

AMERICAN UNIVERSITY SCHOOL OF MEDICINE ARUBA

BASIC SCIENCES CURRICULUM DESIGN BOOKLET

2025 version

Revised November 14, 2025



Section 1:
Alignment 1
(From
ACGME competencies
to
AUSOMA MD program
standards)

I. AUSOMA's Vision, Mission and Educational Competencies

Vision

To develop culturally diverse individuals into compassionate physicians and leaders in their respective medical fields without the life-long crippling debt.

Mission

The mission of AUSOMA is to deliver high-quality, affordable medical education that leverages cutting-edge technology within a supportive and student-centered environment. AUSOMA prepares future physicians with the knowledge, clinical expertise, communication skills, and compassion needed to provide excellent patient care and to thrive in a dynamic, evolving healthcare landscape. AUSOMA graduates will possess the competence, confidence, and commitment to lifelong learning necessary to integrate knowledge effectively and manage patient needs with efficiency and empathy.

Educational competencies

AUSOMA has identified and defined six educational competencies aligned with the six ACGME competencies. The program educational competencies (PEC) and the corresponding program educational objectives (PEOs) of AUSOMA are shown in the following table:

PEC	PEO
	The objective of the AUSOMA MD program is to train students to become physicians with the ability to
PEC 1: Basic Knowledge of medicine	PEO1: Apply medical knowledge to dedicated patient care
PEC 2: Clinical and diagnostic skills	PEO2: Use the acquired knowledge towards right discretion to diagnose and treat patients
PEC 3: Patient centered medicine	PEO3: Understand the influence of socio-economic, behavioral, ethnic, cultural & religious factors on patients during treatment
PEC 4: Interpersonal rapport and communication	PEO4: Effectively and empathetically communicate with patients, patient families and fellow team members for quality healthcare
PEC 5: Medical ethics and professionalism	PEO5: Adhere to the highest ethical standards and professional protocols while dealing with patients
PEC 6: Evidence based practice and lifelong learning	PEO6: Treat newly emerging diseases based on community medical evidences and continue learning till the end of their practicing career

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Program Learning outcomes for each Program educational objective

Program educational competencies	Program educational objectives	Program learning outcomes
	The objective of the AUSOMA MD program is to train students to become physicians with the ability to	At the end of four years of MD program, AUSOMA graduates should be able to:
PEC 1: Basic Knowledge of medicine	PEO1: Apply medical knowledge to dedicated patient care	PLO1: Describe the fundamental principles of homeostasis and disturbance in homeostasis, and the role of medical intervention during disturbed homeostasis
		PLO2: Apply fundamental knowledge of basic and clinical sciences to the diagnosis, treatment, prevention and management of patient problems
		PLO3: Identify the role of external and epigenetic factors as causes of variations in disease expression
PEC 2: Clinical and diagnostic skills	PEO2: Use the acquired knowledge towards right discretion to diagnose and treat patients	PLO4: Accurately perform history taking and physical examination by the right application of acquired theoretical knowledge
		PLO5: Accurately and completely perform the appropriate technical procedures so as to reflect completeness in the skills of medical practice
		PLO6: Conjecture differential diagnoses and formulate a diagnosis by applying acquired knowledge and in the background of gathered history as well as clinical findings
PEC 3: Patient centered medicine	PEO3: Understand the influence of socio-economic, behavioral, ethnic, cultural & religious factors on patients during treatment	PLO7: Deliver quality patient care in the context of varied perceptions of health and disease as well as varied responses to symptoms and treatments by people of different genders, diverse ages, cultures, ethnicities, religions, nationalities, socioeconomic backgrounds and those with disabilities
		PLO8: Perceive the medical consequences of common societal problems as well as critique with patients and patient parties about complexities and management of existing social issues

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PEC 4: Interpersonal rapport and communication	PEO4: Effectively and empathetically communicate with patients, patient families and fellow team members for quality healthcare	PLO9: Communicate information and ideas categorically and in an organized manner to inform and educate patients, patient parties and society
		PLO10: Initiate, establish and adhere to empathetic communication with patients, families, colleagues, health professionals and supervisors to achieve quality health care by upholding the spirit of non-discrimination and inclusiveness
		PLO11: Resolve patient-doctor, patient party-doctor, doctor-doctor, doctor-supervisor or doctor-healthcare system related conflicts through effective communication
PEC 5: Medical ethics and professionalism	PEO5: Adhere to the highest ethical standards and professional protocols while dealing with patients	PLO12: Apply during medical practice, the three fundamental principles and ten professional commitments listed in “The Physicians’ Charter” of ABIM, ACP and European federation of Internal medicine
		PLO13: Conform to the highest standards of medical ethics and professionalism while dealing with the complexities of health care practice and delivery, organizations and bureaucracy
PEC 6: Evidence based practice and lifelong learning	PEO6: Treat newly emerging diseases based on community medical evidences and continue learning till the end of their practicing career	PLO14: Demonstrate an open mind, scientific inquisitiveness and research inclination to acquire newly emerging clinical knowledge and skills that enable improved quality of care in the wake of newly emerging diseases
		PLO15: Equip themselves with the latest skills on information technology, study design and statistical methods and apply them into appropriate use in medical practice, therapeutic effectiveness, critical appraisal of scientific literature, research methodologies and studies of their own patient population or the larger community.

II. Alignment of AUSOMA's Mission, PEC, PEO and PLO with ACGME competencies

AUSOMA's mission statement in alignment with ACGME competencies

ACGME Competencies	Phrases from AUSOMA's mission statement
• Patient care	• "...solve and deal with patient problems in an efficient manner...."
• Medical knowledge	• "...high quality cost conscious medical education..."
• Practice based learning and improvement	• "...cutting edge technology...." • "...curriculum to meet the demands of a changing market with ever increasing competitiveness...."
• Interpersonal and communication skills	• "...sharpened interpersonal clinical oriented communication skills...."
• Professionalism	• "...importance of independence as well as interdependence...."
• System based practice	• "...integrate acquired pieces of knowledge into an overall whole...."

Mapping of AUSOMA's PEC, PEO and PLO to ACGME competencies

ACGME Competencies	AUSOMA's PEC	AUSOMA's PEO	AUSOMA's PLO
Patient care	PEC3	PEO3	PLO7, PLO8
Medical knowledge	PEC1	PEO1	PLO1, PLO2, PLO3
Practice based learning and improvement	PEC6	PEO6	PLO14, PLO15
Interpersonal and communication skills	PEC4	PEO4	PLO9, PLO10, PLO11
Professionalism	PEC5	PEO5	PLO12, PLO13
System based practice	PEC2	PEO2	PLO4, PLO5, PLO6

Section 2:

Basic Sciences Curriculum overview and curriculum mapping

I. Basic Sciences Overview (15 weeks/ semester)

MD-1 semester (28 Credit Hours)

MD 1001: Foundational Principles of Basic sciences	13 Credit Hours
MD 1002: Musculoskeletal System	8 Credit Hours
MD 1003: Integumentary system	2 Credit Hours
MD 1004: Clinical Skills-1	2 Credit Hour
MD 1005: Preventive Medicine, Public Health and Quality Health Parameters	3 Credit Hours

MD-2 semester (27 Credit Hours)

MD 2006: Nutrition and Metabolism	6 Credit Hours
MD 2007: Behavioral Sciences and Neurology	13 Credit Hours
MD 2008: Medical Ethics	2 Credit Hours
MD 2009: Clinical Skills-2	2 Credit Hours
MD 2010: Preventive Medicine, Public Health and Quality Health Parameters	4 Credit Hours

MD-3 semester (28 credit Hours)

MD 3011: Respiratory System	9 Credit Hours
MD 3012: Gastrointestinal system	9 Credit Hours
MD 3016: Hematology and Immunology	4 Credit Hours
MD 3014: Clinical Skills-3	2 Credit Hours
MD 3015: Preventive Medicine, Public Health and Quality Health Parameters	4 Credit Hours

MD-4 semester (30 credit Hours)

MD 4016: Cardiovascular System	10 Credit Hours
MD 4017: Renal System	4 Credit Hours
MD 4018: Endocrine and Reproductive System	10 Credit Hours
MD 4019: Clinical Skills-4	2 Credit Hours
MD 4020: Preventive Medicine, Public Health and Quality Health Parameters	4 Credit Hours

MD-5 semester (27 Credit Hours)

MD 5021: Introduction to Clinical Medicine	12 Credit Hours
MD 5022: Review of Basic Sciences	15 Credit hours

II. Basic Sciences 5x4 strand curriculum

		SEMESTERS IN BASIC SCIENCE (15 weeks each)				
		MD1	MD2	MD3	MD4	MD5
COURSE DELIVERY	Organ systems	- Foundation principles of basic science (FPBS) - Musculoskeletal system - Integumentary system	- Behavioral science and neurology - Nutrition and metabolism	- Gastrointestinal system - Respiratory system - Hematology and Oncology	- Cardiovascular system - Renal system - Endocrine and Reproductive system	
	Modules	- Clinical Skills-1 - Preventive medicine and public health parameters	- Medical ethics - Clinical Skills-2 - Preventive medicine and public health parameters	- Clinical Skills-3 - Preventive medicine and public health parameters	- Clinical Skills-4 - Preventive medicine and public health parameters	- Introduction to clinical medicine - Review of basic sciences
	Learning opportunities	- Interactive lectures - Lab sessions - Clinical skills sessions - Small group sessions	- Interactive lectures - Lab sessions - Medical ethics sessions - Clinical skills sessions - Small group sessions	- Interactive lectures - Lab sessions - Clinical skills sessions - Small group sessions	- Interactive lectures - Lab sessions - Clinical skills sessions - Small group sessions	- Comprehensive Integration of Clinical Judgment - Foundations of Medicine - Basic Life Support (BLS) - HIPAA
	Assessment	Frequently: Quizzes, Pop-quizzes Daily: Assignments Fortnightly: Block exams End of system: System final exam - Module exam	Frequently: Quizzes, Pop-quizzes Daily: Assignments Fortnightly: Block exams End of system: System final exam - Module exam	Frequently: Quizzes, Pop-quizzes Daily: Assignments Fortnightly: Block exams End of system: System final exam - Module exam	Frequently: Quizzes, Pop-quizzes Daily: Assignments Fortnightly: Block exams End of system: System final exam - Module exam	- ICM exams - Review exams - NBME CBSE - USMLE Step 1

Section 3:
Individual courses
and
Alignment 2
(From Program
standards
to
Course standards)

MD1 courses

Organ systems	1. MD 1001 Foundation Principles of Basic Sciences (FPBS)
	2. MD 1002 Musculoskeletal System
	3. MD 1003 Integumentary system
Modules	4. MD 1004 Clinical Skills-1
	5. MD 1005 Preventive Medicine, Public Health and Quality Health Parameters

I. MD 1001 Foundation Principles of Basic Sciences

1. Course Overview:

Semester	Course Code	Course Title	Credit Hours
MD1	MD 1001	Foundation Principles of Basic Sciences	13

2. Course Description:

The Foundational Principles of Basic Sciences module introduces the principles of basic and clinical sciences and lays the foundation for medical practice. It provides students with tools to effectively master application-based material in the subsequent organ-system-based modules.

The module will prepare students to recognize and apply key concepts of cellular structure and adaptation and response to cellular and organ injury, stress and environmental threats, including inflammation, tissue perfusion, and neoplasia. This module will also introduce the students' role in clinical medicine and patient-centered care.

Learning opportunities include lectures, active independent learning, lab sessions, self-study and clinical experience with real and simulated patients.

3. General Learning Objectives:

At the end of this course, students should be able to:

- Recognize and explain the structure and functions of different parts of the human body.
- Integrate and correlate knowledge of normal bio-molecular structure-function relationships, metabolic and regulatory processes, and diagnosis of diseases.
- Understand the relationship between normal and abnormal physiological, metabolic and regulatory processes and interventions.

4. Course learning outcomes (CLOs) (course measurable outcomes):

At the end of this system students should be able to:

Cognitive

- CLO 1. Describe basic structural and functional features of the major organ systems within the human body and relate them to the different planes, layers and anatomic positions (Bloom's C2, C4)
- CLO 2. Describe the normal structures and functions of macromolecules, organelles, cells, tissues, organs, systems and interstitium in the human body. (Bloom's C2)
- CLO 3. Identify the normal and abnormal changes that occur in them during human development as well as the adaptations and reversible/irreversible changes that occur during illness, injury, ageing and disease (Bloom's C4)
- CLO 4. Describe the functions and kinetics of enzymes, hormones, receptors and attribute the alterations imposed on them to the metabolic properties and/or actions of regulatory factors, microbes, drugs and microbial as well as non-microbial toxins (Bloom's C2, C4)

Psychomotor

- CLO 5. Familiarize with the function, handling and routine care of equipment in the laboratory and perceive the importance of safety measures while dealing with patients (Dave's P2)
- CLO 6. Recognize the details of the hard and soft parts of the human body through specimen and models (Dave's P1)
- CLO 7. Structure and design SOAP notes by conducting focused and comprehensive history taking in a simulated patient (Dave's P7)

Affective

- CLO 8. Practice as individuals or in teams the application of their medical knowledge to investigate clinical scenarios and debate current topics in medical research (Krathwol-Bloom's A4)
- CLO 9. Demonstrate adherence to the highest standards of professional and ethical behavior, as explained in the Physicians' charter, during interaction with fellow students and faculty in or outside classroom, or with a patient during clinical skills sessions (Krathwol-Bloom's A2)
- CLO 10. Demonstrate empathy to fellow students' problems in or outside classroom, or to patients during history taking and physical examination sessions (Krathwol-Bloom's A2)

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5. Linking of AUSOMA's Program learning outcomes (PLOs) to course learning outcomes (CLOs), learning opportunities and outcome measures of FPBS course:

PROGRAM LEARNING OUTCOMES (PLOs) (= PROGRAM MEASURABLE OUTCOMES)	COURSE LEARNING OUTCOMES (CLOs) (= COURSE MEASURABLE OUTCOMES) FOR FPBS	Learning opportunities	Outcome measures
At the end of four years of MD program, AUSOMA graduates should be able to:	At the end of this system, students should be able to:		
PEC1: Basic medical knowledge	- Describe basic structural and functional features of the major organ systems within the human body and relate them to the different planes, layers and anatomic positions - Describe the normal structures and functions of macromolecules, organelles, cells, tissues, organs, systems and interstitium in the human body. - Identify the normal and abnormal changes that occur in them during human development as well as the adaptations and reversible/irreversible changes that occur during illness, injury, ageing and disease - Describe the functions and kinetics of enzymes, hormones, receptors and attribute the alterations imposed on them to the metabolic properties and/or actions of regulatory factors, microbes, drugs and microbial as well as non-microbial toxins	- Interactive Lectures - Small group sessions	- Class assessments - Small group assessments - Written/ online assignments - Block exams - System ending exam - Feedback by students
PLO1: Describe the fundamental principles of homeostasis and disturbance in homeostasis, and the role of medical intervention during disturbed homeostasis			
PLO2: Apply fundamental knowledge of basic and clinical sciences to the diagnosis, treatment, prevention and management of patient problems			
PLO3: Identify the role of external and epigenetic factors as causes of variations in disease expression	- Recognize the details of the hard and soft parts of the human body through specimen and models - Structure and design SOAP notes by conducting focused and comprehensive history taking in a simulated patient	- Interactive Lectures - Clinical skills sessions - Lab sessions	- Class assessments - OSCE - Written/ online assignments - Block exams - System ending exam - Feedback by students
PEC2: Clinical and diagnostic skills			
PLO4: Accurately perform history taking and physical examination by the right application of acquired theoretical knowledge			
PLO5: Accurately and completely perform the appropriate technical procedures so as to reflect completeness in the skills of medical practice			
PLO6: Conjecture differential diagnoses and formulate a diagnosis by applying acquired knowledge and in the background of gathered history as well as clinical findings			

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PEC3: Patient centered medicine	Familiarize with the function, handling and routine care of equipment in the laboratory and perceive the importance of safety measures while dealing with patients	- Interactive Lectures - Clinical skills sessions - Lab sessions	- Class assessments - OSCE - Written/ online assignments - Block exams - System ending exam - Feedback by students
PLO7: Deliver quality patient care in the context of varied perceptions of health and disease as well as varied responses to symptoms and treatments by people of different genders, diverse ages, cultures, ethnicities, religions, nationalities, socioeconomic backgrounds and those with disabilities PLO8: Perceive the medical consequences of common societal problems as well as critique with patients and patient parties about complexities and management of existing social issues			
PEC4: Interpersonal rapport and communication	Demonstrate empathy to fellow students' problems in or outside classroom, or to patients during history taking and physical examination sessions	- Interactive Lectures - Clinical skills sessions	- Class assessments - OSCE - Written/ online assignments - Block exams - System ending exam - Feedback by students
PLO9: Communicate information and ideas categorically and in an organized manner to inform and educate patients, patient parties and society			
PLO10: Initiate, establish and adhere to empathetic communication with patients, families, colleagues, health professionals and supervisors to achieve quality health care by upholding the spirit of non-discrimination and inclusiveness			
PLO11: Resolve patient-doctor, patient party-doctor, doctor-doctor, doctor-supervisor or doctor-healthcare system related conflicts through effective communication			

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PEC5: Medical ethics and professionalism			
PLO12: Apply during medical practice, the three fundamental principles and ten professional commitments listed in “The Physicians’ Charter” of ABIM, ACP and European federation of Internal medicine	• Demonstrate adherence to the highest standards of professional and ethical behavior, as explained in the Physicians’ charter, during interaction with fellow students and faculty in or outside classroom, or with a patient during clinical skills sessions	• Medical ethics lectures • Clinical skills sessions • Small group sessions	• Class assessments • OSCE • Small group assessments • Written/ online assignments • Block exams • System ending exam • Feedback by students
PLO13: Conform to the highest standards of medical ethics and professionalism while dealing with the complexities of health care practice and delivery, organizations and bureaucracy			
PEC6: Evidence based practice and lifelong learning			
PLO14: Demonstrate an open mind, scientific inquisitiveness and research inclination to acquire newly emerging clinical knowledge and skills that enable improved quality of care in the wake of newly emerging diseases	• Practice as individuals or in teams the application of their medical knowledge to investigate clinical scenarios and debate current topics in medical research	• Clinical skills sessions • Small group sessions	• Class assessments • OSCE • Small group assessments • Block exams • System ending exam • Systems feedback by basic science students
PLO15: Equip themselves with the latest skills on information technology, study design and statistical methods and apply them into appropriate use in medical practice, therapeutic effectiveness, critical appraisal of scientific literature, research methodologies and studies of their own patient population or the larger community.			
PLO16: Apply the experience of medical practice into practice-based systematic improvement activities and hence contribute new medical knowledge to the community of medical research throughout their career.			

6. Topics for Foundation Principles of Basic Sciences

- 001. Introduction to anatomy/skin, fascias
- 002. Intro to Biochemistry and amino acids & proteins-1
- 003. Overview of locomotor system - skeletal system
- 004. Amino acids & proteins-2
- 005. Fibrous & Globular proteins
- 006. Overview of muscular system
- 007. Enzymes-1
- 008. Introduction to Histology, Basic tissue types and methods of study
- 009. Overview of muscular system – articular system
- 010. Enzymes-2
- 011. Nucleotides
- 012. Histology – methods of study and microscopy
- 013. Overview of cardiovascular, respiratory, gastrointestinal and urinary systems
- 014. Nucleic acids
- 015. Overview of nervous system
- 016. Autonomous nervous system
- 017. Cell cycle and DNA replication-1
- 018. Histology – microscopy and cell components
- 019. DNA replication-2
- 020. Cellular transport – carrier-mediated, diffusion, osmosis, endo/exocytosis
- 021. Histology – cell components (cytoskeleton and nucleus)
- 022. Overview of endocrine system and medical imaging
- 023. Introduction to bacteriology-1
- 024. Introduction to embryology and first week of human development
- 025. Cell membrane, resting membrane potentials, ion channels, diffusion and equilibrium potential
- 026. Histology – epithelium
- 027. Second week of human development
- 028. Histology – epithelium glands
- 029. Third week of human development
- 030. Connective tissue components
- 031. Connective tissue proper -types
- 032. Fourth to eighth week of human development
- 033. Introduction to physiology and body fluids-1
- 034. Overview of immune system
- 035. Cells of immune system and their functions
- 036. Ninth week to birth – fetal period
- 037. Introduction to virology
- 038. Development of the face; pharyngeal arches

- 039. Introduction to pathology
- 040. Introduction to mycology
- 041. Body fluid distribution and microcirculation
- 042. Cellular adaptation
- 043. Introduction to parasitology
- 044. Introduction to acid-base balance
- 045. Cellular response to stress-1
- 046. General concepts of microbiology
- 047. Cellular response to stress-2
- 048. Transcription
- 049. Post-transcriptional modification-1
- 050. Inflammation and repair-1
- 051. Translation and post-translational modification-1
- 052. Inflammation and repair-2
- 053. Translation and post-translational modification-2
- 054. Inflammation and repair-3
- 056. Neoplasia-1
- 057. Innate immunity
- 058. Neoplasia-2
- 059. Adaptive immunity
- 060. Regulation of gene expression-1
- 061. Pharmacokinetics
- 062. Neoplasia-3
- 063. Neoplasia-4
- 064. Regulation of gene expression-2
- 065. Mutations-1
- 066. Pharmacodynamics
- 067. Mutations-2
- 068. Patterns of inheritance-1
- 069. Patterns of inheritance-2
- 070. Humoral and T-cell mediated immune response
- 071. Population genetics
- 072. Hypersensitivity reactions
- 073. Molecular techniques
- 074. Autoimmune disorders

7. Teaching-Learning distribution

- Lectures (60-70%)
- Active independent learning (20%)
- Lab sessions (10-20%)

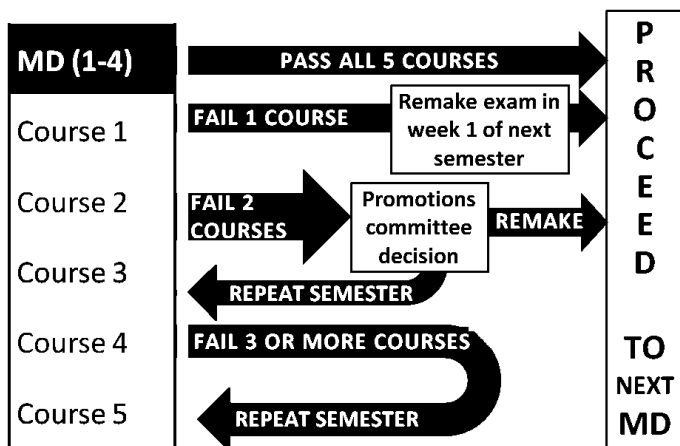
8. Grade distribution

- One block exam: 30%
- Final Exam: 50%
- Non-Exam Assessments: 20% (Assignments, Lecture assessments, quizzes)

9. Grading pattern

Grading Scale	Grade Points	Descriptor
H = 90% – 100%	4.0	Honors
HP = 80% – 89%	3.0	High Pass
P = 70% – 79%	2.0	Pass
F = less than 70%	0.0	Fail

10. Progression to next semester



11. Learning resources

A. Anatomy

Clinically oriented Anatomy by Keith L. Moore, Arthur F. Dalley, Arthur F. Dalley and Anne M.R. Agur,
Published by Lippincott, Williams and Wilkins, Edition 8 ISBN-13: 978-1975104962 ISBN-10: 197510496X

B. Behavioral Sciences

- a. Jekel's Epidemiology, Biostatistics, Preventive Medicine, and Public Health, by D. L. Katz, J. G. Elmore, D. M.G. Wild, & S. C. Lucan. Elsevier Saunders, Fourth Edition, ISBN: 978-1-4557-0658-7
- b. "Basic & Clinical Biostatistics, 5th Edition."

C. Biochemistry

- a. Lippincott Illustrated Reviews: Biochemistry (Lippincott Illustrated Reviews Series) Seventh, North American Edition by Denise Ferrier ISBN-13: 978-1496344496 ISBN-10: 1496344499
- b. Harper's Illustrated Biochemistry Thirty-First Edition 31st Edition by Victor Rodwell, David Bender, Kathleen Botham, Peter Kennelly, P. Anthony Weil. ISBN-13: 978-1259837937; ISBN-10: 1259837939

D. Clinical Skills

Bate's guide to Physical Examination and History taking, by Barbara Bates, Lynn S Bickley. 12th edition ISBN-13: 978-1469893419, ISBN-10: 9781469893419

E. Embryology

The Developing Human –Clinically Oriented Embryology by Keith L. Moore and T.V.N. Persaud, Published by Saunders – Elsevier, Edition 9, ISBN: 978 -1-4377-2002-0

F. Genetics

Thompson & Thompson Genetics in Medicine (9th Ed.) by Nussbaum, Mcinnes & Willard. Elsevier Australia ISBN 9780323547628

G. Histology

Junqueira's Basic Histology: Text and Atlas, 15e. Anthony L. Mescher Publisher: McGraw-Hill Education ISBN-13: 978-1260026177; ISBN-10: 1260026175

H. Immunology

- a. Lippincott Illustrated Reviews: Immunology Second, North American Edition by Thao Doan, Roger Melvold, Susan Viselli, Carl Waltenbaugh. ISBN-13: 978-1451109375; ISBN-10: 9781451109375
- b. Cellular and Molecular Immunology by Abul Abbas, Andrew Lichtman, Shiv Pillai, 10th Edition, eBook ISBN: 9780323757508, Paperback ISBN: 9780323757485



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I. Medical Ethics

- a. Resolving Ethical Dilemmas: A guide for Clinicians Sixth Edition, by Bernard Lo. Lippincott Williams & Wilkins, a Wolters Kluwer. ISBN-13: 978-1975103545, ISBN-10: 1975 103548
- b. "Medical Law & Ethics, 6th Ed."
- c. "Resolving Ethical Dilemmas: A Guide for Clinician, 6th Ed"
- d. "Medical Ethics for Dummies"

J. Microbiology

Lippincott's illustrated reviews: Microbiology 4th edition Author: Cynthia Nau Cornelissen Paperback ISBN: 978-1496395856 Imprint: Wolters Kluwer

K. Neuroscience

- a. Essential Neuroscience by Allan Siegel, Wolters Kluwer, Fourth edition ISBN-13, 978-1451189681
- b. Clinical Neuroanatomy for Medical Students: by Richard S. Snell. 7th edition, ISBN 978-0781794275

L. Nutrition

Understanding Normal And Clinical Nutrition (8th Ed.) by Sharon Rady Rolfes, Kathryn Pinna, Elley Whitney. Wadsworth Cengage learning. ISBN-13: 978-0-495-55646-6 ISBN-10: 0-495-55646-7

M. Pathology

Robbins Basic Pathology (Robbins Pathology) 10th Edition by Vinay Kumar, Abul K. Abbas, Jon C. Aster MD. ISBN-13: 978-0323353175; ISBN-10: 0323353177

N. Pharmacology

Pharmacology (Lippincott Illustrated Reviews Series) 7th Edition by Karen Whalen. ISBN-13: 978-1496384133; ISBN-10: 149638413X

O. Physiology

Physiology, by Linda S. Costanzo. 6th edition. ISBN-13: 978-0323478816, ISBN-10: 0323478816

P. Preventive Medicine

- a. Jekel's Epidemiology, Biostatistics, Preventive Medicine, and Public Health, by D. L. Katz, J. G. Elmore, D. M.G. Wild, & S. C. Lucan. Elsevier Saunders, Fourth Edition, ISBN: 978-1-4557-0658-7
- b. "Basic & Clinical Biostatistics, 5th Edition. "Maxcy-Rosenau-Last Public Health & Preventive Medicine, 15th Edition, by Robert B. Wallace. ISBN- 13: 978-0071441988, ISBN- 10: 0071441980

II. MD 1002 Musculoskeletal system

1. Course Overview:

Semester	Course Code	Course Title	Credit Hours
MD1	MD 1002	Musculoskeletal system	8

2. Course Description:

This is an interdisciplinary integrated module of musculoskeletal system. Basic sciences of anatomy, biochemistry, histology, physiology, microbiology, pathology, and pharmacology of the musculoskeletal system are correlated with clinical disorders of this system. The goal of this integrated course is to provide the medical student with comprehensive knowledge about bones, joints, muscles, tendons, ligaments, and associated soft tissues related to clinical manifestations of diseases.

Learning opportunities include lectures, active independent learning, lab sessions, self-study and clinical experience with real and simulated patients.

3. General Learning Objectives:

At the end of this course, students should be able to:

- Understand the development, structure and function of cartilages, bones, joints and muscles,
- Understand the development, blood supply, innervation and congenital anomalies of the limbs and vertebral column
- Appreciate the physiological mechanism and biochemical and molecular basis of muscle contraction.
- Comprehend the pathogenesis, pathological features and interventions in infections and disease that affect bones, joints and muscles

4. Course learning outcomes (CLOs) (course measurable outcomes):

At the end of this system students should be able to:

Cognitive

- CLO 1. Describe the different parts of the musculoskeletal system and relate their normal structure, actions, blood supply and innervation to the associated congenital anomalies (Bloom's C2, C4)
- CLO 2. Correlate the mechanism of muscle contraction to metabolism and the biochemical and molecular basis of disease affecting muscles and bones (Bloom's C4)
- CLO 3. Describe the pathogenesis and pathological features of infections and disease that affect bones, joints and muscles and attribute the variations seen to the features and/or actions of microbes, drugs and microbial as well as non-microbial toxins (Bloom's C2, C4)

Psychomotor

- CLO 4. Demonstrate competence in handling lab equipments/solutions as per safety protocols with wellness of self, peers, supervisors, patients as utmost priority (Dave's P2)
- CLO 5. Dissect the important muscles, trace their blood supplies and innervation in a cadaveric specimen (Dave's P2)
- CLO 6. Specify the parts of the most important bones of limbs and axial skeleton (Dave's P5)

Affective

- CLO 7. Practice as individuals or in teams the application of their medical knowledge to investigate clinical scenarios and debate current topics in medical research in the area of musculoskeletal system (Krathwol-Bloom's A4)
- CLO 8. Demonstrate adherence to the highest standards of professional and ethical behavior, as explained in the Physicians' charter, during interaction with fellow students and faculty in or outside classroom, or with a patient during clinical skills sessions (Krathwol-Bloom's A2)
- CLO 9. Demonstrate empathy to fellow students' problems in or outside classroom, or to patients during history taking and physical examination sessions (Krathwol-Bloom's A2)
- CLO 10. Act with cultural humility while interacting with classmates, seniors, teachers and patients by focusing on their culture, age, gender, sexual orientation, risk perception, and personal values (Krathwol-Bloom's A6)

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5. Linking of AUSOMA's Program learning outcomes (PLOs) to course learning outcomes (CLOs), learning opportunities and outcome measures of Musculoskeletal system:

PROGRAM LEARNING OUTCOMES (PLOs) (= PROGRAM MEASURABLE OUTCOMES)	COURSE LEARNING OUTCOMES (CLOs) (= COURSE MEASURABLE OUTCOMES) FOR MUSCULOSKELETAL SYSTEM	Learning opportunities	Outcome measures
At the end of four years of MD program, AUSOMA graduates should be able to:	At the end of this system, students should be able to:		
PEC1: Basic medical knowledge			
PLO1: Describe the fundamental principles of homeostasis and disturbance in homeostasis, and the role of medical intervention during disturbed homeostasis	- Describe the different parts of the musculoskeletal system and relate their normal structure, actions, blood supply and innervation to the associated congenital anomalies - Correlate the mechanism of muscle contraction to metabolism and the biochemical and molecular basis of disease affecting muscles and bones - Describe the pathogenesis and pathological features of infections and disease that affect bones, joints and muscles and attribute the variations seen to the features and/or actions of microbes, drugs and microbial as well as non-microbial toxins	- Interactive Lectures - Small group sessions	- Class assessments - Small group assessments - Written/ online assignments - Block exams - System ending exam - Feedback by students
PLO2: Apply fundamental knowledge of basic and clinical sciences to the diagnosis, treatment, prevention and management of patient problems			
PLO3: Identify the role of external and epigenetic factors as causes of variations in disease expression			
PEC2: Clinical and diagnostic skills			
PLO4: Accurately perform history taking and physical examination by the right application of acquired theoretical knowledge			
PLO5: Accurately and completely perform the appropriate technical procedures so as to reflect completeness in the skills of medical practice	- Dissect the important muscles, trace their blood supplies and innervation in a cadaveric specimen - Specify the parts of the most important bones of limbs and axial skeleton	- Interactive Lectures - Clinical skills sessions - Lab sessions	- Class assessments - OSCE - Written/ online assignments - Block exams - System ending exam - Feedback by students
PLO6: Conjecture differential diagnoses and formulate a diagnosis by applying acquired knowledge and in the background of gathered history as well as clinical findings			

AUSOMA BASIC SCIENCES CURRICULUM DESIGN BOOKLET

PEC3: Patient centered medicine	• Demonstrate competence in handling lab equipments/solutions as per safety protocols with wellness of self, peers, supervisors, patients as utmost priority • Act with cultural humility while interacting with classmates, seniors, teachers and patients by focusing on their culture, age, gender, sexual orientation, risk perception, and personal values	• Interactive Lectures • Clinical skills sessions • Lab sessions	• Class assessments • OSCE • Written/ online assignments • Block exams • System ending exam • Feedback by students
PLO7: Deliver quality patient care in the context of varied perceptions of health and disease as well as varied responses to symptoms and treatments by people of different genders, diverse ages, cultures, ethnicities, religions, nationalities, socioeconomic backgrounds and those with disabilities PLO8: Perceive the medical consequences of common societal problems as well as critique with patients and patient parties about complexities and management of existing social issues			
PEC4: Interpersonal rapport and communication	• Demonstrate empathy to fellow students' problems in or outside classroom, or to patients during history taking and physical examination sessions	• Interactive Lectures • Clinical skills sessions	• Class assessments • OSCE • Written/ online assignments • Block exams • System ending exam • Feedback by students
PLO9: Communicate information and ideas categorically and in an organized manner to inform and educate patients, patient parties and society			
PLO10: Initiate, establish and adhere to empathetic communication with patients, families, colleagues, health professionals and supervisors to achieve quality health care by upholding the spirit of non-discrimination and inclusiveness			
PLO11: Resolve patient-doctor, patient party-doctor, doctor-doctor, doctor-supervisor or doctor-healthcare system related conflicts through effective communication			

AUSOMA BASIC SCIENCES CURRICULUM DESIGN BOOKLET

PEC5: Medical ethics and professionalism			
PLO12: Apply during medical practice, the three fundamental principles and ten professional commitments listed in “The Physicians’ Charter” of ABIM, ACP and European federation of Internal medicine	• Demonstrate adherence to the highest standards of professional and ethical behavior, as explained in the Physicians’ charter, during interaction with fellow students and faculty in or outside classroom, or with a patient during clinical skills sessions	• Medical ethics lectures • Clinical skills sessions • Small group sessions	• Class assessments • OSCE • Small group assessments • Written/ online assignments • Block exams • System ending exam • Feedback by students
PLO13: Conform to the highest standards of medical ethics and professionalism while dealing with the complexities of health care practice and delivery, organizations and bureaucracy			
PEC6: Evidence based practice and lifelong learning			
PLO14: Demonstrate an open mind, scientific inquisitiveness and research inclination to acquire newly emerging clinical knowledge and skills that enable improved quality of care in the wake of newly emerging diseases	• Practice as individuals or in teams the application of their medical knowledge to investigate clinical scenarios and debate current topics in medical research in the area of musculoskeletal system	• Clinical skills sessions • Small group sessions	• Class assessments • OSCE • Small group assessments • Block exams • System ending exam • Systems feedback by basic science students
PLO15: Equip themselves with the latest skills on information technology, study design and statistical methods and apply them into appropriate use in medical practice, therapeutic effectiveness, critical appraisal of scientific literature, research methodologies and studies of their own patient population or the larger community.			
PLO16: Apply the experience of medical practice into practice-based systematic improvement activities and hence contribute new medical knowledge to the community of medical research throughout their career.			

6. Topics for Musculoskeletal system

- 001. Anatomy - Bones of the Upper Limb
- 002. Histology Cartilage Chondrogenesis
- 003. Bone Metabolism
- 004. Anatomy - Blood Supply, Fascia and Muscles of the Upper Limb 1
- 005. Bone Histology
- 006. Anatomy - Muscles of the Upper Limb 2
- 007. Purine Nucleotide metabolism & Gout
- 008. Bone osteogenesis
- 009. Role of Vitamin D, PTH and Calcitonin in the bone remodeling
- 010. Anatomy - Axilla, Brachial Plexus, Cubital fossa and Hand
- 011. Muscle Histology
- 012. Joints of the Upper Limb & Nerve injury
- 013. Bones of the lower limb
- 014. Blood supply, Nerve supply fascia and Muscles of the Lower Limb 1
- 015. Skeletal muscle metabolism 1
- 016. Skeletal muscle metabolism 2
- 017. Muscles of the Lower limb 2
- 018. Femoral triangle, Popliteal fossa and Foot
- 019. Muscle Physiology 1
- 020. Muscle Physiology 2
- 021. Joints of the Lower limb
- 022. Pathology – Congenital disorders of the MSK system
- 023. Axial Bones
- 024. Microbiology MSK 1
- 025. Bones of the Skull
- 026. Microbiology MSK 2
- 027. Anatomy - Muscles of the Head and Neck
- 028. Anatomy - Muscles of the Chest, Back and Abdomen
- 029. Anatomy - Muscles of Facial expression, mastication and TMJ
- 030. Pathology - Skeletal muscle disorders
- 031. Pathology - Bone disorders
- 032. Pathology - Joint disorders
- 033. Pharmacology - NSAIDs
- 034. Pathology - Traumatic injuries

7. Teaching-Learning distribution

- Lectures (50-60%)
- Active independent learning (20-30%)
- Lab sessions (10-20%)

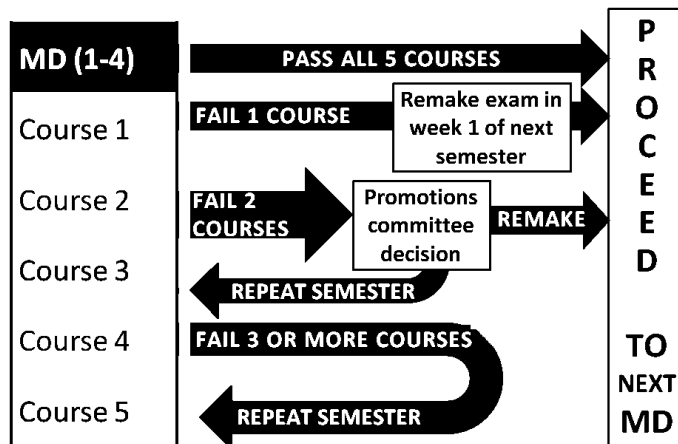
8. Grade distribution

- One block exam: 30%
- Final Exam: 50%
- Non-Exam Assessments: 20% (Assignments, Lecture assessments, quizzes)

9. Grading pattern

Grading Scale	Grade Points	Descriptor
H = 90% – 100%	4.0	Honors
HP = 80% – 89%	3.0	High Pass
P = 70% – 79%	2.0	Pass
F = less than 70%	0.0	Fail

10. Progression to next semester



11. Learning resources

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F. Genetics

Thompson & Thompson Genetics in Medicine (9th Ed.) by Nussbaum, Mcinnes & Willard. Elsevier Australia ISBN 9780323547628

G. Histology

Junqueira's Basic Histology: Text and Atlas, 15e. Anthony L. Mescher Publisher: McGraw-Hill Education ISBN-13: 978-1260026177; ISBN-10: 1260026175

H. Immunology

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J. Microbiology

Lippincott's illustrated reviews: Microbiology 4th edition Author: Cynthia Nau Cornelissen Paperback ISBN: 978-1496395856 Imprint: Wolters Kluwer

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- b. "Basic & Clinical Biostatistics, 5th Edition. "Maxcy-Rosenau-Last Public Health & Preventive Medicine, 15th Edition, by Robert B. Wallace. ISBN- 13: 978-0071441988, ISBN- 10: 0071441980

III. MD 1003 Integumentary system

1. Course Overview:

Semester	Course Code	Course Title	Credit Hours
MD1	MD 1003	Integumentary system	2

2. Course Description:

Basic sciences of anatomy, biochemistry microbiology, pathology, pharmacology, and physiology of the integumentary system are correlated with clinical disorder of this system. The goal of this integrated course is to provide the medical student with comprehensive knowledge about skin and associated soft tissues related to clinical manifestations of diseases. This course covers the normal microscopic anatomy and function of skin, basic biological concepts and terminology related to basic skin lesions. Medical entomology will be discussed with emphasis on vectors and mode of transmission. Common clinical skin conditions such as heat stroke, wound healing, burns, protozoans, and worms will be explained. Mechanism of action, relevant pharmacokinetics, therapeutic use and adverse effects of drugs that affect the skin are also covered.

Learning opportunities include lectures, active independent learning, lab sessions, self-study and clinical experience with real and simulated patients.

3. General Learning Objectives:

At the end of this course, students should be able to:

- Understand the origin, general features, macroscopic and microscopic structure, pigmentation process and functions of skin and the structural and functional features of the subcutaneous tissue.
- Describe the commensals and pathogenic microbes affecting the skin and subcutaneous tissue
- Understand the epidemiology, pathogenesis, pathological features and interventions in injuries and diseases that affect the soft tissue and skin

4. Course learning outcomes (CLOs) (course measurable outcomes):

At the end of this system students should be able to:

Cognitive

- CLO 1. Describe the origin, structural and functional features and pigmentation process of the skin and integrate these features to the structural and functional features of the subcutaneous tissue (Bloom's C2,C4)
- CLO 2. Describe the commensals and pathogenic microbes affecting the skin and subcutaneous tissue (Bloom's C2)
- CLO 3. Explain the epidemiology, etiology, pathogenesis and pathological features of infections, injuries and diseases that affect skin and soft tissue and attribute the abnormalities to the features and/or actions of microbes, drugs and microbial as well as non-microbial toxins (Bloom's C2, C4)

Psychomotor

- CLO 4. Demonstrate competence in handling solutions and microscopic slides as per safety protocols with wellness of self, peers, supervisors, patients as utmost priority (Dave's P2)
- CLO 5. Focus a histological slide of a skin tissue under a microscope and identify cellular features of the different layers (Dave's P2,P5)
- CLO 6. Microscopically identify areas of medical importance in histopathological slides related to most important disorders affecting the skin (Dave's P5)

Affective

- CLO 7. Practice as individuals or in teams the application of their medical knowledge to investigate clinical scenarios and debate current topics in medical research in the area of integumentary system (Krathwol-Bloom's A4)
- CLO 8. Demonstrate adherence to the highest standards of professional and ethical behavior, as explained in the Physicians' charter, during interaction with fellow students and faculty in or outside classroom, or with a patient during clinical skills sessions (Krathwol-Bloom's A2)
- CLO 9. Demonstrate empathy to fellow students' problems in or outside classroom, or to patients during history taking and physical examination sessions (Krathwol-Bloom's A2)
- CLO 10. Act with cultural humility while interacting with classmates, seniors, teachers and patients by focusing on their culture, age, gender, sexual orientation, risk perception, and personal values (Krathwol-Bloom's A6)

AUSOMA BASIC SCIENCES CURRICULUM DESIGN BOOKLET

5. Linking of AUSOMA's Program learning outcomes (PLOs) to course learning outcomes (CLOs), learning opportunities and outcome measures of Integumentary system:

PROGRAM LEARNING OUTCOMES (PLOs) (= PROGRAM MEASURABLE OUTCOMES)	COURSE LEARNING OUTCOMES (CLOs) (= COURSE MEASURABLE OUTCOMES) FOR INTEGUMENTARY SYSTEM	Learning opportunities	Outcome measures
At the end of four years of MD program, AUSOMA graduates should be able to:	At the end of this system, students should be able to:		
PEC1: Basic medical knowledge			
PLO1: Describe the fundamental principles of homeostasis and disturbance in homeostasis, and the role of medical intervention during disturbed homeostasis	- Describe the origin, structural and functional features and pigmentation process of the skin and integrate these features to the structural and functional features of the subcutaneous tissue - Describe the commensals and pathogenic microbes affecting the skin and subcutaneous tissue - Explain the epidemiology, etiology, pathogenesis and pathological features of infections, injuries and diseases that affect skin and soft tissue and attribute the abnormalities to the features and/or actions of microbes, drugs and microbial as well as non-microbial toxins	- Interactive Lectures - Small group sessions	- Class assessments - Small group assessments - Written/ online assignments - Block exams - System ending exam - Feedback by students
PLO2: Apply fundamental knowledge of basic and clinical sciences to the diagnosis, treatment, prevention and management of patient problems			
PLO3: Identify the role of external and epigenetic factors as causes of variations in disease expression			
PEC2: Clinical and diagnostic skills			
PLO4: Accurately perform history taking and physical examination by the right application of acquired theoretical knowledge			
PLO5: Accurately and completely perform the appropriate technical procedures so as to reflect completeness in the skills of medical practice	- Focus a histological slide of a skin tissue under a microscope and identify cellular features of the different layers - Microscopically identify areas of medical importance in histopathological slides related to most important disorders affecting the skin	- Interactive Lectures - Clinical skills sessions - Lab sessions	- Class assessments - OSCE - Written/ online assignments - Block exams - System ending exam - Feedback by students
PLO6: Conjecture differential diagnoses and formulate a diagnosis by applying acquired knowledge and in the background of gathered history as well as clinical findings			

AUSOMA BASIC SCIENCES CURRICULUM DESIGN BOOKLET

PEC3: Patient centered medicine	• Demonstrate competence in handling solutions and microscopic slides as per safety protocols with wellness of self, peers, supervisors, patients as utmost priority • Act with cultural humility while interacting with classmates, seniors, teachers and patients by focusing on their culture, age, gender, sexual orientation, risk perception, and personal values	• Interactive Lectures • Clinical skills sessions • Lab sessions	• Class assessments • OSCE • Written/ online assignments • Block exams • System ending exam • Feedback by students
PLO7: Deliver quality patient care in the context of varied perceptions of health and disease as well as varied responses to symptoms and treatments by people of different genders, diverse ages, cultures, ethnicities, religions, nationalities, socioeconomic backgrounds and those with disabilities PLO8: Perceive the medical consequences of common societal problems as well as critique with patients and patient parties about complexities and management of existing social issues			
PEC4: Interpersonal rapport and communication	• Demonstrate empathy to fellow students' problems in or outside classroom, or to patients during history taking and physical examination sessions	• Interactive Lectures • Clinical skills sessions	• Class assessments • OSCE • Written/ online assignments • Block exams • System ending exam • Feedback by students
PLO9: Communicate information and ideas categorically and in an organized manner to inform and educate patients, patient parties and society			
PLO10: Initiate, establish and adhere to empathetic communication with patients, families, colleagues, health professionals and supervisors to achieve quality health care by upholding the spirit of non-discrimination and inclusiveness			
PLO11: Resolve patient-doctor, patient party-doctor, doctor-doctor, doctor-supervisor or doctor-healthcare system related conflicts through effective communication			

AUSOMA BASIC SCIENCES CURRICULUM DESIGN BOOKLET

PEC5: Medical ethics and professionalism			
PLO12: Apply during medical practice, the three fundamental principles and ten professional commitments listed in “The Physicians’ Charter” of ABIM, ACP and European federation of Internal medicine	• Demonstrate adherence to the highest standards of professional and ethical behavior, as explained in the Physicians’ charter, during interaction with fellow students and faculty in or outside classroom, or with a patient during clinical skills sessions	• Medical ethics lectures • Clinical skills sessions • Small group sessions	• Class assessments • OSCE • Small group assessments • Written/ online assignments • Block exams • System ending exam • Feedback by students
PLO13: Conform to the highest standards of medical ethics and professionalism while dealing with the complexities of health care practice and delivery, organizations and bureaucracy			
PEC6: Evidence based practice and lifelong learning			
PLO14: Demonstrate an open mind, scientific inquisitiveness and research inclination to acquire newly emerging clinical knowledge and skills that enable improved quality of care in the wake of newly emerging diseases	• Practice as individuals or in teams the application of their medical knowledge to investigate clinical scenarios and debate current topics in medical research in the area of integumentary system	• Clinical skills sessions • Small group sessions	• Class assessments • OSCE • Small group assessments • Block exams • System ending exam • Systems feedback by basic science students
PLO15: Equip themselves with the latest skills on information technology, study design and statistical methods and apply them into appropriate use in medical practice, therapeutic effectiveness, critical appraisal of scientific literature, research methodologies and studies of their own patient population or the larger community.			
PLO16: Apply the experience of medical practice into practice-based systematic improvement activities and hence contribute new medical knowledge to the community of medical research throughout their career.			

6. Topics for Integumentary system

- 001. Skin Generalities
- 002. Melanin Synthesis
- 003. Appendages of Skin
- 004. Adnexal Disorders
- 005. Traumatic & Mechanical disorders of Skin
- 006. Bacterial Skin infections 1
- 007. Bacterial Skin infections 2
- 008. Pathological lesions of the skin
- 009. Viral and Parasitic Skin infections
- 010. Fungal skin infections
- 011. Tumors of the Skin
- 012. Immunologic Disorders of Skin
- 013. Pharmacotherapy

7. Teaching-Learning distribution

- Lectures (50-60%)
- Active independent learning (20-30%)
- Lab sessions (10-20%)

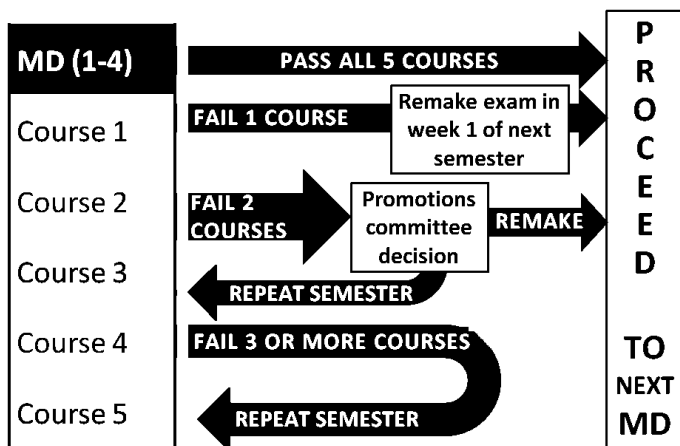
8. Grade distribution

- One block exam: 30%
- Final Exam: 50%
- Non-Exam Assessments: 20% (Assignments, Lecture assessments, quizzes)

9. Grading pattern

Grading Scale	Grade Points	Descriptor
H = 90% – 100%	4.0	Honors
HP = 80% – 89%	3.0	High Pass
P = 70% – 79%	2.0	Pass
F = less than 70%	0.0	Fail

10. Progression to next semester



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IV. MD 1004 Clinical skills-1

1. Course Overview:

Semester	Course Code	Course Title	Credit Hours
MD1	MD 1004	Clinical skills-1	2

2. Course Description:

The Clinical Skills course is designed to teach each medical student the basic skills needed for medical practice. These skills include effective communication, scheme-based history taking and physical examination, development of clinical reasoning, formation of an initial diagnostic plan, interpretation of basic diagnostic studies, performance of selected procedures, provision of counseling and feedback, and articulate clinical case presentations

Learning opportunities include lectures, active independent learning, lab sessions, self-study and clinical experience with real and simulated patients.

3. General Learning Objectives:

At the end of this course, students should be able to:

- Obtain an accurate, comprehensive, focused/full history from and perform a careful, rational, thorough physical examination on the patient
- Apply information obtained from HPE (history and physical examination) and initial laboratory data to create a problem list, recognize and prioritize the issues, formulate differential diagnosis and generate a diagnostic and therapeutic plan
- Record in writing and present orally the results of the HPE (including assessment and plan) in a systematic, concise and coherent manner.
- Use medical literature to understand the natural history of diseases, plan therapy and integrate clinical reasoning skills and strive towards continual and lifelong learning

4. Course learning outcomes (CLOs) (course measurable outcomes):

At the end of this course students should be able to (with emphasis on integumentary and musculoskeletal system):

Cognitive

- CLO 1. Review the knowledge gained in the different courses of MD1 appropriately and correlate it to interviewing patients for accurate, comprehensive, focused/full history taking (Bloom's C5,C4)
- CLO 2. Appraise the information obtained from HPE and initial laboratory data to formulate their diagnosis and devise a treatment-management plan (Bloom's C6)
- CLO 3. Review medical literature to retrieve documented information on patient problems, integrate clinical reasoning skills and adapt towards continual and lifelong learning (Bloom's C5, C1, C6)

Psychomotor

- CLO 4. Conduct an interview for an accurate, comprehensive, focused/full history and perform a careful, rational, thorough physical examination on the patient (Dave's P2)
- CLO 5. Structure and design SOAP notes following history-taking and physical examination in a patient (Dave's P4)
- CLO 6. Improve and master history-taking and physical examination skills through repeated practice during and out of training sessions (Dave's P4)
- CLO 7. Coordinate and integrate the acquired tangible as well as non-tangible clinical skills in managing the general public of Aruba during health fairs and voluntary services organized by the school (Dave's P4, P5)

Affective

- CLO 8. Practice as individuals or in teams to the application of their medical knowledge to investigate clinical scenarios and debate current topics in medical research (Krathwol-Bloom's A4)
- CLO 9. Demonstrate adherence to the highest standards of professional and ethical behavior, as explained in the Physicians' charter, during interaction with fellow students and faculty in or outside classroom, or with a patient during clinical skills sessions (Krathwol-Bloom's A2)
- CLO 10. Demonstrate empathy to fellow students' problems in or outside classroom, or to patients during history taking and physical examination sessions (Krathwol-Bloom's A2)
- CLO 11. Act with cultural humility while interacting with classmates, seniors, teachers and patients by focusing on their culture, age, gender, sexual orientation, risk perception, and personal values (Krathwol-Bloom's A6)

AUSOMA BASIC SCIENCES CURRICULUM DESIGN BOOKLET

5. Linking of AUSOMA's Program learning outcomes (PLOs) to course learning outcomes (CLOs), learning opportunities and outcome measures of Clinical skills-1:

PROGRAM LEARNING OUTCOMES (PLOs) (= PROGRAM MEASURABLE OUTCOMES)	COURSE LEARNING OUTCOMES (CLOs) (= COURSE MEASURABLE OUTCOMES) FOR CLINICAL SKILLS-1	Learning opportunities	Outcome measures
At the end of four years of MD program, AUSOMA graduates should be able to:	At the end of this system, students should be able to (with emphasis on integumentary and musculoskeletal system):		
PEC1: Basic medical knowledge			
PLO1: Describe the fundamental principles of homeostasis and disturbance in homeostasis, and the role of medical intervention during disturbed homeostasis	- Review the knowledge gained in the different courses of MD1 appropriately and correlate it to interviewing patients for accurate, comprehensive, focused/full history taking - Appraise the information obtained from HPE and initial laboratory data to formulate their diagnosis and devise a treatment-management plan - Review medical literature to retrieve documented information on patient problems, integrate clinical reasoning skills and adapt towards continual and lifelong learning	- Interactive Lectures - Small group sessions	- Class assessments - Small group assessments - Written/ online assignments - Block exams - System ending exam - Feedback by students
PLO2: Apply fundamental knowledge of basic and clinical sciences to the diagnosis, treatment, prevention and management of patient problems			
PLO3: Identify the role of external and epigenetic factors as causes of variations in disease expression			
PEC2: Clinical and diagnostic skills			
PLO4: Accurately perform history taking and physical examination by the right application of acquired theoretical knowledge	- Conduct an interview for an accurate, comprehensive, focused/full history and perform a careful, rational, thorough physical examination on the patient - Structure and design SOAP notes following history-taking and physical examination in a patient - Improve and master history-taking and physical examination skills through repeated practice during and out of training sessions	- Interactive Lectures - Clinical skills sessions - Lab sessions	- Class assessments - OSCE - Written/ online assignments - Block exams - System ending exam - Feedback by students
PLO5: Accurately and completely perform the appropriate technical procedures so as to reflect completeness in the skills of medical practice			
PLO6: Conjecture differential diagnoses and formulate a diagnosis by applying acquired knowledge and in the background of gathered history as well as clinical findings			

AUSOMA BASIC SCIENCES CURRICULUM DESIGN BOOKLET

PEC3: Patient centered medicine	• Coordinate and integrate the acquired tangible as well as non-tangible clinical skills in managing the general public of Aruba during health fairs and voluntary services organized by the school • Act with cultural humility while interacting with classmates, seniors, teachers and patients by focusing on their culture, age, gender, sexual orientation, risk perception, and personal values	• Interactive Lectures • Clinical skills sessions • Lab sessions	• Class assessments • OSCE • Written/ online assignments • Block exams • System ending exam • Feedback by students
PLO7: Deliver quality patient care in the context of varied perceptions of health and disease as well as varied responses to symptoms and treatments by people of different genders, diverse ages, cultures, ethnicities, religions, nationalities, socioeconomic backgrounds and those with disabilities PLO8: Perceive the medical consequences of common societal problems as well as critique with patients and patient parties about complexities and management of existing social issues			
PEC4: Interpersonal rapport and communication	• Demonstrate empathy to fellow students' problems in or outside classroom, or to patients during history taking and physical examination sessions	• Interactive Lectures • Clinical skills sessions	• Class assessments • OSCE • Written/ online assignments • Block exams • System ending exam • Feedback by students
PLO9: Communicate information and ideas categorically and in an organized manner to inform and educate patients, patient parties and society			
PLO10: Initiate, establish and adhere to empathetic communication with patients, families, colleagues, health professionals and supervisors to achieve quality health care by upholding the spirit of non-discrimination and inclusiveness			
PLO11: Resolve patient-doctor, patient party-doctor, doctor-doctor, doctor-supervisor or doctor-healthcare system related conflicts through effective communication			

AUSOMA BASIC SCIENCES CURRICULUM DESIGN BOOKLET

PEC5: Medical ethics and professionalism			
PLO12: Apply during medical practice, the three fundamental principles and ten professional commitments listed in “The Physicians’ Charter” of ABIM, ACP and European federation of Internal medicine	• Demonstrate adherence to the highest standards of professional and ethical behavior, as explained in the Physicians’ charter, during interaction with fellow students and faculty in or outside classroom, or with a patient during clinical skills sessions	• Medical ethics lectures • Clinical skills sessions • Small group sessions	• Class assessments • OSCE • Small group assessments • Written/ online assignments • Block exams • System ending exam • Feedback by students
PLO13: Conform to the highest standards of medical ethics and professionalism while dealing with the complexities of health care practice and delivery, organizations and bureaucracy			
PEC6: Evidence based practice and lifelong learning			
PLO14: Demonstrate an open mind, scientific inquisitiveness and research inclination to acquire newly emerging clinical knowledge and skills that enable improved quality of care in the wake of newly emerging diseases	• Practice as individuals or in teams the application of their knowledge to investigate clinical scenarios and debate current topics in medical research	• Clinical skills sessions • Small group sessions	• Class assessments • OSCE • Small group assessments • Block exams • System ending exam • Systems feedback by basic science students
PLO15: Equip themselves with the latest skills on information technology, study design and statistical methods and apply them into appropriate use in medical practice, therapeutic effectiveness, critical appraisal of scientific literature, research methodologies and studies of their own patient population or the larger community.			
PLO16: Apply the experience of medical practice into practice-based systematic improvement activities and hence contribute new medical knowledge to the community of medical research throughout their career.			

6. Topics for Clinical skills-1

001. Generalities

002. Interviewing and health history-1

003. Interviewing and health history-2

004. Beginning the physical examination: general survey, vital signs, and pain-1

005. Beginning the physical examination: general survey, vital signs, and pain-2

006. Vital signs

007. SOAP notes and taking notes in specific specialties

008. The skin, hair, nails-1

009. The skin, hair, nails-2

010. Musculoskeletal system-1

011. Musculoskeletal system -2

7. Teaching-Learning distribution

- Lectures (20-30%)
- Active independent learning (35-40%)
- Lab sessions (35-40%)

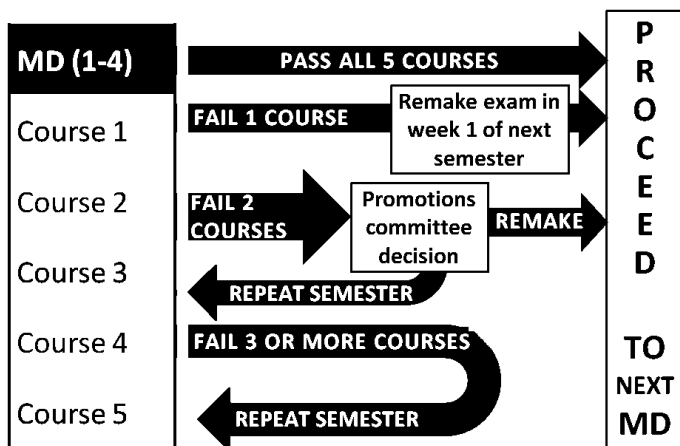
8. Grade distribution

- One block exam: 30%
- Final Exam: 50%
- Non-Exam Assessments: 20% (Assignments, Lecture assessments, quizzes)

9. Grading pattern

Grading Scale	Grade Points	Descriptor
H = 90% – 100%	4.0	Honors
HP = 80% – 89%	3.0	High Pass
P = 70% – 79%	2.0	Pass
F = less than 70%	0.0	Fail

10. Progression to next semester



11. Learning resources

A. Anatomy

Clinically oriented Anatomy by Keith L. Moore, Arthur F. Dalley, Arthur F. Dalley and Anne M.R. Agur, Published by Lippincott, Williams and Wilkins, Edition 8 ISBN-13: 978-1975104962 ISBN-10: 197510496X

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- a. Jekel's Epidemiology, Biostatistics, Preventive Medicine, and Public Health, by D. L. Katz, J. G. Elmore, D. M.G. Wild, & S. C. Lucan. Elsevier Saunders, Fourth Edition, ISBN: 978-1-4557-0658-7
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C. Biochemistry

- a. Lippincott Illustrated Reviews: Biochemistry (Lippincott Illustrated Reviews Series) Seventh, North American Edition by Denise Ferrier ISBN-13: 978-1496344496 ISBN-10: 1496344499
- b. Harper's Illustrated Biochemistry Thirty-First Edition 31st Edition by Victor Rodwell, David Bender, Kathleen Botham, Peter Kennelly, P. Anthony Weil. ISBN-13: 978-1259837937; ISBN-10: 1259837939

D. Clinical Skills

Bate's guide to Physical Examination and History taking, by Barbara Bates, Lynn S Bickley. 12th edition ISBN-13: 978-1469893419, ISBN-10: 9781469893419

E. Embryology

The Developing Human –Clinically Oriented Embryology by Keith L. Moore and T.V.N. Persaud, Published by Saunders – Elsevier, Edition 9, ISBN: 978 -1-4377-2002-0

F. Genetics

Thompson & Thompson Genetics in Medicine (9th Ed.) by Nussbaum, Mcinnes & Willard. Elsevier Australia ISBN 9780323547628

G. Histology

Junqueira's Basic Histology: Text and Atlas, 15e. Anthony L. Mescher Publisher: McGraw-Hill Education ISBN-13: 978-1260026177; ISBN-10: 1260026175

H. Immunology

- a. Lippincott Illustrated Reviews: Immunology Second, North American Edition by Thao Doan, Roger Melvold, Susan Viselli, Carl Waltenbaugh. ISBN-13: 978-1451109375; ISBN-10: 9781451109375
- b. Cellular and Molecular Immunology by Abul Abbas, Andrew Lichtman, Shiv Pillai, 10th Edition, eBook ISBN: 9780323757508, Paperback ISBN: 9780323757485



AUSOMA BASIC SCIENCES CURRICULUM DESIGN BOOKLET

I. Medical Ethics

- a. Resolving Ethical Dilemmas: A guide for Clinicians Sixth Edition, by Bernard Lo. Lippincott Williams & Wilkins, a Wolters Kluwer. ISBN-13: 978-1975103545, ISBN-10: 1975 103548
- b. "Medical Law & Ethics, 6th Ed."
- c. "Resolving Ethical Dilemmas: A Guide for Clinician, 6th Ed"
- d. "Medical Ethics for Dummies"

J. Microbiology

Lippincott's illustrated reviews: Microbiology 4th edition Author: Cynthia Nau Cornelissen Paperback ISBN: 978-1496395856 Imprint: Wolters Kluwer

K. Neuroscience

- a. Essential Neuroscience by Allan Siegel, Wolters Kluwer, Fourth edition ISBN-13, 978-1451189681
- b. Clinical Neuroanatomy for Medical Students: by Richard S. Snell. 7th edition, ISBN 978-0781794275

L. Nutrition

Understanding Normal And Clinical Nutrition (8th Ed.) by Sharon Rady Rolfes, Kathryn Pinna, Elley Whitney. Wadsworth Cengage learning. ISBN-13: 978-0-495-55646-6 ISBN-10: 0-495-55646-7

M. Pathology

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N. Pharmacology

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O. Physiology

Physiology, by Linda S. Costanzo. 6th edition. ISBN-13: 978-0323478816, ISBN-10: 0323478816

P. Preventive Medicine

- a. Jekel's Epidemiology, Biostatistics, Preventive Medicine, and Public Health, by D. L. Katz, J. G. Elmore, D. M.G. Wild, & S. C. Lucan. Elsevier Saunders, Fourth Edition, ISBN: 978-1-4557-0658-7
- b. "Basic & Clinical Biostatistics, 5th Edition. "Maxcy-Rosenau-Last Public Health & Preventive Medicine, 15th Edition, by Robert B. Wallace. ISBN- 13: 978-0071441988, ISBN- 10: 0071441980

V. MD 1005 Preventive medicine, Public health and Quality health parameters

1. Course Overview:

Semester	Course Code	Course Title	Credit Hours
MD1	MD 1005	Preventive medicine, Public health and Quality health parameters	3

2. Course Description:

This course introduces students to an understanding of the fundamental concepts of preventive medicine, public health, and quality health parameters. Epidemiological and biostatistical concepts considered as cornerstone of preventive medicine and public health will enhance the students understanding of distribution of diseases or health conditions and their risk factors, which direct to comprehensive development and implementation of disease control and preventive strategies. Knowledge of these concepts and principles are critically applicable in clinical practice and research. This course will give students the opportunities to be familiar with different levels of prevention, including primary, secondary, tertiary, and quaternary for communicable and non-communicable diseases.

Learning opportunities include lectures, and small group discussions of clinically oriented problems to enhance self-directed learning.

3. General Learning Objectives:

At the end of this course, students should be able to:

- Understand the fundamental principles and concepts of epidemiology and biostatistics in clinical practice and research.
- Describe the principles and concepts of epidemiology, including measures of disease frequency, observational and experimental study designs, biases in research, measures of association, and diagnostic and statistical tests.
- Recognize and explain the basic concepts of biostatistics: measures of central tendency, measures of dispersion, distribution, statistical hypotheses, and statistical tests.
- Integrate and correlate knowledge of concepts of primary, secondary, tertiary, and/or quaternary prevention of infectious diseases and chronic diseases.

4. Course learning outcomes (CLOs) (course measurable outcomes):

At the end of this course students should be able to:

Cognitive

- CLO 1. Define the terminologies for general concepts of epidemiology and explain the role of epidemiology in preventive medicine and public health (Bloom's C2)
- CLO 2. Describe the three sources of evidence, explain how each source contributes to evidence-based decision-making, and describe the types of evidence-based questions and their related clinical information they draw out for clinicians (Bloom's C2)
- CLO 3. List at least three leading causes of death by age group and describe health disparities and their related outcomes among individuals and populations (Bloom's C2)
- CLO 4. List and explain the concepts of measures of disease frequency, studies designs and their related measures of effects, screening tests, and statistical distributions and hypotheses (Bloom's C2)

Psychomotor

- CLO 5. Coordinate and integrate the acquired knowledge of health disparities and outcomes in managing the general public during health fairs and voluntary services organized by the school (Dave's P4, P5)
- CLO 6. Practice as individuals during lab sessions, the hand hygiene technique and demonstrate the practice of the same during health fairs / voluntary activities as a critical measure for infection control (Dave's P3, P4)

Affective

- CLO 7. Practice as individuals or in teams the application of their knowledge of evidence-based decision making to investigate clinical scenarios and debate current topics in medical research (Krathwol-Bloom's A4)
- CLO 8. Demonstrate adherence to the highest standards of professional and ethical behavior, as explained in the Physicians' charter, during interaction with fellow students and faculty in or outside classroom, or with a patient during clinical skills sessions (Krathwol-Bloom's A2)
- CLO 9. Demonstrate empathy to fellow students' problems in or outside classroom, or to patients during history taking and physical examination sessions (Krathwol-Bloom's A2)
- CLO 10. Act with cultural humility while interacting with classmates, seniors, teachers and patients by focusing on their culture, age, gender, sexual orientation, risk perception, and personal values (Krathwol-Bloom's A6)

AUSOMA BASIC SCIENCES CURRICULUM DESIGN BOOKLET

5. Linking of AUSOMA's Program learning outcomes (PLOs) to course learning outcomes (CLOs), learning opportunities and outcome measures of Preventive medicine, Public health and Quality health parameters:

PROGRAM LEARNING OUTCOMES (PLOs) (= PROGRAM MEASURABLE OUTCOMES)	COURSE LEARNING OUTCOMES (CLOs) (= COURSE MEASURABLE OUTCOMES) FOR PREVENTIVE MEDICINE, PUBLIC HEALTH AND QUALITY HEALTH PARAMETERS	Learning opportunities	Outcome measures
At the end of four years of MD program, AUSOMA graduates should be able to:	At the end of this system, students should be able to:		
PEC1: Basic medical knowledge			
PLO1: Describe the fundamental principles of homeostasis and disturbance in homeostasis, and the role of medical intervention during disturbed homeostasis	- Define the terminologies for general concepts of epidemiology and explain the role of epidemiology in preventive medicine and public health - Describe the three sources of evidence, explain how each source contributes to evidence-based decision-making, and describe the types of evidence-based questions and their related clinical information they draw out for clinicians - List at least three leading causes of death by age group and describe health disparities and their related outcomes among individuals and populations - List and explain the concepts of measures of disease frequency, studies designs and their related measures of effects, screening tests, and statistical distributions and hypotheses	- Interactive Lectures - Small group sessions	- Class assessments - Small group assessments - Written/ online assignments - Block exams - System ending exam - Feedback by students
PLO2: Apply fundamental knowledge of basic and clinical sciences to the diagnosis, treatment, prevention and management of patient problems			
PLO3: Identify the role of external and epigenetic factors as causes of variations in disease expression			
PEC2: Clinical and diagnostic skills			
PLO4: Accurately perform history taking and physical examination by the right application of acquired theoretical knowledge			
PLO5: Accurately and completely perform the appropriate technical procedures so as to reflect completeness in the skills of medical practice	Practice as individuals, on a daily basis, the hand hygiene technique and demonstrate the practice of the same during health fairs / voluntary activities as a critical measure for infection control	- Interactive Lectures - Clinical skills sessions - Lab sessions	- Class assessments - OSCE - Written/ online assignments - Block exams - System ending exam - Feedback by students
PLO6: Conjecture differential diagnoses and formulate a diagnosis by applying acquired knowledge and in the background of gathered history as well as clinical findings			

AUSOMA BASIC SCIENCES CURRICULUM DESIGN BOOKLET

PEC3: Patient centered medicine	• Coordinate and integrate the acquired knowledge of health disparities and outcomes in managing the general public during health fairs and voluntary services organized by the school • Act with cultural humility while interacting with classmates, seniors, teachers and patients by focusing on their culture, age, gender, sexual orientation, risk perception, and personal values	• Interactive Lectures • Clinical skills sessions • Lab sessions	• Class assessments • OSCE • Written/ online assignments • Block exams • System ending exam • Feedback by students
PLO7: Deliver quality patient care in the context of varied perceptions of health and disease as well as varied responses to symptoms and treatments by people of different genders, diverse ages, cultures, ethnicities, religions, nationalities, socioeconomic backgrounds and those with disabilities PLO8: Perceive the medical consequences of common societal problems as well as critique with patients and patient parties about complexities and management of existing social issues			
PEC4: Interpersonal rapport and communication	• Demonstrate empathy to fellow students' problems in or outside classroom, or to patients during history taking and physical examination sessions	• Interactive Lectures • Clinical skills sessions	• Class assessments • OSCE • Written/ online assignments • Block exams • System ending exam • Feedback by students
PLO9: Communicate information and ideas categorically and in an organized manner to inform and educate patients, patient parties and society			
PLO10: Initiate, establish and adhere to empathetic communication with patients, families, colleagues, health professionals and supervisors to achieve quality health care by upholding the spirit of non-discrimination and inclusiveness			
PLO11: Resolve patient-doctor, patient party-doctor, doctor-doctor, doctor-supervisor or doctor-healthcare system related conflicts through effective communication			

AUSOMA BASIC SCIENCES CURRICULUM DESIGN BOOKLET

PEC5: Medical ethics and professionalism			
PLO12: Apply during medical practice, the three fundamental principles and ten professional commitments listed in “The Physicians’ Charter” of ABIM, ACP and European federation of Internal medicine	• Demonstrate adherence to the highest standards of professional and ethical behavior, as explained in the Physicians’ charter, during interaction with fellow students and faculty in or outside classroom, or with a patient during clinical skills sessions	• Medical ethics lectures • Clinical skills sessions • Small group sessions	• Class assessments • OSCE • Small group assessments • Written/ online assignments • Block exams • System ending exam • Feedback by students
PLO13: Conform to the highest standards of medical ethics and professionalism while dealing with the complexities of health care practice and delivery, organizations and bureaucracy			
PEC6: Evidence based practice and lifelong learning			
PLO14: Demonstrate an open mind, scientific inquisitiveness and research inclination to acquire newly emerging clinical knowledge and skills that enable improved quality of care in the wake of newly emerging diseases	• Practice as individuals or in teams the application of their knowledge of evidence-based decision making to investigate clinical scenarios and debate current topics in medical research	• Clinical skills sessions • Small group sessions	• Class assessments • OSCE • Small group assessments • Block exams • System ending exam • Systems feedback by basic science students
PLO15: Equip themselves with the latest skills on information technology, study design and statistical methods and apply them into appropriate use in medical practice, therapeutic effectiveness, critical appraisal of scientific literature, research methodologies and studies of their own patient population or the larger community.			
PLO16: Apply the experience of medical practice into practice-based systematic improvement activities and hence contribute new medical knowledge to the community of medical research throughout their career.			

6. Topics for Preventive medicine, Public health and Quality health parameters

001. Introduction to epidemiology and measures of disease frequency

002. Research study designs: observational

003. Research study designs: experimental

004. Measures of association

005. Biases

006. Evaluation, diagnostic and screening tests

007. Predictive value

008. Measures of central tendency, measures of dispersion

009. Summary measures in statistics

0010. Statistical hypotheses and statistical tests

0011. Introduction to preventive medicine

010. Epidemiological and behavioral aspects of skin diseases

011. Physical activity and exercise

7. Teaching-Learning distribution

- Lectures (60-70%)
- Active independent learning (30-40%)

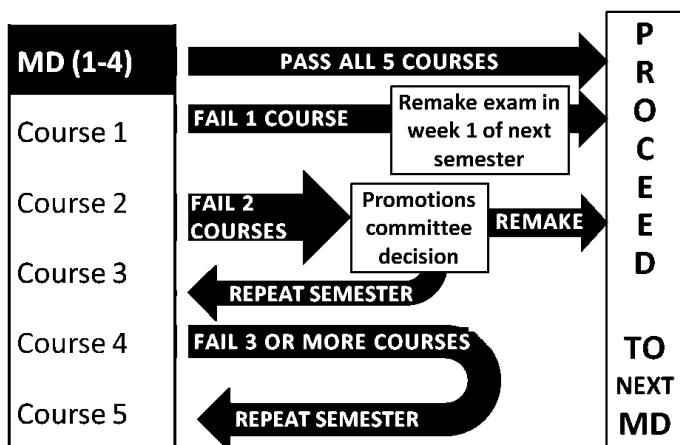
8. Grade distribution

- One block exam: 30%
- Final Exam: 50%
- Non-Exam Assessments: 20% (Assignments, Lecture assessments, quizzes)

9. Grading pattern

Grading Scale	Grade Points	Descriptor
H = 90% – 100%	4.0	Honors
HP = 80% – 89%	3.0	High Pass
P = 70% – 79%	2.0	Pass
F = less than 70%	0.0	Fail

10. Progression to next semester



11. Learning resources

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- c. "Resolving Ethical Dilemmas: A Guide for Clinician, 6th Ed"
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- b. "Basic & Clinical Biostatistics, 5th Edition. "Maxcy-Rosenau-Last Public Health & Preventive Medicine, 15th Edition, by Robert B. Wallace. ISBN- 13: 978-0071441988, ISBN- 10: 0071441980

MD2 courses

Organ systems	1. MD 2006 Nutrition and metabolism
	2. MD 2007 Behavioral sciences and neurology
Modules	3. MD 2008 Medical Ethics
	4. MD 2009 Clinical Skills-2
	5. MD 2010 Preventive Medicine, Public Health and Quality Health Parameters

VI. MD 2006 Nutrition and Metabolism

1. Course Overview:

Semester	Course Code	Course Title	Credit Hours
MD2	MD 2006	Nutrition and Metabolism	6

2. Course Description:

Nutrition and metabolism introduce students to an understanding of biochemical pathways related to the three main components of our diets: carbohydrates, proteins and fats. It also helps to understand diets and their physiological effects on the human organism. The macromolecules that constitute the body and their metabolic fate; the effect of the types of food we eat, fad diets, supplements of vitamins and minerals and how they influence our well-being, will deepen the students understanding of the genesis of diseases like obesity, dyslipidemias, metabolic syndrome, Type 2 Diabetes mellitus. fad diets, taking supplements and vitamins. Knowledge of micronutrients is applicable to everyday practice. This class builds over previous basics learned on amino acids and proteins.

Teaching methods include lectures, and small group discussions of clinically oriented problems to enhance self-directed learning.

3. General Learning Objectives:

At the end of this course, students should be able to:

- Recognize and explain the functions of the key biomolecules in human body.
- Integrate and correlate knowledge of normal bio-molecular structure-function relationships, metabolic and regulatory processes, and diagnosis of diseases.
- Understand the relationship between biochemical process and diseases related to our nutrition.

4. Course learning outcomes (CLOs) (course measurable outcomes):

At the end of this system students should be able to:

Cognitive

- CLO 1. Define the terminologies for general concepts of nutrition and explain the role of the most important influencing factors for nutrition in health and disease (Bloom's C2)
- CLO 2. Describe the catabolic and anabolic pathways for the exogenous as well as endogenous energy-yielding and structural biomolecules (Bloom's C2)
- CLO 3. List the inborn errors of metabolism of the energy-yielding and structural biomolecules and describe the molecular basis of the most commonly reported diseases caused by them (Bloom's C2)
- CLO 4. List and explain the role of the most important social factors affecting the expression of the most common nutritional disorders and the hereditary transmission of the most common metabolic disorders (Bloom's C2)

Psychomotor

- CLO 5. Calculate and estimate the optimality of caloric contribution by different macromolecules in a commercial food pack of your choice (Dave's P3)
- CLO 6. Perform spectrophotometric experiments or virtual lab sessions to estimate blood urea nitrogen and BUN creatinine ratio in a dummy sample (Dave's P5)
- CLO 7. Perform spectrophotometric experiments or virtual lab sessions for diabetic panel and lipid panel in a dummy sample (Dave's P5)

Affective

- CLO 8. Demonstrate adherence to the highest standards of professional and ethical behavior, as explained in the Physicians' charter, during interaction with fellow students and faculty in or outside classroom, or with a patient during clinical skills sessions (Krathwol-Bloom's A2)
- CLO 9. Demonstrate empathy to fellow students' problems in or outside classroom, or to patients during history taking and physical examination sessions (Krathwol-Bloom's A2)
- CLO 10. Follow the most recent research articles to identify novel problems and novel solutions to improve health care delivery to patients with nutritional and metabolic disorders (Krathwol-Bloom's A5)
- CLO 11. Act with cultural humility while interacting with classmates, seniors, teachers and patients by focusing on their culture, age, gender, sexual orientation, risk perception, and personal values related to nutrition (Krathwol-Bloom's A5)

AUSOMA BASIC SCIENCES CURRICULUM DESIGN BOOKLET

5. Linking of AUSOMA's Program learning outcomes (PLOs) to course learning outcomes (CLOs), learning opportunities and outcome measures of Nutrition and Metabolism course:

PROGRAM LEARNING OUTCOMES (PLOs) (= PROGRAM MEASURABLE OUTCOMES)	COURSE LEARNING OUTCOMES (CLOs) (= COURSE MEASURABLE OUTCOMES) FOR NUTRITION AND METABOLISM	Learning opportunities	Outcome measures
At the end of four years of MD program, AUSOMA graduates should be able to:	At the end of this system, students should be able to:		
PEC1: Basic medical knowledge			
PLO1: Describe the fundamental principles of homeostasis and disturbance in homeostasis, and the role of medical intervention during disturbed homeostasis	- Define the terminologies for general concepts of nutrition and explain the role of the most important influencing factors for nutrition in health and disease - Describe the catabolic and anabolic pathways for the exogenous as well as endogenous energy-yielding and structural biomolecules - List the inborn errors of metabolism of the energy-yielding and structural biomolecules and describe the molecular basis of the most commonly reported diseases caused by them	- Interactive Lectures - Small group sessions	- Class assessments - Small group assessments - Written/ online assignments - Block exams - System ending exam - Feedback by students
PLO2: Apply fundamental knowledge of basic and clinical sciences to the diagnosis, treatment, prevention and management of patient problems			
PLO3: Identify the role of external and epigenetic factors as causes of variations in disease expression			
PEC2: Clinical and diagnostic skills			
PLO4: Accurately perform history taking and physical examination by the right application of acquired theoretical knowledge	- Calculate and analyze the optimality of caloric contribution by different macromolecules in a commercial food pack of your choice - Perform spectrophotometric experiments or virtual lab sessions to estimate blood urea nitrogen and BUN creatinine ratio in a dummy sample - Perform spectrophotometric experiments or virtual lab sessions for diabetic panel and lipid panel in a dummy sample	- Interactive Lectures - Clinical skills sessions - Small group sessions	- Class assessments - OSCE - Small group assessments - Written/ online assignments - Block exams - System ending exam - Feedback by students
PLO5: Accurately and completely perform the appropriate technical procedures so as to reflect completeness in the skills of medical practice			
PLO6: Conjecture differential diagnoses and formulate a diagnosis by applying acquired knowledge and in the background of gathered history as well as clinical findings			

AUSOMA BASIC SCIENCES CURRICULUM DESIGN BOOKLET

PEC3: Patient centered medicine	• List and explain the role of the most important social factors affecting the expression of the most common nutritional disorders and the hereditary transmission of the most common metabolic disorders • Act with cultural humility while interacting with classmates, seniors, teachers and patients by focusing on their culture, age, gender, sexual orientation, risk perception, and personal values related to nutrition	• Interactive Lectures • Clinical skills sessions • Small group sessions	• Class assessments • OSCE • Small group assessments • Written/ online assignments • Block exams • System ending exam • Feedback by students
PLO7: Deliver quality patient care in the context of varied perceptions of health and disease as well as varied responses to symptoms and treatments by people of different genders, diverse ages, cultures, ethnicities, religions, nationalities, socioeconomic backgrounds and those with disabilities			
PLO8: Perceive the medical consequences of common societal problems as well as critique with patients and patient parties about complexities and management of existing social issues			
PEC4: Interpersonal rapport and communication	• Demonstrate empathy to fellow students' problems in or outside classroom, or to patients during history taking and physical examination sessions	• Clinical skills sessions • Small group sessions	• Class assessments • OSCE • Small group assessments • Written/ online assignments • Block exams • System ending exam • Feedback by students
PLO9: Communicate information and ideas categorically and in an organized manner to inform and educate patients, patient parties and society			
PLO10: Initiate, establish and adhere to empathetic communication with patients, families, colleagues, health professionals and supervisors to achieve quality health care by upholding the spirit of non-discrimination and inclusiveness			
PLO11: Resolve patient-doctor, patient party-doctor, doctor-doctor, doctor-supervisor or doctor-healthcare system related conflicts through effective communication			

AUSOMA BASIC SCIENCES CURRICULUM DESIGN BOOKLET

PEC5: Medical ethics and professionalism	• Demonstrate adherence to the highest standards of professional and ethical behavior, as explained in the Physicians' charter, during interaction with fellow students and faculty in or outside classroom, or with a patient during clinical skills sessions	• Medical ethics lectures • Clinical skills sessions • Small group sessions	• Class assessments • OSCE • Small group assessments • Written/ online assignments • Block exams • System ending exam • Feedback by students
PLO12: Apply during medical practice, the three fundamental principles and ten professional commitments listed in "The Physicians' Charter" of ABIM, ACP and European federation of Internal medicine			
PLO13: Conform to the highest standards of medical ethics and professionalism while dealing with the complexities of health care practice and delivery, organizations and bureaucracy			
PEC6: Evidence based practice and lifelong learning	• Follow the most recent research articles to identify novel problems and novel solutions to improve health care delivery to patients with nutritional and metabolic disorders	• Clinical skills sessions • Small group sessions	• Class assessments • OSCE • Small group assessments • Block exams • System ending exam • Systems feedback by basic science students
PLO14: Demonstrate an open mind, scientific inquisitiveness and research inclination to acquire newly emerging clinical knowledge and skills that enable improved quality of care in the wake of newly emerging diseases			
PLO15: Equip themselves with the latest skills on information technology, study design and statistical methods and apply them into appropriate use in medical practice, therapeutic effectiveness, critical appraisal of scientific literature, research methodologies and studies of their own patient population or the larger community.			
PLO16: Apply the experience of medical practice into practice-based systematic improvement activities and hence contribute new medical knowledge to the community of medical research throughout their career.			

6. Topics for Nutrition and Metabolism

1. General Concepts of Nutrition (Introduction to the Digestive System, BMR, SDA, Physiological Fuel Value, Energy Calculations, Role of Macronutrients)
2. Fat-Soluble Vitamins: A and E
3. Fat-Soluble Vitamins: D and K
4. Water-Soluble Vitamins I
5. Water-Soluble Vitamins II
6. Microminerals and Disorders I
7. Microminerals and Disorders II
8. Age-Wise Nutrition of the Well Patient
9. Digestion and Absorption of Macromolecules and Associated Disorders
10. Energy Metabolism, Glycolysis, and Disorders
11. Gluconeogenesis
12. Glycogen Metabolism and Disorders
13. HMP Shunt and Uronic Acid Pathway
14. Monosaccharide and Disaccharide Metabolism
15. Glycosaminoglycan and Mucopolysaccharide Metabolism
16. Lipolysis, β -Oxidation, and Associated Disorders
17. Fatty Acid Synthesis and Triglyceride Synthesis
18. Metabolism of Complex Lipids I (Phospholipids, Glycolipids, and Disorders)
19. Metabolism of Complex Lipids II (Eicosanoid Metabolism and Function)
20. Cholesterol Metabolism and Bile Salt Synthesis
21. Lipoprotein Metabolism and Disorders
22. Nitrogen Metabolism, Urea Cycle, and Disorders
23. Energy I: TCA/Krebs Cycle
24. Energy II: Electron Transport Chain
25. Metabolism of Individual Amino Acids I
26. Metabolism of Individual Amino Acids II
27. Ketone Body Metabolism and the Starve–Feed Cycle
28. Starve–Feed Cycle II
29. Alcohol Metabolism and Biotransformation
30. Purine (Review) and Pyrimidine Nucleotide Metabolism
31. Enteral and Parenteral Nutrition
32. Protein–Energy Malnutrition (PEM)

7. Teaching-Learning distribution

- Lectures (50-60%)
- Active independent learning (20-30%)
- Lab sessions (10-20%)

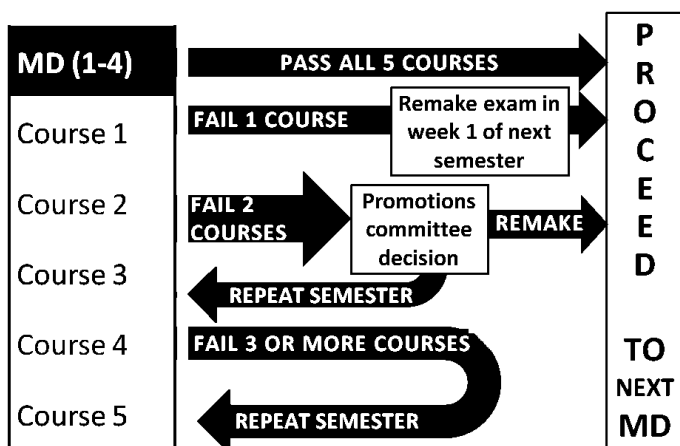
8. Grade distribution

- One block exam: 30%
- Final Exam: 60%
- Non-Exam Assessments: 10% (Attendance, Assignments, Class assessments)

9. Grading pattern

Grading Scale	Grade Points	Descriptor
H = 90% – 100%	4.0	Honors
HP = 80% – 89%	3.0	High Pass
P = 70% – 79%	2.0	Pass
F = less than 70%	0.0	Fail

10. Progression to next semester



11. Learning resources

A. Anatomy

Clinically oriented Anatomy by Keith L. Moore, Arthur F. Dalley, Arthur F. Dalley and Anne M.R. Agur, Published by Lippincott, Williams and Wilkins, Edition 8 ISBN-13: 978-1975104962 ISBN-10: 197510496X

B. Behavioral Sciences

- a. Jekel's Epidemiology, Biostatistics, Preventive Medicine, and Public Health, by D. L. Katz, J. G. Elmore, D. M.G. Wild, & S. C. Lucan. Elsevier Saunders, Fourth Edition, ISBN: 978-1-4557-0658-7
- b. "Basic & Clinical Biostatistics, 5th Edition."

C. Biochemistry

- a. Lippincott Illustrated Reviews: Biochemistry (Lippincott Illustrated Reviews Series) Seventh, North American Edition by Denise Ferrier ISBN-13: 978-1496344496 ISBN-10: 1496344499
- b. Harper's Illustrated Biochemistry Thirty-First Edition 31st Edition by Victor Rodwell, David Bender, Kathleen Botham, Peter Kennelly, P. Anthony Weil. ISBN-13: 978-1259837937; ISBN-10: 1259837939

D. Clinical Skills

Bate's guide to Physical Examination and History taking, by Barbara Bates, Lynn S Bickley. 12th edition ISBN-13: 978-1469893419, ISBN-10: 9781469893419

E. Embryology

The Developing Human –Clinically Oriented Embryology by Keith L. Moore and T.V.N. Persaud, Published by Saunders – Elsevier, Edition 9, ISBN: 978 -1-4377-2002-0

F. Genetics

Thompson & Thompson Genetics in Medicine (9th Ed.) by Nussbaum, Mcinnes & Willard. Elsevier Australia ISBN 9780323547628

G. Histology

Junqueira's Basic Histology: Text and Atlas, 15e. Anthony L. Mescher Publisher: McGraw-Hill Education ISBN-13: 978-1260026177; ISBN-10: 1260026175

H. Immunology

- a. Lippincott Illustrated Reviews: Immunology Second, North American Edition by Thao Doan, Roger Melvold, Susan Viselli, Carl Waltenbaugh. ISBN-13: 978-1451109375; ISBN-10: 9781451109375
- b. Cellular and Molecular Immunology by Abul Abbas, Andrew Lichtman, Shiv Pillai, 10th Edition, eBook ISBN: 9780323757508, Paperback ISBN: 9780323757485

I. Medical Ethics

- a. Resolving Ethical Dilemmas: A guide for Clinicians Sixth Edition, by Bernard Lo. Lippincott Williams & Wilkins, a Wolters Kluwer. ISBN-13: 978-1975103545, ISBN-10: 1975 103548
- b. "Medical Law & Ethics, 6th Ed."
- c. "Resolving Ethical Dilemmas: A Guide for Clinician, 6th Ed"
- d. "Medical Ethics for Dummies"

J. Microbiology

Lippincott's illustrated reviews: Microbiology 4th edition Author: Cynthia Nau Cornelissen Paperback ISBN: 978-1496395856 Imprint: Wolters Kluwer

K. Neuroscience

- a. Essential Neuroscience by Allan Siegel, Wolters Kluwer, Fourth edition ISBN-13, 978-1451189681
- b. Clinical Neuroanatomy for Medical Students: by Richard S. Snell. 7th edition, ISBN 978-0781794275

L. Nutrition

Understanding Normal And Clinical Nutrition (8th Ed.) by Sharon Rady Rolfes, Kathryn Pinna, Elley Whitney. Wadsworth Cengage learning. ISBN-13: 978-0-495-55646-6 ISBN-10: 0-495-55646-7

M. Pathology

Robbins Basic Pathology (Robbins Pathology) 10th Edition by Vinay Kumar, Abul K. Abbas, Jon C. Aster MD. ISBN-13: 978-0323353175; ISBN-10: 0323353177

N. Pharmacology

Pharmacology (Lippincott Illustrated Reviews Series) 7th Edition by Karen Whalen. ISBN-13: 978-1496384133; ISBN-10: 149638413X

O. Physiology

Physiology, by Linda S. Costanzo. 6th edition. ISBN-13: 978-0323478816, ISBN-10: 0323478816

P. Preventive Medicine

- a. Jekel's Epidemiology, Biostatistics, Preventive Medicine, and Public Health, by D. L. Katz, J. G. Elmore, D. M.G. Wild, & S. C. Lucan. Elsevier Saunders, Fourth Edition, ISBN: 978-1-4557-0658-7
- b. "Basic & Clinical Biostatistics, 5th Edition. "Maxcy-Rosenau-Last Public Health & Preventive Medicine, 15th Edition, by Robert B. Wallace. ISBN- 13: 978-0071441988, ISBN- 10: 0071441980

VII. MD 2007 Behavioral sciences and neurology

1. Course Overview:

Semester	Course Code	Course Title	Credit Hours
MD2	MD 2007	Behavioral sciences and neurology	13

2. Course Description:

This class encompasses the connection of the Nervous system and Human Behavior.

The behavioral science portion of this clinically oriented course will teach students relevant principles of human behavior including biological, social, and cultural substrate; psychosocial aspects of human development, childhood and early-onset disorders, learning theories, transference and countertransference, defense mechanisms and all categories of behavioral dysfunctions and disorders. The course will furthermore discuss psychopharmacology, including antidepressants, antipsychotics, mood stabilizers, anxiolytics, central nervous system stimulants, and opioid withdrawal and detoxification.

In the Neuroscience portion of this course students will learn the discipline of neuroscience and will cover the topics of neuro-embryology, neuro-histology, neuro-physiology, neuro-pathology, and neuro-pharmacology. Main topics are Central nervous system, peripheral nervous system, autonomic nervous system. There is great emphasis on clinical correlations and neuroanatomical structure. This course is designed for the modern-day medical student who needs to integrate neuroscience to clinical applications.

Teaching methods include lectures, lab sessions and small group discussions of clinically oriented problems to enhance self-directed learning.

3. General Learning Objectives:

At the end of this course, students should be able to:

- Understand the development, structure, function, blood supply and pathways of the nervous system with emphasis on central versus peripheral and somatic versus autonomic nervous system
- Comprehend the pathogenesis, pathological features and interventions in infections and disease that affect the nervous system
- Understand the role of culture, community, cognition, motivation and emotion, sexuality, gender and diversity, personality, mood and stress on health behaviors, beliefs, and outcomes

4. Course learning outcomes (CLOs) (course measurable outcomes):

At the end of this system students should be able to:

Cognitive

- CLO 1. Describe the normal and abnormal development, gross and microscopic structure and functions of different parts of the nervous system (Bloom's C2)
- CLO 2. Explain the epidemiology, etiology, pathogenesis and pathological features of infections, injuries and diseases that affect the nervous system and attribute the abnormalities to the features and/or actions of microbes, drugs and microbial as well as non-microbial toxins (Bloom's C2, C4)
- CLO 3. Describe the influence and potential implications of learning and developmental theories, culture, community, sensation and perception, motivation and emotion, sexuality, gender and diversity, personality, mood and stress on health behaviors, beliefs, and outcomes (Bloom's C2)

Psychomotor

- CLO 4. Identify the different parts and regions of the central and peripheral nervous system in pictures, radio-images (X-rays, MRIs, CT) in the context of health and disease (Dave's,
- CLO 5. Conduct mini-mental examination as well as focused / comprehensive history taking and perform physical examination for the most commonly reported neurologic and behavioral disorders, establishing correlation to how other systems and quality of life could be affected (Dave's P4)
- CLO 6. Establish diagnoses and design treatment plans for the most commonly reported neurologic and behavioral disorders from the gathered or given history, signs/symptoms and laboratory tests. (Dave's P7)

Affective

- CLO 7. Follow the organization, basic financial models and performance of the U.S. health care system and their potential impact on patient behaviors, beliefs and outcomes (Krathwol-Bloom's A5)
- CLO 8. Demonstrate adherence to the highest standards of professional and ethical behavior, as explained in the Physicians' charter, during interaction with fellow students and faculty in or outside classroom, or with a patient during clinical skills sessions (Krathwol-Bloom's A2)
- CLO 9. Demonstrate empathy to fellow students' problems in or outside classroom, or to patients during history taking and physical examination sessions (Krathwol-Bloom's A2)
- CLO 10. Act with cultural humility while interacting with classmates, seniors, teachers and patients by focusing on their culture, age, gender, sexual orientation, risk perception, and personal values (Krathwol-Bloom's A5)
- CLO 11. Follow the most recent research articles to identify novel problems and novel solutions to improve health care delivery to patients with neurologic and behavioral problems (Krathwol-Bloom's A5)

AUSOMA BASIC SCIENCES CURRICULUM DESIGN BOOKLET

5. Linking of AUSOMA's Program learning outcomes (PLOs) to course learning outcomes (CLOs), learning opportunities and outcome measures of Behavioral sciences and neurology:

PROGRAM LEARNING OUTCOMES (PLOs) (= PROGRAM MEASURABLE OUTCOMES)	COURSE LEARNING OUTCOMES (CLOs) (= COURSE MEASURABLE OUTCOMES) FOR BEHAVIORAL SCIENCES AND NEUROLOGY	Learning opportunities	Outcome measures
At the end of four years of MD program, AUSOMA graduates should be able to:	At the end of this system, students should be able to:		
PEC1: Basic medical knowledge			
PLO1: Describe the fundamental principles of homeostasis and disturbance in homeostasis, and the role of medical intervention during disturbed homeostasis	- Describe the normal and abnormal development, gross and microscopic structure and functions of different parts of the nervous system - Explain the epidemiology, etiology, pathogenesis and pathological features of infections, injuries and diseases that affect the nervous system and attribute the abnormalities to the features and/or actions of microbes, drugs and microbial as well as non-microbial toxins - Describe the influence and potential implications of learning and developmental theories, culture, community, sensation and perception, motivation and emotion, sexuality, gender and diversity, personality, mood and stress on health behaviors, beliefs, and outcomes	- Interactive Lectures - Small group sessions	- Class assessments - Small group assessments - Written/online assignments - Block exams - System ending exam - Feedback by students
PLO2: Apply fundamental knowledge of basic and clinical sciences to the diagnosis, treatment, prevention and management of patient problems			
PLO3: Identify the role of external and epigenetic factors as causes of variations in disease expression			
PEC2: Clinical and diagnostic skills			
PLO4: Accurately perform history taking and physical examination by the right application of acquired theoretical knowledge	- Identify the different parts and regions of the central and peripheral nervous system in pictures, radio-images (X-rays, MRIs, CT) in the context of health and disease - Conduct mini-mental examination as well as focused / comprehensive history taking and perform physical examination for the most commonly reported neurologic and behavioral disorders, establishing correlation to how other systems and quality of life could be affected - Establish diagnoses and design treatment plans for the most commonly reported neurologic and behavioral disorders from the gathered or given history, signs/symptoms and laboratory	- Interactive Lectures - Clinical skills sessions - Small group sessions	- Class assessments - OSCE - Written/online assignments - Block exams - System ending exam - Feedback by students
PLO5: Accurately and completely perform the appropriate technical procedures so as to reflect completeness in the skills of medical practice			
PLO6: Conjecture differential diagnoses and formulate a diagnosis by applying acquired knowledge and in the background of gathered history as well as clinical findings			

AUSOMA BASIC SCIENCES CURRICULUM DESIGN BOOKLET

PEC3: Patient centered medicine	• Follow the organization, basic financial models and performance of the U.S. health care system and their potential impact on patient behaviors, beliefs and outcomes • Act with cultural humility while interacting with classmates, seniors, teachers and patients by focusing on their culture, age, gender, sexual orientation, risk perception, and personal values	• Interactive Lectures • Clinical skills sessions • Small group sessions	• Class assessments • OSCE • Small group assessments • Written/online assignments • Block exams • System ending exam • Feedback by students
PLO7: Deliver quality patient care in the context of varied perceptions of health and disease as well as varied responses to symptoms and treatments by people of different genders, diverse ages, cultures, ethnicities, religions, nationalities, socioeconomic backgrounds and those with disabilities PLO8: Perceive the medical consequences of common societal problems as well as critique with patients and patient parties about complexities and management of existing social issues			
PEC4: Interpersonal rapport and communication	• Demonstrate empathy to fellow students' problems in or outside classroom, or to patients during history taking and physical examination sessions	• Clinical skills sessions • Small group sessions	• Class assessments • OSCE • Small group assessments • Written/online assignments • Block exams • System ending exam • Feedback by students
PLO9: Communicate information and ideas categorically and in an organized manner to inform and educate patients, patient parties and society			
PLO10: Initiate, establish and adhere to empathetic communication with patients, families, colleagues, health professionals and supervisors to achieve quality health care by upholding the spirit of non-discrimination and inclusiveness PLO11: Resolve patient-doctor, patient party-doctor, doctor-doctor, doctor-supervisor or doctor-healthcare system related conflicts through effective communication			

AUSOMA BASIC SCIENCES CURRICULUM DESIGN BOOKLET

PEC5: Medical ethics and professionalism	• Demonstrate adherence to the highest standards of professional and ethical behavior, as explained in the Physicians' charter, during interaction with fellow students and faculty in or outside classroom, or with a patient during clinical skills sessions	• Medical ethics lectures • Clinical skills sessions • Small group sessions	• Class assessments • OSCE • Written/online assignments • Block exams • System ending exam • Feedback by students
PLO12: Apply during medical practice, the three fundamental principles and ten professional commitments listed in "The Physicians' Charter" of ABIM, ACP and European federation of Internal medicine			
PLO13: Conform to the highest standards of medical ethics and professionalism while dealing with the complexities of health care practice and delivery, organizations and bureaucracy			
PEC6: Evidence based practice and lifelong learning	• Follow the most recent research articles to identify novel problems and novel solutions to improve health care delivery to patients with neurologic and behavioral problems	• Clinical skills sessions • Small group sessions	• Class assessments • OSCE • Small group assessments • Block exams • System ending exam • Systems feedback by basic science students
PLO14: Demonstrate an open mind, scientific inquisitiveness and research inclination to acquire newly emerging clinical knowledge and skills that enable improved quality of care in the wake of newly emerging diseases			
PLO15: Equip themselves with the latest skills on information technology, study design and statistical methods and apply them into appropriate use in medical practice, therapeutic effectiveness, critical appraisal of scientific literature, research methodologies and studies of their own patient population or the larger community.			
PLO16: Apply the experience of medical practice into practice-based systematic improvement activities and hence contribute new medical knowledge to the community of medical research throughout their career.			

6. Topics for Behavioral sciences and neurology

Neurology

N 001. Generalities of Neurons and Glial Cells
 N 002. Development of the Brain & Spinal Cord
 N 003. Spinal cord and Brain
 N 004. Meninges & CSF
 N 005. Microbiology- Meningitis-1
 N 006. Microbiology- Meningitis-2
 N 007. LAB1: Cortex generalities/ Pain
 N 008. Opioids & Pain Management-1
 N 009. Opioids & Pain Management-2
 N 010. Blood Supply of the Brain-1
 N 011. Blood Supply of the Brain-2
 N 012. Ascending tracts Spinal Cord
 N 013. Descending tracts of the Spinal Cord
 N 014. Spinal Cord Lesions
 N 015. LAB2: Spinal cord, angiograms
 N 016. Foramina of the Skull
 N 017. Cranial Fossae and Syndromes
 N 018. Autonomic Nervous System-1
 N 019. Autonomic Nervous System-2
 N 020. ANS drugs-1
 N 021. Autonomic Pharmacology-2: Adrenergic
 N 022. Autonomic Pharmacology-3: Cholinergic
 N 023. Cranial Nerve I & II pathways
 N 024. Cranial Nerve III-VIII pathways
 N 025. Cranial Nerve IX-XII pathways
 N 026. LAB3: Cranial Nerves
 N 027. Tri-Nucleotide Repeat disorders
 N 028. Brain Stem 1
 N 029. Brain Stem 2
 N 030. Neuropathic Pharmacology
 N 031. LAB4: Brainstem sections
 N 032. Brainstem Syndromes
 N 033. Limbic System
 N 034. Microbiology Encephalitis 1
 N 035. Microbiology Encephalitis 2
 N 036. Cerebral Cortex
 N 037. Cerebellum
 N 038. Thalamus and hypothalamus
 N 039. Ventricular System
 N 040. Basal Nuclei
 N 041. LAB5: Ventricles, Nuclei, Diencephalon and cerebellum
 N 042. Anti-Parkinson drugs
 N 043. Auditory and Vestibular Pathway
 N 044. LAB6: Neuroradiology
 N 045. Oculomotor system
 N 046. Neuropath 1
 N 047. Neuropath 2
 N 048. Neuropath 3 CNS tumors

Behavioral sciences

B001. Behavioral Science -Introduction to Early Development
 B002. Childhood Development
 B003. Pervasive Development Disorders of Childhood
 B004. Hyperactive Disorders
 B005. Adolescence & Adulthood Dev and Disorders
 B006. Changes in the Elderly
 B007. Abuse of Children & Elderly
 B008. Substance Abuse
 B009. Normal & Abnormal Sleep
 B010. Learning Theories
 B011. Intelligence Tests
 B012. Defense Mechanism & Transference
 B013. Behavioral Genetics
 B014. Psychiatric Evaluation
 B015. Schizophrenia & Other Psychotic Disorders
 B016. Mood Disorders
 B017. Antipsychotic Drugs
 B018. Neurotransmitters
 B019. Anxiety Disorders
 B020. Factitious Disorders & Malingering
 B021. Anti-Depressants
 B022. Anxiolytics and Sedative
 B023. Cognitive Disorders and Personality Disorders
 B024. Dissociative Disorders
 B025. Sexual Development & Human Sexuality
 B026. Sexual Aggression & Related Crimes
 B027. Paraphilia
 B028. Pharm Treatment of sexual disorders
 B029. Seizure Disorders
 B030. Anti-Convulsants

7. Teaching-Learning distribution

- Lectures (50-60%)
- Active independent learning (20-30%)
- Lab sessions (10-20%)

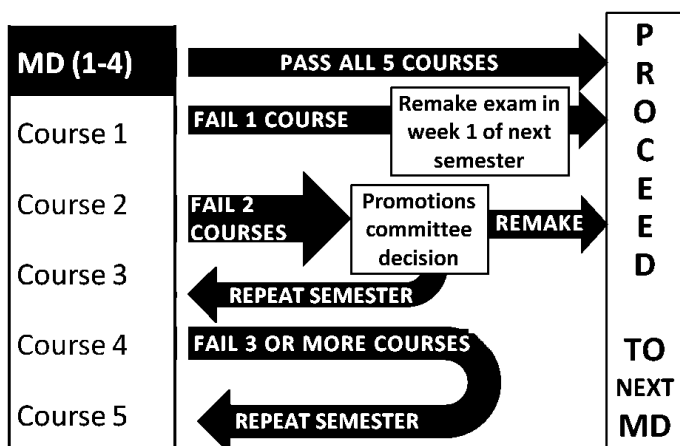
8. Grade distribution

- One block exam: 30%
- Final Exam: 60%
- Non-Exam Assessments: 10% (Attendance, Assignments, Class assessments)

9. Grading pattern

Grading Scale	Grade Points	Descriptor
H = 90% – 100%	4.0	Honors
HP = 80% – 89%	3.0	High Pass
P = 70% – 79%	2.0	Pass
F = less than 70%	0.0	Fail

10. Progression to next semester



11. Learning resources

A. Anatomy

Clinically oriented Anatomy by Keith L. Moore, Arthur F. Dalley, Arthur F. Dalley and Anne M.R. Agur, Published by Lippincott, Williams and Wilkins, Edition 8 ISBN-13: 978-1975104962 ISBN-10: 197510496X

B. Behavioral Sciences

- a. Jekel's Epidemiology, Biostatistics, Preventive Medicine, and Public Health, by D. L. Katz, J. G. Elmore, D. M.G. Wild, & S. C. Lucan. Elsevier Saunders, Fourth Edition, ISBN: 978-1-4557-0658-7
- b. "Basic & Clinical Biostatistics, 5th Edition."

C. Biochemistry

- a. Lippincott Illustrated Reviews: Biochemistry (Lippincott Illustrated Reviews Series) Seventh, North American Edition by Denise Ferrier ISBN-13: 978-1496344496 ISBN-10: 1496344499
- b. Harper's Illustrated Biochemistry Thirty-First Edition 31st Edition by Victor Rodwell, David Bender, Kathleen Botham, Peter Kennelly, P. Anthony Weil. ISBN-13: 978-1259837937; ISBN-10: 1259837939

D. Clinical Skills

Bate's guide to Physical Examination and History taking, by Barbara Bates, Lynn S Bickley. 12th edition ISBN-13: 978-1469893419, ISBN-10: 9781469893419

E. Embryology

The Developing Human –Clinically Oriented Embryology by Keith L. Moore and T.V.N. Persaud, Published by Saunders – Elsevier, Edition 9, ISBN: 978 -1-4377-2002-0

F. Genetics

Thompson & Thompson Genetics in Medicine (9th Ed.) by Nussbaum, Mcinnes & Willard. Elsevier Australia ISBN 9780323547628

G. Histology

Junqueira's Basic Histology: Text and Atlas, 15e. Anthony L. Mescher Publisher: McGraw-Hill Education ISBN-13: 978-1260026177; ISBN-10: 1260026175

H. Immunology

- a. Lippincott Illustrated Reviews: Immunology Second, North American Edition by Thao Doan, Roger Melvold, Susan Viselli, Carl Waltenbaugh. ISBN-13: 978-1451109375; ISBN-10: 9781451109375
- b. Cellular and Molecular Immunology by Abul Abbas, Andrew Lichtman, Shiv Pillai, 10th Edition, eBook ISBN: 9780323757508, Paperback ISBN: 9780323757485

I. Medical Ethics

- a. Resolving Ethical Dilemmas: A guide for Clinicians Sixth Edition, by Bernard Lo. Lippincott Williams & Wilkins, a Wolters Kluwer. ISBN-13: 978-1975103545, ISBN-10: 1975 103548
- b. "Medical Law & Ethics, 6th Ed."
- c. "Resolving Ethical Dilemmas: A Guide for Clinician, 6th Ed"
- d. "Medical Ethics for Dummies"

J. Microbiology

Lippincott's illustrated reviews: Microbiology 4th edition Author: Cynthia Nau Cornelissen Paperback ISBN: 978-1496395856 Imprint: Wolters Kluwer

K. Neuroscience

- a. Essential Neuroscience by Allan Siegel, Wolters Kluwer, Fourth edition ISBN-13, 978-1451189681
- b. Clinical Neuroanatomy for Medical Students: by Richard S. Snell. 7th edition, ISBN 978-0781794275

L. Nutrition

Understanding Normal And Clinical Nutrition (8th Ed.) by Sharon Rady Rolfes, Kathryn Pinna, Elley Whitney. Wadsworth Cengage learning. ISBN-13: 978-0-495-55646-6 ISBN-10: 0-495-55646-7

M. Pathology

Robbins Basic Pathology (Robbins Pathology) 10th Edition by Vinay Kumar, Abul K. Abbas, Jon C. Aster MD. ISBN-13: 978-0323353175; ISBN-10: 0323353177

N. Pharmacology

Pharmacology (Lippincott Illustrated Reviews Series) 7th Edition by Karen Whalen. ISBN-13: 978-1496384133; ISBN-10: 149638413X

O. Physiology

Physiology, by Linda S. Costanzo. 6th edition. ISBN-13: 978-0323478816, ISBN-10: 0323478816

P. Preventive Medicine

- a. Jekel's Epidemiology, Biostatistics, Preventive Medicine, and Public Health, by D. L. Katz, J. G. Elmore, D. M.G. Wild, & S. C. Lucan. Elsevier Saunders, Fourth Edition, ISBN: 978-1-4557-0658-7
- b. "Basic & Clinical Biostatistics, 5th Edition. "Maxcy-Rosenau-Last Public Health & Preventive Medicine, 15th Edition," by Robert B. Wallace. ISBN- 13: 978-0071441988, ISBN- 10: 0071441980

VIII. MD 2008 Medical ethics

1. Course Overview:

Semester	Course Code	Course Title	Credit Hours
MD2	MD 2008	Medical Ethics	2

2. Course Description:

The Medical Ethics course consists of introducing ethical, professional, and legal issues arise in practice of medicine. Medical ethics includes core principles of ethics, concepts of legal competence, informed consent, confidentiality, reportable illnesses, ethical issues in patients with HIV infection, voluntary and involuntary hospitalization, advance directives, death and euthanasia, medical malpractice, and impaired physicians. The course will provide students with basic tools used to identify ethical, professional, and legal conflicts in clinical settings, as well as resources used to critically evaluate and address questions or concerns that these conflicts present.

Learning opportunities include lectures, and small group discussions of clinically oriented problems to enhance self-directed learning.

3. General Learning Objectives:

At the end of this course, students should be able to:

- Recognize common ethical dilemmas that arise in medical practice and strategies to resolve them.
- Distinguish between legal issues and ethical issues as they are associated with medical malpractice.
- Develop a thorough understanding of ethical and legal issues in medicine.
- Explore complex concepts related to confidentiality, informed consent, mental competency, obstetric/pediatric ethics, physician assisted suicide and conflict of interest situations and current laws, regulations, judicial precedents governing ethical matters in medicine.
- Demonstrate a comprehensive understanding of the physician-patient relationship.



AUSOMA BASIC SCIENCES CURRICULUM DESIGN BOOKLET

4. Course learning outcomes (CLOs) (course measurable outcomes):

At the end of this course students should be able to:

Cognitive

- CLO 1. Define the fundamental concepts of medical ethics and explain the difference between ethics, morality and law (Bloom's C2)
- CLO 2. Describe the four core principles of medical ethics. List and explain at least three exceptions to informed consent and/or confidentiality (Bloom's C2)
- CLO 3. List at least three of the general rules for ethical and legal issues in clinical setting and physician-patient relationships (Bloom's C2)

Psychomotor

- CLO 4. Conduct focused and comprehensive assessment to identify variable ethical situations (Dave's P4)
- CLO 5. Perform focused physical examination on patients with medical or psychological conditions, establishing correlation to how other systems could be affected (Dave's P5)
- CLO 6. Establish diagnoses and design treatment plans for medical or psychological conditions from the gathered or given history, signs/symptoms and laboratory tests. (Dave's P7)

Affective

- CLO 7. Counsel a simulated patient on the role of the most important psychosocial factors affecting the expression of medical conditions (Krathwol-Bloom's A5)
- CLO 8. Demonstrate adherence to the highest standards of professional and ethical behavior, as explained in the Physicians' charter, during interaction with fellow students and faculty in or outside classroom, or with a patient during clinical skills sessions (Krathwol-Bloom's A2)
- CLO 9. Demonstrate empathy to fellow students' problems in or outside classroom, or to patients during history taking and physical examination sessions (Krathwol-Bloom's A2)
- CLO 10. Act with cultural humility while interacting with classmates, seniors, teachers and patients by focusing on their culture, age, gender, sexual orientation, risk perception, and personal values (Krathwol-Bloom's A5)
- CLO 11. Follow the most recent research articles to identify novel problems and novel solutions to improve health care delivery to patients medical or psychological conditions (Krathwol-Bloom's A5)

AUSOMA BASIC SCIENCES CURRICULUM DESIGN BOOKLET

5. Linking of AUSOMA's Program learning outcomes (PLOs) to course learning outcomes (CLOs), learning opportunities and outcome measures for Medical Ethics:

PROGRAM LEARNING OUTCOMES (PLOs) (= PROGRAM MEASURABLE OUTCOMES)	COURSE LEARNING OUTCOMES (CLOs) (= COURSE MEASURABLE OUTCOMES) FOR MEDICAL ETHICS	Learning opportunities	Outcome measures
At the end of four years of MD program, AUSOMA graduates should be able to: PEC1: Basic medical knowledge PLO1: Describe the fundamental principles of homeostasis and disturbance in homeostasis, and the role of medical intervention during disturbed homeostasis PLO2: Apply fundamental knowledge of basic and clinical sciences to the diagnosis, treatment, prevention and management of patient problems PLO3: Identify the role of external and epigenetic factors as causes of variations in disease expression	At the end of this system, students should be able to: - Define the fundamental concepts of medical ethics and explain the difference between ethics, morality and law - Describe the four core principles of medical ethics. List and explain at least three exceptions to informed consent and/or confidentiality - List at least three of the general rules for ethical and legal issues in clinical setting and physician patient relationships	- Interactive Lectures - Small group sessions	- Class assessments - Small group assessments - Written/ online assignments - Block exams - System ending exam - Feedback by students
PEC2: Clinical and diagnostic skills PLO4: Accurately perform history taking and physical examination by the right application of acquired theoretical knowledge PLO5: Accurately and completely perform the appropriate technical procedures so as to reflect completeness in the skills of medical practice PLO6: Conjecture differential diagnoses and formulate a diagnosis by applying acquired knowledge and in the background of gathered history as well as clinical findings	- Conduct focused and comprehensive assessment to identify variable ethical situations - Perform focused physical examination on patients with medical or psychological conditions, establishing correlation to how other systems could be affected - Establish diagnoses and design treatment plans for medical or psychological conditions from the gathered or given history, signs/symptoms and laboratory tests.	- Interactive Lectures - Clinical skills sessions - Lab sessions	- Class assessments - OSCE - Written/ online assignments - Block exams - System ending exam - Feedback by students

AUSOMA BASIC SCIENCES CURRICULUM DESIGN BOOKLET

PEC3: Patient centered medicine			
PLO7: Deliver quality patient care in the context of varied perceptions of health and disease as well as varied responses to symptoms and treatments by people of different genders, diverse ages, cultures, ethnicities, religions, nationalities, socioeconomic backgrounds and those with disabilities	• Counsel a simulated patient on the role of the most important psychosocial factors affecting the expression of medical conditions • Act with cultural humility while interacting with classmates, seniors, teachers and patients by focusing on their culture, age, gender, sexual orientation, risk perception, and personal values	• Interactive Lectures • Clinical skills sessions • Lab sessions	• Class assessments • OSCE • Written/ online assignments • Block exams • System ending exam • Feedback by students
PLO8: Perceive the medical consequences of common societal problems as well as critique with patients and patient parties about complexities and management of existing social issues			
PEC4: Interpersonal rapport and communication			
PLO9: Communicate information and ideas categorically and in an organized manner to inform and educate patients, patient parties and society	• Demonstrate empathy to fellow students' problems in or outside classroom, or to patients during history taking and physical examination sessions	• Interactive Lectures • Clinical skills sessions	• Class assessments • OSCE • Written/ online assignments • Block exams • System ending exam • Feedback by students
PLO10: Initiate, establish and adhere to empathetic communication with patients, families, colleagues, health professionals and supervisors to achieve quality health care by upholding the spirit of non-discrimination and inclusiveness			
PLO11: Resolve patient-doctor, patient party-doctor, doctor-doctor, doctor-supervisor or doctor-healthcare system related conflicts through effective communication			

AUSOMA BASIC SCIENCES CURRICULUM DESIGN BOOKLET

PEC5: Medical ethics and professionalism	• Demonstrate adherence to the highest standards of professional and ethical behavior, as explained in the Physicians' charter, during interaction with fellow students and faculty in or outside classroom, or with a patient during clinical skills sessions	• Medical ethics lectures • Clinical skills sessions • Small group sessions	• Class assessments • OSCE • Small group assessments • Written/ online assignments • Block exams • System ending exam • Feedback by students
PLO12: Apply during medical practice, the three fundamental principles and ten professional commitments listed in "The Physicians' Charter" of ABIM, ACP and European federation of Internal medicine PLO13: Conform to the highest standards of medical ethics and professionalism while dealing with the complexities of health care practice and delivery, organizations and bureaucracy			
PEC6: Evidence based practice and lifelong learning	• Follow the most recent research articles to identify novel problems and novel solutions to improve health care delivery to patients medical or psychological conditions	• Clinical skills sessions • Small group sessions	• Class assessments • OSCE • Small group assessments • Block exams • System ending exam • Systems feedback by basic science students
PLO14: Demonstrate an open mind, scientific inquisitiveness and research inclination to acquire newly emerging clinical knowledge and skills that enable improved quality of care in the wake of newly emerging diseases			
PLO15: Equip themselves with the latest skills on information technology, study design and statistical methods and apply them into appropriate use in medical practice, therapeutic effectiveness, critical appraisal of scientific literature, research methodologies and studies of their own patient population or the larger community. PLO16: Apply the experience of medical practice into practice-based systematic improvement activities and hence contribute new medical knowledge to the community of medical research throughout their career.			

6. Topics for Preventive medicine, Public health and Quality health parameters

- 001. Fundamentals of medical ethics
- 002. Ethical principles and Physicians' charter
- 003. Informed consent
- 004. Confidentiality and HIPAA
- 005. Decision making capacity and advance directives
- 006. End-of-life issues
- 007. Physician-Patient relationship
- 008. Reproductive issues and organ donation
- 009. HIV related issues and medical malpractice
- 010. Ethical situations

7. Teaching-Learning distribution

- Lectures (60-70%)
- Active independent learning (30-40%)

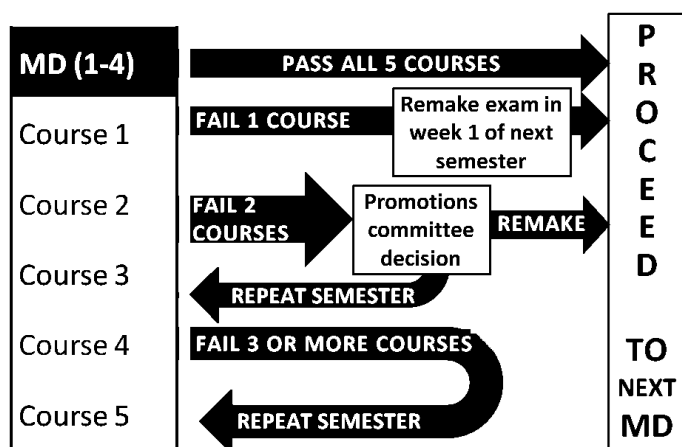
8. Grade distribution

- One block exam: 30%
- Final Exam: 50%
- Non-Exam Assessments: 20% (Assignments, Lecture assessments, quizzes)

9. Grading pattern

Grading Scale	Grade Points	Descriptor
H = 90% – 100%	4.0	Honors
HP = 80% – 89%	3.0	High Pass
P = 70% – 79%	2.0	Pass
F = less than 70%	0.0	Fail

10. Progression to next semester



11. Learning resources

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- b. "Basic & Clinical Biostatistics, 5th Edition. "Maxcy-Rosenau-Last Public Health & Preventive Medicine, 15th Edition," by Robert B. Wallace. ISBN- 13: 978-0071441988, ISBN- 10: 0071441980

IX. MD 2009 Clinical skills-2

1. Course Overview:

Semester	Course Code	Course Title	Credit Hours
MD2	MD 2009	Clinical skills-2	2

2. Course Description:

The Clinical Skills course is designed to teach each medical student the basic skills needed for medical practice. These skills include effective communication, scheme-based history taking and physical examination, development of clinical reasoning, formation of an initial diagnostic plan, interpretation of basic diagnostic studies, performance of selected procedures, provision of counseling and feedback, and articulate clinical case presentations

Learning opportunities include lectures, active independent learning, lab sessions, self-study and clinical experience with real and simulated patients.

3. General Learning Objectives:

At the end of this course, students should be able to:

- Obtain an accurate, comprehensive, focused/full history from and perform a careful, rational, thorough physical examination on the patient
- Apply information obtained from HPE (history and physical examination) and initial laboratory data to create a problem list, recognize and prioritize the issues, formulate differential diagnosis and generate a diagnostic and therapeutic plan
- Record in writing and present orally the results of the HPE (including assessment and plan) in a systematic, concise and coherent manner.
- Use medical literature to understand the natural history of diseases, plan therapy and integrate clinical reasoning skills and strive towards continual and lifelong learning

4. Course learning outcomes (CLOs) (course measurable outcomes):

At the end of this course students should be able to (with emphasis on behavioral sciences, neurology and nutrition)

Cognitive

- CLO 1. Review the knowledge gained in the different courses of MD1,2 appropriately and correlate it to interviewing patients for accurate, comprehensive, focused/full history taking (Bloom's C5,C4)
- CLO 2. Appraise the information obtained from HPE and initial laboratory data to formulate their diagnosis and devise a treatment-management plan (Bloom's C6)
- CLO 3. Review medical literature to retrieve documented information on patient problems, integrate clinical reasoning skills and adapt towards continual and lifelong learning (Bloom's C5, C1, C6)

Psychomotor

- CLO 4. Conduct an interview for an accurate, comprehensive, focused/full history and perform a careful, rational, thorough physical examination on the patient (Dave's P2)
- CLO 5. Structure and design SOAP notes following history-taking and physical examination in a patient (Dave's P4)
- CLO 6. Improve and master history-taking and physical examination skills through repeated practice during and out of training sessions (Dave's P4)
- CLO 7. Coordinate and integrate the acquired tangible as well as non-tangible clinical skills in managing the general public of Aruba during health fairs and voluntary services organized by the school (Dave's P4, P5)

Affective

- CLO 8. Practice as individuals or in teams to the application of their medical knowledge to investigate clinical scenarios and debate current topics in medical research (Krathwol-Bloom's A4)
- CLO 9. Demonstrate adherence to the highest standards of professional and ethical behavior, as explained in the Physicians' charter, during interaction with fellow students and faculty in or outside classroom, or with a patient during clinical skills sessions (Krathwol-Bloom's A2)
- CLO 10. Demonstrate empathy to fellow students' problems in or outside classroom, or to patients during history taking and physical examination sessions (Krathwol-Bloom's A2)
- CLO 11. Act with cultural humility while interacting with classmates, seniors, teachers and patients by focusing on their culture, age, gender, sexual orientation, risk perception, and personal values (Krathwol-Bloom's A6)

AUSOMA BASIC SCIENCES CURRICULUM DESIGN BOOKLET

5. Linking of AUSOMA's Program learning outcomes (PLOs) to course learning outcomes (CLOs), learning opportunities and outcome measures of Clinical skills-2:

PROGRAM LEARNING OUTCOMES (PLOs) (= PROGRAM MEASURABLE OUTCOMES)	COURSE LEARNING OUTCOMES (CLOs) (= COURSE MEASURABLE OUTCOMES) FOR CLINICAL SKILLS-2	Learning opportunities	Outcome measures
At the end of four years of MD program, AUSOMA graduates should be able to:	At the end of this system, students should be able to (with emphasis on behavioral sciences, neurology and nutrition):		
PEC1: Basic medical knowledge			
PLO1: Describe the fundamental principles of homeostasis and disturbance in homeostasis, and the role of medical intervention during disturbed homeostasis	- Review the knowledge gained in the different courses of MD1 appropriately and correlate it to interviewing patients for accurate, comprehensive, focused/full history taking - Appraise the information obtained from HPE and initial laboratory data to formulate their diagnosis and devise a treatment-management plan - Review medical literature to retrieve documented information on patient problems, integrate clinical reasoning skills and adapt towards continual and lifelong learning	- Interactive Lectures - Small group sessions	- Class assessments - Small group assessments - Written/ online assignments - Block exams - System ending exam - Feedback by students
PLO2: Apply fundamental knowledge of basic and clinical sciences to the diagnosis, treatment, prevention and management of patient problems			
PLO3: Identify the role of external and epigenetic factors as causes of variations in disease expression			
PEC2: Clinical and diagnostic skills			
PLO4: Accurately perform history taking and physical examination by the right application of acquired theoretical knowledge	- Conduct an interview for an accurate, comprehensive, focused/full history and perform a careful, rational, thorough physical examination on the patient - Structure and design SOAP notes following history-taking and physical examination in a patient - Improve and master history-taking and physical examination skills through repeated practice during and out of training sessions	- Interactive Lectures - Clinical skills sessions - Lab sessions	- Class assessments - OSCE - Written/ online assignments - Block exams - System ending exam - Feedback by students
PLO5: Accurately and completely perform the appropriate technical procedures so as to reflect completeness in the skills of medical practice			
PLO6: Conjecture differential diagnoses and formulate a diagnosis by applying acquired knowledge and in the background of gathered history as well as clinical findings			

AUSOMA BASIC SCIENCES CURRICULUM DESIGN BOOKLET

PEC3: Patient centered medicine	• Coordinate and integrate the acquired tangible as well as non-tangible clinical skills in managing the general public of Aruba during health fairs and voluntary services organized by the school • Act with cultural humility while interacting with classmates, seniors, teachers and patients by focusing on their culture, age, gender, sexual orientation, risk perception, and personal values	• Interactive Lectures • Clinical skills sessions • Lab sessions	• Class assessments • OSCE • Written/ online assignments • Block exams • System ending exam • Feedback by students
PLO7: Deliver quality patient care in the context of varied perceptions of health and disease as well as varied responses to symptoms and treatments by people of different genders, diverse ages, cultures, ethnicities, religions, nationalities, socioeconomic backgrounds and those with disabilities PLO8: Perceive the medical consequences of common societal problems as well as critique with patients and patient parties about complexities and management of existing social issues			
PEC4: Interpersonal rapport and communication	• Demonstrate empathy to fellow students' problems in or outside classroom, or to patients during history taking and physical examination sessions	• Interactive Lectures • Clinical skills sessions	• Class assessments • OSCE • Written/ online assignments • Block exams • System ending exam • Feedback by students
PLO9: Communicate information and ideas categorically and in an organized manner to inform and educate patients, patient parties and society			
PLO10: Initiate, establish and adhere to empathetic communication with patients, families, colleagues, health professionals and supervisors to achieve quality health care by upholding the spirit of non-discrimination and inclusiveness			
PLO11: Resolve patient-doctor, patient party-doctor, doctor-doctor, doctor-supervisor or doctor-healthcare system related conflicts through effective communication			

AUSOMA BASIC SCIENCES CURRICULUM DESIGN BOOKLET

PEC5: Medical ethics and professionalism			
PLO12: Apply during medical practice, the three fundamental principles and ten professional commitments listed in “The Physicians’ Charter” of ABIM, ACP and European federation of Internal medicine	• Demonstrate adherence to the highest standards of professional and ethical behavior, as explained in the Physicians’ charter, during interaction with fellow students and faculty in or outside classroom, or with a patient during clinical skills sessions	• Medical ethics lectures • Clinical skills sessions • Small group sessions	• Class assessments • OSCE • Small group assessments • Written/ online assignments • Block exams • System ending exam • Feedback by students
PLO13: Conform to the highest standards of medical ethics and professionalism while dealing with the complexities of health care practice and delivery, organizations and bureaucracy			
PEC6: Evidence based practice and lifelong learning			
PLO14: Demonstrate an open mind, scientific inquisitiveness and research inclination to acquire newly emerging clinical knowledge and skills that enable improved quality of care in the wake of newly emerging diseases	• Practice as individuals or in teams the application of their knowledge to investigate clinical scenarios and debate current topics in medical research	• Clinical skills sessions • Small group sessions	• Class assessments • OSCE • Small group assessments • Block exams • System ending exam • Systems feedback by basic science students
PLO15: Equip themselves with the latest skills on information technology, study design and statistical methods and apply them into appropriate use in medical practice, therapeutic effectiveness, critical appraisal of scientific literature, research methodologies and studies of their own patient population or the larger community.			
PLO16: Apply the experience of medical practice into practice-based systematic improvement activities and hence contribute new medical knowledge to the community of medical research throughout their career.			

6. Topics for Clinical skills-2

001. Generalities

002. Introduction to mental examination and mini mental -1

003. Introduction to mental examination and mini mental -2

004. Cranial nerves -1

005. Cranial nerves -2

006. Upper and lower limb -1

007. Upper and lower limb -2

008. Upper and lower limb -3

009. Nutrition - 1

010. Nutrition - 2

011. Nutrition - 3

7. Teaching-Learning distribution

- Lectures (20-30%)
- Active independent learning (35-40%)
- Lab sessions (35-40%)

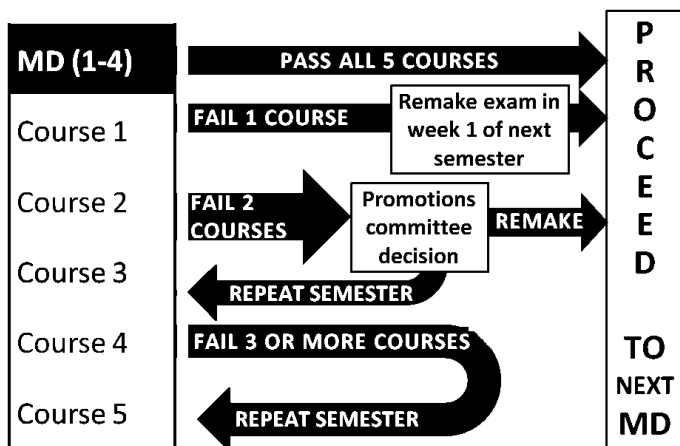
8. Grade distribution

- One block exam: 30%
- Final Exam: 50%
- Non-Exam Assessments: 20% (Assignments, Lecture assessments, quizzes)

9. Grading pattern

Grading Scale	Grade Points	Descriptor
H = 90% – 100%	4.0	Honors
HP = 80% – 89%	3.0	High Pass
P = 70% – 79%	2.0	Pass
F = less than 70%	0.0	Fail

10. Progression to next semester



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X. MD 2010 Preventive medicine, Public health and Quality health parameters

1. Course Overview:

Semester	Course Code	Course Title	Credit Hours
MD2	MD 2010	Preventive medicine, Public health and Quality health parameters	4

2. Course Description:

This course introduces students to an understanding of the fundamental concepts of preventive medicine, public health, and quality health parameters. Epidemiological and biostatistical concepts considered as cornerstone of preventive medicine and public health will enhance the students understanding of distribution of diseases or health conditions and their risk factors, which direct to comprehensive development and implementation of disease control and preventive strategies. Knowledge of these concepts and principles are critically applicable in clinical practice and research. This course will give students the opportunities to be familiar with different levels of prevention, including primary, secondary, tertiary, and quaternary for communicable and non-communicable diseases.

Learning opportunities include lectures, and small group discussions of clinically oriented problems to enhance self-directed learning.

3. General Learning Objectives:

At the end of this course, students should be able to:

- Understand the relevance of preventive medicine, public health, and quality health improvement in clinical practice.
- Understand health care systems in and the influence of socioeconomic status on illnesses in the United States.
- Integrate and correlate knowledge of concepts of primary, secondary, tertiary, and/or quaternary prevention of infectious diseases and chronic diseases.
- Understand fundamental evidence-based approaches to appraise and interpret medical literature.

4. Course learning outcomes (CLOs) (course measurable outcomes):

At the end of this course students should be able to:

Cognitive

- CLO 1. Define the terminologies for general concepts of public health and explain the role of the major metrics and sources of mortality and morbidity in the United States (Bloom's C2)
- CLO 2. Describe the three sources of evidence, explain how each source contributes to evidence-based decision-making, and describe the types of evidence-based questions and their related clinical information they draw out for clinicians (Bloom's C2)
- CLO 3. List at least the three leading causes of death by age group and describe health disparities and their related outcomes among individuals and populations (Bloom's C2)
- CLO 4. List and explain the role of the most important factors affecting the expression of the most common vitamin and mineral deficiencies (Bloom's C2)

Psychomotor

- CLO 5. Coordinate and integrate the acquired knowledge of obesity and DSM-V in informing and demonstrating to the general public during health fairs and voluntary services organized by the school (Dave's P4, P5)
- CLO 6. Practice as individuals during lab sessions, the hand hygiene technique and demonstrate the practice of the same during health fairs / voluntary activities as a critical measure for infection control (Dave's P3, P4)

Affective

- CLO 7. Practice as individuals or in teams the application of their knowledge of evidence-based decision making to investigate clinical scenarios and debate current topics in medical research (Krathwol-Bloom's A4)
- CLO 8. Counsel a simulated patient on the role of the most important psychosocial factors affecting the expression of obesity and the DSM-V eating disorders (Krathwol-Bloom's A5)
- CLO 9. Demonstrate adherence to the highest standards of professional and ethical behavior, as explained in the Physicians' charter, during interaction with fellow students and faculty in or outside classroom, or with a patient during clinical skills sessions (Krathwol-Bloom's A2)
- CLO 10. Demonstrate empathy to fellow students' problems in or outside classroom, or to patients during history taking and physical examination sessions (Krathwol-Bloom's A2)
- CLO 11. Act with cultural humility while interacting with classmates, seniors, teachers and patients by focusing on their culture, age, gender, sexual orientation, risk perception, and personal values (Krathwol-Bloom's A6)

AUSOMA BASIC SCIENCES CURRICULUM DESIGN BOOKLET

5. Linking of AUSOMA's Program learning outcomes (PLOs) to course learning outcomes (CLOs), learning opportunities and outcome measures of Preventive medicine, Public health and Quality health parameters:

PROGRAM LEARNING OUTCOMES (PLOs) (= PROGRAM MEASURABLE OUTCOMES)	COURSE LEARNING OUTCOMES (CLOs) (= COURSE MEASURABLE OUTCOMES) FOR PREVENTIVE MEDICINE, PUBLIC HEALTH AND QUALITY HEALTH PARAMETERS	Learning opportunities	Outcome measures
At the end of four years of MD program, AUSOMA graduates should be able to:	At the end of this system, students should be able to:		
PEC1: Basic medical knowledge			
PLO1: Describe the fundamental principles of homeostasis and disturbance in homeostasis, and the role of medical intervention during disturbed homeostasis	- Define the terminologies for general concepts of public health and explain the role of the major metrics and sources of mortality and morbidity in the United States - Describe the three sources of evidence, explain how each source contributes to evidence-based decision-making, and describe the types of evidence-based questions and their related clinical information they draw out for clinicians - List at least the three leading causes of death by age group and describe health disparities and their related outcomes among individuals and populations - List and explain the role of the most important factors affecting the expression of the most common vitamin and mineral deficiencies	- Interactive Lectures - Small group sessions	- Class assessments - Small group assessments - Written/ online assignments - Block exams - System ending exam - Feedback by students
PLO2: Apply fundamental knowledge of basic and clinical sciences to the diagnosis, treatment, prevention and management of patient problems			
PLO3: Identify the role of external and epigenetic factors as causes of variations in disease expression			
PEC2: Clinical and diagnostic skills			
PLO4: Accurately perform history taking and physical examination by the right application of acquired theoretical knowledge	- Coordinate and integrate the acquired knowledge of obesity and DSM-V in informing and demonstrating to the general public during health fairs and voluntary services organized by the school - Practice as individuals, on a daily basis, the hand hygiene technique and demonstrate the practice of the same during health fairs / voluntary activities as a critical measure for infection control	- Interactive Lectures - Clinical skills sessions - Lab sessions	- Class assessments - OSCE - Written/ online assignments - Block exams - System ending exam - Feedback by students
PLO5: Accurately and completely perform the appropriate technical procedures so as to reflect completeness in the skills of medical practice			
PLO6: Conjecture differential diagnoses and formulate a diagnosis by applying acquired knowledge and in the background of gathered history as well as clinical findings			

AUSOMA BASIC SCIENCES CURRICULUM DESIGN BOOKLET

PEC3: Patient centered medicine	• Counsel a simulated patient on the role of the most important psychosocial factors affecting the expression of obesity and the DSM-V eating disorders • Act with cultural humility while interacting with classmates, seniors, teachers and patients by focusing on their culture, age, gender, sexual orientation, risk perception, and personal values	• Interactive Lectures • Clinical skills sessions • Lab sessions	• Class assessments • OSCE • Written/ online assignments • Block exams • System ending exam • Feedback by students
PLO7: Deliver quality patient care in the context of varied perceptions of health and disease as well as varied responses to symptoms and treatments by people of different genders, diverse ages, cultures, ethnicities, religions, nationalities, socioeconomic backgrounds and those with disabilities PLO8: Perceive the medical consequences of common societal problems as well as critique with patients and patient parties about complexities and management of existing social issues			
PEC4: Interpersonal rapport and communication	• Demonstrate empathy to fellow students' problems in or outside classroom, or to patients during history taking and physical examination sessions	• Interactive Lectures • Clinical skills sessions	• Class assessments • OSCE • Written/ online assignments • Block exams • System ending exam • Feedback by students
PLO9: Communicate information and ideas categorically and in an organized manner to inform and educate patients, patient parties and society			
PLO10: Initiate, establish and adhere to empathetic communication with patients, families, colleagues, health professionals and supervisors to achieve quality health care by upholding the spirit of non-discrimination and inclusiveness			
PLO11: Resolve patient-doctor, patient party-doctor, doctor-doctor, doctor-supervisor or doctor-healthcare system related conflicts through effective communication			

AUSOMA BASIC SCIENCES CURRICULUM DESIGN BOOKLET

PEC5: Medical ethics and professionalism	• Demonstrate adherence to the highest standards of professional and ethical behavior, as explained in the Physicians' charter, during interaction with fellow students and faculty in or outside classroom, or with a patient during clinical skills sessions	• Medical ethics lectures • Clinical skills sessions • Small group sessions	• Class assessments • OSCE • Small group assessments • Written/ online assignments • Block exams • System ending exam • Feedback by students
PLO12: Apply during medical practice, the three fundamental principles and ten professional commitments listed in "The Physicians' Charter" of ABIM, ACP and European federation of Internal medicine PLO13: Conform to the highest standards of medical ethics and professionalism while dealing with the complexities of health care practice and delivery, organizations and bureaucracy			
PEC6: Evidence based practice and lifelong learning	• Practice as individuals or in teams the application of their knowledge of evidence-based decision making to investigate clinical scenarios and debate current topics in medical research	• Clinical skills sessions • Small group sessions	• Class assessments • OSCE • Small group assessments • Block exams • System ending exam • Systems feedback by basic science students
PLO14: Demonstrate an open mind, scientific inquisitiveness and research inclination to acquire newly emerging clinical knowledge and skills that enable improved quality of care in the wake of newly emerging diseases			
PLO15: Equip themselves with the latest skills on information technology, study design and statistical methods and apply them into appropriate use in medical practice, therapeutic effectiveness, critical appraisal of scientific literature, research methodologies and studies of their own patient population or the larger community.			
PLO16: Apply the experience of medical practice into practice-based systematic improvement activities and hence contribute new medical knowledge to the community of medical research throughout their career.			

6. Topics for Preventive medicine, Public health and Quality health parameters

- 001. Recommended vaccinations in childhood
- 002. Family, culture and illness in the US
- 003. Prevention of substance abuse
- 004. Quality health improvement
- 005. Behavioral factors in health promotion
- 006. Prevention of injuries
- 007. Healthcare in the united states
- 008. Quality health improvement- Stress
- 009. Nutrition in public health and preventive medicine
- 010. Eating disorder
- 011. Epidemiology and prevention of obesity

7. Teaching-Learning distribution

- Lectures (60-70%)
- Active independent learning (30-40%)

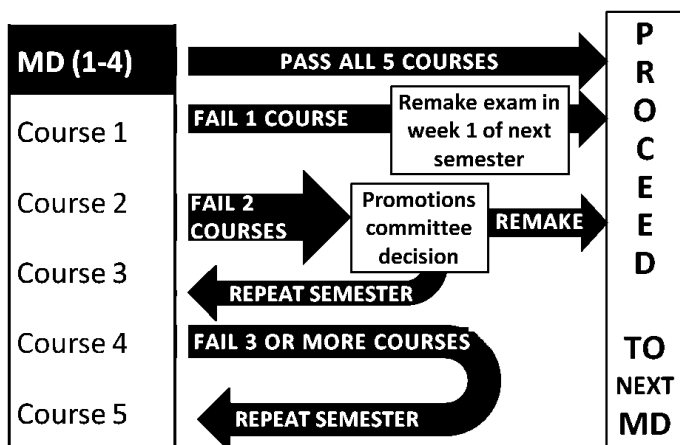
8. Grade distribution

- One block exam: 30%
- Final Exam: 50%
- Non-Exam Assessments: 20% (Assignments, Lecture assessments, quizzes)

9. Grading pattern

Grading Scale	Grade Points	Descriptor
H = 90% – 100%	4.0	Honors
HP = 80% – 89%	3.0	High Pass
P = 70% – 79%	2.0	Pass
F = less than 70%	0.0	Fail

10. Progression to next semester



11. Learning resources

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- b. "Basic & Clinical Biostatistics, 5th Edition. "Maxcy-Rosenau-Last Public Health & Preventive Medicine, 15th Edition," by Robert B. Wallace. ISBN- 13: 978-0071441988, ISBN- 10: 0071441980

MD3 courses

Organ systems	1. MD 3011 Respiratory system
	2. MD 3012 Gastrointestinal system
Modules	3. MD 3016 Hematology and Immunology
	4. MD 3014 Clinical Skills-3
	5. MD 3015 Preventive Medicine, Public Health and Quality Health Parameters

XI. MD 3011 Respiratory system

1. Course Overview:

Semester	Course Code	Course Title	Credit Hours
MD3	MD 3011	Respiratory system	9

2. Course Description:

This course provides a coherent knowledge of anatomy, physiology, pathology, microbiology and pharmacology concepts in respiratory system, in an integrated manner. The course introduces students to clinical examination of respiratory system as well as prevention and control of respiratory disorders.

Learning opportunities include lectures, active independent learning, lab sessions, self-study and clinical experience with real and simulated patients.

3. General Learning Objectives:

At the end of this course, students should be able to:

- Describe and illustrate the development, structure, blood supply, innervation and function of the respiratory system
- Appreciate the physiological mechanism and/or biochemical and molecular basis of inspiration expiration, factors affecting ventilation, transport of gases and control of respiration rate
- Comprehend the pathogenesis, pathological features and interventions in mutations, infections, disorders and disease that affect the respiratory system

4. Course learning outcomes (CLOs) (course measurable outcomes):

At the end of this system students should be able to:

Cognitive

- CLO 1. Illustrate the different parts of the respiratory system and discuss their development, normal structure, actions, blood supply, venous and lymphatic drainage, innervation and functions (Bloom's C3, C2)
- CLO 2. Describe the mechanism of inspiration, expiration and ventilation and the physiological, biochemical and molecular basis of transport of gases and control of respiration rate (Bloom's C4)
- CLO 3. Describe the pathogenesis and pathological features of infections and disease that affect the respiratory system and attribute the variations seen to the features and/or actions of genetic factors, microbes, drugs and microbial as well as non-microbial toxins (Bloom's C2, C4)

Psychomotor

- CLO 4. Focus histological slides of the respiratory and conducting portions of the respiratory system under a microscope and identify their cellular features (Dave's P2,P5)
- CLO 5. Microscopically identify areas of medical importance in histopathological slides related to the respiratory system (Dave's P5)
- CLO 6. Display the appropriate use of a peak flowmeter for measuring peak expiratory flow rate in humans (Dave's P5)

Affective

- CLO 7. Practice as individuals or in teams the application of their medical knowledge to investigate clinical scenarios and debate current topics in medical research in the area of respiratory system (Krathwol-Bloom's A4)
- CLO 8. Demonstrate adherence to the highest standards of professional and ethical behavior, as explained in the Physicians' charter, during interaction with fellow students and faculty in or outside classroom, or with a patient during clinical skills sessions (Krathwol-Bloom's A2)
- CLO 9. Demonstrate empathy to fellow students' problems in or outside classroom, or to patients during history taking and physical examination sessions (Krathwol-Bloom's A2)
- CLO 10. Act with cultural humility while interacting with classmates, seniors, teachers and patients by focusing on their culture, age, gender, sexual orientation, risk perception, and personal values (Krathwol-Bloom's A6)

AUSOMA BASIC SCIENCES CURRICULUM DESIGN BOOKLET

5. Linking of AUSOMA's Program learning outcomes (PLOs) to course learning outcomes (CLOs), learning opportunities and outcome measures of Respiratory system:

PROGRAM LEARNING OUTCOMES (PLOs) (= PROGRAM MEASURABLE OUTCOMES)	COURSE LEARNING OUTCOMES (CLOs) (= COURSE MEASURABLE OUTCOMES) FOR RESPIRATORY SYSTEM	Learning opportunities	Outcome measures
At the end of four years of MD program, AUSOMA graduates should be able to:	At the end of this system, students should be able to:		
PEC1: Basic medical knowledge			
PLO1: Describe the fundamental principles of homeostasis and disturbance in homeostasis, and the role of medical intervention during disturbed homeostasis	• Illustrate the different parts of the respiratory system and discuss their development, normal structure, actions, blood supply, innervation and functions • Describe the mechanism of inspiration, expiration and ventilation and the physiological, biochemical and molecular basis of transport of gases and control of respiration rate • Describe the pathogenesis and pathological features of infections and disease that affect the respiratory system and attribute the variations seen to the features and/or actions of genetic factors, microbes, drugs and microbial as well as non-microbial toxins	• Interactive Lectures • Small group sessions	• Class assessments • Small group assessments • Written/ online assignments • Block exams • System ending exam • Feedback by students
PLO2: Apply fundamental knowledge of basic and clinical sciences to the diagnosis, treatment, prevention and management of patient problems			
PLO3: Identify the role of external and epigenetic factors as causes of variations in disease expression			
PEC2: Clinical and diagnostic skills			
PLO4: Accurately perform history taking and physical examination by the right application of acquired theoretical knowledge	• Focus histological slides of the respiratory and conducting portions of the respiratory system under a microscope and identify their cellular features • Microscopically identify areas of medical importance in histopathological slides related to the respiratory system • Display the appropriate use of a peak flowmeter for measuring peak expiratory flow rate in humans	• Interactive Lectures • Clinical skills sessions • Lab sessions	• Class assessments • OSCE • Written/ online assignments • Block exams • System ending exam • Feedback by students
PLO5: Accurately and completely perform the appropriate technical procedures so as to reflect completeness in the skills of medical practice			
PLO6: Conjecture differential diagnoses and formulate a diagnosis by applying acquired knowledge and in the background of gathered history as well as clinical findings			

AUSOMA BASIC SCIENCES CURRICULUM DESIGN BOOKLET

PEC3: Patient centered medicine	• Act with cultural humility while interacting with classmates, seniors, teachers and patients by focusing on their culture, age, gender, sexual orientation, risk perception, and personal values	• Interactive Lectures • Clinical skills sessions • Lab sessions	• Class assessments • OSCE • Written/ online assignments • Block exams • System ending exam • Feedback by students
PLO7: Deliver quality patient care in the context of varied perceptions of health and disease as well as varied responses to symptoms and treatments by people of different genders, diverse ages, cultures, ethnicities, religions, nationalities, socioeconomic backgrounds and those with disabilities PLO8: Perceive the medical consequences of common societal problems as well as critique with patients and patient parties about complexities and management of existing social issues			
PEC4: Interpersonal rapport and communication	• Demonstrate empathy to fellow students' problems in or outside classroom, or to patients during history taking and physical examination sessions	• Interactive Lectures • Clinical skills sessions	• Class assessments • OSCE • Written/ online assignments • Block exams • System ending exam • Feedback by students
PLO9: Communicate information and ideas categorically and in an organized manner to inform and educate patients, patient parties and society			
PLO10: Initiate, establish and adhere to empathetic communication with patients, families, colleagues, health professionals and supervisors to achieve quality health care by upholding the spirit of non-discrimination and inclusiveness			
PLO11: Resolve patient-doctor, patient party-doctor, doctor-doctor, doctor-supervisor or doctor-healthcare system related conflicts through effective communication			

AUSOMA BASIC SCIENCES CURRICULUM DESIGN BOOKLET

PEC5: Medical ethics and professionalism			
PLO12: Apply during medical practice, the three fundamental principles and ten professional commitments listed in “The Physicians’ Charter” of ABIM, ACP and European federation of Internal medicine	• Demonstrate adherence to the highest standards of professional and ethical behavior, as explained in the Physicians’ charter, during interaction with fellow students and faculty in or outside classroom, or with a patient during clinical skills sessions	• Medical ethics lectures • Clinical skills sessions • Small group sessions	• Class assessments • OSCE • Small group assessments • Written/ online assignments • Block exams • System ending exam • Feedback by students
PLO13: Conform to the highest standards of medical ethics and professionalism while dealing with the complexities of health care practice and delivery, organizations and bureaucracy			
PEC6: Evidence based practice and lifelong learning			
PLO14: Demonstrate an open mind, scientific inquisitiveness and research inclination to acquire newly emerging clinical knowledge and skills that enable improved quality of care in the wake of newly emerging diseases	• Practice as individuals or in teams the application of their medical knowledge to investigate clinical scenarios and debate current topics in medical research in the area of respiratory system	• Clinical skills sessions • Small group sessions	• Class assessments • OSCE • Small group assessments • Block exams • System ending exam • Systems feedback by basic science students
PLO15: Equip themselves with the latest skills on information technology, study design and statistical methods and apply them into appropriate use in medical practice, therapeutic effectiveness, critical appraisal of scientific literature, research methodologies and studies of their own patient population or the larger community.			
PLO16: Apply the experience of medical practice into practice-based systematic improvement activities and hence contribute new medical knowledge to the community of medical research throughout their career.			

6. Topics for Respiratory system

- 001. Development of respiratory system
- 002. Histology of conducting airways
- 003. Anatomy of upper respiratory tract
- 004. Introduction to Respiratory Physiology
- 005. Histology of respiratory airways
- 006. Blood and nerve supply of respiratory system
- 007. Vascular disorders of respiratory system
- 008. Anatomy of pharynx, larynx, epiglottis
- 009. Otitis externa and media, sinusitis and common cold
- 010. Mechanism of respiration
- 011. Pulmonary function tests
- 012. Thoracic cage and lung Anatomy
- 013. Upper respiratory disorders
- 014. COAD: Asthma and allergy
- 015. Pharyngitis, laryngitis, epiglottitis, croup, bronchiolitis
- 016. Physiology of alveolar blood gas exchange: Transport of oxygen
- 017. Transport of CO₂ and Physiology of control of respiration
- 018. Ventilation and perfusion, V/Q mismatch
- 019. Physiology of Hypoxia, hypoxemia, high-altitude physiology
- 020. Respiratory distress syndrome (adult and neonate) and Sudden Acute Respiratory Syndromes
- 021. COPD: Chronic bronchitis, emphysema, alpha-1-AT, bronchiectasis
- 022. Asthma and COPD drugs
- 023. Microbiology of pneumonia
- 024. Pathology of pneumonia
- 025. Mechanism of action and adverse effects of antimicrobial drugs
- 026. Antibacterial and antiviral medications
- 027. Atypical pneumonia and HIV-associated pneumonia
- 028. Restrictive lung diseases and pneumoconiosis
- 029. Pneumothorax, pleural effusions and lung abscesses
- 030. Acid-base balance 1
- 031. Acid-base balance 2
- 032. Lung cancers and paraneoplastic syndromes
- 033. Tuberculosis Microbiology
- 034. Anti-tuberculosis medications
- 035. Fungal and parasitic lung infections
- 036. Antifungal and antiparasitic medications
- 037. Interstitial lung diseases: Sarcoidosis, Goodpasture Syndrome, Idiopathic pulmonary fibrosis, chronic eosinophilia, pneumonia and hypersensitivity pneumonitis, cystic fibrosis

7. Teaching-Learning distribution

- Lectures (50-60%)
- Active independent learning (20-30%)
- Lab sessions (10-20%)

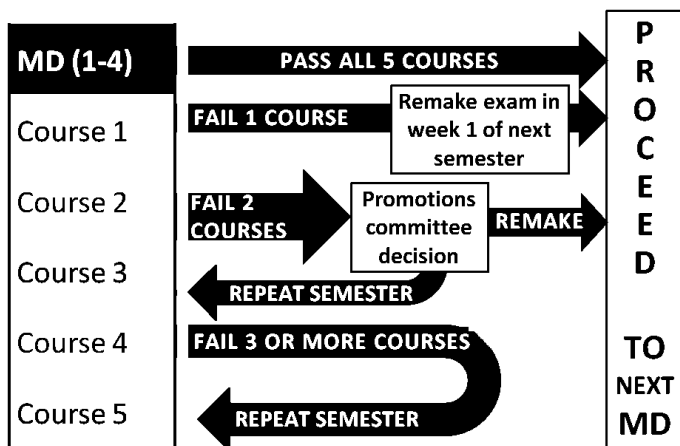
8. Grade distribution

- One block exam: 30%
- Final Exam: 50%
- Non-Exam Assessments: 20% (Assignments, Lecture assessments, quizzes)

9. Grading pattern

Grading Scale	Grade Points	Descriptor
H = 90% – 100%	4.0	Honors
HP = 80% – 89%	3.0	High Pass
P = 70% – 79%	2.0	Pass
F = less than 70%	0.0	Fail

10. Progression to next semester



11. Learning resources

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XII. MD 3012 Gastrointestinal system

1. Course Overview:

Semester	Course Code	Course Title	Credit Hours
MD3	MD 3012	Gastrointestinal system	9

2. Course Description:

The Gastrointestinal system course focuses on understanding of structure, biochemical aspects, physiological functions, pathological disorders, microbial, parasitic, and viral infections, and pharmacological treatment of gastrointestinal disorders. In addition, the clinical skills to examine the GIT and recognize its major diseases will be introduced to students. Also, prevention of diseases of the system will be discussed.

Learning opportunities include lectures, active independent learning, lab sessions, self-study and clinical experience with real and simulated patients.

3. General Learning Objectives:

At the end of this course, students should be able to:

- Understand the development, structure, blood supply, innervation, distinguishing features and functions of different parts of the gastrointestinal system
- Appreciate the physiological mechanism and/or biochemical and molecular basis of processes involved in digestion and absorption of major nutrients and their associated disorders
- Comprehend the etiology, risk factors, pathogenesis, pathological features and interventions in genetic factors, infections, disorders and diseases that affect the gastrointestinal system

4. Course learning outcomes (CLOs) (course measurable outcomes):

At the end of this system students should be able to:

Cognitive

- CLO 1. Illustrate the different parts of the gastrointestinal system and discuss their development, normal structure, actions, blood supply, venous and lymphatic drainage, innervation and functions (Bloom's C3, C2)
- CLO 2. Describe the physiological mechanisms and the biochemical and molecular basis of most important processes involved in digestion and absorption and their associated disorders (Bloom's C4)
- CLO 3. Describe the pathogenesis and pathological features of infections and disease that affect the gastrointestinal system and attribute the variations seen to the features and/or actions of genetic factors, microbes, drugs and microbial as well as non-microbial toxins (Bloom's C2, C4)

Psychomotor

- CLO 4. Dissect the important regions of the gastrointestinal system, trace their blood supplies and innervation in a cadaveric specimen (Dave's P2)
- CLO 5. Focus histological slides of the GI wall and accessory glands under a microscope and identify their cellular features (Dave's P2,P5)
- CLO 6. Microscopically identify areas of lesions in histopathological slides related to the gastrointestinal system (Dave's P5)
- CLO 7. Display the use of appropriate tools and techniques for lab diagnosis of pathogens of the GIT (Dave's P5)

Affective

- CLO 8. Practice as individuals or in teams the application of their medical knowledge to investigate clinical scenarios and debate current topics in medical research in the area of gastrointestinal system (Krathwol-Bloom's A4)
- CLO 9. Demonstrate adherence to the highest standards of professional and ethical behavior, as explained in the Physicians' charter, during interaction with fellow students and faculty in or outside classroom, or with a patient during clinical skills sessions (Krathwol-Bloom's A2)
- CLO 10. Demonstrate empathy to fellow students' problems in or outside classroom, or to patients during history taking and physical examination sessions (Krathwol-Bloom's A2)
- CLO 11. Act with cultural humility while interacting with classmates, seniors, teachers and patients by focusing on their culture, age, gender, sexual orientation, risk perception, and personal values (Krathwol-Bloom's A6)

AUSOMA BASIC SCIENCES CURRICULUM DESIGN BOOKLET

5. Linking of AUSOMA's Program learning outcomes (PLOs) to course learning outcomes (CLOs), learning opportunities and outcome measures of Gastrointestinal system:

PROGRAM LEARNING OUTCOMES (PLOs) (= PROGRAM MEASURABLE OUTCOMES)	COURSE LEARNING OUTCOMES (CLOs) (= COURSE MEASURABLE OUTCOMES) FOR GASTROINTESTINAL SYSTEM	Learning opportunities	Outcome measures
At the end of four years of MD program, AUSOMA graduates should be able to: PEC1: Basic medical knowledge PLO1: Describe the fundamental principles of homeostasis and disturbance in homeostasis, and the role of medical intervention during disturbed homeostasis PLO2: Apply fundamental knowledge of basic and clinical sciences to the diagnosis, treatment, prevention and management of patient problems PLO3: Identify the role of external and epigenetic factors as causes of variations in disease expression	At the end of this system, students should be able to: • Illustrate the different parts of the gastrointestinal system and discuss their development, normal structure, actions, blood supply, venous and lymphatic drainage, innervation and functions • Describe the physiological mechanisms and the biochemical and molecular basis of most important processes involved in digestion and absorption and their associated disorders • Describe the pathogenesis and pathological features of infections and disease that affect the gastrointestinal system and attribute the variations seen to the features and/or actions of genetic factors, microbes, drugs and microbial as well as non-microbial toxins	• Interactive Lectures • Small group sessions	• Class assessments • Small group assessments • Written/ online assignments • Block exams • System ending exam • Feedback by students
PEC2: Clinical and diagnostic skills PLO4: Accurately perform history taking and physical examination by the right application of acquired theoretical knowledge PLO5: Accurately and completely perform the appropriate technical procedures so as to reflect completeness in the skills of medical practice PLO6: Conjecture differential diagnoses and formulate a diagnosis by applying acquired knowledge and in the background of gathered history as well as clinical findings	• Dissect the important regions of the gastrointestinal system, trace their blood supplies and innervation in a cadaveric specimen • Focus histological slides of the GI wall and accessory glands under a microscope and identify their cellular features • Microscopically identify areas of lesions in histopathological slides related to the gastrointestinal system • Display the use of appropriate tools and techniques for lab diagnosis of pathogens of the GIT	• Interactive Lectures • Clinical skills sessions • Lab sessions	• Class assessments • OSCE • Written/ online assignments • Block exams • System ending exam • Feedback by students

AUSOMA BASIC SCIENCES CURRICULUM DESIGN BOOKLET

PEC3: Patient centered medicine	• Act with cultural humility while interacting with classmates, seniors, teachers and patients by focusing on their culture, age, gender, sexual orientation, risk perception, and personal values	• Interactive Lectures • Clinical skills sessions • Lab sessions	• Class assessments • OSCE • Written/ online assignments • Block exams • System ending exam • Feedback by students
PLO7: Deliver quality patient care in the context of varied perceptions of health and disease as well as varied responses to symptoms and treatments by people of different genders, diverse ages, cultures, ethnicities, religions, nationalities, socioeconomic backgrounds and those with disabilities PLO8: Perceive the medical consequences of common societal problems as well as critique with patients and patient parties about complexities and management of existing social issues			
PEC4: Interpersonal rapport and communication	• Demonstrate empathy to fellow students' problems in or outside classroom, or to patients during history taking and physical examination sessions	• Interactive Lectures • Clinical skills sessions	• Class assessments • OSCE • Written/ online assignments • Block exams • System ending exam • Feedback by students
PLO9: Communicate information and ideas categorically and in an organized manner to inform and educate patients, patient parties and society			
PLO10: Initiate, establish and adhere to empathetic communication with patients, families, colleagues, health professionals and supervisors to achieve quality health care by upholding the spirit of non-discrimination and inclusiveness			
PLO11: Resolve patient-doctor, patient party-doctor, doctor-doctor, doctor-supervisor or doctor-healthcare system related conflicts through effective communication			

AUSOMA BASIC SCIENCES CURRICULUM DESIGN BOOKLET

PEC5: Medical ethics and professionalism			
PLO12: Apply during medical practice, the three fundamental principles and ten professional commitments listed in “The Physicians’ Charter” of ABIM, ACP and European federation of Internal medicine	• Demonstrate adherence to the highest standards of professional and ethical behavior, as explained in the Physicians’ charter, during interaction with fellow students and faculty in or outside classroom, or with a patient during clinical skills sessions	• Medical ethics lectures • Clinical skills sessions • Small group sessions	• Class assessments • OSCE • Small group assessments • Written/ online assignments • Block exams • System ending exam • Feedback by students
PLO13: Conform to the highest standards of medical ethics and professionalism while dealing with the complexities of health care practice and delivery, organizations and bureaucracy			
PEC6: Evidence based practice and lifelong learning			
PLO14: Demonstrate an open mind, scientific inquisitiveness and research inclination to acquire newly emerging clinical knowledge and skills that enable improved quality of care in the wake of newly emerging diseases	• Practice as individuals or in teams the application of their medical knowledge to investigate clinical scenarios and debate current topics in medical research in the area of gastrointestinal system	• Clinical skills sessions • Small group sessions	• Class assessments • OSCE • Small group assessments • Block exams • System ending exam • Systems feedback by basic science students
PLO15: Equip themselves with the latest skills on information technology, study design and statistical methods and apply them into appropriate use in medical practice, therapeutic effectiveness, critical appraisal of scientific literature, research methodologies and studies of their own patient population or the larger community.			
PLO16: Apply the experience of medical practice into practice-based systematic improvement activities and hence contribute new medical knowledge to the community of medical research throughout their career.			

6. Topics for Gastrointestinal system

- 001. Histology - Oral cavity and salivary glands
- 002. Anatomy - Oral cavity and salivary glands
- 003. Physiology - Appetite, nausea, vomiting
- 004. Pathology - Oral cavity and Salivary glands
- 005. Anatomy - Pharynx and esophagus
- 006. Histology - Pharynx, esophagus
- 007. Physiology - Esophagus and mechanism of swallowing
- 008. Anatomy - Abdominal wall, peritoneal cavity
- 009. Pathology - Esophagus
- 010: Histology - Stomach
- 011: Anatomy - Stomach
- 012: Physiology - Stomach: Motility, emptying and secretions
- 013: Pathology - Stomach
- 014: Anatomy - Small and large intestine including blood supply
- 015: Histology - Small and large intestine
- 016: Physiology - Small intestine
- 017: Microbiology - Upper GIT infections
- 018: Physiology - Large intestine and others
- 019: Pathology - Small intestine and appendix
- 020: Pathology - Large intestine disorders
- 021: Pathology - Inflammatory Bowel Disease (IBD)
- 022: Pathology - Colon cancer
- 023: Pharmacology - Anti-/emetic, PUD, antidiarrheal, laxatives, increased motility and other drugs
- 024: Histology - Liver, Gall bladder, and Pancreas
- 025: Anatomy - Liver
- 026: Physiology - Liver and Gall bladder
- 027: Anatomy - Gall bladder and Pancreas
- 028: Biochemistry - Bile salt synthesis
- 029: Physiology - Pancreas
- 030: Microbiology - Hepatitis
- 031: Pathology - Hepatitis
- 032: Microbiology - Lower GIT infections and diarrheas
- 033: Embryology - GIT
- 034: Microbiology – Parasitic diarrheas and infections
- 035: Pathology - Liver acquired hepatic and biliary disorders
- 036: Pathology - Congenital liver diseases and tumors
- 037: Microbiology – Inflammatory and Non-inflammatory diarrheas
- 038: Pathology - Pancreas
- 039: Biochemistry - Liver and Pancreatic function tests

7. Teaching-Learning distribution

- Lectures (50-60%)
- Active independent learning (20-30%)
- Lab sessions (10-20%)

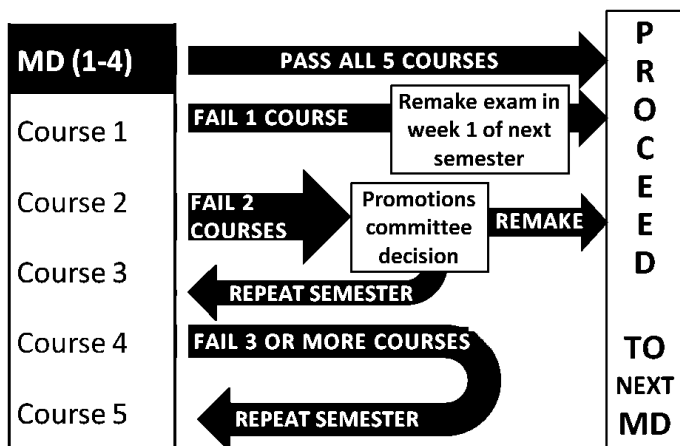
8. Grade distribution

- One block exam: 30%
- Final Exam: 50%
- Non-Exam Assessments: 20% (Assignments, Lecture assessments, quizzes)

9. Grading pattern

Grading Scale	Grade Points	Descriptor
H = 90% – 100%	4.0	Honors
HP = 80% – 89%	3.0	High Pass
P = 70% – 79%	2.0	Pass
F = less than 70%	0.0	Fail

10. Progression to next semester



11. Learning resources

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J. Microbiology

Lippincott's illustrated reviews: Microbiology 4th edition Author: Cynthia Nau Cornelissen Paperback ISBN: 978-1496395856 Imprint: Wolters Kluwer

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P. Preventive Medicine

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XIII. MD 3016 Hematology and Immunology

1. Course Overview:

Semester	Course Code	Course Title	Credit Hours
MD3	MD 3016	Hematology and Immunology	4

2. Course Description:

This unit will provide students with a solid understanding of current hematological and immunological concepts. The ontogeny, identification, morphology and function of blood cells are studied. Hematopoiesis and its role in hemostasis and immune function are considered. Hematological disease perturbations are also covered. Host immune responses to pathogens from initial non-specific immune reactions through to the development of adaptive responses and immunological memory are studied. Underpinning concepts such as the danger hypothesis and immune efficacy against various pathogen classes are emphasized.

Teaching methods include lectures, lab sessions and small group discussions of clinically oriented problems to enhance self-directed learning.

3. General Learning Objectives:

At the end of this course, students should be able to:

- Explain the key concepts and common diseases/disorders of hematopoietic and immune systems and their management
- Outline the most prevalent hereditary diseases, their associated conditions, and their impact on the community.
- Acquire basic understanding of the immunological aspects of tumors.
- Explain the role of Major Histocompatibility Complex (MHC) in tissue transplantation and graft rejection

4. Course learning outcomes (CLOs) (course measurable outcomes):

At the end of this system students should be able to:

Cognitive

- CLO 1. Identify and describe the key cells, molecules, genes and processes that drive the hematopoietic, innate and adaptive immune systems and evaluate their regulation, integration and contribution to human defence mechanisms (Bloom's C2)
- CLO 2. Integrate the knowledge of hematopoietic and immune systems to the biological processes and therapeutic targets involved in their disorders (Bloom's C6)
- CLO 3. Apply appropriate tools and techniques for treatment of disorders of the hematologic and immune systems (Bloom's C3)

Psychomotor

- CLO 4. Focus a histological slide of blood cells and lymphoid tissues under a microscope and identify their cellular features (Dave's P2,P5)
- CLO 5. Microscopically identify areas of medical importance in histopathological slides related to most important lymphomas (Dave's P5)
- CLO 6. Display the use of appropriate tools and techniques for lab diagnosis of respiratory pathogens and those employed in immunodiagnostics (Dave's P5)

Affective

- CLO 7. Demonstrate adherence to the highest standards of professional and ethical behavior, as explained in the Physicians' charter, during interaction with fellow students and faculty in or outside classroom, or with a patient during clinical skills sessions (Krathwol-Bloom's A2)
- CLO 8. Demonstrate empathy to fellow students' problems in or outside classroom, or to patients during history taking and physical examination sessions (Krathwol-Bloom's A2)
- CLO 9. Act with cultural humility while interacting with classmates, seniors, teachers and patients by focusing on their culture, age, gender, sexual orientation, risk perception, and personal values (Krathwol-Bloom's A5)
- CLO 10. Study ongoing research data relating to immune and blood cell function and discuss how this impacts development of novel therapies (Krathwol-Bloom's A5)

AUSOMA BASIC SCIENCES CURRICULUM DESIGN BOOKLET

5. Linking of AUSOMA's Program learning outcomes (PLOs) to course learning outcomes (CLOs), learning opportunities and outcome measures of Hematology and Immunology:

PROGRAM LEARNING OUTCOMES (PLOs) (= PROGRAM MEASURABLE OUTCOMES)	COURSE LEARNING OUTCOMES (CLOs) (= COURSE MEASURABLE OUTCOMES) FOR HEMATOLOGY AND IMMUNOLOGY	Learning opportunities	Outcome measures
At the end of four years of MD program, AUSOMA graduates should be able to:	At the end of this system, students should be able to:		
PEC1: Basic medical knowledge			
PLO1: Describe the fundamental principles of homeostasis and disturbance in homeostasis, and the role of medical intervention during disturbed homeostasis	Identify and describe the key cells, molecules, genes and processes that drive the hematopoietic, innate and adaptive immune systems and evaluate their regulation, integration and contribution to human defence mechanisms	- Interactive Lectures - Small group sessions	- Class assessments - Small group assessments - Written/online assignments - Block exams - System ending exam - Feedback by students
PLO2: Apply fundamental knowledge of basic and clinical sciences to the diagnosis, treatment, prevention and management of patient problems	Integrate the knowledge of hematopoietic and immune systems to the biological processes and therapeutic targets involved in their disorders		
PLO3: Identify the role of external and epigenetic factors as causes of variations in disease expression	Apply appropriate tools and techniques for treatment of disorders of the hematologic and immune systems		
PEC2: Clinical and diagnostic skills			
PLO4: Accurately perform history taking and physical examination by the right application of acquired theoretical knowledge	Focus a histological slide of blood cells and lymphoid tissues under a microscope and identify their cellular features	- Interactive Lectures - Clinical skills sessions - Small group sessions	- Class assessments - OSCE - Written/online assignments - Block exams - System ending exam - Feedback by students
PLO5: Accurately and completely perform the appropriate technical procedures so as to reflect completeness in the skills of medical practice	Microscopically identify areas of medical importance in histopathological slides related to most important lymphomas		
PLO6: Conjecture differential diagnoses and formulate a diagnosis by applying acquired knowledge and in the background of gathered history as well as clinical findings	Display the use of appropriate tools and techniques for lab diagnosis of respiratory pathogens and those employed in immunodiagnostics		

AUSOMA BASIC SCIENCES CURRICULUM DESIGN BOOKLET

PEC3: Patient centered medicine	• Act with cultural humility while interacting with classmates, seniors, teachers and patients by focusing on their culture, age, gender, sexual orientation, risk perception, and personal values	• Interactive Lectures • Clinical skills sessions • Small group sessions	• Class assessments • OSCE • Small group assessments • Written/online assignments • Block exams • System ending exam • Feedback by students
PLO7: Deliver quality patient care in the context of varied perceptions of health and disease as well as varied responses to symptoms and treatments by people of different genders, diverse ages, cultures, ethnicities, religions, nationalities, socioeconomic backgrounds and those with disabilities PLO8: Perceive the medical consequences of common societal problems as well as critique with patients and patient parties about complexities and management of existing social issues			
PEC4: Interpersonal rapport and communication	• Demonstrate empathy to fellow students' problems in or outside classroom, or to patients during history taking and physical examination sessions	• Clinical skills sessions • Small group sessions	• Class assessments • OSCE • Small group assessments • Written/online assignments • Block exams • System ending exam • Feedback by students
PLO9: Communicate information and ideas categorically and in an organized manner to inform and educate patients, patient parties and society			
PLO10: Initiate, establish and adhere to empathetic communication with patients, families, colleagues, health professionals and supervisors to achieve quality health care by upholding the spirit of non-discrimination and inclusiveness PLO11: Resolve patient-doctor, patient party-doctor, doctor-doctor, doctor-supervisor or doctor-healthcare system related conflicts through effective communication			

AUSOMA BASIC SCIENCES CURRICULUM DESIGN BOOKLET

PEC5: Medical ethics and professionalism	• Demonstrate adherence to the highest standards of professional and ethical behavior, as explained in the Physicians' charter, during interaction with fellow students and faculty in or outside classroom, or with a patient during clinical skills sessions	• Medical ethics lectures • Clinical skills sessions • Small group sessions	• Class assessments • OSCE • Written/online assignments • Block exams • System ending exam • Feedback by students
PLO12: Apply during medical practice, the three fundamental principles and ten professional commitments listed in "The Physicians' Charter" of ABIM, ACP and European federation of Internal medicine			
PLO13: Conform to the highest standards of medical ethics and professionalism while dealing with the complexities of health care practice and delivery, organizations and bureaucracy			
PEC6: Evidence based practice and lifelong learning	• Study ongoing research data relating to immune and blood cell function and discuss how this impacts development of novel therapies	• Clinical skills sessions • Small group sessions	• Class assessments • OSCE • Small group assessments • Block exams • System ending exam • Systems feedback by basic science students
PLO14: Demonstrate an open mind, scientific inquisitiveness and research inclination to acquire newly emerging clinical knowledge and skills that enable improved quality of care in the wake of newly emerging diseases			
PLO15: Equip themselves with the latest skills on information technology, study design and statistical methods and apply them into appropriate use in medical practice, therapeutic effectiveness, critical appraisal of scientific literature, research methodologies and studies of their own patient population or the larger community.			
PLO16: Apply the experience of medical practice into practice-based systematic improvement activities and hence contribute new medical knowledge to the community of medical research throughout their career.			

6. Topics for Hematology and Immunology

Hematology

HE 001. Blood and Hematopoiesis
 HE 002. Blood Indices/CBC
 HE 003. Lab- Blood and Hematopoiesis
 HE 004. Hemoglobin and electrophoresis
 HE 005. Heme and Porphyrins
 HE 006. Iron Metabolism – HFE, GENE, Hcpidin
 HE 007. Anemia Classification and Microcytic Anemia (IDA)
 HE 008. Hematology General Concepts
 HE 009. Microcytic anemia (Anemia of chronic diseases, lead poisoning, thalassemia)
 HE 010. Macrocytic anemia
 HE 011. Normocytic anemia
 HE 012. Hemolytic Anemia (Extra and Intravascular)
 HE 013. Normal Hemostasis
 HE 014. Platelet disorders
 HE 015. Coagulation disorders
 HE 016. Anticoagulants
 HE 017. WBC reactive disorders
 HE 018. Acute Leukemias
 HE 019. Chronic Leukemias
 HE 020. Myelodysplastic disorders (MDD) & Myeloproliferative disorders (MPD)
 HE 021. Plasma Cell disorder
 HE 022. Hodgkin's Lymphoma
 HE 023. Non - Hodgkin's Lymphoma
 HE 024. Cancer Chemotherapy

Immunology

IM 001. Introduction to the Immune system;
 Cells and Tissues involved
 IM 002. Anatomy-Lymphoid system
 IM 003. Histology-Lymphoid tissue
 IM 004. LAB (Histology) – Lymphoid tissue
 IM 005. Innate Immunity
 IM 006. Antibodies and Antigens
 IM 007. Major Histocompatibility Complex
 Molecules and Antigen presentation
 to T-Lymphocytes
 IM 008. Maturation and natural selection of
 the Lymphocytes and CD markers
 IM 009. Activation of Lymphocytes
 IM 0010. Effector Mechanisms of Humoral &
 Cell-mediated Immunity
 IM 0011. Specialized Immune Responses in
 Epithelial and Immune Privileged
 Tissues
 IM 0012. Immunologic Tolerance and
 Autoimmunity
 IM 0013. Immunity to Microbes
 IM 0014. Immuno Lab-Immunodiagnostics
 IM 0015. Pediatrics and Adult Immunizations
 IM 0016. Primary Immunodeficiencies
 IM 0017. Immunotherapeutics
 IM 0018. Transplantation; Hypersensitivity and
 Autoimmune Disease

7. Teaching-Learning distribution

- Lectures (50-60%)
- Active independent learning (20-30%)
- Lab sessions (10-20%)

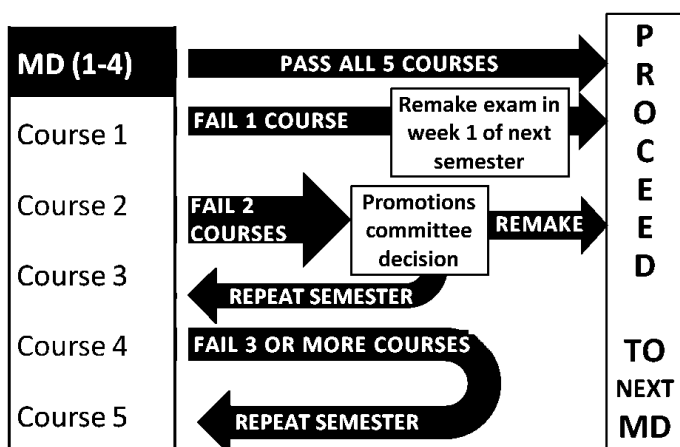
8. Grade distribution

- One block exam: 30%
- Final Exam: 60%
- Non-Exam Assessments: 10% (Attendance, Assignments, Class assessments)

9. Grading pattern

Grading Scale	Grade Points	Descriptor
H = 90% – 100%	4.0	Honors
HP = 80% – 89%	3.0	High Pass
P = 70% – 79%	2.0	Pass
F = less than 70%	0.0	Fail

10. Progression to next semester



11. Learning resources

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XIV. MD 3014 Clinical skills-3

1. Course Overview:

Semester	Course Code	Course Title	Credit Hours
MD3	MD 3014	Clinical skills-3	2

2. Course Description:

The Clinical Skills course is designed to teach each medical student the basic skills needed for medical practice. These skills include effective communication, scheme-based history taking and physical examination, development of clinical reasoning, formation of an initial diagnostic plan, interpretation of basic diagnostic studies, performance of selected procedures, provision of counseling and feedback, and articulate clinical case presentations

Learning opportunities include lectures, active independent learning, lab sessions, self-study and clinical experience with real and simulated patients.

3. General Learning Objectives:

At the end of this course, students should be able to:

- Obtain an accurate, comprehensive, focused/full history from and perform a careful, rational, thorough physical examination on the patient
- Apply information obtained from HPE (history and physical examination) and initial laboratory data to create a problem list, recognize and prioritize the issues, formulate differential diagnosis and generate a diagnostic and therapeutic plan
- Record in writing and present orally the results of the HPE (including assessment and plan) in a systematic, concise and coherent manner.
- Use medical literature to understand the natural history of diseases, plan therapy and integrate clinical reasoning skills and strive towards continual and lifelong learning

4. Course learning outcomes (CLOs) (course measurable outcomes):

At the end of this course students should be able to (with emphasis on gastrointestinal, respiratory and hematological systems)

Cognitive

- CLO 1. Review the knowledge gained in the different courses of MD1-3 appropriately and correlate it to interviewing patients for accurate, comprehensive, focused/full history taking (Bloom's C5,C4)
- CLO 2. Appraise the information obtained from HPE and initial laboratory data to formulate their diagnosis and devise a treatment-management plan (Bloom's C6)
- CLO 3. Review medical literature to retrieve documented information on patient problems, integrate clinical reasoning skills and adapt towards continual and lifelong learning (Bloom's C5, C1, C6)

Psychomotor

- CLO 4. Conduct an interview for an accurate, comprehensive, focused/full history and perform a careful, rational, thorough physical examination on the patient (Dave's P2)
- CLO 5. Structure and design SOAP notes following history-taking and physical examination in a patient (Dave's P4)
- CLO 6. Improve and master history-taking and physical examination skills through repeated practice during and out of training sessions (Dave's P4)
- CLO 7. Coordinate and integrate the acquired tangible as well as non-tangible clinical skills in managing the general public of Aruba during health fairs and voluntary services organized by the school (Dave's P4, P5)
- CLO 8. Practice as individuals or in teams to the application of their medical knowledge to investigate clinical scenarios and debate current topics in medical research (Dave's P3)

Affective

- CLO 9. Demonstrate adherence to the highest standards of professional and ethical behavior, as explained in the Physicians' charter, during interaction with fellow students and faculty in or outside classroom, or with a patient during clinical skills sessions (Krathwol-Bloom's A2)
- CLO 10. Demonstrate empathy to fellow students' problems in or outside classroom, or to patients during history taking and physical examination sessions (Krathwol-Bloom's A2)
- CLO 11. Act with cultural humility while interacting with classmates, seniors, teachers and patients by focusing on their culture, age, gender, sexual orientation, risk perception, and personal values (Krathwol-Bloom's A6)

AUSOMA BASIC SCIENCES CURRICULUM DESIGN BOOKLET

5. Linking of AUSOMA's Program learning outcomes (PLOs) to course learning outcomes (CLOs), learning opportunities and outcome measures of Clinical skills-3:

PROGRAM LEARNING OUTCOMES (PLOs) (= PROGRAM MEASURABLE OUTCOMES)	COURSE LEARNING OUTCOMES (CLOs) (= COURSE MEASURABLE OUTCOMES) FOR CLINICAL SKILLS-3	Learning opportunities	Outcome measures
At the end of four years of MD program, AUSOMA graduates should be able to:	At the end of this system, students should be able to (with emphasis on gastrointestinal, respiratory and hematological systems):		
PEC1: Basic medical knowledge			
PLO1: Describe the fundamental principles of homeostasis and disturbance in homeostasis, and the role of medical intervention during disturbed homeostasis	- Review the knowledge gained in the different courses of MD1 appropriately and correlate it to interviewing patients for accurate, comprehensive, focused/full history taking - Appraise the information obtained from HPE and initial laboratory data to formulate their diagnosis and devise a treatment-management plan - Review medical literature to retrieve documented information on patient problems, integrate clinical reasoning skills and adapt towards continual and lifelong learning	- Interactive Lectures - Small group sessions	- Class assessments - Small group assessments - Written/ online assignments - Block exams - System ending exam - Feedback by students
PLO2: Apply fundamental knowledge of basic and clinical sciences to the diagnosis, treatment, prevention and management of patient problems			
PLO3: Identify the role of external and epigenetic factors as causes of variations in disease expression			
PEC2: Clinical and diagnostic skills			
PLO4: Accurately perform history taking and physical examination by the right application of acquired theoretical knowledge	- Conduct an interview for an accurate, comprehensive, focused/full history and perform a careful, rational, thorough physical examination on the patient - Structure and design SOAP notes following history-taking and physical examination in a patient - Improve and master history-taking and physical examination skills through repeated practice during and out of training sessions	- Interactive Lectures - Clinical skills sessions - Lab sessions	- Class assessments - OSCE - Written/ online assignments - Block exams - System ending exam - Feedback by students
PLO5: Accurately and completely perform the appropriate technical procedures so as to reflect completeness in the skills of medical practice			
PLO6: Conjecture differential diagnoses and formulate a diagnosis by applying acquired knowledge and in the background of gathered history as well as clinical findings			

AUSOMA BASIC SCIENCES CURRICULUM DESIGN BOOKLET

PEC3: Patient centered medicine	• Coordinate and integrate the acquired tangible as well as non-tangible clinical skills in managing the general public of Aruba during health fairs and voluntary services organized by the school • Act with cultural humility while interacting with classmates, seniors, teachers and patients by focusing on their culture, age, gender, sexual orientation, risk perception, and personal values	• Interactive Lectures • Clinical skills sessions • Lab sessions	• Class assessments • OSCE • Written/ online assignments • Block exams • System ending exam • Feedback by students
PLO7: Deliver quality patient care in the context of varied perceptions of health and disease as well as varied responses to symptoms and treatments by people of different genders, diverse ages, cultures, ethnicities, religions, nationalities, socioeconomic backgrounds and those with disabilities PLO8: Perceive the medical consequences of common societal problems as well as critique with patients and patient parties about complexities and management of existing social issues			
PEC4: Interpersonal rapport and communication	• Demonstrate empathy to fellow students' problems in or outside classroom, or to patients during history taking and physical examination sessions	• Interactive Lectures • Clinical skills sessions	• Class assessments • OSCE • Written/ online assignments • Block exams • System ending exam • Feedback by students
PLO9: Communicate information and ideas categorically and in an organized manner to inform and educate patients, patient parties and society			
PLO10: Initiate, establish and adhere to empathetic communication with patients, families, colleagues, health professionals and supervisors to achieve quality health care by upholding the spirit of non-discrimination and inclusiveness			
PLO11: Resolve patient-doctor, patient party-doctor, doctor-doctor, doctor-supervisor or doctor-healthcare system related conflicts through effective communication			

AUSOMA BASIC SCIENCES CURRICULUM DESIGN BOOKLET

PEC5: Medical ethics and professionalism			
PLO12: Apply during medical practice, the three fundamental principles and ten professional commitments listed in “The Physicians’ Charter” of ABIM, ACP and European federation of Internal medicine	• Demonstrate adherence to the highest standards of professional and ethical behavior, as explained in the Physicians’ charter, during interaction with fellow students and faculty in or outside classroom, or with a patient during clinical skills sessions	• Medical ethics lectures • Clinical skills sessions • Small group sessions	• Class assessments • OSCE • Small group assessments • Written/ online assignments • Block exams • System ending exam • Feedback by students
PLO13: Conform to the highest standards of medical ethics and professionalism while dealing with the complexities of health care practice and delivery, organizations and bureaucracy			
PEC6: Evidence based practice and lifelong learning			
PLO14: Demonstrate an open mind, scientific inquisitiveness and research inclination to acquire newly emerging clinical knowledge and skills that enable improved quality of care in the wake of newly emerging diseases	• Practice as individuals or in teams the application of their knowledge to investigate clinical scenarios and debate current topics in medical research	• Clinical skills sessions • Small group sessions	• Class assessments • OSCE • Small group assessments • Block exams • System ending exam • Systems feedback by basic science students
PLO15: Equip themselves with the latest skills on information technology, study design and statistical methods and apply them into appropriate use in medical practice, therapeutic effectiveness, critical appraisal of scientific literature, research methodologies and studies of their own patient population or the larger community.			
PLO16: Apply the experience of medical practice into practice-based systematic improvement activities and hence contribute new medical knowledge to the community of medical research throughout their career.			

6. Topics for Clinical skills-3

- 001. Generalities
- 002. Respiratory system -1
- 003. Respiratory system -2
- 004. Respiratory system -3
- 005. Respiratory system -4
- 006. Abdominal systems -1
- 007. Abdominal systems -2
- 008. Abdominal systems -3
- 009. Abdominal systems - 4
- 010. Lymphoreticular examination and hematological - 1
- 011. Lymphoreticular examination and hematological – 2
- 012. Lymphoreticular examination and hematological – 3
- 013. Lymphoreticular examination and hematological – 4

7. Teaching-Learning distribution

- Lectures (20-30%)
- Active independent learning (35-40%)
- Lab sessions (35-40%)

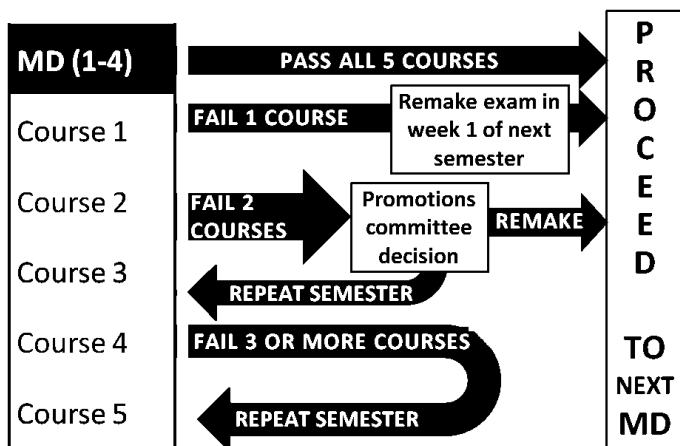
8. Grade distribution

- One block exam: 30%
- Final Exam: 50%
- Non-Exam Assessments: 20% (Assignments, Lecture assessments, quizzes)

9. Grading pattern

Grading Scale	Grade Points	Descriptor
H = 90% – 100%	4.0	Honors
HP = 80% – 89%	3.0	High Pass
P = 70% – 79%	2.0	Pass
F = less than 70%	0.0	Fail

10. Progression to next semester



11. Learning resources

A. Anatomy

Clinically oriented Anatomy by Keith L. Moore, Arthur F. Dalley, Arthur F. Dalley and Anne M.R. Agur,
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- b. Harper's Illustrated Biochemistry Thirty-First Edition 31st Edition by Victor Rodwell, David Bender, Kathleen Botham, Peter Kennelly, P. Anthony Weil. ISBN-13: 978-1259837937; ISBN-10: 1259837939

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E. Embryology

The Developing Human –Clinically Oriented Embryology by Keith L. Moore and T.V.N. Persaud, Published by Saunders – Elsevier, Edition 9, ISBN: 978 -1-4377-2002-0

F. Genetics

Thompson & Thompson Genetics in Medicine (9th Ed.) by Nussbaum, Mcinnes & Willard. Elsevier Australia ISBN 9780323547628

G. Histology

Junqueira's Basic Histology: Text and Atlas, 15e. Anthony L. Mescher Publisher: McGraw-Hill Education ISBN-13: 978-1260026177; ISBN-10: 1260026175

H. Immunology

- a. Lippincott Illustrated Reviews: Immunology Second, North American Edition by Thao Doan, Roger Melvold, Susan Viselli, Carl Waltenbaugh. ISBN-13: 978-1451109375; ISBN-10: 9781451109375
- b. Cellular and Molecular Immunology by Abul Abbas, Andrew Lichtman, Shiv Pillai, 10th Edition, eBook ISBN: 9780323757508, Paperback ISBN: 9780323757485



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- b. "Medical Law & Ethics, 6th Ed."
- c. "Resolving Ethical Dilemmas: A Guide for Clinician, 6th Ed"
- d. "Medical Ethics for Dummies"

J. Microbiology

Lippincott's illustrated reviews: Microbiology 4th edition Author: Cynthia Nau Cornelissen Paperback ISBN: 978-1496395856 Imprint: Wolters Kluwer

K. Neuroscience

- a. Essential Neuroscience by Allan Siegel, Wolters Kluwer, Fourth edition ISBN-13, 978-1451189681
- b. Clinical Neuroanatomy for Medical Students: by Richard S. Snell. 7th edition, ISBN 978-0781794275

L. Nutrition

Understanding Normal And Clinical Nutrition (8th Ed.) by Sharon Rady Rolfes, Kathryn Pinna, Elley Whitney. Wadsworth Cengage learning. ISBN-13: 978-0-495-55646-6 ISBN-10: 0-495-55646-7

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P. Preventive Medicine

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- b. "Basic & Clinical Biostatistics, 5th Edition. "Maxcy-Rosenau-Last Public Health & Preventive Medicine, 15th Edition," by Robert B. Wallace. ISBN- 13: 978-0071441988, ISBN- 10: 0071441980

XV. MD 3015 Preventive medicine, Public health and Quality health parameters

1. Course Overview:

Semester	Course Code	Course Title	Credit Hours
MD3	MD 3015	Preventive medicine, Public health and Quality health parameters	4

2. Course Description:

This course emphasizes on fundamental concepts of preventive medicine in specific medical conditions, and quality health parameters. Epidemiological and biostatistical concepts considered as cornerstone of preventive medicine and public health will enhance the students understanding of distribution of diseases or health conditions and their risk factors, which direct to comprehensive development and implementation of disease control and preventive strategies. This course will focus on epidemiology of occupational and environmental hazards, prevention of food and water-borne diseases, emerging microbial threats to health, prevention of respiratory diseases, Cancer screening, quality improvement in healthcare, communication skills, epidemiology and prevention of tuberculosis, and vaccine preventable diseases.

Learning opportunities include lectures, and small group discussions of clinically oriented problems to enhance self-directed learning.

3. General Learning Objectives:

At the end of this course, students should be able to:

- Understand the role and importance of epidemiological concepts and quality health improvement in clinical practice.
- Recognize occupational and environmental hazards and list cancer screening methods
- Integrate and correlate knowledge of concepts of primary, secondary, tertiary, and/or quaternary prevention of infectious diseases and chronic diseases.
- Describe major risk factors of tuberculosis and identify control and preventive measures of TB.

4. Course learning outcomes (CLOs) (course measurable outcomes):

At the end of this course students should be able to:

Cognitive

- CLO 1. State the approximate lifetime risk of being diagnosed with and dying from cancer and identify most appropriate cancer screening methods (Bloom's C1)
- CLO 2. List at least the first three most frequently diagnosed cancer (US) by gender and explain the five guidelines, which help guide making decision about cancer screening (Bloom's C2)
- CLO 3. List and explain the role of the most important factors affecting the expression of the most common chronic diseases, including cancer and chronic lung disease (Bloom's C2)

Psychomotor

- CLO 4. Guide the general public during health fairs, on food and water-borne diseases as well as risk factors, red flags, implications on quality of life associated with chronic lung diseases and tuberculosis infection (Dave's P5)
- CLO 5. Practice as individuals during lab sessions, the hand hygiene technique and demonstrate the practice of the same during health fairs / voluntary activities as a critical measure for infection control (Dave's P3, P4)
- CLO 6. Practice as individuals or in teams the application of their knowledge of evidence-based decision making to investigate clinical scenarios and debate current topics in medical research (Dave's P3)

Affective

- CLO 7. Counsel a simulated patient or the general public on the role of the most important psychosocial factors affecting the expression of chronic lung diseases, TB infection and hereditary cancer syndromes (Krathwol-Bloom's A5)
- CLO 8. Demonstrate adherence to the highest standards of professional and ethical behavior, as explained in the Physicians' charter, during interaction with fellow students and faculty in or outside classroom, or with a patient during clinical skills sessions (Krathwol-Bloom's A2)
- CLO 9. Demonstrate empathy to fellow students' problems in or outside classroom, or to patients during history taking and physical examination sessions (Krathwol-Bloom's A2)
- CLO 10. Act with cultural humility while interacting with classmates, seniors, teachers and patients by focusing on their culture, age, gender, sexual orientation, risk perception, and personal values (Krathwol-Bloom's A6)

AUSOMA BASIC SCIENCES CURRICULUM DESIGN BOOKLET

5. Linking of AUSOMA's Program learning outcomes (PLOs) to course learning outcomes (CLOs), learning opportunities and outcome measures of Preventive medicine, Public health and Quality health parameters:

PROGRAM LEARNING OUTCOMES (PLOs) (= PROGRAM MEASURABLE OUTCOMES)	COURSE LEARNING OUTCOMES (CLOs) (= COURSE MEASURABLE OUTCOMES) FOR PREVENTIVE MEDICINE, PUBLIC HEALTH AND QUALITY HEALTH PARAMETERS	Learning opportunities	Outcome measures
At the end of four years of MD program, AUSOMA graduates should be able to:	At the end of this system, students should be able to:		
PEC1: Basic medical knowledge			
PLO1: Describe the fundamental principles of homeostasis and disturbance in homeostasis, and the role of medical intervention during disturbed homeostasis	State the approximate lifetime risk of being diagnosed with and dying from cancer and identify most appropriate cancer screening methods	- Interactive Lectures - Small group sessions	- Class assessments - Small group assessments - Written/ online assignments - Block exams - System ending exam - Feedback by students
PLO2: Apply fundamental knowledge of basic and clinical sciences to the diagnosis, treatment, prevention and management of patient problems	List at least the first three most frequently diagnosed cancer (US) by gender and explain the five guidelines, which help guide making decision about cancer screening		
PLO3: Identify the role of external and epigenetic factors as causes of variations in disease expression	List and explain the role of the most important factors affecting the expression of the most common chronic diseases, including cancer and chronic lung disease		
PEC2: Clinical and diagnostic skills			
PLO4: Accurately perform history taking and physical examination by the right application of acquired theoretical knowledge	Guide the general public during health fairs, on food and water-borne diseases as well as risk factors, red flags, implications on quality of life and emotional/ social implications associated with chronic lung diseases and tuberculosis infection	- Interactive Lectures - Clinical skills sessions - Lab sessions	- Class assessments - OSCE - Written/ online assignments - Block exams - System ending exam - Feedback by students
PLO5: Accurately and completely perform the appropriate technical procedures so as to reflect completeness in the skills of medical practice	Practice as individuals, on a daily basis, the hand hygiene technique and demonstrate the practice of the same during health fairs / voluntary activities as a critical measure for infection control		
PLO6: Conjecture differential diagnoses and formulate a diagnosis by applying acquired knowledge and in the background of gathered history as well as clinical findings			

AUSOMA BASIC SCIENCES CURRICULUM DESIGN BOOKLET

PEC3: Patient centered medicine	• Counsel a simulated patient on the role of the most important psychosocial factors affecting the expression of TB infection and hereditary cancer syndromes • Act with cultural humility while interacting with classmates, seniors, teachers and patients by focusing on their culture, age, gender, sexual orientation, risk perception, and personal values	• Interactive Lectures • Clinical skills sessions • Lab sessions	• Class assessments • OSCE • Written/ online assignments • Block exams • System ending exam • Feedback by students
PLO7: Deliver quality patient care in the context of varied perceptions of health and disease as well as varied responses to symptoms and treatments by people of different genders, diverse ages, cultures, ethnicities, religions, nationalities, socioeconomic backgrounds and those with disabilities PLO8: Perceive the medical consequences of common societal problems as well as critique with patients and patient parties about complexities and management of existing social issues			
PEC4: Interpersonal rapport and communication	• Demonstrate empathy to fellow students' problems in or outside classroom, or to patients during history taking and physical examination sessions	• Interactive Lectures • Clinical skills sessions	• Class assessments • OSCE • Written/ online assignments • Block exams • System ending exam • Feedback by students
PLO9: Communicate information and ideas categorically and in an organized manner to inform and educate patients, patient parties and society			
PLO10: Initiate, establish and adhere to empathetic communication with patients, families, colleagues, health professionals and supervisors to achieve quality health care by upholding the spirit of non-discrimination and inclusiveness			
PLO11: Resolve patient-doctor, patient party-doctor, doctor-doctor, doctor-supervisor or doctor-healthcare system related conflicts through effective communication			

AUSOMA BASIC SCIENCES CURRICULUM DESIGN BOOKLET

PEC5: Medical ethics and professionalism			
PLO12: Apply during medical practice, the three fundamental principles and ten professional commitments listed in “The Physicians’ Charter” of ABIM, ACP and European federation of Internal medicine	• Demonstrate adherence to the highest standards of professional and ethical behavior, as explained in the Physicians’ charter, during interaction with fellow students and faculty in or outside classroom, or with a patient during clinical skills sessions	• Medical ethics lectures • Clinical skills sessions • Small group sessions	• Class assessments • OSCE • Small group assessments • Written/ online assignments • Block exams • System ending exam • Feedback by students
PLO13: Conform to the highest standards of medical ethics and professionalism while dealing with the complexities of health care practice and delivery, organizations and bureaucracy			
PEC6: Evidence based practice and lifelong learning			
PLO14: Demonstrate an open mind, scientific inquisitiveness and research inclination to acquire newly emerging clinical knowledge and skills that enable improved quality of care in the wake of newly emerging diseases	• Practice as individuals or in teams the application of their knowledge of evidence-based decision making to investigate clinical scenarios and debate current topics in medical research	• Clinical skills sessions • Small group sessions	• Class assessments • OSCE • Small group assessments • Block exams • System ending exam • Systems feedback by basic science students
PLO15: Equip themselves with the latest skills on information technology, study design and statistical methods and apply them into appropriate use in medical practice, therapeutic effectiveness, critical appraisal of scientific literature, research methodologies and studies of their own patient population or the larger community.			
PLO16: Apply the experience of medical practice into practice-based systematic improvement activities and hence contribute new medical knowledge to the community of medical research throughout their career.			

6. Topics for Preventive medicine, Public health and Quality health parameters

- 001. Occupational and environmental health hazards
- 002. Environmental health
- 003. Prevention of food and water borne-diseases
- 004. Quality health improvement: prevention of parasitic diseases
- 005. Epidemiology of chronic respiratory diseases
- 006. Incidence and risk factors of anemias
- 007. Prevention of tuberculosis
- 008. Patient safety and quality improvement
- 009. Communication skills
- 010. Cancer epidemiology and screening
- 011. Vaccines, preventable diseases and recommended adult immunizations

7. Teaching-Learning distribution

- Lectures (60-70%)
- Active independent learning (30-40%)

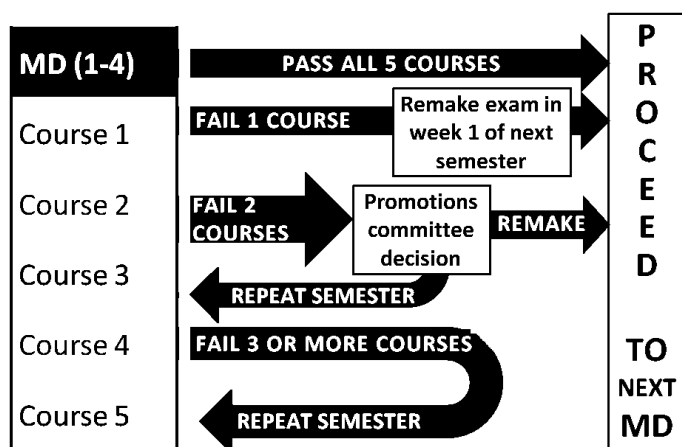
8. Grade distribution

- One block exam: 30%
- Final Exam: 50%
- Non-Exam Assessments: 20% (Assignments, Lecture assessments, quizzes)

9. Grading pattern

Grading Scale	Grade Points	Descriptor
H = 90% – 100%	4.0	Honors
HP = 80% – 89%	3.0	High Pass
P = 70% – 79%	2.0	Pass
F = less than 70%	0.0	Fail

10. Progression to next semester



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MD4 courses

Organ systems	1. MD 4016 Cardiovascular system
	2. MD 4017 Renal system
Modules	3. MD 4018 Endocrine and Reproductive system
	4. MD 4019 Clinical Skills-4
	5. MD 4020 Preventive Medicine, Public Health and Quality Health Parameters

XVI. MD 4016 Cardiovascular system

1. Course Overview:

Semester	Course Code	Course Title	Credit Hours
MD4	MD 4016	Cardiovascular system	10

2. Course Description:

This course will focus on the fundamentals of cardiovascular diseases. Areas studied include basic ideas such as Embryology, Anatomy, Physiology, Pathology and Pharmacology pertaining to the Cardiovascular System.

Learning opportunities include lectures, active independent learning, lab sessions, self-study and clinical experience with real and simulated patients.

3. General Learning Objectives:

At the end of this course, students should be able to:

- Understand the normal structure, function and development of the cardiovascular system from the molecular through organ system level and integration and regulation of physiologic mechanisms of the system in health and disease.
- Know the etiology, major risk factors, pathogenesis, pathophysiology of diseases, injuries and functional deficits affecting the cardiovascular system, with an ability to interpret the clinical, histopathologic, laboratory and radiographic findings.
- Understand the diagnosis, prevention, treatment and management of cardiovascular diseases, injuries and functional deficits.

4. Course learning outcomes (CLOs) (course measurable outcomes):

At the end of this system students should be able to:

Cognitive

- CLO 1. Illustrate the different parts of the cardiovascular system and discuss their development, normal structure, blood supply, venous and lymphatic drainage, innervation and functions (Bloom's C3, C2)
- CLO 2. Describe the physiological, biochemical and molecular mechanisms involved in the normal functioning of cardiovascular system namely blood circulation, fluid balance and maintenance of blood pressure (Bloom's C4)
- CLO 3. Describe the etiology, major risk factors, pathogenesis and pathological features of infections, disorders and diseases that affect the cardiovascular system and attribute the variations seen to the features and/or actions of genetic factors, microbes, drugs and microbial as well as non-microbial toxins (Bloom's C2, C4)
- CLO 4. Interpret the clinical, histopathologic, laboratory and radiographic findings in genetic factors, infections, diseases and disorders affecting the cardiovascular system (Bloom's C3)

Psychomotor

- CLO 5. Dissect the important regions of the cardiovascular system namely heart, pericardium and major blood vessels in a cadaveric specimen (Dave's P2)
- CLO 6. Focus histological and histopathological slides of the heart wall layers and blood vessels under a microscope and identify their normal cellular features and variations in atherosclerosis and ischemic heart diseases (Dave's P2,P5)
- CLO 7. Display the appropriate skill to demonstrate the effect of posture on heart rate and blood pressure in humans (Dave's P5)

Affective

- CLO 8. Practice as individuals or in teams the application of their medical knowledge to investigate clinical scenarios and debate current topics in medical research in the area of cardiovascular system (Krathwol-Bloom's A4)
- CLO 9. Demonstrate adherence to the highest standards of professional and ethical behavior, as explained in the Physicians' charter, during interaction with fellow students and faculty in or outside classroom, or with a patient during clinical skills sessions (Krathwol-Bloom's A2)
- CLO 10. Demonstrate empathy to fellow students' problems in or outside classroom, or to patients during history taking and physical examination sessions (Krathwol-Bloom's A2)
- CLO 11. Act with cultural humility while interacting with classmates, seniors, teachers and patients by focusing on their culture, age, gender, sexual orientation, risk perception, and personal values (Krathwol-Bloom's A6)

AUSOMA BASIC SCIENCES CURRICULUM DESIGN BOOKLET

5. Linking of AUSOMA's Program learning outcomes (PLOs) to course learning outcomes (CLOs), learning opportunities and outcome measures of Cardiovascular system:

PROGRAM LEARNING OUTCOMES (PLOs) (= PROGRAM MEASURABLE OUTCOMES)	COURSE LEARNING OUTCOMES (CLOs) (= COURSE MEASURABLE OUTCOMES) FOR CARDIOVASCULAR SYSTEM	Learning opportunities	Outcome measures
At the end of four years of MD program, AUSOMA graduates should be able to:	At the end of this system, students should be able to:		
PEC1: Basic medical knowledge			
PLO1: Describe the fundamental principles of homeostasis and disturbance in homeostasis, and the role of medical intervention during disturbed homeostasis	• Illustrate the different parts of the cardiovascular system and discuss their development, normal structure, blood supply, venous and lymphatic drainage, innervation and functions • Describe the physiological, biochemical and molecular mechanisms involved in the normal functioning of cardiovascular system namely blood circulation, fluid balance and maintenance of blood pressure • Describe the etiology, major risk factors, pathogenesis and pathological features of infections, disorders and diseases that affect the cardiovascular system and attribute the variations seen to the features and/or actions of genetic factors, microbes, drugs and microbial as well as non-microbial toxins	• Interactive Lectures • Small group sessions	• Class assessments • Small group assessments • Written/ online assignments • Block exams • System ending exam • Feedback by students
PLO2: Apply fundamental knowledge of basic and clinical sciences to the diagnosis, treatment, prevention and management of patient problems			
PLO3: Identify the role of external and epigenetic factors as causes of variations in disease expression			
PEC2: Clinical and diagnostic skills			
PLO4: Accurately perform history taking and physical examination by the right application of acquired theoretical knowledge	• Interpret the clinical, histopathologic, laboratory and radiographic findings in mutations, infections, diseases and disorders affecting the cardiovascular system • Dissect the important regions of the cardiovascular system namely heart, pericardium and major blood vessels in a cadaveric specimen • Focus histological and histopathological slides of the heart wall layers and blood vessels under a microscope and identify their normal cellular features and variations in atherosclerosis and ischemic heart diseases • Display the appropriate skill to demonstrate the effect of posture on heart rate and blood pressure in humans	• Interactive Lectures • Clinical skills sessions • Lab sessions	• Class assessments • OSCE • Written/ online assignments • Block exams • System ending exam • Feedback by students
PLO5: Accurately and completely perform the appropriate technical procedures so as to reflect completeness in the skills of medical practice			
PLO6: Conjecture differential diagnoses and formulate a diagnosis by applying acquired knowledge and in the background of gathered history as well as clinical findings			

AUSOMA BASIC SCIENCES CURRICULUM DESIGN BOOKLET

PEC3: Patient centered medicine	• Act with cultural humility while interacting with classmates, seniors, teachers and patients by focusing on their culture, age, gender, sexual orientation, risk perception, and personal values	• Interactive Lectures • Clinical skills sessions • Lab sessions	• Class assessments • OSCE • Written/ online assignments • Block exams • System ending exam • Feedback by students
PLO7: Deliver quality patient care in the context of varied perceptions of health and disease as well as varied responses to symptoms and treatments by people of different genders, diverse ages, cultures, ethnicities, religions, nationalities, socioeconomic backgrounds and those with disabilities PLO8: Perceive the medical consequences of common societal problems as well as critique with patients and patient parties about complexities and management of existing social issues			
PEC4: Interpersonal rapport and communication	• Demonstrate empathy to fellow students' problems in or outside classroom, or to patients during history taking and physical examination sessions	• Interactive Lectures • Clinical skills sessions	• Class assessments • OSCE • Written/ online assignments • Block exams • System ending exam • Feedback by students
PLO9: Communicate information and ideas categorically and in an organized manner to inform and educate patients, patient parties and society			
PLO10: Initiate, establish and adhere to empathetic communication with patients, families, colleagues, health professionals and supervisors to achieve quality health care by upholding the spirit of non-discrimination and inclusiveness			
PLO11: Resolve patient-doctor, patient party-doctor, doctor-doctor, doctor-supervisor or doctor-healthcare system related conflicts through effective communication			

AUSOMA BASIC SCIENCES CURRICULUM DESIGN BOOKLET

PEC5: Medical ethics and professionalism	• Demonstrate adherence to the highest standards of professional and ethical behavior, as explained in the Physicians' charter, during interaction with fellow students and faculty in or outside classroom, or with a patient during clinical skills sessions	• Medical ethics lectures • Clinical skills sessions • Small group sessions	• Class assessments • OSCE • Small group assessments • Written/ online assignments • Block exams • System ending exam • Feedback by students
PLO12: Apply during medical practice, the three fundamental principles and ten professional commitments listed in "The Physicians' Charter" of ABIM, ACP and European federation of Internal medicine PLO13: Conform to the highest standards of medical ethics and professionalism while dealing with the complexities of health care practice and delivery, organizations and bureaucracy			
PEC6: Evidence based practice and lifelong learning	• Practice as individuals or in teams the application of their medical knowledge to investigate clinical scenarios and debate current topics in medical research in the area of cardiovascular system	• Clinical skills sessions • Small group sessions	• Class assessments • OSCE • Small group assessments • Block exams • System ending exam • Systems feedback by basic science students
PLO14: Demonstrate an open mind, scientific inquisitiveness and research inclination to acquire newly emerging clinical knowledge and skills that enable improved quality of care in the wake of newly emerging diseases			
PLO15: Equip themselves with the latest skills on information technology, study design and statistical methods and apply them into appropriate use in medical practice, therapeutic effectiveness, critical appraisal of scientific literature, research methodologies and studies of their own patient population or the larger community.			
PLO16: Apply the experience of medical practice into practice-based systematic improvement activities and hence contribute new medical knowledge to the community of medical research throughout their career.			

6. Topics for Cardiovascular system

- 001. Introduction to Cardiovascular System
- 002. Anatomy of Heart
- 003. Histology of Heart
- 004. Introduction to CVS Physiology
- 005. Development of heart and vessels
- 006. Histology of blood vessels
- 007. Physiological basis of hypertension
- 008. Pathology of hypertension
- 009. Antihypertensive drugs
- 010. Microcirculation of CVS
- 011. Anatomy of Mediastinum, Diaphragm and Pericardium
- 012. Cardiac Muscle Electrical Activity
- 013. Cardiac Muscle Mechanics
- 014. Diuretics and Antidiuretics
- 015. Coronary Circulation
- 016. Physiology of Cardiac Cycle
- 017. Cholesterol and Lipoprotein Metabolism
- 018. Dyslipidemias and Cardiac Biomarkers
- 019. Antihyperlipidemic Drugs
- 020. Atherosclerosis
- 021. Ischemic Heart Diseases
- 022. EKG Basis
- 023. EKG Clinical Application
- 024. Shock and Acute Pulmonary Edema
- 025. Antianginal Drugs
- 026. PV Loop, Central Venous Pressure
- 027. Heart Failure
- 028. Drugs for Heart failure
- 029. Infections of Heart and Rheumatic Fever
- 030. Valvular heart diseases
- 031. Congenital heart diseases
- 032. Aneurysm, Dissection, Peripheral Vascular Diseases
- 033. Vasculitis
- 034. Pericarditis and Cardiac Tamponade
- 035. Cardiomyopathies
- 036. Antiarrhythmic Medications
- 037. Cardiovascular Imaging

7. Teaching-Learning distribution

- Lectures (50-60%)
- Active independent learning (20-30%)
- Lab sessions (10-20%)

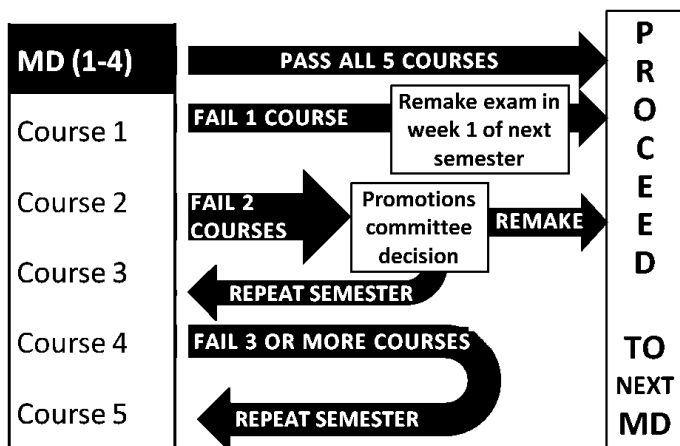
8. Grade distribution

- One block exam: 30%
- Final Exam: 50%
- Non-Exam Assessments: 20% (Assignments, Lecture assessments, quizzes)

9. Grading pattern

Grading Scale	Grade Points	Descriptor
H = 90% – 100%	4.0	Honors
HP = 80% – 89%	3.0	High Pass
P = 70% – 79%	2.0	Pass
F = less than 70%	0.0	Fail

10. Progression to next semester



11. Learning resources

A. Anatomy

Clinically oriented Anatomy by Keith L. Moore, Arthur F. Dalley, Arthur F. Dalley and Anne M.R. Agur, Published by Lippincott, Williams and Wilkins, Edition 8 ISBN-13: 978-1975104962 ISBN-10: 197510496X

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- a. Jekel's Epidemiology, Biostatistics, Preventive Medicine, and Public Health, by D. L. Katz, J. G. Elmore, D. M.G. Wild, & S. C. Lucan. Elsevier Saunders, Fourth Edition, ISBN: 978-1-4557-0658-7
- b. "Basic & Clinical Biostatistics, 5th Edition."

C. Biochemistry

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- b. Harper's Illustrated Biochemistry Thirty-First Edition 31st Edition by Victor Rodwell, David Bender, Kathleen Botham, Peter Kennelly, P. Anthony Weil. ISBN-13: 978-1259837937; ISBN-10: 1259837939

D. Clinical Skills

Bate's guide to Physical Examination and History taking, by Barbara Bates, Lynn S Bickley. 12th edition ISBN-13: 978-1469893419, ISBN-10: 9781469893419

E. Embryology

The Developing Human –Clinically Oriented Embryology by Keith L. Moore and T.V.N. Persaud, Published by Saunders – Elsevier, Edition 9, ISBN: 978 -1-4377-2002-0

F. Genetics

Thompson & Thompson Genetics in Medicine (9th Ed.) by Nussbaum, Mcinnes & Willard. Elsevier Australia ISBN 9780323547628

G. Histology

Junqueira's Basic Histology: Text and Atlas, 15e. Anthony L. Mescher Publisher: McGraw-Hill Education ISBN-13: 978-1260026177; ISBN-10: 1260026175

H. Immunology

- a. Lippincott Illustrated Reviews: Immunology Second, North American Edition by Thao Doan, Roger Melvold, Susan Viselli, Carl Waltenbaugh. ISBN-13: 978-1451109375; ISBN-10: 9781451109375
- b. Cellular and Molecular Immunology by Abul Abbas, Andrew Lichtman, Shiv Pillai, 10th Edition, eBook ISBN: 9780323757508, Paperback ISBN: 9780323757485



AUSOMA BASIC SCIENCES CURRICULUM DESIGN BOOKLET

I. Medical Ethics

- a. Resolving Ethical Dilemmas: A guide for Clinicians Sixth Edition, by Bernard Lo. Lippincott Williams & Wilkins, a Wolters Kluwer. ISBN-13: 978-1975103545, ISBN-10: 1975 103548
- b. "Medical Law & Ethics, 6th Ed."
- c. "Resolving Ethical Dilemmas: A Guide for Clinician, 6th Ed"
- d. "Medical Ethics for Dummies"

J. Microbiology

Lippincott's illustrated reviews: Microbiology 4th edition Author: Cynthia Nau Cornelissen Paperback ISBN: 978-1496395856 Imprint: Wolters Kluwer

K. Neuroscience

- a. Essential Neuroscience by Allan Siegel, Wolters Kluwer, Fourth edition ISBN-13, 978-1451189681
- b. Clinical Neuroanatomy for Medical Students: by Richard S. Snell. 7th edition, ISBN 978-0781794275

L. Nutrition

Understanding Normal And Clinical Nutrition (8th Ed.) by Sharon Rady Rolfes, Kathryn Pinna, Elley Whitney. Wadsworth Cengage learning. ISBN-13: 978-0-495-55646-6 ISBN-10: 0-495-55646-7

M. Pathology

Robbins Basic Pathology (Robbins Pathology) 10th Edition by Vinay Kumar, Abul K. Abbas, Jon C. Aster MD. ISBN-13: 978-0323353175; ISBN-10: 0323353177

N. Pharmacology

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O. Physiology

Physiology, by Linda S. Costanzo. 6th edition. ISBN-13: 978-0323478816, ISBN-10: 0323478816

P. Preventive Medicine

- a. Jekel's Epidemiology, Biostatistics, Preventive Medicine, and Public Health, by D. L. Katz, J. G. Elmore, D. M.G. Wild, & S. C. Lucan. Elsevier Saunders, Fourth Edition, ISBN: 978-1-4557-0658-7
- b. "Basic & Clinical Biostatistics, 5th Edition. "Maxcy-Rosenau-Last Public Health & Preventive Medicine, 15th Edition," by Robert B. Wallace. ISBN- 13: 978-0071441988, ISBN- 10: 0071441980

XVII. MD 4017 Renal system

1. Course Overview:

Semester	Course Code	Course Title	Credit Hours
MD4	MD 4017	Renal system	4

2. Course Description:

This course provides a coherent knowledge of anatomy, physiology, pathology, microbiology and pharmacology concepts in renal system, in an integrated manner. The course introduces students to clinical skills pertaining to renal system, as well as prevention and control of renal disorders.

Learning opportunities include lectures, active independent learning, lab sessions, self-study and clinical experience with real and simulated patients.

3. General Learning Objectives:

At the end of this course, students should be able to:

- Understand the development, structure, blood supply, innervation, distinguishing features and functions of different parts of the renal system
- Appreciate the physiological mechanism and/or biochemical and molecular basis of processes involved in filtration, reabsorption, secretion and fluid homeostasis functions of the kidney
- Comprehend the etiology, risk factors, pathogenesis, pathological features and interventions in mutations, infections, disorders and diseases that affect the renal system

4. Course learning outcomes (CLOs) (course measurable outcomes):

At the end of this system students should be able to:

Cognitive

- CLO 1. Illustrate the different parts of the renal system and discuss their development, normal structure, histological variations between different parts, blood supply, venous and lymphatic drainage, innervation and functions (Bloom's C3, C2)
- CLO 2. Describe the physiological mechanisms and the biochemical and molecular basis of most important processes involved in filtration, reabsorption, secretion and fluid homeostasis functions of the kidney (Bloom's C4)
- CLO 3. Describe the pathogenesis and pathological features of infections, disorders and diseases that affect the renal system and attribute the variations seen to the features and/or actions of genetic factors, microbes, drugs and microbial as well as non-microbial toxins (Bloom's C2, C4)

Psychomotor

- CLO 4. Focus histological slides of major parts of the urinary system under a microscope and identify their cellular features (Dave's P2,P5)
- CLO 5. Microscopically identify areas of medical importance in histopathological slides related to disorders of kidney and urinary bladder (Dave's P5)

Affective

- CLO 6. Practice as individuals or in teams the application of their medical knowledge to investigate clinical scenarios and debate current topics in medical research in the area of renal system (Krathwol-Bloom's A4)
- CLO 7. Demonstrate adherence to the highest standards of professional and ethical behavior, as explained in the Physicians' charter, during interaction with fellow students and faculty in or outside classroom, or with a patient during clinical skills sessions (Krathwol-Bloom's A2)
- CLO 8. Demonstrate empathy to fellow students' problems in or outside classroom, or to patients during history taking and physical examination sessions (Krathwol-Bloom's A2)
- CLO 9. Act with cultural humility while interacting with classmates, seniors, teachers and patients by focusing on their culture, age, gender, sexual orientation, risk perception, and personal values (Krathwol-Bloom's A6)

AUSOMA BASIC SCIENCES CURRICULUM DESIGN BOOKLET

5. Linking of AUSOMA's Program learning outcomes (PLOs) to course learning outcomes (CLOs), learning opportunities and outcome measures of Renal system:

PROGRAM LEARNING OUTCOMES (PLOs) (= PROGRAM MEASURABLE OUTCOMES)	COURSE LEARNING OUTCOMES (CLOs) (= COURSE MEASURABLE OUTCOMES) FOR RENAL SYSTEM	Learning opportunities	Outcome measures
At the end of four years of MD program, AUSOMA graduates should be able to: PEC1: Basic medical knowledge PLO1: Describe the fundamental principles of homeostasis and disturbance in homeostasis, and the role of medical intervention during disturbed homeostasis PLO2: Apply fundamental knowledge of basic and clinical sciences to the diagnosis, treatment, prevention and management of patient problems PLO3: Identify the role of external and epigenetic factors as causes of variations in disease expression	At the end of this system, students should be able to: • Illustrate the different parts of the renal system and discuss their development, normal structure, histological variations between different parts, blood supply, venous and lymphatic drainage, innervation and functions • Describe the physiological mechanisms and the biochemical and molecular basis of most important processes involved in filtration, reabsorption, secretion and fluid homeostasis functions of the kidney • Describe the pathogenesis and pathological features of infections, disorders and diseases that affect the renal system and attribute the variations seen to the features and/or actions of genetic factors, microbes, drugs and microbial as well as non-microbial toxins	• Interactive Lectures • Small group sessions	• Class assessments • Small group assessments • Written/ online assignments • Block exams • System ending exam • Feedback by students
PEC2: Clinical and diagnostic skills PLO4: Accurately perform history taking and physical examination by the right application of acquired theoretical knowledge PLO5: Accurately and completely perform the appropriate technical procedures so as to reflect completeness in the skills of medical practice PLO6: Conjecture differential diagnoses and formulate a diagnosis by applying acquired knowledge and in the background of gathered history as well as clinical findings	• Focus histological slides of major parts of the urinary system under a microscope and identify their cellular features • Microscopically identify areas of medical importance in histopathological slides related to disorders of kidney and urinary bladder	• Interactive Lectures • Clinical skills sessions • Lab sessions	• Class assessments • OSCE • Written/ online assignments • Block exams • System ending exam • Feedback by students

AUSOMA BASIC SCIENCES CURRICULUM DESIGN BOOKLET

PEC3: Patient centered medicine	• Act with cultural humility while interacting with classmates, seniors, teachers and patients by focusing on their culture, age, gender, sexual orientation, risk perception, and personal values	• Interactive Lectures • Clinical skills sessions • Lab sessions	• Class assessments • OSCE • Written/ online assignments • Block exams • System ending exam • Feedback by students
PLO7: Deliver quality patient care in the context of varied perceptions of health and disease as well as varied responses to symptoms and treatments by people of different genders, diverse ages, cultures, ethnicities, religions, nationalities, socioeconomic backgrounds and those with disabilities PLO8: Perceive the medical consequences of common societal problems as well as critique with patients and patient parties about complexities and management of existing social issues			
PEC4: Interpersonal rapport and communication	• Demonstrate empathy to fellow students' problems in or outside classroom, or to patients during history taking and physical examination sessions	• Interactive Lectures • Clinical skills sessions	• Class assessments • OSCE • Written/ online assignments • Block exams • System ending exam • Feedback by students
PLO9: Communicate information and ideas categorically and in an organized manner to inform and educate patients, patient parties and society			
PLO10: Initiate, establish and adhere to empathetic communication with patients, families, colleagues, health professionals and supervisors to achieve quality health care by upholding the spirit of non-discrimination and inclusiveness			
PLO11: Resolve patient-doctor, patient party-doctor, doctor-doctor, doctor-supervisor or doctor-healthcare system related conflicts through effective communication			

AUSOMA BASIC SCIENCES CURRICULUM DESIGN BOOKLET

PEC5: Medical ethics and professionalism			
PLO12: Apply during medical practice, the three fundamental principles and ten professional commitments listed in “The Physicians’ Charter” of ABIM, ACP and European federation of Internal medicine	• Demonstrate adherence to the highest standards of professional and ethical behavior, as explained in the Physicians’ charter, during interaction with fellow students and faculty in or outside classroom, or with a patient during clinical skills sessions	• Medical ethics lectures • Clinical skills sessions • Small group sessions	• Class assessments • OSCE • Small group assessments • Written/ online assignments • Block exams • System ending exam • Feedback by students
PLO13: Conform to the highest standards of medical ethics and professionalism while dealing with the complexities of health care practice and delivery, organizations and bureaucracy			
PEC6: Evidence based practice and lifelong learning			
PLO14: Demonstrate an open mind, scientific inquisitiveness and research inclination to acquire newly emerging clinical knowledge and skills that enable improved quality of care in the wake of newly emerging diseases	• Practice as individuals or in teams the application of their medical knowledge to investigate clinical scenarios and debate current topics in medical research in the area of renal system	• Clinical skills sessions • Small group sessions	• Class assessments • OSCE • Small group assessments • Block exams • System ending exam • Systems feedback by basic science students
PLO15: Equip themselves with the latest skills on information technology, study design and statistical methods and apply them into appropriate use in medical practice, therapeutic effectiveness, critical appraisal of scientific literature, research methodologies and studies of their own patient population or the larger community.			
PLO16: Apply the experience of medical practice into practice-based systematic improvement activities and hence contribute new medical knowledge to the community of medical research throughout their career.			

6. Topics for Renal system

- 001. Anatomy of kidneys
- 002. Histology of kidney
- 003. Introduction to physiology of renal system
- 004. Histology of ureter, urinary bladder, urethra
- 005. Anatomy of ureter, urinary bladder, urethra
- 006. Development of the urinary system
- 007. Hemodynamics of kidney
- 008. GFR, RPF and regulation of fluids
- 009. Glomerulonephritis
- 010. Nephritic and nephrotic conditions-1
- 011. Nephritic and nephrotic conditions-2
- 012. Renal transport and regulation of electrolytes
- 013. Tubulointerstitial diseases and cystic disease of kidney
- 014. Urinary tract infection
- 015. Acid base balance and RTA
- 016. Acute kidney injury
- 017. Chronic kidney diseases, ESRD, kidney transplantation
- 018. Vascular disease, obstructive uropathy, hydronephrosis
- 019. Nephrolithiasis
- 020. Endocrine functions of the kidney
- 021. Tumors of the kidney
- 022. Renal function tests and urinalysis
- 023. Bladder pathologies
- 024. Pharmacology of the renal system
- 025. Control of urination

7. Teaching-Learning distribution

- Lectures (50-60%)
- Active independent learning (20-30%)
- Lab sessions (10-20%)

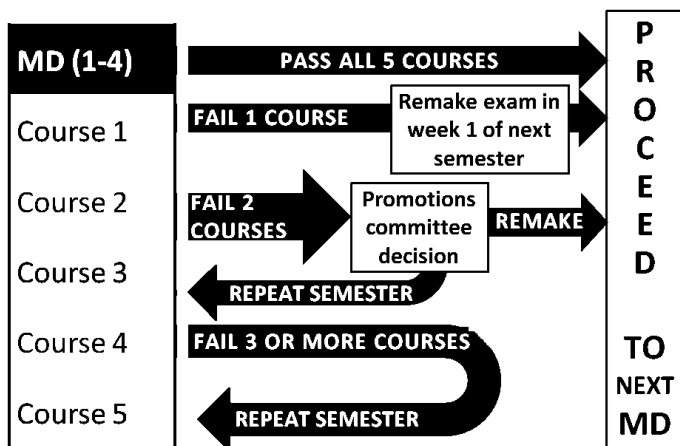
8. Grade distribution

- One block exam: 30%
- Final Exam: 50%
- Non-Exam Assessments: 20% (Assignments, Lecture assessments, quizzes)

9. Grading pattern

Grading Scale	Grade Points	Descriptor
H = 90% – 100%	4.0	Honors
HP = 80% – 89%	3.0	High Pass
P = 70% – 79%	2.0	Pass
F = less than 70%	0.0	Fail

10. Progression to next semester



11. Learning resources

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Clinically oriented Anatomy by Keith L. Moore, Arthur F. Dalley, Arthur F. Dalley and Anne M.R. Agur, Published by Lippincott, Williams and Wilkins, Edition 8 ISBN-13: 978-1975104962 ISBN-10: 197510496X

B. Behavioral Sciences

- a. Jekel's Epidemiology, Biostatistics, Preventive Medicine, and Public Health, by D. L. Katz, J. G. Elmore, D. M.G. Wild, & S. C. Lucan. Elsevier Saunders, Fourth Edition, ISBN: 978-1-4557-0658-7
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The Developing Human –Clinically Oriented Embryology by Keith L. Moore and T.V.N. Persaud, Published by Saunders – Elsevier, Edition 9, ISBN: 978 -1-4377-2002-0

F. Genetics

Thompson & Thompson Genetics in Medicine (9th Ed.) by Nussbaum, Mcinnes & Willard. Elsevier Australia ISBN 9780323547628

G. Histology

Junqueira's Basic Histology: Text and Atlas, 15e. Anthony L. Mescher Publisher: McGraw-Hill Education ISBN-13: 978-1260026177; ISBN-10: 1260026175

H. Immunology

- a. Lippincott Illustrated Reviews: Immunology Second, North American Edition by Thao Doan, Roger Melvold, Susan Viselli, Carl Waltenbaugh. ISBN-13: 978-1451109375; ISBN-10: 9781451109375
- b. Cellular and Molecular Immunology by Abul Abbas, Andrew Lichtman, Shiv Pillai, 10th Edition, eBook ISBN: 9780323757508, Paperback ISBN: 9780323757485



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J. Microbiology

Lippincott's illustrated reviews: Microbiology 4th edition Author: Cynthia Nau Cornelissen Paperback ISBN: 978-1496395856 Imprint: Wolters Kluwer

K. Neuroscience

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- b. Clinical Neuroanatomy for Medical Students: by Richard S. Snell. 7th edition, ISBN 978-0781794275

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XVIII. MD 4018 Endocrine and reproductive system

1. Course Overview:

Semester	Course Code	Course Title	Credit Hours
MD4	MD 4018	Endocrine and reproductive system	10

2. Course Description:

Endocrine and reproductive system as an organ system will be taught with an integrated approach integrating the embryology, anatomy, physiology, biochemistry, pharmacology, microbiology, and histopathology of the organ system, fostering its understanding in the clinical context and addressing social implications and behavioral aspects in diseases of the system. The flow of topics will follow through the structure of endocrine glands/ reproductive organs; synthesis, mechanism of action and degradation of the chemical messengers secreted by them; physiological functions of the glands and organs; endogenous regulatory mechanisms to maintain the homeostasis of the chemical messengers, clinical conditions associated with disturbances, laboratory investigations to detect/ diagnose the conditions, pharmacological interventions to restore the physiological balance and management of these conditions. Students will be exposed to clinical scenarios both classic as well as of current interest to achieve evidence based as well as lifelong learning. They will be trained in history taking, physical examination and differential diagnosis, comprehension of triggers that disrupt patterns of behavior and social issues that could limit the physical as well as psychological freedom of the affected individual. Students will come to understand the relationship between different hormone levels and their influence in the patients thought process.

Learning opportunities include lectures, active independent learning, lab sessions, self-study and clinical experience with real and simulated patients.

3. General Learning Objectives:

At the end of this course, students should be able to:

- Understand the development, structure, blood supply, innervation, distinguishing features and functions of different parts of the renal system
- Appreciate the physiological mechanism and/or biochemical and molecular basis of processes involved in filtration, reabsorption, secretion and fluid homeostasis functions of the kidney
- Comprehend the etiology, risk factors, pathogenesis, pathological features and interventions in mutations, infections, disorders and diseases that affect the renal system

4. Course learning outcomes (CLOs) (course measurable outcomes):

At the end of this system students should be able to:

Cognitive

- CLO 1. Explain the normal development, gross and microscopic structure, blood supply, venous and lymphatic drainage, innervations and functions of all major tissues and organs of the endocrine and reproductive system (Bloom's C2)
- CLO 2. Describe the normal physiological functioning of all major endocrine glands and reproductive organs as well as process of secretion, metabolism, mechanism of action and neuroendocrine regulation for all major hormones (Bloom's C4)
- CLO 3. Describe the etiology, pathogenesis and pathological features of infections, disorders and diseases that affect the endocrine and reproductive system and attribute the variations seen to the features and/or actions of genetic factors, microbes, drugs and microbial as well as non-microbial toxins (Bloom's C2, C4)

Psychomotor

- CLO 4. Focus histological slides of major endocrine glands under a microscope and identify their cellular features (Dave's P2,P5)
- CLO 5. Focus histological slides of major parts of the male and female reproductive systems under a microscope and identify their cellular features (Dave's P2,P5)
- CLO 6. Microscopically identify areas of medical importance in histopathological slides related to endocrine neoplasia and disorders of the male and female reproductive systems (Dave's P5)

Affective

- CLO 7. Practice as individuals or in teams the application of their medical knowledge to investigate clinical scenarios and debate current topics in medical research in the area of endocrine and reproductive system (Krathwol-Bloom's A4)
- CLO 8. Demonstrate adherence to the highest standards of professional and ethical behavior, as explained in the Physicians' charter, during interaction with fellow students and faculty in or outside classroom, or with a patient during clinical skills sessions (Krathwol-Bloom's A2)
- CLO 9. Demonstrate empathy to fellow students' problems in or outside classroom, or to patients during history taking and physical examination sessions (Krathwol-Bloom's A2)
- CLO 10. Act with cultural humility while interacting with classmates, seniors, teachers and patients by focusing on their culture, age, gender, sexual orientation, risk perception, and personal values (Krathwol-Bloom's A6)

AUSOMA BASIC SCIENCES CURRICULUM DESIGN BOOKLET

5. Linking of AUSOMA's Program learning outcomes (PLOs) to course learning outcomes (CLOs), learning opportunities and outcome measures of Renal system:

PROGRAM LEARNING OUTCOMES (PLOs) (= PROGRAM MEASURABLE OUTCOMES)	COURSE LEARNING OUTCOMES (CLOs) (= COURSE MEASURABLE OUTCOMES) FOR RENAL SYSTEM	Learning opportunities	Outcome measures
At the end of four years of MD program, AUSOMA graduates should be able to: PEC1: Basic medical knowledge PLO1: Describe the fundamental principles of homeostasis and disturbance in homeostasis, and the role of medical intervention during disturbed homeostasis PLO2: Apply fundamental knowledge of basic and clinical sciences to the diagnosis, treatment, prevention and management of patient problems PLO3: Identify the role of external and epigenetic factors as causes of variations in disease expression	At the end of this system, students should be able to: • Explain the normal development, gross and microscopic structure, blood supply, venous and lymphatic drainage, innervations and functions of all major tissues and organs of the endocrine and reproductive system • Describe the normal physiological functioning of all major endocrine glands and reproductive organs as well as process of secretion, metabolism, mechanism of action and neuroendocrine regulation for all major hormones • Describe the etiology, pathogenesis and pathological features of infections, disorders and diseases that affect the endocrine and reproductive system and attribute the variations seen to the features and/or actions of genetic factors, microbes, drugs and microbial as well as non-microbial toxins	• Interactive Lectures • Small group sessions	• Class assessments • Small group assessments • Written/ online assignments • Block exams • System ending exam • Feedback by students
PEC2: Clinical and diagnostic skills PLO4: Accurately perform history taking and physical examination by the right application of acquired theoretical knowledge PLO5: Accurately and completely perform the appropriate technical procedures so as to reflect completeness in the skills of medical practice PLO6: Conjecture differential diagnoses and formulate a diagnosis by applying acquired knowledge and in the background of gathered history as well as clinical findings	• Focus histological slides of major endocrine glands under a microscope and identify their cellular features • Focus histological slides of major parts of the male and female reproductive systems under a microscope and identify their cellular features • Microscopically identify areas of medical importance in histopathological slides related to endocrine neoplasia and disorders of the male and female reproductive systems	• Interactive Lectures • Clinical skills sessions • Lab sessions	• Class assessments • OSCE • Written/ online assignments • Block exams • System ending exam • Feedback by students

AUSOMA BASIC SCIENCES CURRICULUM DESIGN BOOKLET

PEC3: Patient centered medicine	• Act with cultural humility while interacting with classmates, seniors, teachers and patients by focusing on their culture, age, gender, sexual orientation, risk perception, and personal values	• Interactive Lectures • Clinical skills sessions • Lab sessions	• Class assessments • OSCE • Written/ online assignments • Block exams • System ending exam • Feedback by students
PLO7: Deliver quality patient care in the context of varied perceptions of health and disease as well as varied responses to symptoms and treatments by people of different genders, diverse ages, cultures, ethnicities, religions, nationalities, socioeconomic backgrounds and those with disabilities PLO8: Perceive the medical consequences of common societal problems as well as critique with patients and patient parties about complexities and management of existing social issues			
PEC4: Interpersonal rapport and communication	• Demonstrate empathy to fellow students' problems in or outside classroom, or to patients during history taking and physical examination sessions	• Interactive Lectures • Clinical skills sessions	• Class assessments • OSCE • Written/ online assignments • Block exams • System ending exam • Feedback by students
PLO9: Communicate information and ideas categorically and in an organized manner to inform and educate patients, patient parties and society			
PLO10: Initiate, establish and adhere to empathetic communication with patients, families, colleagues, health professionals and supervisors to achieve quality health care by upholding the spirit of non-discrimination and inclusiveness			
PLO11: Resolve patient-doctor, patient party-doctor, doctor-doctor, doctor-supervisor or doctor-healthcare system related conflicts through effective communication			

AUSOMA BASIC SCIENCES CURRICULUM DESIGN BOOKLET

PEC5: Medical ethics and professionalism			
PLO12: Apply during medical practice, the three fundamental principles and ten professional commitments listed in “The Physicians’ Charter” of ABIM, ACP and European federation of Internal medicine	• Demonstrate adherence to the highest standards of professional and ethical behavior, as explained in the Physicians’ charter, during interaction with fellow students and faculty in or outside classroom, or with a patient during clinical skills sessions	• Medical ethics lectures • Clinical skills sessions • Small group sessions	• Class assessments • OSCE • Small group assessments • Written/ online assignments • Block exams • System ending exam • Feedback by students
PLO13: Conform to the highest standards of medical ethics and professionalism while dealing with the complexities of health care practice and delivery, organizations and bureaucracy			
PEC6: Evidence based practice and lifelong learning			
PLO14: Demonstrate an open mind, scientific inquisitiveness and research inclination to acquire newly emerging clinical knowledge and skills that enable improved quality of care in the wake of newly emerging diseases	• Practice as individuals or in teams the application of their medical knowledge to investigate clinical scenarios and debate current topics in medical research in the area of endocrine and reproductive system	• Clinical skills sessions • Small group sessions	• Class assessments • OSCE • Small group assessments • Block exams • System ending exam • Systems feedback by basic science students
PLO15: Equip themselves with the latest skills on information technology, study design and statistical methods and apply them into appropriate use in medical practice, therapeutic effectiveness, critical appraisal of scientific literature, research methodologies and studies of their own patient population or the larger community.			
PLO16: Apply the experience of medical practice into practice-based systematic improvement activities and hence contribute new medical knowledge to the community of medical research throughout their career.			

6. Topics for Endocrine and reproductive system

001. Introduction to endocrine system
002. Anatomy-Embryology of Pituitary gland
003. Histology of Pituitary gland
004. Physiology – Pituitary gland
005. Hormone & signal transduction-1
006. Hormone & signal transduction 2
007. Pharmacology - Hypothalamic & pituitary analogs
008. Pathology - Pituitary disorders
009. Anatomy-Embryology-Thyroid and Parathyroid gland with congenital issues
010. Histology- Thyroid & Parathyroid gland, Adrenal glands and Pancreas
011. Physiology – Thyroid
012. Biosynthesis of thyroid and parathyroid hormones
013. Physiology- Metabolism parathyroid Hormones, Calcitonin and Vitamin D
014. Thyroid pathologies
015. Parathyroid disorders/tumors
016. Pharmacology- Thyroid – Parathyroid- Calcium
017. Anatomy and development -Adrenal and suprarenal glands
018. Physiology of adrenal gland/hormone synthesis
019. Adrenal gland Cushing's syndrome
020. CAH & Addison's
021. Anatomy/Embryo and Congenital abnormalities of Pancreas
022. Physiology- Endocrine Pancreas
023. Pancreatic neuroendocrine tumors and M.E.N. Syndrome
024. Diabetes Mellitus
025. Pharmacology- Drugs for Diabetes Mellitus
026. Introduction to Male and Female Reproductive System
027. Anatomy of Female Reproductive system
028. Histology of Female Reproductive System with lab
029. Anatomy and development of Female internal genitalia
030. Female Reproductive physiology and Menstrual Cycle
031. Pharmacology-Estrogen and Androgens
032. Normal pregnancy, labor, delivery and lactation
033. Common Genetic and chromosomal disorders
034. Biochemical changes in pregnancy
035. Complications of pregnancy 1
036. Complications of pregnancy 2
037. Anatomy and embryology of Breast
038. Tumors of the breast
039. Obstetrical and Perinatal infections / TORCHS-1
040. Obstetrical and Perinatal infections / TORCHS-2
041. Pathology of Female reproductive Part 1
042. Pathology of Female Reproductive part 2
043. Sexually Transmitted Infections part-1
044. Sexually Transmitted Infections part-2
045. Anatomy and development of Male Reproductive system
046. Histology of Male Reproductive system- Spermiogenesis
047. Anatomy of Posterior Abdominal and Anterolateral abdominal wall/ inguinal
048. Congenital pathologies of reproductive system
049. Pathology of Male reproductive
050. Radiological-Anatomy Lab pelvic structure

7. Teaching-Learning distribution

- Lectures (50-60%)
- Active independent learning (20-30%)
- Lab sessions (10-20%)

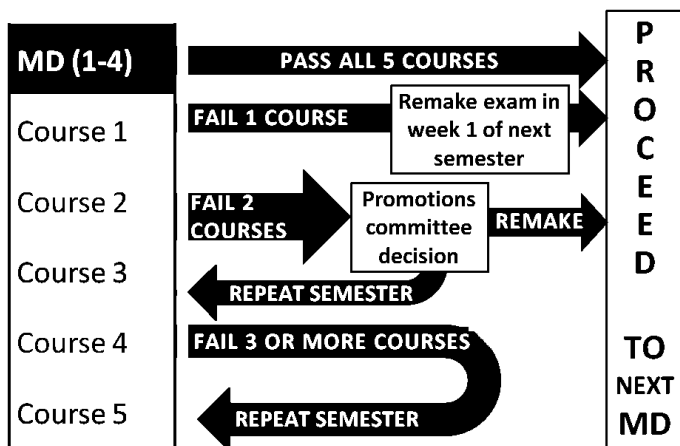
8. Grade distribution

- Two block exams: 30%
- Final Exam: 50%
- Non-Exam Assessments: 20% (Assignments, Lecture assessments, quizzes)

9. Grading pattern

Grading Scale	Grade Points	Descriptor
H = 90% – 100%	4.0	Honors
HP = 80% – 89%	3.0	High Pass
P = 70% – 79%	2.0	Pass
F = less than 70%	0.0	Fail

10. Progression to next semester



11. Learning resources

A. Anatomy

Clinically oriented Anatomy by Keith L. Moore, Arthur F. Dalley, Arthur F. Dalley and Anne M.R. Agur, Published by Lippincott, Williams and Wilkins, Edition 8 ISBN-13: 978-1975104962 ISBN-10: 197510496X

B. Behavioral Sciences

- a. Jekel's Epidemiology, Biostatistics, Preventive Medicine, and Public Health, by D. L. Katz, J. G. Elmore, D. M.G. Wild, & S. C. Lucan. Elsevier Saunders, Fourth Edition, ISBN: 978-1-4557-0658-7
- b. "Basic & Clinical Biostatistics, 5th Edition."

C. Biochemistry

- a. Lippincott Illustrated Reviews: Biochemistry (Lippincott Illustrated Reviews Series) Seventh, North American Edition by Denise Ferrier ISBN-13: 978-1496344496 ISBN-10: 1496344499
- b. Harper's Illustrated Biochemistry Thirty-First Edition 31st Edition by Victor Rodwell, David Bender, Kathleen Botham, Peter Kennelly, P. Anthony Weil. ISBN-13: 978-1259837937; ISBN-10: 1259837939

D. Clinical Skills

Bate's guide to Physical Examination and History taking, by Barbara Bates, Lynn S Bickley. 12th edition ISBN-13: 978-1469893419, ISBN-10: 9781469893419

E. Embryology

The Developing Human –Clinically Oriented Embryology by Keith L. Moore and T.V.N. Persaud, Published by Saunders – Elsevier, Edition 9, ISBN: 978 -1-4377-2002-0

F. Genetics

Thompson & Thompson Genetics in Medicine (9th Ed.) by Nussbaum, Mcinnes & Willard. Elsevier Australia ISBN 9780323547628

G. Histology

Junqueira's Basic Histology: Text and Atlas, 15e. Anthony L. Mescher Publisher: McGraw-Hill Education ISBN-13: 978-1260026177; ISBN-10: 1260026175

H. Immunology

- a. Lippincott Illustrated Reviews: Immunology Second, North American Edition by Thao Doan, Roger Melvold, Susan Viselli, Carl Waltenbaugh. ISBN-13: 978-1451109375; ISBN-10: 9781451109375
- b. Cellular and Molecular Immunology by Abul Abbas, Andrew Lichtman, Shiv Pillai, 10th Edition, eBook ISBN: 9780323757508, Paperback ISBN: 9780323757485

I. Medical Ethics

- a. Resolving Ethical Dilemmas: A guide for Clinicians Sixth Edition, by Bernard Lo. Lippincott Williams & Wilkins, a Wolters Kluwer. ISBN-13: 978-1975103545, ISBN-10: 1975 103548
- b. "Medical Law & Ethics, 6th Ed."
- c. "Resolving Ethical Dilemmas: A Guide for Clinician, 6th Ed"
- d. "Medical Ethics for Dummies"

J. Microbiology

Lippincott's illustrated reviews: Microbiology 4th edition Author: Cynthia Nau Cornelissen Paperback ISBN: 978-1496395856 Imprint: Wolters Kluwer

K. Neuroscience

- a. Essential Neuroscience by Allan Siegel, Wolters Kluwer, Fourth edition ISBN-13, 978-1451189681
- b. Clinical Neuroanatomy for Medical Students: by Richard S. Snell. 7th edition, ISBN 978-0781794275

L. Nutrition

Understanding Normal And Clinical Nutrition (8th Ed.) by Sharon Rady Rolfes, Kathryn Pinna, Elley Whitney. Wadsworth Cengage learning. ISBN-13: 978-0-495-55646-6 ISBN-10: 0-495-55646-7

M. Pathology

Robbins Basic Pathology (Robbins Pathology) 10th Edition by Vinay Kumar, Abul K. Abbas, Jon C. Aster MD. ISBN-13: 978-0323353175; ISBN-10: 0323353177

N. Pharmacology

Pharmacology (Lippincott Illustrated Reviews Series) 7th Edition by Karen Whalen. ISBN-13: 978-1496384133; ISBN-10: 149638413X

O. Physiology

Physiology, by Linda S. Costanzo. 6th edition. ISBN-13: 978-0323478816, ISBN-10: 0323478816

P. Preventive Medicine

- a. Jekel's Epidemiology, Biostatistics, Preventive Medicine, and Public Health, by D. L. Katz, J. G. Elmore, D. M.G. Wild, & S. C. Lucan. Elsevier Saunders, Fourth Edition, ISBN: 978-1-4557-0658-7
- b. "Basic & Clinical Biostatistics, 5th Edition. "Maxcy-Rosenau-Last Public Health & Preventive Medicine, 15th Edition," by Robert B. Wallace. ISBN- 13: 978-0071441988, ISBN- 10: 0071441980

XIX. MD 4019 Clinical skills-4

1. Course Overview:

Semester	Course Code	Course Title	Credit Hours
MD4	MD 4019	Clinical skills-4	2

2. Course Description:

The Clinical Skills course is designed to teach each medical student the basic skills needed for medical practice. These skills include effective communication, scheme-based history taking and physical examination, development of clinical reasoning, formation of an initial diagnostic plan, interpretation of basic diagnostic studies, performance of selected procedures, provision of counseling and feedback, and articulate clinical case presentations

Learning opportunities include lectures, active independent learning, lab sessions, self-study and clinical experience with real and simulated patients.

3. General Learning Objectives:

At the end of this course, students should be able to:

- Obtain an accurate, comprehensive, focused/full history from and perform a careful, rational, thorough physical examination on the patient
- Apply information obtained from HPE (history and physical examination) and initial laboratory data to create a problem list, recognize and prioritize the issues, formulate differential diagnosis and generate a diagnostic and therapeutic plan
- Record in writing and present orally the results of the HPE (including assessment and plan) in a systematic, concise and coherent manner.
- Use medical literature to understand the natural history of diseases, plan therapy and integrate clinical reasoning skills and strive towards continual and lifelong learning

4. Course learning outcomes (CLOs) (course measurable outcomes):

At the end of this course students should be able to (with emphasis on cardiovascular, renal, endocrine and reproductive systems)

Cognitive

- CLO 1. Review the knowledge gained in the different courses of MD1-4 appropriately and correlate it to interviewing patients for accurate, comprehensive, focused/full history taking (Bloom's C5,C4)
- CLO 2. Appraise the information obtained from HPE and initial laboratory data to formulate their diagnosis and devise a treatment-management plan (Bloom's C6)
- CLO 3. Review medical literature to retrieve documented information on patient problems, integrate clinical reasoning skills and adapt towards continual and lifelong learning (Bloom's C5, C1, C6)

Psychomotor

- CLO 4. Conduct an interview for an accurate, comprehensive, focused/full history and perform a careful, rational, thorough physical examination on the patient (Dave's P2)
- CLO 5. Structure and design SOAP notes following history-taking and physical examination in a patient (Dave's P4)
- CLO 6. Improve and master history-taking and physical examination skills through repeated practice during and out of training sessions (Dave's P4)
- CLO 7. Coordinate and integrate the acquired tangible as well as non-tangible clinical skills in managing the general public of Aruba during health fairs and voluntary services organized by the school (Dave's P4, P5)
- CLO 8. Practice as individuals or in teams to the application of their medical knowledge to investigate clinical scenarios and debate current topics in medical research (Dave's P3)

Affective

- CLO 9. Demonstrate adherence to the highest standards of professional and ethical behavior, as explained in the Physicians' charter, during interaction with fellow students and faculty in or outside classroom, or with a patient during clinical skills sessions (Krathwol-Bloom's A2)
- CLO 10. Demonstrate empathy to fellow students' problems in or outside classroom, or to patients during history taking and physical examination sessions (Krathwol-Bloom's A2)
- CLO 11. Act with cultural humility while interacting with classmates, seniors, teachers and patients by focusing on their culture, age, gender, sexual orientation, risk perception, and personal values (Krathwol-Bloom's A6)

AUSOMA BASIC SCIENCES CURRICULUM DESIGN BOOKLET

5. Linking of AUSOMA's Program learning outcomes (PLOs) to course learning outcomes (CLOs), learning opportunities and outcome measures of Clinical skills-4:

PROGRAM LEARNING OUTCOMES (PLOs) (= PROGRAM MEASURABLE OUTCOMES)	COURSE LEARNING OUTCOMES (CLOs) (= COURSE MEASURABLE OUTCOMES) FOR CLINICAL SKILLS-4	Learning opportunities	Outcome measures
At the end of four years of MD program, AUSOMA graduates should be able to:	At the end of this system, students should be able to (with emphasis on cardiovascular, renal, endocrine and reproductive systems):		
PEC1: Basic medical knowledge			
PLO1: Describe the fundamental principles of homeostasis and disturbance in homeostasis, and the role of medical intervention during disturbed homeostasis	- Review the knowledge gained in the different courses of MD1 appropriately and correlate it to interviewing patients for accurate, comprehensive, focused/full history taking - Appraise the information obtained from HPE and initial laboratory data to formulate their diagnosis and devise a treatment-management plan - Review medical literature to retrieve documented information on patient problems, integrate clinical reasoning skills and adapt towards continual and lifelong learning	- Interactive Lectures - Small group sessions	- Class assessments - Small group assessments - Written/ online assignments - Block exams - System ending exam - Feedback by students
PLO2: Apply fundamental knowledge of basic and clinical sciences to the diagnosis, treatment, prevention and management of patient problems			
PLO3: Identify the role of external and epigenetic factors as causes of variations in disease expression			
PEC2: Clinical and diagnostic skills			
PLO4: Accurately perform history taking and physical examination by the right application of acquired theoretical knowledge	- Conduct an interview for an accurate, comprehensive, focused/full history and perform a careful, rational, thorough physical examination on the patient - Structure and design SOAP notes following history-taking and physical examination in a patient - Improve and master history-taking and physical examination skills through repeated practice during and out of training sessions	- Interactive Lectures - Clinical skills sessions - Lab sessions	- Class assessments - OSCE - Written/ online assignments - Block exams - System ending exam - Feedback by students
PLO5: Accurately and completely perform the appropriate technical procedures so as to reflect completeness in the skills of medical practice			
PLO6: Conjecture differential diagnoses and formulate a diagnosis by applying acquired knowledge and in the background of gathered history as well as clinical findings			

AUSOMA BASIC SCIENCES CURRICULUM DESIGN BOOKLET

PEC3: Patient centered medicine	• Coordinate and integrate the acquired tangible as well as non-tangible clinical skills in managing the general public of Aruba during health fairs and voluntary services organized by the school • Act with cultural humility while interacting with classmates, seniors, teachers and patients by focusing on their culture, age, gender, sexual orientation, risk perception, and personal values	• Interactive Lectures • Clinical skills sessions • Lab sessions	• Class assessments • OSCE • Written/ online assignments • Block exams • System ending exam • Feedback by students
PLO7: Deliver quality patient care in the context of varied perceptions of health and disease as well as varied responses to symptoms and treatments by people of different genders, diverse ages, cultures, ethnicities, religions, nationalities, socioeconomic backgrounds and those with disabilities PLO8: Perceive the medical consequences of common societal problems as well as critique with patients and patient parties about complexities and management of existing social issues			
PEC4: Interpersonal rapport and communication	• Demonstrate empathy to fellow students' problems in or outside classroom, or to patients during history taking and physical examination sessions	• Interactive Lectures • Clinical skills sessions	• Class assessments • OSCE • Written/ online assignments • Block exams • System ending exam • Feedback by students
PLO9: Communicate information and ideas categorically and in an organized manner to inform and educate patients, patient parties and society			
PLO10: Initiate, establish and adhere to empathetic communication with patients, families, colleagues, health professionals and supervisors to achieve quality health care by upholding the spirit of non-discrimination and inclusiveness			
PLO11: Resolve patient-doctor, patient party-doctor, doctor-doctor, doctor-supervisor or doctor-healthcare system related conflicts through effective communication			

AUSOMA BASIC SCIENCES CURRICULUM DESIGN BOOKLET

PEC5: Medical ethics and professionalism			
PLO12: Apply during medical practice, the three fundamental principles and ten professional commitments listed in “The Physicians’ Charter” of ABIM, ACP and European federation of Internal medicine	• Demonstrate adherence to the highest standards of professional and ethical behavior, as explained in the Physicians’ charter, during interaction with fellow students and faculty in or outside classroom, or with a patient during clinical skills sessions	• Medical ethics lectures • Clinical skills sessions • Small group sessions	• Class assessments • OSCE • Small group assessments • Written/ online assignments • Block exams • System ending exam • Feedback by students
PLO13: Conform to the highest standards of medical ethics and professionalism while dealing with the complexities of health care practice and delivery, organizations and bureaucracy			
PEC6: Evidence based practice and lifelong learning			
PLO14: Demonstrate an open mind, scientific inquisitiveness and research inclination to acquire newly emerging clinical knowledge and skills that enable improved quality of care in the wake of newly emerging diseases	• Practice as individuals or in teams the application of their knowledge to investigate clinical scenarios and debate current topics in medical research	• Clinical skills sessions • Small group sessions	• Class assessments • OSCE • Small group assessments • Block exams • System ending exam • Systems feedback by basic science students
PLO15: Equip themselves with the latest skills on information technology, study design and statistical methods and apply them into appropriate use in medical practice, therapeutic effectiveness, critical appraisal of scientific literature, research methodologies and studies of their own patient population or the larger community.			
PLO16: Apply the experience of medical practice into practice-based systematic improvement activities and hence contribute new medical knowledge to the community of medical research throughout their career.			



AUSOMA BASIC SCIENCES CURRICULUM DESIGN BOOKLET

6. Topics for Clinical skills-4

- 001. Generalities of the cardiovascular system
- 002. Cardiac examination -1
- 003. Cardiac examination -2
- 004. Murmurs
- 005. Renal examination
- 006. Endocrine examination -1
- 007. Endocrine examination -2
- 008. HEENT, thyroid gland examination and diabetic foot
- 009. Head to toe general examination

7. Teaching-Learning distribution

- Lectures (20-30%)
- Active independent learning (35-40%)
- Lab sessions (35-40%)

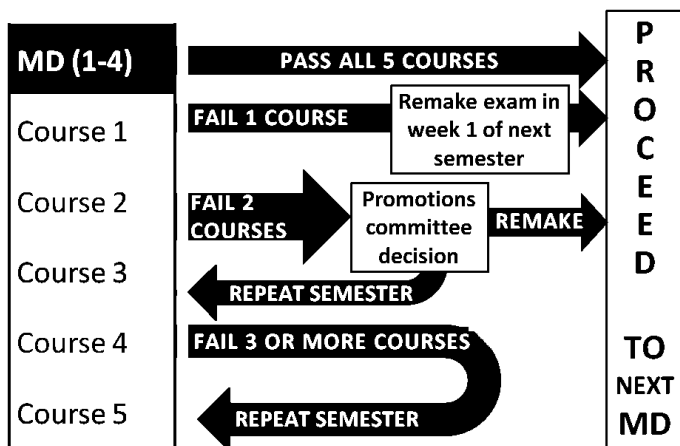
8. Grade distribution

- One block exam: 30%
- Final Exam: 50%
- Non-Exam Assessments: 20% (Assignments, Lecture assessments, quizzes)

9. Grading pattern

Grading Scale	Grade Points	Descriptor
H = 90% – 100%	4.0	Honors
HP = 80% – 89%	3.0	High Pass
P = 70% – 79%	2.0	Pass
F = less than 70%	0.0	Fail

10. Progression to next semester



11. Learning resources

A. Anatomy

Clinically oriented Anatomy by Keith L. Moore, Arthur F. Dalley, Arthur F. Dalley and Anne M.R. Agur,
Published by Lippincott, Williams and Wilkins, Edition 8 ISBN-13: 978-1975104962 ISBN-10: 197510496X

B. Behavioral Sciences

- a. Jekel's Epidemiology, Biostatistics, Preventive Medicine, and Public Health, by D. L. Katz, J. G. Elmore, D. M.G. Wild, & S. C. Lucan. Elsevier Saunders, Fourth Edition, ISBN: 978-1-4557-0658-7
- b. "Basic & Clinical Biostatistics, 5th Edition."

C. Biochemistry

- a. Lippincott Illustrated Reviews: Biochemistry (Lippincott Illustrated Reviews Series) Seventh, North American Edition by Denise Ferrier ISBN-13: 978-1496344496 ISBN-10: 1496344499
- b. Harper's Illustrated Biochemistry Thirty-First Edition 31st Edition by Victor Rodwell, David Bender, Kathleen Botham, Peter Kennelly, P. Anthony Weil. ISBN-13: 978-1259837937; ISBN-10: 1259837939

D. Clinical Skills

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E. Embryology

The Developing Human –Clinically Oriented Embryology by Keith L. Moore and T.V.N. Persaud, Published by Saunders – Elsevier, Edition 9, ISBN: 978 -1-4377-2002-0

F. Genetics

Thompson & Thompson Genetics in Medicine (9th Ed.) by Nussbaum, Mcinnes & Willard. Elsevier Australia ISBN 9780323547628

G. Histology

Junqueira's Basic Histology: Text and Atlas, 15e. Anthony L. Mescher Publisher: McGraw-Hill Education ISBN-13: 978-1260026177; ISBN-10: 1260026175

H. Immunology

- a. Lippincott Illustrated Reviews: Immunology Second, North American Edition by Thao Doan, Roger Melvold, Susan Viselli, Carl Waltenbaugh. ISBN-13: 978-1451109375; ISBN-10: 9781451109375
- b. Cellular and Molecular Immunology by Abul Abbas, Andrew Lichtman, Shiv Pillai, 10th Edition, eBook ISBN: 9780323757508, Paperback ISBN: 9780323757485

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- a. Resolving Ethical Dilemmas: A guide for Clinicians Sixth Edition, by Bernard Lo. Lippincott Williams & Wilkins, a Wolters Kluwer. ISBN-13: 978-1975103545, ISBN-10: 1975 103548
- b. "Medical Law & Ethics, 6th Ed."
- c. "Resolving Ethical Dilemmas: A Guide for Clinician, 6th Ed"
- d. "Medical Ethics for Dummies"

J. Microbiology

Lippincott's illustrated reviews: Microbiology 4th edition Author: Cynthia Nau Cornelissen Paperback ISBN: 978-1496395856 Imprint: Wolters Kluwer

K. Neuroscience

- a. Essential Neuroscience by Allan Siegel, Wolters Kluwer, Fourth edition ISBN-13, 978-1451189681
- b. Clinical Neuroanatomy for Medical Students: by Richard S. Snell. 7th edition, ISBN 978-0781794275

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O. Physiology

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- b. "Basic & Clinical Biostatistics, 5th Edition. "Maxcy-Rosenau-Last Public Health & Preventive Medicine, 15th Edition," by Robert B. Wallace. ISBN- 13: 978-0071441988, ISBN- 10: 0071441980

XX. MD 4020 Preventive medicine, Public health and Quality health parameters

1. Course Overview:

Semester	Course Code	Course Title	Credit Hours
MD4	MD 4020	Preventive medicine, Public health and Quality health parameters	4

2. Course Description:

This course emphasizes on a comprehensive application of concepts of preventive medicine into specific medical conditions. Epidemiological concepts considered as cornerstone of preventive medicine and public health will enhance the students understanding of distribution of diseases or health conditions and their risk factors, which direct to comprehensive development and implementation of disease control and preventive strategies. This course will focus on prevention of disability in older persons, prevention of cardiovascular diseases, epidemiology & prevention of diabetes mellitus, prevention of renal & urinary tract diseases, prevention of health-associated infections, epidemiology and prevention of HIV/AIDS, epidemiology & prevention of sexually transmitted diseases (STDs), and hormonal effects on the mind.

Learning opportunities include lectures, and small group discussions of clinically oriented problems to enhance self-directed learning.

3. General Learning Objectives:

At the end of this course, students should be able to:

- Describe the types of disability and explain preventive approaches specific and general causes of disability among the elderly.
- Integrate and correlate knowledge of concepts of primary, secondary, tertiary, and/or quaternary prevention of STDs and chronic diseases, such as cardiovascular diseases, diabetes mellitus.
- Describe risk factors of STDs and HIV infection and explain relationships of CD4 count to development of opportunistic infections.

4. Course learning outcomes (CLOs) (course measurable outcomes):

At the end of this course students should be able to:

Cognitive

- CLO 1. Describe the risk factors for HIV infection, identify the major route of HIV transmission in the United States and worldwide, and explain pre- and post- exposure prophylaxis (Bloom's C2)
- CLO 2. List at least three behavioral and metabolic modifiable risk factors and explain the screening of metabolic risk factors for coronary heart disease (Bloom's C2)
- CLO 3. List and explain the role of the most important factors affecting the expression of the most common chronic diseases, including cardiovascular disease (CVD), chronic kidney disease (CKD) (Bloom's C2)

Psychomotor

- CLO 4. Guide the general public during health fairs, on risk factors, red flags, precautions, implications on quality of life associated with cardiovascular diseases, chronic kidney diseases, old age and STDs (Dave's P5)
- CLO 5. Practice as individuals during lab sessions, the hand hygiene technique and demonstrate the practice of the same during health fairs / voluntary activities as a critical measure for infection control (Dave's P3, P4)
- CLO 6. Practice as individuals or in teams the application of their knowledge of evidence-based decision making to investigate clinical scenarios and debate current topics in medical research (Dave's P3)

Affective

- CLO 7. Counsel the general public on the role of the most important psychosocial factors affecting the expression of cardiovascular diseases, chronic kidney diseases, old age and STDs (Krathwol-Bloom's A5)
- CLO 8. Demonstrate adherence to the highest standards of professional and ethical behavior, as explained in the Physicians' charter, during interaction with fellow students and faculty in or outside classroom, or with a patient during clinical skills sessions (Krathwol-Bloom's A2)
- CLO 9. Demonstrate empathy to fellow students' problems in or outside classroom, or to patients during history taking and physical examination sessions (Krathwol-Bloom's A2)
- CLO 10. Act with cultural humility while interacting with classmates, seniors, teachers and patients by focusing on their culture, age, gender, sexual orientation, risk perception, and personal values (Krathwol-Bloom's A6)

AUSOMA BASIC SCIENCES CURRICULUM DESIGN BOOKLET

5. Linking of AUSOMA's Program learning outcomes (PLOs) to course learning outcomes (CLOs), learning opportunities and outcome measures of Preventive medicine, Public health and Quality health parameters:

PROGRAM LEARNING OUTCOMES (PLOs) (= PROGRAM MEASURABLE OUTCOMES)	COURSE LEARNING OUTCOMES (CLOs) (= COURSE MEASURABLE OUTCOMES) FOR PREVENTIVE MEDICINE, PUBLIC HEALTH AND QUALITY HEALTH PARAMETERS	Learning opportunities	Outcome measures
At the end of four years of MD program, AUSOMA graduates should be able to:	At the end of this system, students should be able to:		
PEC1: Basic medical knowledge			
PLO1: Describe the fundamental principles of homeostasis and disturbance in homeostasis, and the role of medical intervention during disturbed homeostasis	- Describe the risk factors for HIV infection, identify the major route of HIV transmission in the United States and worldwide, and explain pre- and post- exposure prophylaxis - List at least three behavioral and metabolic modifiable risk factors and explain the screening of metabolic risk factors for coronary heart disease - List and explain the role of the most important factors affecting the expression of the most common chronic diseases, including cardiovascular disease (CVD), chronic kidney disease (CKD)	- Interactive Lectures - Small group sessions	- Class assessments - Small group assessments - Written/ online assignments - Block exams - System ending exam - Feedback by students
PLO2: Apply fundamental knowledge of basic and clinical sciences to the diagnosis, treatment, prevention and management of patient problems			
PLO3: Identify the role of external and epigenetic factors as causes of variations in disease expression			
PEC2: Clinical and diagnostic skills			
PLO4: Accurately perform history taking and physical examination by the right application of acquired theoretical knowledge	- Guide the general public during health fairs, on risk factors, red flags, precautions, implications on quality of life associated with cardiovascular diseases, chronic kidney diseases, old age and STDs - Practice as individuals, on a daily basis, the hand hygiene technique and demonstrate the practice of the same during health fairs / voluntary activities as a critical measure for infection control	- Interactive Lectures - Clinical skills sessions - Lab sessions	- Class assessments - OSCE - Written/ online assignments - Block exams - System ending exam - Feedback by students
PLO5: Accurately and completely perform the appropriate technical procedures so as to reflect completeness in the skills of medical practice			
PLO6: Conjecture differential diagnoses and formulate a diagnosis by applying acquired knowledge and in the background of gathered history as well as clinical findings			

AUSOMA BASIC SCIENCES CURRICULUM DESIGN BOOKLET

PEC3: Patient centered medicine	• Counsel the general public on the role of the most important psychosocial factors affecting the expression of cardiovascular diseases, chronic kidney diseases, old age and STDs • Act with cultural humility while interacting with classmates, seniors, teachers and patients by focusing on their culture, age, gender, sexual orientation, risk perception, and personal values	• Interactive Lectures • Clinical skills sessions • Lab sessions	• Class assessments • OSCE • Written/ online assignments • Block exams • System ending exam • Feedback by students
PLO7: Deliver quality patient care in the context of varied perceptions of health and disease as well as varied responses to symptoms and treatments by people of different genders, diverse ages, cultures, ethnicities, religions, nationalities, socioeconomic backgrounds and those with disabilities PLO8: Perceive the medical consequences of common societal problems as well as critique with patients and patient parties about complexities and management of existing social issues			
PEC4: Interpersonal rapport and communication	• Demonstrate empathy to fellow students' problems in or outside classroom, or to patients during history taking and physical examination sessions	• Interactive Lectures • Clinical skills sessions	• Class assessments • OSCE • Written/ online assignments • Block exams • System ending exam • Feedback by students
PLO9: Communicate information and ideas categorically and in an organized manner to inform and educate patients, patient parties and society			
PLO10: Initiate, establish and adhere to empathetic communication with patients, families, colleagues, health professionals and supervisors to achieve quality health care by upholding the spirit of non-discrimination and inclusiveness			
PLO11: Resolve patient-doctor, patient party-doctor, doctor-doctor, doctor-supervisor or doctor-healthcare system related conflicts through effective communication			

AUSOMA BASIC SCIENCES CURRICULUM DESIGN BOOKLET

PEC5: Medical ethics and professionalism			
PLO12: Apply during medical practice, the three fundamental principles and ten professional commitments listed in “The Physicians’ Charter” of ABIM, ACP and European federation of Internal medicine	• Demonstrate adherence to the highest standards of professional and ethical behavior, as explained in the Physicians’ charter, during interaction with fellow students and faculty in or outside classroom, or with a patient during clinical skills sessions	• Medical ethics lectures • Clinical skills sessions • Small group sessions	• Class assessments • OSCE • Small group assessments • Written/ online assignments • Block exams • System ending exam • Feedback by students
PLO13: Conform to the highest standards of medical ethics and professionalism while dealing with the complexities of health care practice and delivery, organizations and bureaucracy			
PEC6: Evidence based practice and lifelong learning			
PLO14: Demonstrate an open mind, scientific inquisitiveness and research inclination to acquire newly emerging clinical knowledge and skills that enable improved quality of care in the wake of newly emerging diseases	• Practice as individuals or in teams the application of their knowledge of evidence-based decision making to investigate clinical scenarios and debate current topics in medical research	• Clinical skills sessions • Small group sessions	• Class assessments • OSCE • Small group assessments • Block exams • System ending exam • Systems feedback by basic science students
PLO15: Equip themselves with the latest skills on information technology, study design and statistical methods and apply them into appropriate use in medical practice, therapeutic effectiveness, critical appraisal of scientific literature, research methodologies and studies of their own patient population or the larger community.			
PLO16: Apply the experience of medical practice into practice-based systematic improvement activities and hence contribute new medical knowledge to the community of medical research throughout their career.			



AUSOMA BASIC SCIENCES CURRICULUM DESIGN BOOKLET

6. Topics for Preventive medicine, Public health and Quality health parameters

- 001. Prevention of disability in older person
- 002. Prevention of cardiovascular disease
- 003. Prevention of arthropod-borne viral illnesses
- 004. Prevention of zoonotic illnesses
- 005. Epidemiology of renal and urinary tract diseases
- 006. Quality health improvement- healthcare associated infections (HAIs)
- 007. Prevention and control of agent of bioterrorism
- 008. Prevention of HIV infection and AIDS
- 009. Epidemiology and prevention of STDs
- 011. Maternal and child health
- 012. Hormone effects on the mind

7. Teaching-Learning distribution

- Lectures (60-70%)
- Active independent learning (30-40%)

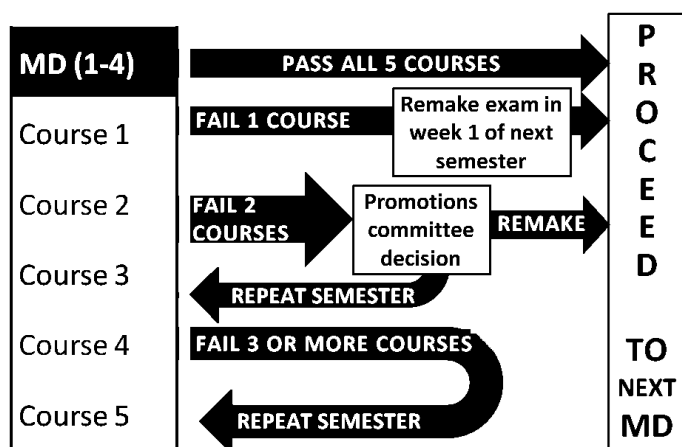
8. Grade distribution

- One block exam: 30%
- Final Exam: 50%
- Non-Exam Assessments: 20% (Assignments, Lecture assessments, quizzes)

9. Grading pattern

Grading Scale	Grade Points	Descriptor
H = 90% – 100%	4.0	Honors
HP = 80% – 89%	3.0	High Pass
P = 70% – 79%	2.0	Pass
F = less than 70%	0.0	Fail

10. Progression to next semester



11. Learning resources

A. Anatomy

Clinically oriented Anatomy by Keith L. Moore, Arthur F. Dalley, Arthur F. Dalley and Anne M.R. Agur, Published by Lippincott, Williams and Wilkins, Edition 8 ISBN-13: 978-1975104962 ISBN-10: 197510496X

B. Behavioral Sciences

- a. Jekel's Epidemiology, Biostatistics, Preventive Medicine, and Public Health, by D. L. Katz, J. G. Elmore, D. M.G. Wild, & S. C. Lucan. Elsevier Saunders, Fourth Edition, ISBN: 978-1-4557-0658-7
- b. "Basic & Clinical Biostatistics, 5th Edition."

C. Biochemistry

- a. Lippincott Illustrated Reviews: Biochemistry (Lippincott Illustrated Reviews Series) Seventh, North American Edition by Denise Ferrier ISBN-13: 978-1496344496 ISBN-10: 1496344499
- b. Harper's Illustrated Biochemistry Thirty-First Edition 31st Edition by Victor Rodwell, David Bender, Kathleen Botham, Peter Kennelly, P. Anthony Weil. ISBN-13: 978-1259837937; ISBN-10: 1259837939

D. Clinical Skills

Bate's guide to Physical Examination and History taking, by Barbara Bates, Lynn S Bickley. 12th edition ISBN-13: 978-1469893419, ISBN-10: 9781469893419

E. Embryology

The Developing Human –Clinically Oriented Embryology by Keith L. Moore and T.V.N. Persaud, Published by Saunders – Elsevier, Edition 9, ISBN: 978 -1-4377-2002-0

F. Genetics

Thompson & Thompson Genetics in Medicine (9th Ed.) by Nussbaum, Mcinnes & Willard. Elsevier Australia ISBN 9780323547628

G. Histology

Junqueira's Basic Histology: Text and Atlas, 15e. Anthony L. Mescher Publisher: McGraw-Hill Education ISBN-13: 978-1260026177; ISBN-10: 1260026175

H. Immunology

- a. Lippincott Illustrated Reviews: Immunology Second, North American Edition by Thao Doan, Roger Melvold, Susan Viselli, Carl Waltenbaugh. ISBN-13: 978-1451109375; ISBN-10: 9781451109375
- b. Cellular and Molecular Immunology by Abul Abbas, Andrew Lichtman, Shiv Pillai, 10th Edition, eBook ISBN: 9780323757508, Paperback ISBN: 9780323757485

I. Medical Ethics

- a. Resolving Ethical Dilemmas: A guide for Clinicians Sixth Edition, by Bernard Lo. Lippincott Williams & Wilkins, a Wolters Kluwer. ISBN-13: 978-1975103545, ISBN-10: 1975 103548
- b. "Medical Law & Ethics, 6th Ed."
- c. "Resolving Ethical Dilemmas: A Guide for Clinician, 6th Ed"
- d. "Medical Ethics for Dummies"

J. Microbiology

Lippincott's illustrated reviews: Microbiology 4th edition Author: Cynthia Nau Cornelissen Paperback ISBN: 978-1496395856 Imprint: Wolters Kluwer

K. Neuroscience

- a. Essential Neuroscience by Allan Siegel, Wolters Kluwer, Fourth edition ISBN-13, 978-1451189681
- b. Clinical Neuroanatomy for Medical Students: by Richard S. Snell. 7th edition, ISBN 978-0781794275

L. Nutrition

Understanding Normal And Clinical Nutrition (8th Ed.) by Sharon Rady Rolfes, Kathryn Pinna, Elley Whitney. Wadsworth Cengage learning. ISBN-13: 978-0-495-55646-6 ISBN-10: 0-495-55646-7

M. Pathology

Robbins Basic Pathology (Robbins Pathology) 10th Edition by Vinay Kumar, Abul K. Abbas, Jon C. Aster MD. ISBN-13: 978-0323353175; ISBN-10: 0323353177

N. Pharmacology

Pharmacology (Lippincott Illustrated Reviews Series) 7th Edition by Karen Whalen. ISBN-13: 978-1496384133; ISBN-10: 149638413X

O. Physiology

Physiology, by Linda S. Costanzo. 6th edition. ISBN-13: 978-0323478816, ISBN-10: 0323478816

P. Preventive Medicine

- a. Jekel's Epidemiology, Biostatistics, Preventive Medicine, and Public Health, by D. L. Katz, J. G. Elmore, D. M.G. Wild, & S. C. Lucan. Elsevier Saunders, Fourth Edition, ISBN: 978-1-4557-0658-7
- b. "Basic & Clinical Biostatistics, 5th Edition. "Maxcy-Rosenau-Last Public Health & Preventive Medicine, 15th Edition," by Robert B. Wallace. ISBN- 13: 978-0071441988, ISBN- 10: 0071441980

MD5 courses

MD 5021	Introduction to clinical medicine
MD 5022	Review of Basic sciences

XXI. MD 5021 Introduction to clinical medicine AND MD 5022 Review of basic sciences

1. Course Overview:

Semester	Course Code	Course Title	Credit Hours
MD5	MD 5021	Introduction to clinical medicine	12
	MD 5022	Review of basic sciences	15

2. Course Description:

The fifth semester at AUSOMA is the bridge between basic sciences and clinical sciences. In this semester, students will be reinforced their essential clinical skills for medical practice, in the course of Introduction to Clinical Medicine as well as a Comprehensive Basic Science Review to prepare them for their NBME and later their Step 1 USMLE examination. Lectures will be complemented with clinical cases, knowledge review and through assessment of multiple-choice questions.

Learning opportunities include lectures and self-study in basic sciences and in-house (lectures and self-study) as well as outsourced (HIPAA, BLS) ICM sessions .

3. Course learning outcomes (CLOs) (course measurable outcomes):

At the end of this course students should be able to:

Cognitive

- CLO 1. Translate their basic science knowledge acquired from the initial stages of learning into a cross-disciplinary integration for application to their future clinical setting (Bloom's C4)
- CLO 2. Recontextualize their acquired knowledge on the influence of cultural, social, regional, ethnic and behavioral factors on patient care, into a multidisciplinary continuum to mesh appropriately with its clinical application (Bloom's C6)

Psychomotor

- CLO 3. Recontextualize their acquired competency on comprehensive and focused history-taking and physical examination to mesh at the multidisciplinary and interdisciplinary level (Dave's P4)
- CLO 4. Customize their acquired competency on creating problem list and generating differential diagnosis to merge into a single compendium of healthcare that cuts across systems, and modules (Dave's P4)
- CLO 5. Customize their acquired competency on generating a patient-oriented assessment at the multidisciplinary level (Dave's P4)

Affective

- CLO 6. Demonstrate an ability to extrapolate their acquired competency of patient-counseling on the role of the most important social factors affecting the expression of disease, to the multidisciplinary, societal and real-life tier (Krathwol-Bloom's A2)
- CLO 7. Demonstrate an ability to extrapolate their acquired competency of professional and ethical behavior, as explained in the Physicians' charter, to interaction with patients, patient-families and society at large (Krathwol-Bloom's A2)
- CLO 8. Demonstrate an ability to extrapolate their acquired competency of empathy to the community and society at large (Krathwol-Bloom's A2)
- CLO 9. Follow the most recent research articles to identify novel problems and novel solutions to improve general and specific health care delivery to patients (Krathwol-Bloom's A1)

AUSOMA BASIC SCIENCES CURRICULUM DESIGN BOOKLET

4. Linking of AUSOMA's Program learning outcomes (PLOs) to course learning outcomes (CLOs), learning opportunities and outcome measures of Preventive medicine, Public health and Quality health parameters:

PROGRAM LEARNING OUTCOMES (PLOs) (= PROGRAM MEASURABLE OUTCOMES)	COURSE LEARNING OUTCOMES (CLOs) (= COURSE MEASURABLE OUTCOMES) FOR PREVENTIVE MEDICINE, PUBLIC HEALTH AND QUALITY HEALTH PARAMETERS	Learning opportunities	Outcome measures
At the end of four years of MD program, AUSOMA graduates should be able to:	At the end of this system, students should be able to:		
PEC1: Basic medical knowledge			
PLO1: Describe the fundamental principles of homeostasis and disturbance in homeostasis, and the role of medical intervention during disturbed homeostasis	• Translate their basic science knowledge acquired from the initial stages of learning into a cross-disciplinary integration for application to their future clinical setting	• Interactive Lectures • Small group sessions	• Initial CBSE Exam • In-session exams • NBME CBSE exam • Feedback by students
PLO2: Apply fundamental knowledge of basic and clinical sciences to the diagnosis, treatment, prevention and management of patient problems			
PLO3: Identify the role of external and epigenetic factors as causes of variations in disease expression			
PEC2: Clinical and diagnostic skills			
PLO4: Accurately perform history taking and physical examination by the right application of acquired theoretical knowledge	• Recontextualize their acquired competency on comprehensive and focused history-taking and physical examination to mesh at the multidisciplinary and interdisciplinary level • Customize their acquired competency on creating problem list and generating differential diagnosis to merge into a single compendium of healthcare that cuts across systems, and modules • Customize their acquired competency on generating a patient-oriented assessment at the multidisciplinary level	• Clinical medicine sessions • Small group sessions • BLS course session	• BLS exam • Comprehensive and written ICM final exam • NBME CBSE exam
PLO5: Accurately and completely perform the appropriate technical procedures so as to reflect completeness in the skills of medical practice			
PLO6: Conjecture differential diagnoses and formulate a diagnosis by applying acquired knowledge and in the background of gathered history as well as clinical findings			

AUSOMA BASIC SCIENCES CURRICULUM DESIGN BOOKLET

PEC3: Patient centered medicine	• Recontextualize their acquired knowledge on the influence of cultural, social, regional, ethnic and behavioral factors on patient care, into a multidisciplinary continuum to mesh appropriately with its clinical application	• Clinical medicine sessions • Small group sessions • BLS course session	• Initial CBSE Exam • In-session exams • BLS exam • Comprehensive and written ICM final exam • NBME CBSE exam
PLO7: Deliver quality patient care in the context of varied perceptions of health and disease as well as varied responses to symptoms and treatments by people of different genders, diverse ages, cultures, ethnicities, religions, nationalities, socioeconomic backgrounds and those with disabilities			
PLO8: Perceive the medical consequences of common societal problems as well as critique with patients and patient parties about complexities and management of existing social issues			
PEC4: Interpersonal rapport and communication	• Demonstrate an ability to extrapolate their acquired competency of patient-counselling on the role of the most important social factors affecting the expression of disease, to the multidisciplinary, societal and real-life tier • Demonstrate an ability to extrapolate their acquired competency of empathy to the community and society at large	• Clinical medicine sessions • Small group sessions • BLS course session	• BLS exam • Comprehensive and written ICM final exam • NBME CBSE exam
PLO9: Communicate information and ideas categorically and in an organized manner to inform and educate patients, patient parties and society			
PLO10: Initiate, establish and adhere to empathetic communication with patients, families, colleagues, health professionals and supervisors to achieve quality health care by upholding the spirit of non-discrimination and inclusiveness			
PLO11: Resolve patient-doctor, patient party-doctor, doctor-doctor, doctor-supervisor or doctor-healthcare system related conflicts through effective communication			

AUSOMA BASIC SCIENCES CURRICULUM DESIGN BOOKLET

PEC5: Medical ethics and professionalism			
PLO12: Apply during medical practice, the three fundamental principles and ten professional commitments listed in “The Physicians’ Charter” of ABIM, ACP and European federation of Internal medicine	• Demonstrate an ability to extrapolate their acquired competency of professional and ethical behavior, as explained in the Physicians’ charter, to interaction with patients, patient-families and society at large	• Medical ethics sessions • Clinical medicine sessions • Small group sessions • BLS course session	• Initial CBSE Exam • In-session exams • BLS exam • Comprehensive and written ICM final exam • NBME CBSE exam
PLO13: Conform to the highest standards of medical ethics and professionalism while dealing with the complexities of health care practice and delivery, organizations and bureaucracy			
PEC6: Evidence based practice and lifelong learning			
PLO14: Demonstrate an open mind, scientific inquisitiveness and research inclination to acquire newly emerging clinical knowledge and skills that enable improved quality of care in the wake of newly emerging diseases	• Follow the most recent research articles to identify novel problems and novel solutions to improve general and specific health care delivery to patients	• Clinical medicine sessions • Small group sessions • BLS course session	• Initial CBSE Exam • In-session exams • NBME CBSE exam
PLO15: Equip themselves with the latest skills on information technology, study design and statistical methods and apply them into appropriate use in medical practice, therapeutic effectiveness, critical appraisal of scientific literature, research methodologies and studies of their own patient population or the larger community.			
PLO16: Apply the experience of medical practice into practice-based systematic improvement activities and hence contribute new medical knowledge to the community of medical research throughout their career.			

5. Teaching-Learning distribution

- Review sessions (60-70%)
- Active independent learning (30-40%)

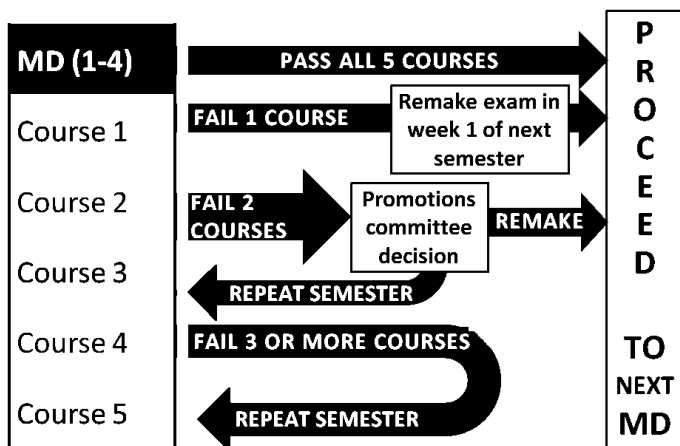
6. Grade distribution

- Block exams cumulative: 30 %
- Final Exam: 50%
- Non-Exam Assessments: 20% (ABMOSS QBanks assignments, ICM assignments, outsourced courses)

7. Grading pattern

Grading Scale	Grade Points	Descriptor
H = 90% – 100%	4.0	Honors
HP = 80% – 89%	3.0	High Pass
P = 70% – 79%	2.0	Pass
F = less than 70%	0.0	Fail

8. Progression to next semester



9. Learning resources

A. Anatomy

Clinically oriented Anatomy by Keith L. Moore, Arthur F. Dalley, Arthur F. Dalley and Anne M.R. Agur, Published by Lippincott, Williams and Wilkins, Edition 8 ISBN-13: 978-1975104962 ISBN-10: 197510496X

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F. Genetics

Thompson & Thompson Genetics in Medicine (9th Ed.) by Nussbaum, Mcinnes & Willard. Elsevier Australia ISBN 9780323547628

G. Histology

Junqueira's Basic Histology: Text and Atlas, 15e. Anthony L. Mescher Publisher: McGraw-Hill Education ISBN-13: 978-1260026177; ISBN-10: 1260026175

H. Immunology

- a. Lippincott Illustrated Reviews: Immunology Second, North American Edition by Thao Doan, Roger Melvold, Susan Viselli, Carl Waltenbaugh. ISBN-13: 978-1451109375; ISBN-10: 9781451109375
- b. Cellular and Molecular Immunology by Abul Abbas, Andrew Lichtman, Shiv Pillai, 10th Edition, eBook ISBN: 9780323757508, Paperback ISBN: 9780323757485

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- a. Resolving Ethical Dilemmas: A guide for Clinicians Sixth Edition, by Bernard Lo. Lippincott Williams & Wilkins, a Wolters Kluwer. ISBN-13: 978-1975103545, ISBN-10: 1975 103548
- b. "Medical Law & Ethics, 6th Ed."
- c. "Resolving Ethical Dilemmas: A Guide for Clinician, 6th Ed"
- d. "Medical Ethics for Dummies"

J. Microbiology

Lippincott's illustrated reviews: Microbiology 4th edition Author: Cynthia Nau Cornelissen Paperback ISBN: 978-1496395856 Imprint: Wolters Kluwer

K. Neuroscience

- a. Essential Neuroscience by Allan Siegel, Wolters Kluwer, Fourth edition ISBN-13, 978-1451189681
- b. Clinical Neuroanatomy for Medical Students: by Richard S. Snell. 7th edition, ISBN 978-0781794275

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- b. "Basic & Clinical Biostatistics, 5th Edition. "Maxcy-Rosenau-Last Public Health & Preventive Medicine, 15th Edition," by Robert B. Wallace. ISBN- 13: 978-0071441988, ISBN- 10: 0071441980