

Course Description Form

1. Course Name:					
Medical Equipment					
2. Course Code:					
WBM-31-06					
3. Semester / Year:					
first semester					
4. Description Preparation Date:					
2024-9-23					
5. Available Attendance Forms:					
6. Number of Credit Hours (Total) / Number of Units (Total)					
90 Hours / 3 Unit					
7. Course administrator's name (mention all, if more than one name)					
Name: mustafa habeeb Email: mustafa.ha@uowa.edu.iq					
8. Course Objectives					
Course Objectives		<ul style="list-style-type: none"> • 1- Identify the basic parts of the medical sensor and how to manufacture • 2- How medical allergens develop over time • 3- Knowing the types of medical allergens • 4- Classification of medical allergens according to use 5- The purpose of using medical sensors with the human body 			
9. Teaching and Learning Strategies					
Strategy		1- Theoretical lectures. Using the whiteboard and data show. 2- Discussion lectures Tutorials. 3- Practical experiments in laboratories. 4- Homework assignments.			
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	3	X-Ray definition, theory and production	X-Ray definition theory production	Lectures presented in PPT format	Daily exams + homework assignments + monthly

					exams
2	3	Design of X-Ray tube, Heat loading characteristics of X-Ray tube	Design of X-Ray tube, Heat loading characteristics of X-Ray tube	Lectures presented in PDF format	Daily exams homework assignments monthly exams
3	3	X-Ray power supplies and circuits, X-Ray control unit, X-Ray switches and timing model	X-Ray power supplies and circuits, X-Ray control unit, X-Ray switches and timing model	Lectures presented in PDF format	Daily exams homework assignments monthly exams
4	3	Development of X-Ray films (automatic and manual),	Development of X-Ray films (automatic and manual),	Lectures presented in PDF format	Daily exams homework assignments monthly exams
5	3	X-ray fluoroscope machine	X-ray fluoroscope machine	Lectures presented in PDF format	Daily exams homework assignments monthly
6	3	Computed tomography data acquisition, geometrics,	Computed tomography data acquisition, geometrics,	Lectures presented in PDF format	Daily exams homework assignments monthly
7	3	X-ray system of the CT	X-ray system of the CT	Lectures presented in PDF format	Daily exams homework assignments monthly
8	3	Data acquisition system, computer system	Data acquisition system, computer system	Lectures presented in PDF format	Daily exams homework assignments monthly
9	3	Typical faults	Typical faults	Lectures presented in PDF format	Daily exams homework assignments monthly
10	3	Typical maintenance	Typical maintenance	Lectures presented in PDF format	Daily exams homework assignments monthly exams
11	3	Nuclear medicine and magnetic Resonance Imaging System: the hardware,	Nuclear medicine and magnetic Resonance Imaging System: the hardware,	Lectures presented in PDF format	Daily exams homework assignments monthly exams
12	3	Basic MRI Components, magnet types, RF coils,	Basic MRI Components, magnet types, RF coils,	Lectures presented in	Daily exams homework

		magnetization	magnetization	PDF format	assignments monthly exam
13	3	Radioisotopes in medical diagnosis, Gamma Camera. Physics of radioactivity, biological effects of NMR imaging	Radioisotopes in medical diagnosis, Gamma Camera. Physics of radioactivity, biological effects of NMR imaging	Lectures presented in PDF format	Daily exams homework assignments monthly exam
14	3	Principles of NMR imaging system,	Principles of NMR imaging system,	Lectures presented in PDF format	Daily exams homework assignments monthly exam
15	3	Image reconstruction technique	Image reconstruction technique	Lectures presented in PDF format	Daily exams homework assignments monthly exam

11. Course Evaluation

- ☑ Daily exams with practical and scientific questions.
- ☑ Participation scores for difficult competition questions among students
- ☑ Establishing grades for environmental duties and the reports assigned to them
- ☑ Semester exams for the curriculum, in addition to the mid-year exam and final exam

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Biomedical Instrumentation (R.S. Khandpur)
Main references (sources)	Biomedical Instrumentation Technology and Applications
Recommended books and references (scientific journals, reports...)	Standard handbook of biomedical sensors

