



مدونة المناهج السعودية

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الموقع التعليمي لجميع المراحل الدراسية

في المملكة العربية السعودية



University of Hafr Al-Batin
Preparatory Year Program - (191) Semester

Course Name & Code: *Basics of Medical Physics – Phys 001*

Textbook: “*Conceptual Physical Science*” by Hewitt, Suchocki and Hewitt

Reference Book: “*Physics of Medical Imaging*” by Jerrold T. Bushberg et.al.,

❖ **Course Coordinator:**

- Muhammad Zubair

❖ **Course Instructors:**

- Dr. Dr. Dafalla Hamdan (Office Location: # 2118, Prep Campus Bldg.)

❖ **Course Website:** <https://hbcc.blackboard.com>

❖ **Course Description:** An introduction to key Physical principles as applied to medical imaging and radiation therapy. Topics covered will include the definition and working principle, physical metrics and radiation and its safety and radioactivity, radiation therapy, computed tomography, ultrasound and magnetic resonance imaging.

❖ **Course Objectives:**

- **Review** basic concepts in Medical Physics through which students would be equipped with general English scientific terminology.
- **Develop** and stimulate students’ interest in Medical Physics.
- **Engage** students in reading scientific text.

❖ **Attendance** is compulsory. It will be enforced and evaluated according to current university regulations. **DN grade shall be given to students who accumulate 3 or more unexcused absences or a total (excused and unexcused) of 5 or more absences.** You lose half a point (out of 2) for each unexcused absence. A student, who has a valid excuse for an absence, must present an officially authorized document to his instructor no later than one week following his resumption of classes.

❖ **Grading Policy:** *** **Course Passing Grade is 60 (out of 100)**

Class Work	20%	[Attendance (2%), Class Quizzes (8%), Assignments (10%)]
Major Exam I	20%	[Week 6; Date will be mentioned later]
Major Exam II	20%	[Week 11; Date will be mentioned later]
Final Exam	40%	
Total	100%	

❖ **Teaching Method:** Lectures-Blackboard, Multimedia (Power Point Presentations), eLearning, Interactive and/or Group Work, Practical Demonstrations.

❖ **Make-up Policy:** A student, who misses an exam, must present an **official and valid document (excuse)** to the instructor within one week (following his resumption of classes) in order to be considered for a make-up. ***The official excuse absences must be approved only by the Dean of prep year or his representative. No excuses will be accepted after posting the final grades.***

❖ **Cheating** is unethical. Proved cases of cheating would entitle concerned students to zero marks (in exams or other assessments) and the possibility of dismissal from the University.

❖ **Be in class on time.** Entering the class 5 minutes after the official lecture designated time is considered “Late”. **Three “Late”** cases are equivalent to **one absence**. The student who arrives late **more than 5 minutes** will be considered **absent without excuse**.



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Phy001 Syllabus and Lectures Schedule - (191 Semester)

WEEK	CHAPTER	TOPIC/TITLE	LECTURE	HOMEWORK
1	1	Introduction to Medical Physics	1	
			2	1
2	2	Patterns of Motion and Equilibrium	3	
	3	Newton's Laws of Motion	4	2
3	4	Momentum and Energy	5	
			6	3
4	5	Gravity, Weight and weightlessness	7	
			8	4
5	6	Fluid Mechanics	9	
			10	
MAJOR 1				
6	7	Thermal Energy and Thermodynamics	11	
			12	5
7	8	Heat transfer and change of phase	13	
8			14	
8	9	Static and Current Electricity	15	6
9			16	
10	10	Magnetism and Electromagnetic Induction	17	
			18	7
11	11	Waves	19	
			20	8
MAJOR 2				
12	12	Sounds	21	
			22	
13	13	Optics	23	
			24	9
14	14	Nuclear Physics	25	
			26	10
15	15	Ionizing radiation	27	
			28	11
15	15	Ionizing radiation	29	
			30	