مركز الاعتماد وضمان الجودة
ACCREDITATION & QUALITY ASSURANCE CENTER

Course Syllabus

1	**Course title**	Nondestructive testing	
2	**Course number**	0302366	
3	**Credit hours**	3	
	Contact hours (theory, practical)	3 theory	
4	**Prerequisites/corequisites**	033236	
5	**Program title**	Physics	
6	**Program code**		
7	**Awarding institution**	The university of Jordan	
8	**School**	Science	
9	**Department**	Physics	
10	**Course level**	2nd year	
11	**Year of study and semester(s)**	3rd year	
12	**Other department(s) involved in teaching the course**		
13	**Main teaching language**		
14	**Delivery method**	☒Face to face learning ☐Blended ☐Fully online	
15	**Online platforms(s)**	☒Moodle ☒Microsoft Teams ☐Skype ☐Zoom ☐Others……	
16	**Issuing/Revision Date**	3/2024	

17 Course Coordinator:

Name:	Contact hours:
Office number:	Phone number:
Email:	

18 Other instructors:

Name:
Office number:
Phone number:
Email:
Contact hours:
Name:
Office number:
Phone number:
Email:
Contact hours:

19 Course Description:

Common nondestructive testing (NDT) methods include: ultrasonic; magnetic particle (MT), liquid penetrant, radiographic, remote visual inspection (RVI), eddy current testing, and low-coherence interferometry; the benefits of using NDT methods in life, especially in agriculture, engineering, and medicine.

20 Course aims and outcomes:

مركز الاعتماد وضمان الجودة
ACCREDITATION & QUALITY ASSURANCE CENTER

A- Aims:

Nondestructive testing (NDT) methods are invaluable across various fields, including agriculture, engineering, and medicine, due to their ability to inspect and analyze materials, structures, and systems without causing damage. This course aims to enhance student to impart knowledge in various methods of nondestructive testing.

B- Students Learning Outcomes (SLOs):

Currently used Students Learning Outcomes (SLOs):

SLO (1) Master professionally a broad set of knowledge concerning the fundamentals in the basic areas of physics: Classical Mechanics, Electrostatics and Magnetism, Quantum Mechanics, Thermal Physics, Optics, Theory of Special Relativity, Mathematical Physics, Electronics.

SLO (2) Apply knowledge of mathematics and fundamental concepts in the basic areas of physics to identify and solve physics related problems.

SLO (3) Utilize computers and available software in both data collections and data analysis.

SLO (4) Utilize standard laboratory equipment, modern instrumentation, and classical techniques to design and conduct experiments as well as to analyze and interpret data.

SLO (5) Develop a recognition of the need and ability to engage in life-long learning.

SLO (6) Demonstrate ability to use techniques, skills, and modern scientific tools necessary for professional practice.

SLO (7) Communicate clearly and effectively in both written and oral forms.

SLO (8) Apply proficiently team-work skills and employ team-based learning strategies.

SLO (9) Apply professional and ethical responsibility to society.

Suggested Course SLO's:

Upon completing this course, students are expected to:

Program SLOs / Course SLOs	SLO (1)	SLO (2)	SLO (3)	SLO (4)	SLO (5)	SLO (6)	SLO (7)	SLO (8)	SLO (9)
Understand the principles of various NDT techniques		✓							
List the types of equipment used for non-destructive testing and their principles of operation.		✓							
Understand the procedure followed in NDT techniques		✓							
Get familiar with NDT applications		✓							

21. Topic Outline and Schedule:

Week	Lecture	Topic	Intended Learning Outcome	Learning Methods (Face to Face/Blended/ Fully Online)	Platform	Synchronous / Asynchronous Lecturing	Evaluation Methods	Resources
1	1.1	UNIT I- VISUAL INSPECTION AND EDDY CURRENT TESTING	1,2,3,4	Face to Face	Teams		H.W, Exams	
	1.2							
	1.3							
2	2.1							
	2.2							
	2.3							
3	3.1							
	3.2							
	3.3							
4	4.1	UNIT II- Liquid penetrate testing	1,2,3,4					
	4.2							
	4.3							
5	5.1							
	5.2							
	5.3							
6	6.1							
	6.2							
	6.3							
7	7.1	UNIT III- MAGNETIE PARTICLE TESTENG	1,2,3,4					
	7.2							
	7.3							
8	8.1							
	8.2							

	8.3							
9	9.1							
	9.2							
	9.3							
10	10.1	UNIT IV RADIOGRAPHIC TESTING	1,2,3,4					
	10.2							
	10.3							
11	11.1							
	11.2							
	11.3							
12	12.1							
	12.2							
	12.3							
13	13.1	UNIT V- Ultrasonic testing	1,2,3,4					
	13.2							
	13.3							
14	14.1							
	14.2							
	14.3							
15	15.1							
	15.2							
	15.3							

22 Evaluation Methods:

Opportunities to demonstrate achievement of the SLOs are provided through the following assessment methods and requirements:

Evaluation Activity	Mark	Topic(s)	SLOs	Period (Week)	Platform
Midterm Exam	30%	CH1,CH2	1,2,3,4	Week6	Paper-Based
Second Exam	20%	CH3, CH4	1,2,3,4	Week 12	Paper-Based
Homework	10%		1,2,3,4	All	E-learning
Final Exam	50%	All Material	1,2,3,4	Week 16	Paper-Based

مركز الاعتماد وضمان الجودة
ACCREDITATION & QUALITY ASSURANCE CENTER

23 Course Requirements

(e.g: students should have a computer, internet connection, webcam, account on a specific software/platform…etc):

24 Course Policies:

A- Attendance policies: Students cannot miss more than of 15% of classes throughout the semester. B- Absences from exams and handing in assignments on time: Only students with acceptable excuses are eligible for the makeup exam. C- Health and safety procedures: D- Honesty policy regarding cheating, plagiarism, misbehavior: All students are expected to abide by the common rules of honesty. Any violations are dealt with according the University of Jordan regulations. E- Grading policy: F- Available university services that support achievement in the course:

25 References:

A- Required book(s), assigned reading and audio-visuals: ***J Prasad, CGK Nair, "Non-Destructive Testing and Evaluation of Materials" Tata McGraw*** ***Hill Education Private Limited*** B- Recommended books, materials, and media: **1. American Metals Society, Non-Destructive Examination and Ouality Control Metals Hand** **Book, Vol.17, 9th Ed, Metals Park, OH, 1989.**

2. Bray, Don.E and Staniey, Roderic.K, "Nondestructive Evaluation: A Tool in Design.

Manufacturing, and Service. Revised", CRC Press New York, Edition 1997

3. www.ndt-ed.org

4. Www.krautkramer.com,au

26 Additional information:

Name of Course Coordinator: _____ Signature: ---------- Date: ----------3/2024-----
Head of Curriculum Committee/Department: ---------- Signature: ----------
Head of Department: ---------- Signature: ----------
Head of Curriculum Committee/Faculty: ---------- Signature: ----------
Dean: ---------- Signature: ----------