

Course Description Form

1. Course Name:	Diagnostic Instrumentation
2. Course Code:	WBM-51-03
3. Semester / Year:	1 st Semester / 2023 2024
4. Description Preparation Date:	19/3/2024
5. Available Attendance Forms:	Weekly (Theoretical & Practical)
6. Number of Credit Hours (Total) / Number of Units (Total)	45 Hrs. Theoretical & 30 Hrs. Practical / 3 Units
7. Course administrator's name (mention all, if more than one name)	Name: Dr. Hayder A. Yousif Email: hayder.ab@uowa.edu.iq
8. Course Objectives	<p>Course Objectives</p> <p>The main aim of this study is studying some diagnostic devices that are related to the human body (such as the sonar device, the medical endoscope device, and the vital activity monitoring device) and study the principle working with its effect on the human body.</p> <p>In this course the student will study the Diagnostic Instrumentation (Medical Ultrasound, Endoscopy, and Patient Alarm Systems)</p> <p>The student will be able to know the following:</p> <p>1- The properties of ultrasound waves. The decibel notation for ultrasound intensity and pressure. The ultrasound properties of velocity, attenuation, and absorption. The ultrasound reflection, refraction and</p>

	<p>scattering, and principle working of ultrasound device.</p> <p>2- Basic component of Endoscopy, Principle working of Endoscopy, and Types of Endoscopies.</p>
--	--

9. Teaching and Learning Strategies

Strategy	<p>The student will be able to understand the principle of operation of the Diagnostic Instrumentation and its dealings with the human body, and to graduate engineers specialized in the field of biomedical engineering, which relates to human life with the medical device and work in the medical engineering environment.</p>
-----------------	---

10. Course Structure

Week	Hours	Unit or subject name and Required Learning Outcomes	Learning method	Evaluation method
1	3	2	Theoretical & Practical	Daily test and oral questions
2	3	2	Theoretical & Practical	Daily test and oral questions
3	3	2	Theoretical & Practical	Daily test and oral questions
5&4	3	2	Theoretical & Practical	Daily test and oral questions
6	3	2	Theoretical & Practical	Daily test and oral questions
7	3	2	Theoretical & Practical	Daily test and oral questions
8	3	2	Theoretical & Practical	Daily test and oral questions
10&9	3	2	Theoretical & Practical	Daily test and oral questions
11	3	2	Theoretical & Practical	Daily test and oral questions
12 13& & 14 15	3	2	Theoretical & Practical	Daily test and oral questions
			Theoretical & Practical	Daily test and oral questions

11. Course Evaluation	
1- Weekly exams	
2- Monthly exams	
3- Participations inside the class	
4-present the seminars	
5- Writing reports	
12. Learning and Teaching Resources	
Required textbooks (curricular books any)	Handbook of Biomedical Instrumentation Second Edition - R S KHANPUR
Main references (sources)	Handbook Of Biomedical Instrumentation 3rd Edition 933920543X · 9789339205430 By R S Khandpur
Recommended books and references (scientific journals, reports...)	Standard handbook of biomedical engineering & design - M Kutz
Electronic References, Websites	https://books.google.iq/books/about/Handbook_of_Biomedical_Instrumentation.html?idesc=y