



جامعة اليرموك
Yarmouk University
كلية الطب
Faculty of Medicine



| | | |
|------------------------|-----------------|---------------|
| Document Approval Date | Course Syllabus | Document Code |
| | | AP01-PR05 |

Department: Basic medical sciences

Official Stamp:

| Course Identification | |
|---|---------------------------------|
| Course Name: Research methods and biostatistics | Course Code and Number: MED 214 |
| Number of Credit Hours: 2 | Semester: First |
| Course Status: On Campus | Teaching Language: English |
| Pre-requisite: None | Course Coordinator: |

| General Information | |
|---------------------|---|
| Teaching Method | <input checked="" type="checkbox"/> Face-to-Face <input type="checkbox"/> Online <input type="checkbox"/> Blended |
| Course Description | <p>This course will provide the initial steps in learning about how research and research design is conducted and implemented. Students will learn about formulating research questions, selecting analytical methods, developing conclusions and recommendations, and understanding the use of appropriate research methodologies used in the clinical field. It allows the student to understand the research process by recognizing what it means to do research, what the key issues are including validity and types of research designs, and the kinds of techniques used such as data collection, exploratory data analysis, and hypothesis testing. It is designed to prepare students to develop their own research projects, and to understand and incorporate the elements of effective research designs and appropriate data analyses. The biostatistics part of this course will introduce students with bio-medical background to biostatistical analysis general concepts as used in biomedical, public health and social sciences. The course will describe how to describe and analyze data to solve problems using biostatistics. It will cover the foundation of descriptive data analysis and inferential analysis, data summarization, data visual representation, probability distributions, sampling distributions, estimations, confidence intervals, sample size determination, contingency tables, hypothesis testing, and tests of significance, regression analysis and analysis of variance. The main scope of this course is not to give technical details of these methods, but rather to familiarize students with these methods and their appropriate use as well as result interpretation. It will focus on understanding of what the statistical methods are telling, what their limits, and what is required to properly use the methods. This course</p> |



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| | will help students to better understand research articles method section and critically evaluate the result of any manuscript paper. |
| Course Objectives | <p>The purpose of this course is to teach basic research skills and concepts needed to plan, conduct, and analyze data from a research project. This course is designed to enable students to meet the following learning objectives: To acquire knowledge and understanding required to identify problems to study develop hypotheses and research questions, specify independent and dependent variables, check for the validity and reliability of studies and design research projects. Students should be able to explore research methods including observational, survey and experimental methods. They will be exposed to the broad range of research designs, surveys, focus groups and in-depth interviewing.</p> <p>This course will also familiarize the student with the basic concepts of biostatistics and their applications and interpretation. This will be achieved using examples based on data arising from epidemiology, environmental health, biomedical and other public health related research. Major topics include descriptive statistics, graphics, probability distributions, sampling distributions, estimations, confidence intervals, sample size determination, contingency tables, hypothesis testing, and tests of significance, regression analysis and analysis of variance. Skills including performing literature searches, questionnaire development, scale construction, data cleaning and management, data manipulation and analysis, and interpretation and report writing will be taught.</p> |
| Course Learning Outcomes (CLOs) | <p>CLO1: Describe basic concepts in research process including research question and literature review</p> <p>CLO2: Describe each research design functions and relevance to clinicians</p> <p>CLO3: Describe used approaches for data collection, sampling methods and data summarization and visualization and data interpretation</p> <p>CLO4: Describe a research paper and referencing using referencing softwares</p> <p>CLO5: Understand medical data</p> <p>CLO6: Describe and visualize different medical data</p> <p>CLO7: Draw inferences from data</p> <p>CLO8: Know when and how to use different medical questions</p> <p>CLO9: Clinical decision and diagnostic test evaluation</p> |

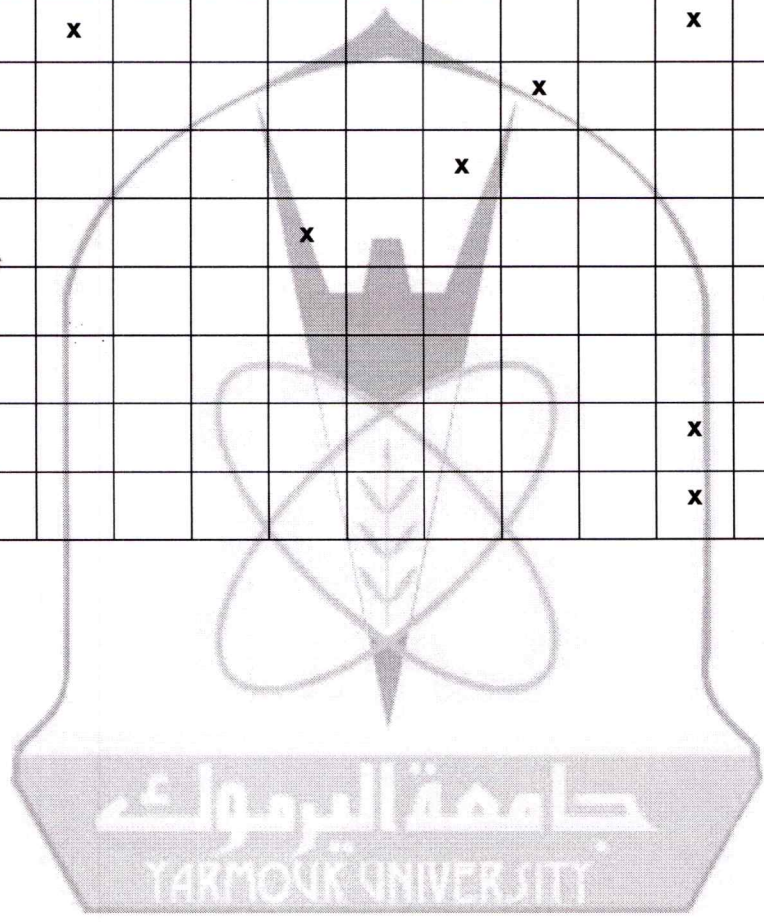


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| Mapping Course Learning Outcomes CLOs to Program Learning Outcomes PLOs | | | | | | | | | | | | | | |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|
| | PLO 1 | PLO 2 | PLO 3 | PLO 4 | PLO 5 | PLO 6 | PLO 7 | PLO 8 | PLO 9 | PLO 10 | PLO 11 | PLO 12 | PLO 13 | PLO 14 |
| CLO 1 | x | | | | | | | | | | | | | |
| CLO 2 | | | x | | | | | | | | x | | | |
| CLO 3 | | | | | | | | | x | | | | | |
| CLO 4 | | | | | | | | x | | | | | | |
| CLO 5 | | | | | | x | | | | | | | | |
| CLO 6 | | | | | | | | | | | | x | | |
| CLO 7 | | | | | | | | | | | | | | |
| CLO 8 | | | | | | | | | | | x | | x | |
| CLO 9 | | | | | | | | | | | x | | | |





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| Assessment Methods | | | | |
|--------------------|------------------------|-------------------|----------|-------------------|
| Assessment Type | Date and Time | Assessment Method | Mark (%) | CLOs |
| Midterm Exam | | Exams | 50% | 1,2,3,4,5,6 |
| Activities* | Discussion: Q and A | | | 1,2,3,4,5,6,7,8,9 |
| | Practical training | | | 1,4,5 |
| | Problem solving | | | 1,2,3,4,5,6,7,8,9 |
| | Assignments | | | 7,9 |
| | Exercise | | | 5,7,9 |
| Final Exam | | Exam | 50% | 3,5,6,7,8,9 |

*The instructor must choose at least three activities from the following: quizzes, assignments, projects, videos, discussions, etc.

| Course Contents, Schedule, and Instruction Methods | | |
|--|--|----------------------|
| Week | Course Content | Instruction Method** |
| Week 1 | Introduction to Research: Definition, Origins, Process and types | Face-to-face class |
| | Formulating a research problem and Literature review | Face-to-face class |
| Week 2 | Identifying variables | Face-to-face class |
| | Development of formulate hypothesis | Face-to-face class |
| Week 3 | Research design – Cross sectional, ecological studies | Face-to-face class |
| | Research design – Cohort studies | Face-to-face class |
| Week 4 | Research design -Case control studies | Face-to-face class |
| | Research design - RCTs | Face-to-face class |
| Week 5 | Constructing an instrument for Data collection and coding | Face-to-face class |
| | Planning the Measurements: Precision, Accuracy, and Validity | Face-to-face class |
| Week 6 | Sampling, bias, and confounding | Face-to-face class |
| | Research protocol | Face-to-face class |
| Week 7 | Presentation and summary of data | Face-to-face class |
| | Reporting the results | Face-to-face class |
| Week 8 | Introduction into data | Face-to-face class |
| | Data summarization & visualization (I) (Data summary for one variable, tables & graphs) | Face-to-face class |
| Week 9 | Data summarization & visualization (II) | Face-to-face class |



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| Course Contents, Schedule, and Instruction Methods | | |
|--|--|----------------------|
| Week | Course Content | Instruction Method** |
| | (Two variables relationship 7 presentation) | |
| | Contingency table & risk ratios | Face-to-face class |
| Week 10 | Diagnostic tests & ROC curve | Face-to-face class |
| | Probabilities and distributions | Face-to-face class |
| Week 11 | Foundations for inferences I | Face-to-face class |
| | Foundations for inferences II | Face-to-face class |
| Week 12 | Inference for numerical data I (one sample & two sample means) | Face-to-face class |
| | Inference for numerical data II (three or more sample means) | Face-to-face class |
| Week 13 | Inference for categorical data (Chi. Square) | Face-to-face class |
| | Simple linear regression | Face-to-face class |
| Week 14 | Multiple linear regression | Face-to-face class |
| | Other regression models | Face-to-face class |
| Week 15 | General topics in research methods | Face-to-face class |
| | General topics in Biostatistics | Face-to-face class |
| Week 16 | Final Exam Week | |

**Instruction method is as follows:

- **Face-to-Face course:** Face-to-face class
- **Onlinecourse:** Interactive synchronous or asynchronous
- **Blended course:** Face-to-face or Online (synchronous or asynchronous)

| Main Textbook and References | |
|------------------------------|--|
| Main Textbook | <ol style="list-style-type: none">1. Ranjit Kumar - Research Methodology_ A Step-by-Step Guide for Beginners-SAGE Publications Ltd2. Glantz, S.A., 2002. Primer of biostatistics |
| Other References | <ol style="list-style-type: none">1. Hulley SB, Cummings SR, Browner WS, Grady DG, Newman TB. Designing Clinical Research. Fourth Edition. Lippincott Williams & Wilkins, 20132. Pagano, M. and Gauvreau, K., 2000. Principles of biostatistics. Chapman and Hall/CRC.3. https://www.openintro.org/stat/ |

Policies and Instructions***



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| Attendance | حسب تعليمات جامعة اليرموك لمنح شهادة بكالوريوس في الطب المادة (7) على الطالب: |
|-----------------|---|
| | <ul style="list-style-type: none">المواظبة في حضور المحاضرات النظرية والمناقشات والتدريب العملي والسريري والزيارات الميدانية المقررة لكل مساق في الخطة الدراسية، ويقوم مدرس المساق بتسجيل الحضور والغياب وذلك على كشوفات خاصة.لا يسمح للطالب بالتغيب عن أكثر من (15%) من مجموع الساعات لكل مساق.إذا غاب الطالب أكثر من (15%) من مجموع الساعات المقررة دون عذر قهري أو عذر مرضي يقبل به مدرس المساق، فعلى مدرس المساق أن يحرم الطالب من التقدم لجميع الامتحانات اللاحقة لذلك المساق، ويوضع له الحد الأدنى لعامة المساق وهو (35%) محروم بسبب الغياب"، وتدخل هذه النتيجة في حساب معادلة تلك السنة.إذا غاب الطالب أكثر من (15%) من مجموع الساعات المقررة لمساق ما وكان هذا الغياب بعذر قهري يقبله عميد الكلية، أو بعذر مرضي فيسمح العميد للطالب الاستمرار في المساق، ولا يجوز أن يتجاوز الغياب بمجموعه (30%) من الساعات، وفي الحالة التي يتجاوز فيها غياب الطالب بعذر قهري أو مرضي نسبة (30%) من السنة الدراسية، وذلك قبل بداية الامتحانات النهائية في الفصل، ويبلغ عميد الكلية فلمجلس الكلية اعتباره منسحباً بذلك لدراسته تلك السنة (باستثناء الفصل الأول أو الكترونياً دائرة القبول والتسجيل خطياً) ويعتبر بذلك مؤجل لقبوله، ويستثنى من ذلك مساقات متطلبات الجامعة حيث تطبق عليها التعليمات العامة فيما يخص الانسحاب من المساقات يشترط في العذر المرضي أن يكون بتقرير طبي صادر من المرجع الطبي المعتمد في جامعة اليرموك، وإذا تعذر ذلك فلعميد الكلية أن يعتمد التقرير المقدم أو يرفضه، وعلى الطالب أن يقدم التقرير الطبي المطلوب إلى العميد خلال أسبوع من تاريخ زوال العذر ويقوم العميد بإبلاغ مدرسي المواد التي يدرسها الطالب بقراره. |
| Activities | |
| Late Submission | |
| Exams | <p>حسب تعليمات جامعة اليرموك لمنح شهادة بكالوريوس في الطب المادة (8) :</p> <ul style="list-style-type: none">تحسب العلامة النهائية لكل مساق من (100) ولأقرب رقم صحيح.a. العلامة النهائية لكل مساق هي مجموع علامات الامتحان النهائي وعلامات الأعمال الفصلية.b. يعقد الامتحان النهائي لكل مساق مرة واحدة في نهاية الفصل أو في نهاية السنة، وذلك حسب طبيعة المساق، أو عملياً شفوياً لمقرر المساق، ويجوز أن يشمل الامتحان النهائي جزءاً وشاملاً ويكون هذا الامتحان كتابياً تقارير لها نسبة مئوية معينة من العلامة يحددها القسم المعني.c. تشمل الأعمال الفصلية لكل مادة ما يلي:<ul style="list-style-type: none">i. الاختبارات الشفوية أو التقارير أو البحوث.ii. امتحانات فصلية أو سنوية حسب طبيعة المادة، تحدد للطلبة في بداية الفصل أو السنة.d. كل من يتغيب عن امتحان فصلي أو سنوي معلن عنه بعذر قهري يقبل به عميد الكلية التي تطرح المساق، أو عذر مرضي، عليه أن يقدم ما يثبت عذره خلال أسبوع من تاريخ زوال العذر، وفي هذه الحالة يعقد للطالب بالشكل الذي يراه مناسباً مدرس المساق امتحاناً تعويضياً.e. كل من يتغيب عن امتحان نهائي معلن عنه بدون عذر قهري يقبل به عميد الكلية أو عذر مرضي يوضع له (صفر) في ذلك الامتحان، ويحسب له في علامته النهائية |



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اسم الكلية
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| Document Approval Date | Course Syllabus | Document Code |
| | | AP01-PR05 |

Department: Department of Basic Medical Sciences

Official Stamp:

| Course Identification | |
|-----------------------------------|---|
| Course Name: Medical Immunology | Course Code and Number: M215 |
| Number of Credit Hours: 3 hours | Semester: summer |
| Course Status: second year course | Teaching Language: English |
| Pre-requisite:- | Course Coordinator: Dr. Mariam Al-Omari |

| General Information | |
|---------------------------------|---|
| Teaching Method | <input type="checkbox"/> Face-to-Face <input checked="" type="checkbox"/> Online <input type="checkbox"/> Blended |
| Course Description | This course introduces the principles of immunology including Biological and biochemical aspects of immunity, innate and adaptive components of humoral and cellular parts of immunity. Immune system in health and diseases. Immunological reactions as diagnostic tools for bacterial, viral, parasitic as well as autoimmune diseases |
| Course Objectives | The aims of this course are to explain, how the immune system develops, prevents infectious diseases and interacts with other body systems to limit or cause tissue damage. The course includes sections on hematology and stem cell origins of the hematopoietic/immune systems, acute and chronic inflammation, autoimmunity, allergy, transplantation, immune responses to infectious disease including vaccination |
| Course Learning Outcomes (CLOs) | Student will be able to CLO1: Define the components of the innate and adaptive immune responses and describe which cell types and organs are involved in an immune response. CLO2: Describe the bases of the MHC system and its applications. CLO3: Identify the mechanisms of immunodeficiency diseases. CLO4: Explain the mechanisms of autoimmune disease and understand how knowledge about the immune system is acquired and important CLO5: Classify of hypersensitivity reactions CLO6: Understand the principles governing vaccination and the mechanisms of protection against infectious diseases |



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| | <p>CLO7: understand and explain use of different methods of laboratory diagnosis.</p> <p>CLO8: Acquire, read, interpret, and integrate information from clinical cases related to the Immune diseases</p> |
|--|---|

| Mapping Course Learning Outcomes CLOs to Program Learning Outcomes PLOs | | | | | | | | | | | | | | |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|
| | PLO 1 | PLO 2 | PLO 3 | PLO 4 | PLO 5 | PLO 6 | PLO 7 | PLO 8 | PLO 9 | PLO 10 | PLO 11 | PLO 12 | PLO 13 | PLO 14 |
| CLO 1 | X | | | | | | | | | | | | | |
| CLO 2 | X | | | | | | | | | | | | | |
| CLO 3 | X | | | X | | | | | | | | | | |
| CLO 4 | X | | | X | | | | | | | | | | |
| CLO 5 | | | | X | | | | | | | | | | |
| CLO 6 | X | | | X | | | | | | | | | | |
| CLO 7 | | | X | | | | | | | | | | | |
| CLO 8 | | | | X | | | | X | X | | | | | |





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| Assessment Methods | | | | | |
|--------------------|---------------|----------------------|--------------------------------|---------------------|------|
| Assessment Type | Date and Time | Assessment Method | Mark (%) | CLOs | |
| Midterm Exam | 20-07.2022 | Multiple choice test | 40 | CLO 1,CLO2,CLO3 | |
| Activities* | Activity (1) | 10.7.2022 | Short answer test | 3 | CLO3 |
| | Activity (2) | 5.08.2022 | Presentation of clinical cases | 4 | CLO5 |
| | Activity (3) | 20.08.2022 | ,Assignment | 3 | CLO6 |
| | Activity (4) | | | | |
| | Activity (5) | | | | |
| Final Exam | 30.08.2022 | Multiple choice test | 50 | CLO1,CLO4,CLO5.CLO6 | |

*The instructor must choose at least three activities from the following: quizzes, assignments, projects, videos, discussions, etc.

| Course Contents, Schedule, and Instruction Methods | | |
|--|---|---|
| Week | Course Content | Instruction Method** |
| Week 1 | Introduction to the immune system. Basic concepts and components of the immune system. | Interactive synchronous Zoom lecture Streaming video/Video tapes |
| | Antigen recognition and Antigen antibody structure | Interactive synchronous Zoom lecture |
| Week 2 | Antibody-antigen interaction Antibody diversity. The T cell receptor | Interactive synchronous Zoom |



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| Course Contents, Schedule, and Instruction Methods | | |
|--|--|--|
| Week | Course Content | Instruction Method** |
| | Major Histocompatibility Complex Antigen processing and presentation | Interactive synchronous Zoom lecture |
| Week 3 | Lymphocyte activation Hematopoiesis & Cells and organs of the immune system | Interactive synchronous Zoom lecture |
| | B cell development T Cell development Cell to cell interaction in generating effector lymphocytes | Interactive synchronous Zoom lecture |
| Week 4 | Immunological memory & Review of immune physiology Complement system | Interactive synchronous Zoom lecture |
| | Phagocytosis Cytokines & killing in the immune system | Interactive synchronous Zoom lecture |
| Week 5 | Inflammation and review of the innate immunity Infections and vaccines | Interactive synchronous Zoom lecture |
| | Hypersensitivity reaction I Hypersensitivity type-II | Interactive synchronous Zoom lecture |
| Week 6 | Hypersensitivity type-III Hypersensitivity type-IV | Interactive synchronous Zoom lecture |



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Department: Basic Medical Sciences

Official Stamp:

Course Identification

| | |
|--|---|
| Course Name: Introduction to public health | Course Code and Number: MED 216 |
| Number of Credit Hours: 3 credits | Semester: Summer |
| Course Status: Online | Teaching Language: English |
| Pre-requisite: N.A. | Course Coordinator: Dr. Reema Karasneh Email: reema.karasneh@yu.edu.jo |
| Course Instructors: Dr. Reema Karasneh Dr. Ola Soudah | Email: reema.karasneh@yu.edu.jo Email: ola.soudah@yu.edu.jo |

General Information

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|---------------------------|---|
| Teaching Method | <input type="checkbox"/> Face-to-Face <input checked="" type="checkbox"/> Online <input type="checkbox"/> Blended |
| Course Description | This course will introduce undergraduate medical students to the vast discipline of public health by providing an insight into population health including public health approach and evidence-based public health. The course covers several aspects in public health including communicable and non-communicable diseases, environmental and occupational health, health promotion and prevention, global health, maternal, infant, and child health, community mental health, and health behaviors such as healthy diet, physical activity, tobacco, alcohol & other drug use. |



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| Course Objectives | Knowledge | <ol style="list-style-type: none"> 1. To build up foundational knowledge of different aspects of public health and to identify multiple ways that public health affects daily life. 2. Define “population health.” 3. Explain the steps in the evidence-based public health process. 4. Use an approach to identify options for intervention based on “when, who, and how.” 5. Give an example of how cultural differences can impact the diagnosis of mental disorder. 6. List the sources and types of air pollutants and explain the difference between primary and secondary pollutants. 7. Define what is meant by the term waterborne disease and foodborne disease outbreak 8. Define pest, pesticides, target organism, and nontarget organism. 9. Define drug use, misuse, and abuse and drug dependence. 10. Give an example of primary, secondary, and tertiary prevention activities in drug abuse prevention and control programs. 11. Summarize maternal, infant, and child health and explain the importance of maternal, infant, and child health as indicators of a society’s health. 12. Define four different types of physical activity and explain societal trends that have influenced physical activity patterns and discuss the barriers to regular physical activity. 13. Understand components of primary health care. 14. Differentiate between communicable and non-communicable diseases. 15. Be familiar with health status in Jordan. |
| | Skills | <ol style="list-style-type: none"> 1. Explain the critical importance of evidence in advancing public health knowledge 2. Explain effects of occupational, environmental and behavioral factors on a population's health 3. Explain how globalization affects global burdens of disease |
| | Competencies | <ol style="list-style-type: none"> 1. Discuss the science of primary, secondary and tertiary prevention in population health, including health promotion, screening, etc. 2. Design a population-based policy, program, project or intervention |



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Course Learning Outcomes (CLOs)

- CLO1:** Describe what is public health and public health development history.
- CLO2:** Understand the difference between public health approach and clinical health care and public health milestones.
- CLO3:** Understand health determinants of health from different perspectives, social, cultural, behavioral, environmental, and economic factors.
- CLO4:** Know the concepts of health prevention and promotion of communicable and non-communicable diseases.
- CLO5:** Learn a structured framework used in public health program (from planning to dissemination).
- CLO6:** Understand risk communication and how to tailor public health messages for specific audience.
- CLO7:** Explain the most important public health problems facing the society including tobacco, physical activity, diet, & drug abuse.
- CLO8:** Explain environmental hazards and risk at workplaces and possible strategies used by public health authorities.
- CLO9:** Know primary health care in undressing community needs with a focus on common public health issues in Jordan.

Mapping Course Learning Outcomes CLOs to Program Learning Outcomes PLOs

| | PLO1 | PLO2 | PLO3 | PLO4 | PLO5 | PLO6 | PLO7 | PLO8 | PLO9 | PLO10 | PLO11 | PLO12 | PLO13 | PLO14 |
|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|
| CLO1 | | | | | | | | | x | x | | | | |
| CLO2 | | | | | | | | | x | x | | | | x |
| CLO3 | | | | | | | | | x | | x | | | |
| CLO4 | | | x | x | | | | | | x | x | | | x |
| CLO5 | | | | | | | | | | x | | x | | x |
| CLO6 | | | | | | | | | | x | | | | x |
| CLO7 | | | | | | | | | x | | | | | x |
| CLO8 | | | | | | | | | x | x | | | | x |
| CLO9 | | | | | | | | | | x | x | | x | x |



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| Assessment Methods | | | | |
|--------------------|---------------|----------------------|----------|---------------|
| Assessment Type | Date and Time | Assessment Method | Mark (%) | CLOs |
| Midterm Exam | TBA | Multiple choice exam | 50% | 1,2,3,4,5,6,8 |
| Final Exam | TBA | Multiple choice exam | 50% | 3,4,7,8,9 |

*The instructor must choose at least three activities from the following: quizzes, assignments, projects, videos, discussions, etc.

| Course Contents, Schedule, and Instruction Methods | | |
|--|---|-------------------------|
| Week | Course Content | Instruction Method** |
| Week 1 | Introduction to public Health | Interactive synchronous |
| | Public Health: The Population Health Approach | Interactive synchronous |
| | Evidence-Based Public Health I | Interactive synchronous |
| | Evidence-Based Public Health II | Interactive synchronous |
| | Public Health Data and Communications | Asynchronous |
| Week 2 | Public Health surveillance | Interactive synchronous |
| | Social and Behavioral Sciences I | Interactive synchronous |
| | Social and Behavioral Sciences II | Interactive synchronous |
| | Health Law and policy | Interactive synchronous |
| | Case Study: The Obesity Epidemic in the United States—The Tip of an Iceberg | Asynchronous |
| Week 3 | Public Health Institutions and Systems | Interactive synchronous |
| | System thinking: from single solutions to one health I | Interactive synchronous |
| | System thinking: from single solutions to one health I | Interactive synchronous |
| | Global health : Healthy people 2020 initiative | Interactive synchronous |
| | Case Study: Lung Cancer: Old Disease, New Approaches | Asynchronous |



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| Course Contents, Schedule, and Instruction Methods | | |
|--|---|-------------------------|
| Week | Course Content | Instruction Method** |
| Week 4 | Community mental health | Interactive synchronous |
| | School health program | Interactive synchronous |
| | Epidemiology- introduction, rates and reporting | Interactive synchronous |
| | Standardized Measurements of Health Status of Populations | Interactive synchronous |
| | Midterm- exam | |
| Week 5 | Sources of Secondary Data and epidemiological studies | Interactive synchronous |
| | Communicable diseases | Interactive synchronous |
| | Noncommunicable diseases | Interactive synchronous |
| | Prevention, Intervention, Control, and Eradication of Diseases - Levels of Prevention | Interactive synchronous |
| | Environmental Health -The air we breath | Asynchronous |
| Week 6 | Environmental Health – The water we use | Interactive synchronous |
| | Environmental Health – The food we eat | Interactive synchronous |
| | Alcohol, Tobacco, & other drugs I | Interactive synchronous |
| | Alcohol, Tobacco, & other drugs II | Interactive synchronous |
| | Maternal, Infant, & Child health | Asynchronous |
| Week 7 | Eating behaviors | Interactive synchronous |
| | Healthy Eating | Interactive synchronous |
| | Physical activity | Interactive synchronous |
| | Occupational Health | Interactive synchronous |
| Week 8 | Final Exam Week | |

**Instruction method is as follows:

- **Face-to-Face course:** Face-to-face class
- **Online course:** Interactive synchronous or asynchronous
- **Blended course:** Face-to-face or Online (synchronous or asynchronous)



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| Main Textbook and References | |
|------------------------------|---|
| Main Textbook | Riegelman, R. and Kirkwood, B., 2018. <i>Public Health 101: Improving Community Health: Improving Community Health</i> . Jones & Bartlett Learning. |
| Other References | Pinger, R.R. and Seabert, D., 2016. <i>An introduction to community & public health</i> . Jones & Bartlett Learning. |
| | Anastasia M. Snelling. 2014. <i>Introduction to Health Promotion</i> . John Wiley & Sons, Inc. Handouts |

| Policies and Instructions*** | |
|------------------------------|---|
| Attendance | <p>حسب تعليمات جامعة اليرموك لمنح شهادة بكالوريوس في الطب المادة (7) على الطالب:</p> <ul style="list-style-type: none">المواظبة في حضور المحاضرات النظرية والمناقشات والتدريب العملي والسريري والزيارات الميدانية المقررة لكل مساق في الخطة الدراسية، ويقوم مدرس المساق بتسجيل الحضور والغياب وذلك على كشوفات خاصة.لا يسمح للطالب بالتغيب عن أكثر من (15%) من مجموع الساعات لكل مساق.إذا غاب الطالب أكثر من (15%) من مجموع الساعات المقررة دون عذر قهري أو عذر مرضي يقبل به مدرس المساق، فعلى مدرس المساق أن يحرم الطالب من التقدم لجميع الامتحانات اللاحقة لذلك المساق، ويوضع له الحد الأدنى لعامة المساق وهو (35%) محروم بسبب الغياب"، وتدخل هذه النتيجة في حساب معدلة تلك السنة.إذا غاب الطالب أكثر من (15%) من مجموع الساعات المقررة لمساق ما وكان هذا الغياب بعذر قهري يقبله عميد الكلية، أو بعذر مرضي فيسمح العميد للطالب الاستمرار في المساق، ولا يجوز أن يتجاوز الغياب بمجموعه (30%) من الساعات، وفي الحالة التي يتجاوز فيها غياب الطالب بعذر قهري أو مرضي نسبة (30%) من السنة الدراسية، وذلك قبل بداية الامتحانات النهائية في الفصل، ويبلغ عميد الكلية فلمجلس الكلية اعتباره منسحباً بذلك لدراسته تلك السنة (باستثناء الفصل الأول أو الكترولونياً دائرة القبول والتسجيل خطياً) ويعتبر بذلك مؤجل لقبوله، ويستثنى من ذلك مساقات متطلبات الجامعة حيث تطبق عليها التعليمات العامة فيما يخص الانسحاب من المساقاتيشترط في العذر المرضي أن يكون بتقرير طبي صادر من المرجع الطبي المعتمد في جامعة اليرموك، وإذا تعذر ذلك فلعميد الكلية أن يعتمد التقرير المقدم أو يرفضه، وعلى الطالب أن يقدم التقرير الطبي المطلوب إلى العميد خلال أسبوع من تاريخ زوال العذر ويقوم العميد بإبلاغ مدرس المساق الذي يدرسه الطالب بقراره. |
| Activities | |
| Late Submission | |
| Exams | <p>حسب تعليمات جامعة اليرموك لمنح شهادة بكالوريوس في الطب المادة (8) :</p> <ul style="list-style-type: none">تحسب العلامة النهائية لكل مساق من (100) ولأقرب رقم صحيح.a. العلامة النهائية لكل مساق هي مجموع علامات الامتحان النهائي وعلامات الأعمال الفصلية.b. يعقد الامتحان النهائي لكل مساق مرة واحدة في نهاية الفصل أو في نهاية السنة، وذلك حسب طبيعة المساق، أو عملياً شفوياً لمقرر المساق، ويجوز أن يشمل |



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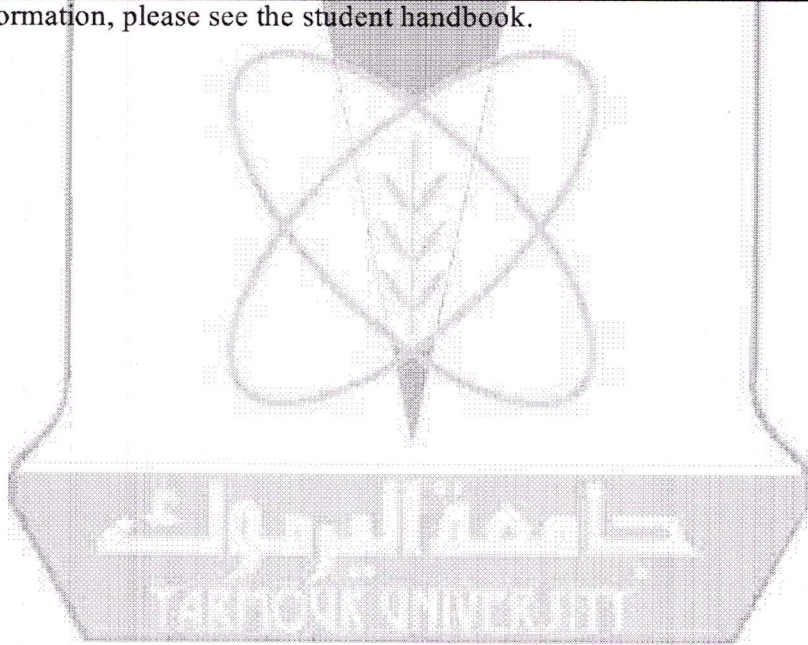
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| | <p>الامتحان النهائي جزءاً وشاملاً ويكون هذا الامتحان كتابياً تقارير لها نسبة مئوية معينة من العلامة يحددها القسم المعني.</p> <p>c. تشمل الأعمال الفصلية لكل مادة ما يلي :</p> <p>i. الاختبارات الشفوية أو التقارير أو البحوث .</p> <p>ii. امتحانات فصلية أو سنوية حسب طبيعة المادة، تحدد للطلبة في بداية الفصل أو السنة .</p> <p>d. كل من يتغيب عن امتحان فصلي أو سنوي يعلن عنه بعذر قهري يقبل به عميد الكلية التي تطرح المساق، أو عذر مرضي، عليه أن يقدم ما يثبت عذره خلال أسبوع من تاريخ زوال العذر، وفي هذه الحالة يعقد للطلاب بالشكل الذي يراه مناسباً مدرس المساق امتحاناً تعويضياً.</p> <p>e. كل من يتغيب عن امتحان نهائي يعلن عنه بدون عذر قهري يقبل به عميد الكلية أو عذر مرضي يوضع له (صفر) في ذلك الامتحان، وبحسب له في علامته النهائية</p> <p>f. ترد جميع أوراق الامتحانات والتقارير، والبحوث إلى الطالب بعد تصحيحها وتسجيل علاماتها، أما أوراق الامتحان النهائي فتحتفظ لدى مدرس المساق لمدة فصل دراسي واحد.</p> <p>g. إذا تغيب الطالب عن الامتحان النهائي لمساق ما بعذر يقبله العميد، يبلغ العميد قراره بقبول العذر الذي مدير دائرة القبول والتسجيل ومدرس المساق ليسجل له علامة "غير مكتمل" إزاء هذا المساق، وعلى الطالب أن يتقدم للامتحان النهائي في المساق المذكور في مدة أقصاها أربعة أسابيع من بداية الفصل التالي للفصل الذي حصل فيه على علامة "غير مكتمل" ويعتبر لهذا الغرض إذا درس فيه الطالب، أما إذا لم يتمكن الطالب من تقديم دراسته الفصل الصيفي فصال الامتحان المذكور في المدة المقررة اعتبرت عالمته صفراً. في ذلك الامتحان.</p> <p>h. لا يجوز للطالب الحاصل على ملاحظة "غير مكتمل" تأجيل دراسته في الجامعة للفصل/ الفصول اللاحقة إلا بعد إزالة هذه الملاحظة ضمن الفترة المحددة في هذه المادة وخالف ذلك تسجل له دائرة القبول والتسجيل العالمية المستحقة من الأعمال الفصلية في ذلك المساق.</p> <p>i. يكون الإطار العام الامتحانات ومواعيدها على النحو التالي</p> <p>i. مساقات السنوات الأولى والثانية والثالثة والفصل الدراسي الأول من السنة الرابعة:</p> <p>1. مساقات النظرية والمساقات النظرية التي تحوي جزءاً عملياً يخصص للأعمال الفصلية (50%) حيث يجري اختباران فصليان على الأقل وقد تكون هذه الاختبارات على شكل امتحانات تحريرية، شفوية، عملية، أو بوساطة الحاسوب أو تقارير أو بحوث كلها أو بعضها على أن يتم تحديد طبيعة الامتحانات ومواعيدها للطلبة في بداية كل فصل دراسي وحسب ما يقرره مجلس القسم الذي يطرح المساق وتناقش أوراق الامتحانات مع الطلبة بعد تصحيحها وتعلن نتائج الأعمال الفصلية للطلبة قبل بداية الامتحان النهائي ويخصص للامتحان النهائي (50%).</p> <p>2. يقوم مجلس القسم الذي يطرح المساق ببيان كيفية توزيع العلامات التي توضع للمساقات العملية قبل بداية الفصل الدراسي.</p> <p>j. يحدد عميد الكلية بالتنسيق مع دائرة القبول والتسجيل مواعيد الامتحانات النهائية في مطلع كل عام دراسي .</p> |
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| | <p>k. تقوم مجالس الأقسام بتحديد أسلوب تقييم أي مساق ذي طبيعة خاصة أو بحثية، وتحديد أعداد ونوعية الممتحنين الخارجيين، وبيان كيفية توزيع العلامات التي توضع لهذه المواد على أن يعتمد هذا التوزيع من مجلس الكلية في بداية كل فصل أو عام دراسي.</p> |
| Cheating and Plagiarism | <p>تعليمات الإجراءات التأديبية للطلبة في جامعة اليرموك رقم (٨) :</p> <ul style="list-style-type: none">• يعاقب بالتنبيه، أو بالإذار الأول، أو بالإذار النهائي، "ما لم يرد نص خاص" كل طالب يقوم بـ: ١- الامتناع المدير عن حضور المحاضرات، والدروس، والأنشطة الجامعية التي تقضي الأنظمة بالمواظبة عليها، أو التحريض على ذلك. 2- الإخلال بالقواعد المتبعة أثناء المحاضرات وعقد الامتحانات، ولمدرس المساق أن يخرج من القاعة واستدعاء الأمن الجامعي عند الضرورة لإخراجه، وله أن يعلم العميد أو المدير المختص بذلك المساق اتخاذ الإجراءات المناسبة بحقه. ٤- استخدام أجهزة الهواتف النقالة، وسائر الأجهزة الإلكترونية داخل القاعات أو خارجها بشكل يؤثر على سير العملية التدريسية.• يعاقب بالفصل المؤقت من الجامعة من فصلين إلى ثلاثة فصول دراسية كل طالب يقوم بـ: الاتفاق مع طالب آخر، أو شخص آخر على الدخول لتأدية امتحان أو اختبار ودخل لتأديته نيابة عنه وتشمل العقوبة في هذه الحالة الطالب الذي دخل الامتحان والطالب الذي أدى الامتحان نيابة عنه، وإذا كان الشخص الذي دخل الامتحان من غير طلبة الجامعة فيحال إلى الجهات المختصة. استخدام أجهزة الهواتف النقالة أو الأجهزة الإلكترونية الغير مصرح باستخدامها داخل قاعة الامتحان. |

***For more information, please see the student handbook.





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Department: Basic Medical Sciences

Official Stamp:

| Course Identification | |
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| Course Name: Respiratory System | Course Code and Number: MED 220 |
| Number of Credit Hours: 6 credits | Semester: Spring |
| Course Status: Face to face | Teaching Language: English |
| Pre-requisite: | Course Coordinator: Dr. Ola Soudah Email: ola.soudah@yu.edu.jo |

| General Information | |
|---------------------|---|
| Teaching Method | <input checked="" type="checkbox"/> Face-to-Face <input type="checkbox"/> Online <input type="checkbox"/> Blended |
| Course Description | Integrative respiratory system provides comprehensive and integrated coverage of anatomy, physiology, histology and embryology of the respiratory system. Microbiology, biochemistry, and pharmacology relating to the system are discussed. Pathology of the upper and lower respiratory system is presented along with clinical presentations of diagnostic and treatment modalities. Teaching methods include lectures, labs, small group discussion, and clinically oriented seminars. |
| Course Objectives | At the end of this course students are expected to: <ol style="list-style-type: none">1. To identify and describe structures of respiratory organs, as well as their development, their histology and their blood supply.2. To describe the mechanics of pulmonary ventilation and the major mechanisms involved in the regulation of respiration.3. To explain how the respiratory gases are exchanged and carried around the body.4. To identify various bacteria, viruses, parasites and fungal infections, which infect the respiratory tract and to understand principles of diagnosis, treatment and prevention.5. To identify and describe the major causes, pathogenesis, morphological changes and complications of various disease processes which affect the respiratory tract.6. To understand the major pharmacological principles, which provide the basis for the treatment of tuberculosis, cough and bronchial asthma, as well as the pharmacology of anti-histamine drugs. |



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| | <p>7. To identify the major risk factors which contribute to occupational diseases of the respiratory system and to understand their epidemiological pattern in the Jordanian community.</p> |
| Course Learning Outcomes (CLOs) | <p>CLO1: Identify the solid and soft organ structure along with their function in normal process.</p> <p>CLO2: Illustrate the embryonic development, fetal maturation, and perinatal changes with understanding of regeneration, repair, and changes associated with different stages of life.</p> <p>CLO3: Describe ventilation and gas exchange process mechanics, normal physiological dynamics, and the associated pathophysiological mechanisms.</p> <p>CLO4: Outline pulmonary defense mechanisms like acid-base buffering system, immunologic defenses, and normal flora.</p> <p>CLO5: Understand myoglobin and hemoglobin structure and normal functions throughout life stages and their role in blood oxygenation.</p> <p>CLO6: Recognize the essential basic pathological processes including Infectious, immunologic, inflammatory, cell death and injury, thrombosis, neoplasia, and congenital disorders.</p> <p>CLO7: Discuss the relation of these essential basic pathological processes to the pathogenesis of common and important diseases.</p> <p>CLO8: Demonstrate an understanding of the predisposing factors, causes, pathogenesis, morphology and potential complications of such diseases.</p> <p>CLO9: Correlate clinical features and diagnostic findings with the causes and mechanisms of disease.</p> <p>CLO10: Apply the pathological processes in the investigation, management and prevention of disease.</p> <p>CLO11: Identify different pharmaceutical treatment modalities, their proper use, and adverse effects.</p> <p>CLO13: Understand work related hazards correlated respiratory diseases and proper diagnostic techniques commonly used in occupational medicine.</p> <p>CLO14: Implement the terminology for the field of pathology correctly and contextually.</p> <p>CLO15: Acquire, read, interpret and integrate information from a wide variety of sources in a planned and timely manner.</p> <p>CLO14: Engage in critical thinking and problem-solving.</p> |

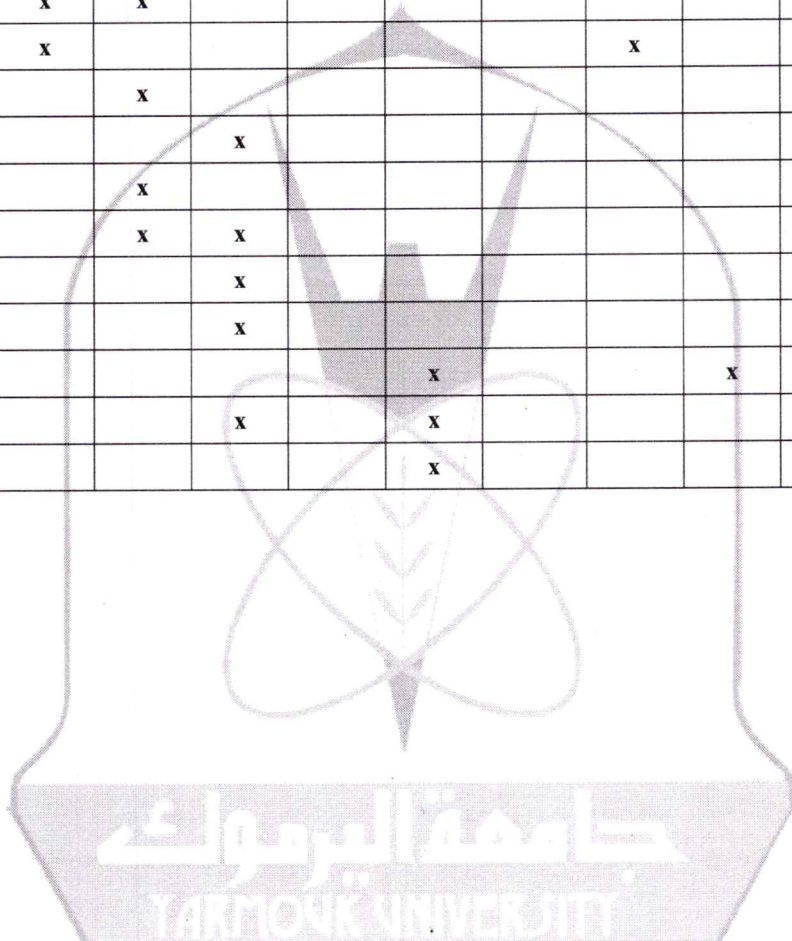


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| Mapping Course Learning Outcomes CLOs to Program Learning Outcomes PLOs | | | | | | | | | | | |
|---|------|------|------|------|------|------|------|------|------|-------|-------|
| | PLO1 | PLO2 | PLO3 | PLO4 | PLO5 | PLO6 | PLO7 | PLO8 | PLO9 | PLO10 | PLO11 |
| CLO1 | x | | | | | | | | | | |
| CLO2 | x | x | | | | | | x | | | |
| CLO3 | | x | | | | | | | | | |
| CLO4 | | x | x | | | | | | | | |
| CLO5 | x | x | | | | | | x | | | |
| CLO6 | | | x | | | | | | | | |
| CLO7 | | | | x | | | | | | | |
| CLO8 | | | x | | | | | | | | |
| CLO9 | | | x | x | | | | | | | |
| CLO10 | | | | x | | | | | | | |
| CLO11 | | | | x | | | | | | | |
| CLO12 | | | | | | x | | | x | x | |
| CLO13 | | | | x | | x | | | | | |
| CLO14 | | | | | | x | | | | | |





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| Assessment Methods | | | | |
|--------------------|---------------|--------------------------|------------|------|
| Assessment Type | Date and Time | Assessment Method | Mark (%) | CLOs |
| Midterm Exam | TBA | Computer based MCQs exam | 50% | 1-14 |
| Activities* | Activity (1) | Case 1 | Discussion | 8-14 |
| | Activity (2) | Case 2 | Discussion | 8-14 |
| Final Exam | TBA | Computer based MCQs exam | 50% | 1-14 |

*The instructor must choose at least three activities from the following: quizzes, assignments, projects, videos, discussions, etc.

| Numbers of questions required for the examinations of the RS Module | | |
|---|------------|-------------|
| RS Exam | # Lectures | # Questions |
| Anatomy | 8 | 15 |
| Anatomy Lab. | 2 | 4 |
| Physiology | 9 | 17 |
| Biochemistry | 4 | 7 |
| Pathology | 10 | 18 |
| Pathology Lab. | 2 | 4 |
| Microbiology | 8 | 15 |
| Pharmacology | 7 | 13 |
| Clinical | 3 | 5 |
| Public Health | 1 | 2 |
| Total | 55 | 100 |



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| Discipline | Course Content | Instruction Method** |
|---------------|--|----------------------|
| Public Health | 1. Burden of respiratory diseases. | Face to Face |
| Anatomy | 1. Upper respiratory Tract- Nose. 2. Upper respiratory Tract-Pharynx. 3. Upper respiratory Tract- Larynx 4. Thoracic cage, wall & respiratory muscles including the diaphragm. 5. Lower respiratory tract, Pleura, Lung 1. 6. Lower respiratory tract, Pleura, Lung 2. 7. Histology of Respiratory Tract. 8. Pre- and Post-Natal Development of RS. | Face to Face |
| Physiology | 1. Structure and function of the respiratory system. 2. Mechanism of pulmonary breathing (ventilation) 3. Lung volumes and their measurement. 4. Alveolar ventilation. 5. Pulmonary blood flow (perfusion). 6. Ventilation -perfusion ratio. 7. Alveolar gas exchange. 8. Control of ventilation. 9. Mechanics of pulmonary and chest wall. | Face to Face |
| Biochemistry | 1. Acid-base balance and the respiratory system as line of defense. 2. Biochemistry of oxygen toxicity. 3. Hemoglobin. 4. Oxygen-hemoglobin dissociation curve shifts. | Face to Face |
| Pathology | 1. Upper respiratory tract diseases. 2. Atelectasis and Disturbances of pulmonary circulation. 3. Obstructive lung disease 1. 4. Obstructive lung disease 2. 5. Restrictive lung disease 1. 6. Restrictive lung disease 2. 7. Acute pneumonia 8. Chronic pneumonia 9. Tuberculosis 10. Lung Tumors | Face to Face |
| Microbiology | 1. URT infections I: Group A B Hemolytic Streptococci & Haemophilus influenza 2. URT infections II: Bordetella pertussis & Corynebacterium diphtheria 3. URT infections III: Influenza virus, RSV 4. LRT infections I: Streptococcus pneumonia and other Spp. | Face to Face |



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| | 5. LRT infections II Pseudomonas, Moraxella & Bacillus Anthracis. 6. LRT infections III Mycoplasma and Legionella. 7. Mycobacterium tuberculosis 8. Fungal infections | |
| Pharmacology | 1. Treatment of upper respiratory tract infections. 2. Treatment of lower respiratory tract infections. 3. Treatment of bronchial asthma- Part 1 4. Treatment of bronchial asthma- Part 2 5. Treatment of COPD 6. Treatment of tuberculosis 7. Cough remedies. | Face to Face |
| Clinical Cases | 1. Medicine: Interpretation arterial blood gases. 2. Medicine: Asthma + Pneumonia. 3. Pediatric: Cystic Fibrosis. | Face to Face |
| Practical (Labs.) | 1. Anatomy I: URT 2. Anatomy II: LRT. 3. Pathology I: Infections 4. Pathology II: Tumors. | Face to Face |

**Instruction method is as follows:

- **Face-to-Face course:** Face-to-face class
- **Online course:** Interactive synchronous or asynchronous
- **Blended course:** Face-to-face or Online (synchronous or asynchronous)
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| Summary of teaching activities in the RS module | | | |
|---|-----------------|-------------|--------------------|
| Department | No. of Lectures | No. of Labs | No. of Discussions |
| Anatomy | 8 | 2 | 0 |
| Physiology | 9 | 0 | 0 |
| Biochemistry | 4 | 0 | 0 |
| Pathology | 10 | 2 | 0 |
| Microbiology | 8 | 0 | 0 |
| Pharmacology | 7 | 0 | 0 |
| Public Health | 1 | 0 | 0 |
| Clinical (pediatrics & medicine) | 0 | 0 | 3 |
| Total (54) | 47 | 4 | 3 |



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| Main Textbook and References | |
|------------------------------|--|
| Main Textbook | <p>Anatomy: Clinical Anatomy for Medical Students. By R.S. Snell, (latest edition). Grants Atlas of Anatomy or any other reasonable colored atlas of Human Anatomy. Before we are born. By K.L. Moore and T.V.N. Persaud, 5th edition 1998. Basic Histology, by L.Carlos Junqueira, 10th. Edition 2004/or functional histology by Wheater (latest edition)</p> <p>Biochemistry: - Harper's Biochemistry. By Robert K. Murray and Co., 1999.</p> <p>Physiology: - Textbook of Medical Physiology, by Guyton and Hall, 10th edition.</p> <p>Microbiology: - Medical Microbiology. An Introduction to Infectious Diseases. By Sheries, 5th edition 2010.</p> <p>Pathology: - Basic Pathology, by Kumar, Cotran and Robbins, 8th. edition, 2007.</p> <p>Pharmacology: - Lippincott's Illustrated Reviews: Pharmacology. Karen Whalen. 6th edition, 2015. - Pharmacotherapy. Principles and Practice. Chisholm-Burns et al. 5th edition, 2019.</p> |
| Other References | Supplementary Handouts for all lectures |
| Cases Clinical | Handouts |

المساق، وعلى الطالب أن يتقدم للامتحان النهائي في المساق المذكور في مدة اقصاها أربعة أسابيع من بداية الفصل التالي للفصل الذي حصل فيه على علامة "غير مكتمل" ويعتبر لهذا الغرض إذا درس فيه الطالب، أما إذا لم يتمكن الطالب من تقديم دراسيا الفصل الصيفي فصال الامتحان المذكور في المدة المقررة اعتبرت عالمته صفرا. في ذلك الامتحان.



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Department: Basic Medical Sciences

Official Stamp:

| Course Identification | |
|------------------------------------|--------------------------------------|
| Course Name: Cardiovascular System | Course Code and Number: MED221 |
| Number of Credit Hours: 6 | Semester: Second Semester |
| Course Status: | Teaching Language: English |
| Pre-requisite: - | Course Coordinator: Dr. Zaid Altaany |

| General Information | |
|---------------------|--|
| Teaching Method | <input checked="" type="checkbox"/> Face-to-Face <input type="checkbox"/> Online <input type="checkbox"/> Blended |
| Course Description | Cardiovascular Module is six credit hours course. It is designed to focus on anatomical with development & physiological character of the system. It also includes the pathological and biochemical changes during diseases state and explains the pharmacological treatment of the disease which includes the possible prevention of those diseases. |
| Course Objectives | The Key learning objectives include: <ul style="list-style-type: none">- Identify the anatomy of mediastinum, heart chambers, valves, general and Topographic of the great vessels and their distribution.- Describe the microscopic appearance of different parts of the cardiovascular system, normal embryological development with their common congenital abnormalities.- Understand the metabolism of the cardiac muscles and the value of the cardiac enzymes and Troponins and their role in the diagnosis of acute myocardial disease.- Recognize the role and types of lipoprotein disorders and the mechanism of formation of atherosclerosis.- Recognize the characteristics of microorganisms that cause infection of the cardiovascular system, their pathogenicity and methods of identification.- Define with the more common types of cardio vascular diseases with emphasis on (etiology, mechanism, morphology and briefly |



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| | <p>to correlate the pathological aspects of diseases with clinical manifestations).</p> <ul style="list-style-type: none">- Recognize the major cardiovascular risk factors in health and diseases.- Identify the nutritional and dietetic components in the etiology, management, and prevention of cardiovascular diseases. |
| Course Learning Outcomes (CLOs) | <p>CLO1: Recall anatomy and physiology of Cardiovascular system.</p> <p>CLO2: Identify the different types of investigative procedures used in diagnosis of cardiovascular disorders</p> <p>CLO3: Outline the Physical Therapy assessment of patient with cardiovascular problem and different treatment protocols for patients with cardiac disorders.</p> <p>CLO4: Describe and understand the electrocardiogram cardiac cycle, hemodynamics, regulation of blood flow and blood pressure, microcirculations, and the mechanism of circulatory shock.</p> <p>CLO5: Compare the different cardiac enzyme appearance in the circulation and their role in detection of myocardial infarction</p> <p>CLO6: Correlate Signs & symptoms of normal and abnormal cardiovascular system, and Pumping of the heart</p> <p>CLO7: Engaging students in critical thinking and problem solving</p> |





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Mapping Course Learning Outcomes CLOs to Program Learning Outcomes PLOs

| | PLO 1 | PLO 2 | PLO 3 | PLO 4 | PLO 5 | PLO 6 | PLO 7 | PLO 8 | PLO 9 | PLO 10 | PLO 11 | PLO 12 | PLO 13 | PLO 14 |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|
| CLO 1 | * | | | | | | | | | | | | | |
| CLO 2 | * | | * | | | | * | | | | | | | |
| CLO 3 | * | * | | | | | | | | | | | | |
| CLO 4 | | | | | | * | | | | | | | | |
| CLO 5 | | * | | | | | | | | | | | | |
| CLO 6 | * | * | | * | | | | | | | | | | |
| CLO 7 | * | | | * | * | | | | | | | | | |

Assessment Methods

| Assessment Type | Date and Time | Assessment Method | Mark (%) | CLOs |
|-----------------|---|------------------------|----------|------------------------------|
| Midterm Exam | To be announce according to department schedule | MCQ test | 50 % | CLO1 CLO2 CLO3 CLO4 |
| Activities* | Activity (1) | Small group discussion | | |
| | Activity (2) | Small group discussion | | |



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| | Activity (3) | | Lab exam and discussion | | |
| | Activity (4) | | | | |
| | Activity (5) | | | | |
| Final Exam | | To be announce according to department schedule | MCQ test | 50 % | CLO4 CLO5 CLO6 CLO7 |

*The instructor must choose at least three activities from the following: quizzes, assignments, projects, videos, discussions, etc.

| Course Contents, Schedule, and Instruction Methods | | |
|--|---|----------------------|
| Week | Course Content | Instruction Method** |
| Week 1 | <ul style="list-style-type: none"> - Introductory Case Presentation for CVS - Mediastinum & pericardium (Anatomy) - Heart chambers, valves Conductive system and Innervations of the heart (Anatomy) - Development of the heart (Anatomy) | Face-to-face class |
| | <ul style="list-style-type: none"> - Organization of CVS (Physiology) - Histology of the myocardium and blood vessels (Anatomy) - Surface anatomy of the CVS (Anatomy) | Face-to-face class |
| | <ul style="list-style-type: none"> - Physiology of cardiac muscle (Physiology) - ECG (Physiology) - Cardiac arrhythmia (Physiology) | |



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| | <ul style="list-style-type: none">- Antiarrhythmic drugs (Pharmacology)- Cardiac cycle (Physiology)- Cardiac Output & Its regulation (Physiology) | | |
| | <ul style="list-style-type: none">- Pumping of the heart (Physiology)- Metabolism in the cardiac muscle under physiological and pathological conditions (Biochemistry)- Microbiology of carditis (Pathology) | | |
| Week 2 | <ul style="list-style-type: none">- Valvular heart disease. Rheumatic fever and Rheumatic heart disease1 (Pathology)- Endocarditis Myocarditis (Pathology)- Cardiomyopathy-Pericardium and cardiac tumors (Pathology) | Face-to-face class | |
| | <ul style="list-style-type: none">- Cardiac enzymes and other proteins markers (Biochemistry)- Blood vessels I-Arterial system (Anatomy)- Blood vessels II- Venous system (Anatomy) | Face-to-face class | |
| | <ul style="list-style-type: none">- Hemodynamic I (Physiology)- Hemodynamic II (Physiology)- Development of the vascular system (Anatomy) | | Face-to-face class |
| | <ul style="list-style-type: none">- Blood pressure (Physiology)- Blood pressure regulation I (Physiology)- Blood pressure regulation II (Physiology) | | |
| Week 3 | <ul style="list-style-type: none">- Microcirculation (Physiology)- Vasculitis (1+2) | Face-to-face class | |

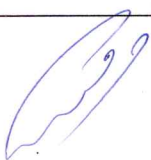


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| | <p>(Pathology)</p> <ul style="list-style-type: none">- Blood flow to the tissue <p>(Physiology)</p> <ul style="list-style-type: none">- Plasma lipoproteins and cholesterol I <p>(Biochemistry)</p> <ul style="list-style-type: none">- Plasma lipoproteins and cholesterol II <p>(Biochemistry)</p> <ul style="list-style-type: none">- Arteriosclerosis Atherosclerosis (I) <p>(Pathology)</p> <ul style="list-style-type: none">- Atherosclerosis (II) Aortic aneurysms <p>(Pathology)</p> | |
| | <ul style="list-style-type: none">- Hypertension <p>(Physiology)</p> <ul style="list-style-type: none">- Antihypertensive drugs I <p>(Pharmacology)</p> <ul style="list-style-type: none">- Antihypertensive drugs II <p>(Pharmacology)</p> <ul style="list-style-type: none">- Epidemiology of Cardiovascular disease <p>(Public Health)</p> | Face-to-face class |
| | <ul style="list-style-type: none">- Cardiovascular disease risk factors <p>(Public Health)</p> <ul style="list-style-type: none">- Hyperlipidamias <p>(Pharmacology)</p> <ul style="list-style-type: none">- Coronary circulation & venous drainage of the myocardium <p>(Anatomy)</p> | |
| Week 4 | <ul style="list-style-type: none">- Coronary circulations <p>(Physiology)</p> <ul style="list-style-type: none">- Ischemic heart disease (IHD) I <p>(Pathology)</p> <ul style="list-style-type: none">- Ischemic heart disease (IHD) II Hypertensive heart disease (HHD) <p>(Pathology)</p> | Face-to-face class |
| | <ul style="list-style-type: none">- Antianginal drugs <p>(Pharmacology)</p> <ul style="list-style-type: none">- Exercise <p>(Physiology)</p> <ul style="list-style-type: none">- Prevention and control of CVD <p>(Public Health)</p> | Face-to-face class |





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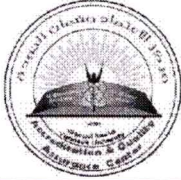
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| | <ul style="list-style-type: none">- Varicose veins and tumors of blood vessels (Pathology)- Peripheral Vascular Disease (Vascular Surgery)- heart failure and Circulatory shock (Physiology) | |
| | <ul style="list-style-type: none">- Drugs used in the treatment of heart failure (Pharmacology)- Surgical Aspects of Coronary Artery (Cardiac Surgery)- Disease and Valvular Heart Disease (Cardiac Surgery) | |
| Week 5 | Final Exam Week | |

**Instruction method is as follows:

- **Face-to-Face course:** Face-to-face class
- **Online course:** Interactive synchronous or asynchronous
- **Blended course:** Face-to-face or Online (synchronous or asynchronous)

| Main Textbook and References | |
|------------------------------|---|
| Main Textbook | <ol style="list-style-type: none">1- Anatomy:<ul style="list-style-type: none">- Clinical Anatomy for Medical Students. By R.S. Snell, 8th Edition, 2008.- Grants Atlas of Anatomy, 12th edition, 2009.- Basic Histology. By L. Carlos Junqueira, 12th edition, 2010.- Before we are born. By K.L.Morre and T.V.N.Persaud, 7th edition, 2008.2- Physiology:<ul style="list-style-type: none">- Textbook of Medical physiology. By Guyton and Hall, 11th edition, 2006.3- Biochemistry:<ul style="list-style-type: none">- Lippincott's Illustrated Reviews: biochemistry, 8th edition, 2019.4- Pharmacology:<ul style="list-style-type: none">- Lippincott's Illustrated Reviews: Pharmacology, 8th edition, 2019.5- Pathology:<ul style="list-style-type: none">- Basic Pathology. By Kumar, Cotran and Robbins, 8th edition, 2009.6- Microbiology:<ul style="list-style-type: none">- Medical Microbiology. An Introduction to infectious Diseases. By Sheries, 5th edition, 2010.. |



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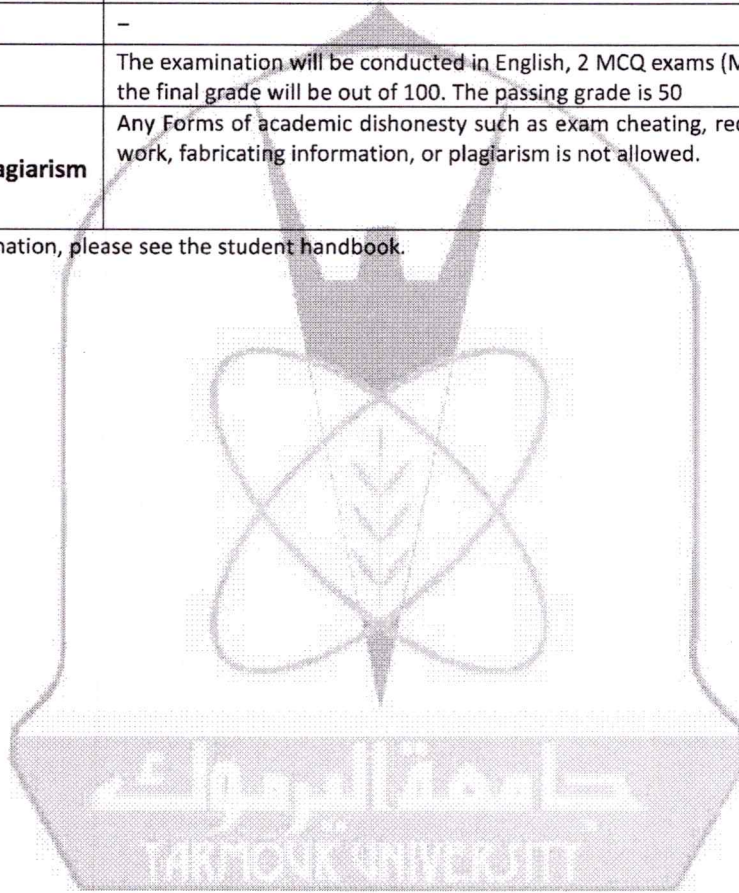


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| Other References | |
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| Policies and Instructions*** | |
|------------------------------|---|
| Attendance | Attendance is mandatory and you have a professional obligation to attend all scheduled lectures. |
| Activities | Discussions and exercises in problem solving. |
| Late Submission | - |
| Exams | The examination will be conducted in English, 2 MCQ exams (Mid and final), and the final grade will be out of 100. The passing grade is 50 |
| Cheating and Plagiarism | Any Forms of academic dishonesty such as exam cheating, recycling/resubmitting work, fabricating information, or plagiarism is not allowed. |

***For more information, please see the student handbook.





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Department:

Official Stamp:

| Course Identification | |
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| Course Name: Hematopoietic and Lymphoid System (HLS) | Course Code and Number: M 222 |
| Number of Credit Hours: 6 Credits | Semester: second |
| Course Status: second year course | Teaching Language: English |
| Pre-requisite:- | Course Coordinator: Dr. Mariam Al-Omari |

| General Information | |
|---------------------------------|---|
| Teaching Method | <input checked="" type="checkbox"/> Face-to-Face <input type="checkbox"/> Online <input type="checkbox"/> Blended |
| Course Description | This course will cover the main features of the anatomy and function of the hematopoietic and lymphatic system. The basic classification of anemia's and neoplastic diseases and their relevant diagnostic methods and natural history will be discussed. All relevant Pharmacological, biochemical, microbiological, and public health aspects will be handled in relation to specific diseases |
| Course Objectives | The HLS 222 Course is directed towards the learning and understanding of functions and cells blood including red cells, white cells and platelets with introduction to basic pathophysiology of blood disorders |
| Course Learning Outcomes (CLOs) | Students will be able to: CLO1: Describe the various constituents of blood, hematopoiesis, function and maturation of red cells, white cells and platelets, blood types, transfusion, tissue and organ transplantation. CLO2: Describe endothelial function, blood coagulation and discuss the most common abnormalities and complications relating to endothelial dysfunction and failure of hemostasis CLO3: Discuss the general characteristics of leukocytes (neutrophils and macrophages) and their roles in defending the host against infection, including the monocyte-macrophage system and inflammation CLO4: Recognize the basic classification systems of anemia, their laboratory and clinical features, public health aspects, and their management |



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| | <p>CLO5 List the important aspects of hemoglobin genetics and abnormal hemoglobin synthesis</p> <p>CLO6: Describe the regulatory mechanisms of normal hemostasis, abnormalities that lead to bleeding disorders, pathologic aspects that cause thrombotic disorders and how are these conditions treated</p> <p>CLO7: Interpret common laboratory investigations including CBC, and PT and apply in various clinical scenarios</p> <p>CLO8: Discriminate between normal and abnormal blood cells and their appearance and connect with various hematological diseases</p> |
|--|---|

| Mapping Course Learning Outcomes CLOs to Program Learning Outcomes PLOs | | | | | | | | | | | | | | |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|
| | PLO 1 | PLO 2 | PLO 3 | PLO 4 | PLO 5 | PLO 6 | PLO 7 | PLO 8 | PLO 9 | PLO 10 | PLO 11 | PLO 12 | PLO 13 | PLo1 4 |
| CLO 1 | X | | | | | | | | | | | | | |
| CLO 2 | X | | | | | | | | | | | | | |
| CLO 3 | X | | | | | | | | | | | | | |
| CLO 4 | X | | | X | | | | X | | | | | | |
| CLO 5 | X | | | | | | | | | | | | | |
| CLO 6 | X | | | | | | | | | | | | | |
| CLO 7 | | | X | | | | | | | | | | | |
| CLO 8 | | | X | | | | | | | | | | | |



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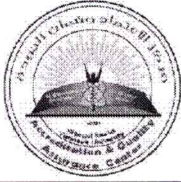


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| Assessment Methods | | | | | |
|--------------------|---------------|----------------------|---------------------------------------|------|--|
| Assessment Type | Date and Time | Assessment Method | Mark (%) | CLOs | |
| Midterm Exam | 20.05.2022 | Multiple choice test | 40% | | |
| Activities* | Activity (1) | 10.05.2022 | Quiz | 3 | |
| | Activity (2) | | Quiz | 3 | |
| | Activity (3) | 13.5.2022 | Small group discussion (case study 1) | 2 | |
| | Activity (4) | | Small group discussion (case study2) | 2 | |
| | Activity (5) | | | | |
| Final Exam | 2.06.2022 | Multiple choice test | 50% | | |

*The instructor must choose at least three activities from the following: quizzes, assignments, projects, videos, discussions, etc.

| Course Contents, Schedule, and Instruction Methods | | |
|--|---|----------------------|
| Week | Course Content | Instruction Method** |
| Week 1 | Introduction Clinically-Based and General) Histology of formed blood elements Blood: Composition, function, blood volume & viscosity | Face-to-face class |
| | Metabolism of vitamin B12 and folic Acid Physiological requirements for hematopoiesis process :Hematopoiesis Pre- and Postnatal | Face-to-face class |
| | Erythropoiesis, myelopoiesis and | Face-to-face class |



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| Course Contents, Schedule, and Instruction Methods | | |
|--|--|----------------------|
| Week | Course Content | Instruction Method** |
| | Thrombopoiesis RBCs: Characteristics & functions WBCs: Characteristics and functions | |
| | Hemoglobin (Hb): structure, function Introduction to anemia: Classification and strategies for diagnosis Community health aspects of anemia | Face-to-face class |
| | Hem and porphyrin metabolism Globin genes and Molecular biology of globin synthesis, and the role of iron and hem Hemolytic anemia | Face-to-face class |
| Week 2 | Hemoglobinopathies and hemoglobin Electrophoresis Molecular Diagnostic Techniques Of Hemoglobin Disorders Thalassemias&Sickle cell anemia | Face-to-face class |
| | Drugs used in anemias I + II Physiology of blood coagulation General overview of homeostatic process | Face-to-face class |
| | Coagulation Disorders Hypercoagulable Disorders and Platelet Disorders Drugs used in coagulation disorders-I | Face-to-face class |
| | Drugs used in coagulation disorders-II Lymph-vascular circulation and Drainage, and Lymphoid tissue -I SalmonellaTyphi, enteric fever and Brucella | |



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| Course Contents, Schedule, and Instruction Methods | | |
|--|--|----------------------|
| Week | Course Content | Instruction Method** |
| | Lymphoid tissue- II Acute Leukemias Plasmodium and Babesiosis | Face-to-face class |
| | -Non Hodgkin Lymphomas (NHL) and chronic Lymphoproliferative Disorders Hodgkin lymphoma Yersinia pestis ,plague , Q-Fever, and other rickettsia | Face-to-face class |
| Week 3 | Biochemical basis of porphyria and jaundice in hemolytic anemia Trypanosomiasis, visceral leishmaniasis and filariasis Chronic myeloproliferative and myelodysplastic syndromes | Face-to-face class |
| | Blood groups Blood transfusion and transplantation Anti-neoplastic drugs- I & II | Face-to-face class |
| | Immunosuppressant Agents Epstein Barr Virus (EBV) and Parvovirus B 19 Blood culture techniques | Face-to-face class |
| | Supportive treatment of cancer of HLS | Face-to-face class |
| Practical Laboratory Sessions Week 1 | Histology of blood smear and Histology of lymphoid tissue (Anatomy) | Face-to-face class |



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| Course Contents, Schedule, and Instruction Methods | | |
|--|---|----------------------|
| Week | Course Content | Instruction Method** |
| | Histology of lymphoid tissue | Face-to-face class |
| Week 2 | RBCs & WBCs count (Physiology) | Face-to-face class |
| | & ,Hb, PCV, RBCs, WBCs differential (Physiology) | Face-to-face class |
| Week 3 | Anemias and leukemias (Pathology) | Face-to-face class |
| | Lymph node enlargement and Lymphomas | Face-to-face class |
| Week 16 | Final Exam Week | |

**Instruction method is as follows:

- **Face-to-Face course:** Face-to-face class
- **Online course:** Interactive synchronous or asynchronous
- **Blended course:** Face-to-face or Online (synchronous or asynchronous)

| Main Textbook and References | |
|------------------------------|---|
| Main Textbook | Clinical Anatomy for Medical Students. By R.S.Snell, Latest Edition Kumar, Cotran and Robbins: Robbins Basic Pathology, Latest Edition |
| Other References | Grant's Atlas of Anatomy or any other reasonable colored Atlas of Human Anatomy Basic Histology. B y L. Carlos Junqueira, (or) Histology by Gartner and .Hiatt; Latest Edition .Before we are born. By K.L.Morre and T.V.N .Persaud; Latest Edition - |

| Policies and Instructions*** | |
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| Attendance | |
| Activities | |



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| Late Submission | |
| Exams | |
| Cheating and Plagiarism | |

***For more information, please see the student handbook.

