		**3**	1.5		
	95. Revision		**3**	1.5		

	96. Revision		3	1.5		
		180	72	36	72	

5. Methods of Students' Assessment

No.	Assessment Methods*	Assessment Timing (Week Number)	Marks	Percentage of Total Course Marks
1	Quiz (Semester work)	Seccond week	-	0
2	End Module exam	Fourth Week	**18**	**20%**
3	Final Written Exam	16-20 Week	**36**	**40%**
4	Final practical Exam	Fourth Week	**27**	**30%**
5	Assignments/Portfolio	Throughout the Module	**9**	**10%**
	Total		**90**	**100%**

6. Learning Resources and Supportive Facilities *

Learning resources (books, scientific references, etc.) *	**The Main (Essential) Reference for the Course** (must be written in full according to the scientific documentation method)	• Drake, R. L., Vogl, W., & Mitchell, A. W. M. (2024). *Gray's Anatomy for Students* (5th ed.). Elsevier. Link: *Elsevier page for the 5th edition* — Gray's Anatomy for Students (Elsevier Health) • Hall, J. E., & Hall, M. E. (2020). *Guyton and Hall Textbook of Medical Physiology* (14th ed.). Elsevier. Link: *Elsevier / Evolve* — Guyton & Hall Textbook of Medical Physiology (Evolve) • Junqueira, L. C., & Carneiro, J. (2023). *Junqueira's Basic Histology: Text and Atlas* (16th ed.). McGraw-Hill Education. • Murray, R. K., Bender, D. A., Botham, K. M., Kennelly, P. J., Rodwell, V. W., & Weil, P. A. (2023). *Harper's Illustrated Biochemistry* (33rd ed.). McGraw-Hill Education. •
	Other References	• Abbas, A. K., Lichtman, A. H., & Pillai, S. (2023). *Cellular and Molecular Immunology* (11th ed.). Elsevier. •
	Electronic Sources (Links must be added)	18. **AccessMedicine – McGraw Hill Medical Library** *(for Harper's Biochemistry & Junqueira's Histology)* https://accessmedicine.mhmedical.com/ 19. **National Center for Biotechnology Information (NCBI) – Bookshelf** *(free access to physiology & biochemistry texts)* https://www.ncbi.nlm.nih.gov/books/ 20. **OpenStax – Anatomy and Physiology** *(free educational textbook resource)* https://openstax.org/details/books/anatomy-and-physiology

		21. **Histology Guide – Virtual Microscopy Resource** *(for histology slides & structure identification)* https://www.histologyguide.com/ 22. **PubMed – Biomedical Literature Database** *(for updated scientific research in all related disciplines)* https://pubmed.ncbi.nlm.nih.gov/
	Learning Platforms (Links must be added)	16. Lecturio – Comprehensive video lectures and quizzes for medical sciences. https://www.lecturio.com/ 17. Visible Body – 3D interactive anatomy and physiology visualization. https://www.visiblebody.com/ 18. Kenhub – Interactive anatomy and histology tutorials with quizzes. https://www.kenhub.com/en/start 19. Labster – Virtual science labs for biochemistry and physiology experiments. https://www.labster.com/ 20. Osmosis – Integrated medical learning videos and flashcards. https://www.osmosis.org/
	Other (to be mentioned)	
Supportive facilities & equipment for teaching and learning *	**Devices/Instruments**	• Microscopes, prepared histology slides, anatomical models, spirometer, spectrophotometer
	Supplies	• histological stains and reagents, microscope slides and cover slips,, and practical record sheets.
	Electronic Programs	Interactive e-learning platforms (ThinCi) and Microsoft teams.
	Skill Labs/ Simulators	
	Virtual Labs	
	Other (to be mentioned)	access to hospital clinics for hands-on clinical exposure

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Course Specifications

SKL 217

2025 /2026

1. Basic Information

Course Title	**Skill lab II**			
Course Code	SKL 217			
Department/s participating in delivery of the course	• **Hepatology, Gastroenterology, and Infectious diseases department** • **Clinical Pathology department** • **Rheumatology**			
Number of credit points of the course = 3	**Theoretical**	**Clinical**	**Self-learning (Tasks/ Assignments/ incision academy**	**Total**
		2.8	1.2	3
Number of contact and non-contact hours of the course	-	54	**36**	90
Course Type	Obligatory			
Academic level at which the course is taught	second year/3rd semester			
Academic Program	M.B. Ch.B. 5+2 Program (credit points)			
Faculty	Kafrelsheikh Faculty of Medicine			
University	Kafrelsheikh University			
Name of Course Coordinator	Marwa naky			
Course Specification Approval Date	7/10/2024			
Course Specification Approval **(Attach the decision/minutes of the department /committee/council ....)**				

2. Course Overview (Brief summary of scientific content)

This course introduces second-year undergraduate students to fundamental clinical and laboratory skills related to the gastrointestinal, blood and lymphatic, and musculoskeletal systems. It integrates basic sciences—anatomy, histology, physiology, and biochemistry—with early clinical applications. Students will learn essential physical examination techniques, basic diagnostic procedures, and selected laboratory analyses through demonstrations and hands-on sessions. Emphasis is placed on developing observation, manual dexterity, and interpretation skills while understanding the scientific basis of each procedure. The course serves as a foundation for subsequent clinical training and professional competency development.

3. Course Learning Outcomes (CLOs)

Matrix of course learning outcomes CLOs with program outcomes POs (NARS/ARS)

	Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		**Course Learning Outcomes Upon completion of the course, the student will be able to:**
Code	**Text**	**Code**	
1.1	Take and record a structured, patient centered history	1.1.1	take a brief focused history relevant to gastrointestinal or musculoskeletal symptoms (e.g., abdominal pain, joint pain, swelling).
1.2	Adopt an empathic and holistic approach to the patients and their problems	1.2.1	
1.3	Assess the mental state of the patient	1.3.1	
1.4	Perform appropriately-timed full physical examination of patients, appropriate to the age, gender, and clinical presentation of the patient while being culturally sensitive	1.4.1	Perform correct sequence of general, abdominal, lymph node, and locomotor system examinations on simulated patients.
1.5	Prioritize issues to be addressed in a patient encounter	1.5.1	
1.6	Select the appropriate investigations and interpret their results taking into consideration cost/ effectiveness factors	1.6.1	Select basic diagnostic tests such as stool analysis, blood grouping, and liver function tests.
1.7	Recognize and respond to the complexity, uncertainty, and ambiguity inherent in medical practice	1.7.1	

1.8	Apply knowledge of the clinical and biomedical sciences relevant to the clinical problem at hand	1.8.1	Apply knowledge of physical examination findings to the underlying anatomy, histology, and physiology of the gastrointestinal, hematologic, and musculoskeletal systems.
1.9	Retrieve, analyze, and evaluate relevant and current data from literature, using information technologies and library resources, in order to help solve a clinical problem based on evidence (EBM)	1.9.1	
1.10	Integrate the results of history, physical examination and laboratory test findings into a meaningful diagnostic formulation	1.10.1	Integrate basic clinical and laboratory findings (inspection, palpation, stool/blood tests) to differentiate between normal and abnormal states.
1.11	Perform diagnostic and intervention procedures in a skillful and safe manner, adapting to unanticipated findings or changing clinical circumstances	1.11.1	Perform basic correct steps in performance of venipuncture, blood film preparation
		1.11.2	perform basic anthropometric measurements
		1.11.3	assess an individual's nutritional status
		1.11.4	Demonstrate correct and safe performance of procedures for determining blood group and performing cross-matching and compatibility testing
		1.11.5	Perform steps for Preparing and examining blood films and assessing hemoglobin value
		1.11.6	Perform steps for correct technique for obtaining and handling a blood sample for culture
		1.11.7	Perform steps for biochemical and microscopic urine and stool analysis
1.12	Adopt strategies and apply measures that promote patient safety	1.12.1	Apply infection control and safety measures during examination and handling of biological specimens.
1.13	Establish patient-centered management plans in partnership with the patient, his/her family and other health professionals as appropriate, using Evidence Based Medicine in management decision	1.13.1	
1.14	Respect patients' rights and involve them and/or their families/carers in management decisions	1.14.1	
1.15	Provide the appropriate care in cases of emergency, including cardio-pulmonary resuscitation, immediate life support measures and basic first aid procedures	1.15.1	
1.16	Apply the appropriate pharmacological and nonpharmacological approaches to alleviate pain and provide palliative care for seriously ill people, aiming to relieve their suffering and improve their quality of life	1.16.1	
1.17	Contribute to the care of patients and their families at the end of life, including management of symptoms,	1.17.1	

	practical issues of law and certification		
2.1	Identify the basic determinants of health and principles of health improvement	2.1.1	
2.2	Recognize the economic, psychological, social, and cultural factors that interfere with wellbeing	2.2.1	
2.3	Discuss the role of nutrition and physical activity in health	2.3.1	Discuss the role of nutritional assessment and anthropometric measurements in musculoskeletal and gastrointestinal health.
2.4	Identify the major health risks in his/her community, including demographic, occupational and environmental risks; endemic diseases, and prevalent chronic diseases	2.4.1	
2.5	Describe the principles of disease prevention, and empower communities, specific groups or individuals by raising their awareness and building their capacity	2.5.1	
2.6	Recognize the epidemiology of common diseases within his/her community and apply the systematic approaches useful in reducing the incidence and prevalence of those diseases	2.6.1	
2.7	Provide care for specific groups including pregnant women, newborns and infants, adolescents and the elderly	2.7.1	
2.8	Identify vulnerable individuals that may be suffering from abuse or neglect and take the proper actions to safeguard their welfare	2.8.1	
3.1	Exhibit appropriate professional behaviors and relationships in all aspects of practice, demonstrating honesty, integrity, commitment, compassion, and respect	3.1.1	Demonstrate professional behavior, empathy, and teamwork during small-group skill sessions.
3.2	Adhere to the professional standards and laws governing the practice, and abide by the national code of ethics issued by the Egyptian Medical Syndicate	3.2.1	
3.3	Respect the different cultural beliefs and values in the community they serve	3.3.1	
3.4	Treat all patients equally, and avoid stigmatizing any category regardless of their social, cultural or ethnic backgrounds, or their disabilities	3.4.1	
3.5	Ensure confidentiality and privacy of patients' information	3.5.1	

3.6	Recognize basics of medico-legal aspects of practice, malpractice and avoid common medical errors	3.6.1	
3.7	Recognize and manage conflicts of interest	3.7.1	
3.8	Refer patients to the appropriate health facility at the appropriate stage	3.8.1	
3.9	Identify and report any unprofessional and unethical behaviors or physical or mental conditions related to himself, colleagues or any other person that might jeopardize patients' safety	3.9.1	
4.1	Describe the normal structure of the body and its major organ systems and explain their functions	4.1.1	Describe surface anatomy of abdominal organs, lymph nodes, and musculoskeletal landmarks during physical examination.
4.2	Explain the molecular, biochemical, and cellular mechanisms that are important in maintaining the body's homeostasis	4.2.1	
4.3	Recognize and describe main developmental changes in humans and the effect of growth, development and aging on the individual and his family	4.3.1	
4.4	Explain normal human behavior and apply theoretical frameworks of psychology to interpret the varied responses of individuals, groups and societies to disease	4.4.1	
4.5	Identify various causes (genetic, developmental, metabolic, toxic, microbiologic, autoimmune, neoplastic, degenerative, and traumatic) of illness/disease and explain the ways in which they operate on the body (pathogenesis)	4.5.1	
4.6	Describe altered structure and function of the body and its major organ systems that are seen in various diseases and conditions	4.6.1	Describe normal versus abnormal findings in common gastrointestinal, blood, and musculoskeletal disorders (e.g., anemia, arthritis, liver disease).
4.7	Describe drug actions: therapeutics and pharmacokinetics; side effects and interactions, including multiple treatments, long term conditions and non-prescribed medication; and effects on the population	4.7.1	
4.8	Demonstrate basic sciences specific practical skills and procedures relevant to future practice, recognizing their scientific basis, and interpret common diagnostic modalities	4.8.1	Demonstrate the ability to Perform stool and blood analyses with corelating results with scientific reasoning.
5.1	Recognize the important role played by other health care professionals in patients' management	5.1.1	

5.2	Respect colleagues and other health care professionals and work cooperatively with them	5.2.1	Work effectively and respectfully within teams during laboratory and skill-station activities.
5.3	Implement strategies to promote understanding, manage differences, and resolve conflicts	5.3.1	
5.4	Apply leadership skills to enhance team functioning, the learning environment, and/or the health care delivery system	5.4.1	
5.5	Communicate effectively using written health records, electronic medical records, or other digital technology	5.5.1	
5.6	Evaluate his / her work and that of others using constructive feedback	5.6.1	
5.7	Recognize own personal and professional limits, and seek help from colleagues and supervisors when necessary	5.7.1	
5.8	Apply fundamental knowledge of health economics to ensure the efficiency and effectiveness of the health care system	5.8.1	
5.9	Use health informatics to improve the quality of patient care	5.9.1	
5.10	Document clinical encounters in an accurate, complete, timely, and accessible manner	5.10.1	Record physical examination and laboratory findings systematically in the student's skill-lab record sheet.
5.11	Improve the health service provision by applying a process of continuous quality improvement	5.11.1	
5.12	Demonstrate accountability to patients, society, and the profession	5.12.1	
6.1	Regularly reflect on and assess his / her performance using various performance indicators and information sources	6.1.1	Reflect on personal skill performance and identify areas for improvement based on instructor feedback
6.2	Develop, implement, monitor, and revise a personal learning plan to enhance professional practice	6.2.1	
6.3	Identify opportunities and use various resources for learning	6.3.1	Utilize videos, virtual labs, and simulation models to enhance skill acquisition in examination and lab procedures.
6.4	Engage in inter-professional activities and collaborative learning	6.4.1	
6.5	Recognize practice uncertainty and knowledge gaps in clinical and other professional encounters and generate focused questions that address them.	6.5.1	
6.6	Effectively manage learning time and resources and set priorities	6.6.1	
6.7	Demonstrate an understanding of the scientific principles of research including its ethical aspects and scholarly inquiry and contribute to the work of a research study	6.7.1	

6.8	Critically appraise research studies and scientific papers in terms of integrity, reliability, and applicability	6.8.1	
6.9	Analyze and use numerical data including the use of basic statistical methods	6.9.1	
6.10	Summarize and present to professional and lay audiences the findings of relevant research and scholarly inquiry	6.10.1	

4. Teaching and Learning Methods

16. Clinical rounds
17. Tutorial classes
18. **Patient simulated classes**
19. **Skill lab**
20. Role play classes
21. Directed self learning.

Course Schedule

NO. of the Week	Scientific content of the course (Course Topics)	Total Weekly Hours	Training Simulated patient/ role play Case discussion Skill lab	Self-learning (Tasks/ Assignments/ Projects/ ...)	Others
1.	**1.** Abdominal Examination	45	4.5	**18 h (Home study, tasks, assignments)**	
	2. Collection and Microscopic Examination of Stool Samples		4.5		
	3. Biochemical Tests Related to Liver Function		4.5		
	4. Principle and Demonstration of Nasogastric Tube Insertion		4.5		
	5. Bedside Diagnostic Tests for GI and Metabolic Functions		4.5		
	6. Assessment of Pulse, Respiratory Rate, and Blood Pressure		4.5		
2.	**7.** Examination of Lymph Nodes and Jugular Veins	45	4.5	**18 h (Home study, tasks, assignments)** **18 h (Home study, tasks,**	
	8. Venipuncture and Blood Sample Collection (Supervised Practice)		4.5		
	9. Principle of Blood Grouping and Compatibility Testing		4.5		
	10. Preparation and Examination of Blood Films		4.5		
	11. Locomotor System Examination		4.5		

	12. Wound Care and Basic Suturing Techniques (Simulation Practice)		4.5		
		90	**54**	**36**	

5. Methods of Students' Assessment

No.	Assessment Methods*	Assessment Timing (Week Number)	Marks	Percentage of Total Course Marks
1.	Continuous assessment	Throughout the Module	**13.5**	**30%**
3.	Final Clinical Exam	Second Week	**31.5**	**70%**
	Total		**45**	**100%**

6. Learning Resources and Supportive Facilities *

Learning resources (books, scientific references, etc.) *	**The Main (Essential) Reference for the Course** (must be written in full according to the scientific documentation method)	• Bickley, L. S., & Szilagyi, P. G. (2021). Bates' Guide to Physical Examination and History Taking (13th ed.). Wolters Kluwer Health.
	Other References	Talley, N. J., & O□Connor, S. (2022). Clinical Examination: A Systematic Guide to Physical Diagnosis (9th ed.). Elsevier.
	Electronic Sources (Links must be added)	1. **Clinical Skills Online – University of Glasgow.** (n.d.). *Clinical Skills Tutorials.* Retrieved from https://clinicalskills.net → Step-by-step video demonstrations of fundamental examination and procedural skills. 2. **MedEdPORTAL – Association of American Medical Colleges (AAMC).** (n.d.). *Peer-reviewed teaching resources for health professions education.* Retrieved from https://www.mededportal.org 3. **Geeky Medics.** (n.d.). *Clinical Examination Guides and OSCE Scenarios.* Retrieved from https://geekymedics.com → Interactive OSCE-style guides and practical examination videos. 4. **TeachMePhysiology.** (n.d.). *Cardiovascular and Respiratory Physiology.* Retrieved from https://teachmephysiology.com 5. **Incision Academy.** (n.d.). *Interactive surgical and procedural skill training platform.* Retrieved from https://www.incision.care/academy

		→ Offers validated e-learning modules and high-quality 3D videos for clinical and procedural skill acquisition. 6. **YouTube – Osmosis & Armando Hasudungan Channels.** (n.d.). *Visual explanations of cardiovascular and respiratory function and pathology.* Retrieved from https://www.youtube.com/user/armandohasudungan
	Learning Platforms (Links must be added)	1. **Moodle Learning Management System (LMS)** – Used for uploading lecture materials, skill videos, assignments, and assessments. https://moodle.org 2. **Microsoft Teams** – Used for virtual tutorials, communication, and feedback sessions. https://www.microsoft.com/en/microsoft-teams 3. **University E-Library Portal** – Provides access to e-books, online journals, and licensed databases (Elsevier ClinicalKey, AccessMedicine). https://www.clinicalkey.com https://accessmedicine.mhmedical.com 4. **Incision Academy** – Offers guided e-learning modules and interactive videos for procedural and examination skill training. https://www.incision.care/academy
	Other (to be mentioned)	• Case studies and ethical dilemma scenarios prepared by the department. • Role-play scripts.
Supportive facilities & equipment for teaching and learning *	**Devices/Instruments**	• desktop or laptop computers with stable internet access • projector and screen (for group teaching, case discussions, and presentations) Student handouts, case sheets, feedback forms, and reflection logs. •
	Supplies	• library facilities & online access with updated textbooks and journals • Whiteboard and markers for discussion summaries. printers / scanners
	Electronic Programs	Interactive e-learning platforms (ThinCi) and Microsoft teams.
	Skill Labs/ Simulators	
	Virtual Labs	
	Other (to be mentioned)	

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