

Physics

(2025)

AHST 101 General

1. Basic Information

Course Title (according to the bylaw)	General Physics			
Course Code (according to the bylaw)	AHST 101			
Department/s participating in delivery of the course	Department of Basic Sciences			
Number of credit hours/points of the course (according to the bylaw)	Theoretical	Practical	Other (specify)	Total
	1	4	-----	3
Course Type	Compulsory			
Academic level at which the course is taught	الفرقة/المستوي الاول			
Academic Program	Basic Sciences			
Institute	Institute of High Technology Institute of Applied Health Science			
Academy	Nile Delta for science			
Name of Course Coordinator				
Course Specification Approval Date	.Click or tap to enter a date			
Course Specification Approval (Attach the decision/minutes of the department /committee/council)	25/9/2025			

2. Course Overview (Brief summary of scientific content)

Upon completing this course, student should be able to:

- know Physical parameters
- be able to recognize light wave
- be able to distinguish between reflection and refraction
- Recognize differences of ionization
- Explain sound waves and ultrasound
- Explain LASER and its applications
- Know about magnetic resonance ionization

3. Course Learning Outcomes CLOs

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

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Course Learning Outcomes Upon completion of the course, the student will be able to:	
Code	Text	Code	Text
	A.1. Demonstrate an understanding of fundamental knowledge of basic applied health sciences including (anatomy, physiology, physical chemistry, microbiology, general physics, mechanics, mechatronics,		CLO 1 know physics concept in medical faculties to understanding physical aspect of the body such as ; forces on and in the body, work, energy, power of the body, heat ,blood flow, respiration, electricity, circulation and hearing.
			CLO 2 Recognize Classification of radiation

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Course Learning Outcomes Upon completion of the course, the student will be able to:	
Code	Text	Code	Text
).		CLO3 Recognize Basic Imaging Principles
	A.2. Understand and deal with the interdisciplinary sciences.		CLO 4 identify Sound waves and ULTRA sound and LASER
			CLO5 learn about light and its waves
			CLO.6 learn about Magnetic resonance imaging , NANOTECHNOLOGY
	B.1. Use computers and software to analyze problems.		CLO.6 distinguish between different types of reflection and refraction
	B.3. Realize the concept of quality.		CLO.7 Analyze sound waves
	C.1. Work safely in the lab environment and possess the basic competencies necessary for a range of practical techniques.		CLO.8 apply on sound waves laws
	C.3. Perform the most common experiments in biological & basic sciences including (Bio-electrodes &		CLO9 Perform practical s of reflection and refraction

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Course Learning Outcomes Upon completion of the course, the student will be able to:	
Code	Text	Code	Text
	Biosensors, Hooke's law, osmosis, diffusion, Wheatstone bridge, Archimedes principles, Magnetometer, Ohm law and Measurements of viscosity by stokes Law, Law of Reflection & lenses, Light microscope & perform microbial staining).		
	D.6.Participate in teamwork harmoniously and exhibit collaborate effectively with colleagues and other health care professionals.		CLO .10 Effectively communicate both orally and in writing by using suitable scientific terminology.
	D.8. Practice professionalism in all aspects of work.		CLO 11 Demonstrates the ability to work in teams with other health care professionals to reach & deliver the best management plan to the patients and to have the necessary leadership skills.
			CLO 12 High efficiency in problem-solving procedures.
			CLO 13 Attention to detail.

4. Teaching and Learning Methods

1. Interactive Lectures

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2. Discussion and brain storming
 3. Case study /problem solving
 4. Research and presentation
 5. Practical Learning
 6. Guiding during office hours

Course Schedule

No	Number of the Week	Scientific content of the course (Course Topics)	Total Weekly Hours	Expected number of the Learning Hours				total course Marks
				Theoretical teaching (lectures/discussion groups/)	Training (Practical/ Clinical/)	Self-learning (Tasks/ Assignments/ Projects/ ...)	Other (to be determined)	
	1	introduction General physics	3	1 (Week Number)	4			
1	2	Classification of radiation	3	1	4			
2								
3		Final Written Exam Medical Imaging	3	17 ^h	75		50%	
	4	Sound wave	3	1	4			
		Final Oral Exam		1	4			
		Presentation NANOTECHNOLOGY	3	-	-		-	
		Field training						
	6	Magnetic resonance imaging	3	1	4			
	7							
	8	light	3	1	4			
	9	waves	3	1	4			
	10	LASER I	3	1	4			
	11	LASER II	3	1	4			
	12	Ultra sound I	3	1	4			
	13	Ultra sound II	3	1	4			
	14	Ultra sound III	3	1	4			
	15	Practical exam						
	16-17	Final exam						

*** The methods mentioned are examples, the organization may add and/or delete**

6. Learning Resources and Supportive Facilities *

Learning	The main (essential) reference for the course	
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resources (books, scientific references, etc.) *	(must be written in full according to the scientific documentation method)	General physics - 2025
	Other References	General physics
	Electronic Sources (Links must be added)	General Physics I: Classical Mechanics David G. Simpson Dept. of Natural Sciences, Prince George's Community College, Largo, Maryland Larry L. Simpson Union Carbide Corporation (ret.), South Charleston, West Virginia http://www.pgccphy.net/1030/phy1030.pdf
	Learning Platforms (Links must be added)	/https://bislms.mans.edu.eg/moodle2024
	Other (to be mentioned)	https://www.ekb.eg/ar
Supportive facilities & equipment for teaching and learning *	Devices/Instruments	Projector, Desktop Computer, mirrors ,lens,
	Supplies	,Whiteboard Markers
	Electronic Programs	ابن الهيثم Model
	Skill Labs/ Simulators	Practical Skills Labs
	Virtual Labs	-----
	Other (to be mentioned)	-----

*** The list mentioned is an example, the institution may add and/or delete depending on the nature of the course**

**Name and Signature
Course Coordinator**

**Name and Signature
Program Coordinator**

