جامعة الإسراء
ISRA UNIVERSITY

COURSE Syllabus
According to JNQF

Course Name: Engineering Dynamics

Course Number: 04032132

General Course Information:

Course title	Engineering Dynamics
Course number	04032132
Credit hours	2 hours (theory)
Contact hours	2 hours per week
Prerequisites/corequisites	Statics 0403121
Academic Program	BSc in Civil Engineering
Program code	0403
Awarding institution	Isra University
Faculty	Engineering
Department	Civil engineering
Level of course	teo
Academic year /semester	first Semester 2022-2023
Awarded qualification	BSc
Other department(s) involved in teaching the course	-
Language of instruction	English
Date of production/revision	2021/2022

Course Coordinator: Dr. Hussein Saraireh

Coordinator's Name: Dr. Eng. Hussein Saraireh
Office No.: 4308
Office Phone: 2502
Office Hours: 9 hours/ Sunday 9-11, Tuesday 10-12, Thursday 9-12: 10:00-12:30 and Monday 14-15, Wednesday: 14.00-15.00
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Other Instructors:

Instructor's Name:
Office No.:
Office Phone:
Office Hours:
Email:

Course Description *(English/Arabic)*:

English	*Motion description of point particles: continuous motion with a straight path and discontinuous motion with a curved path, absolute motion of two point particles and relative motion. Transitional motion, rotation around a fixed axis, relative motion of solid objects.*
Arabic	

Text Book: ***Author(s), Title, Publisher, Edition, Year, Book website.***

Engineering Mechanics, Dynamics by Hibbeler, 12th Edition Hall,2010 ISBN 10: 0-13-607791-9

References: ***Author(s), Title, Publisher, Edition, Year, Book website.***

- Beer Johnston Cornwel, Vector Mechanics for Engineers: Dynamics, McGraw- Hill Primis.
- Jerry Ginsoberg, Engineering Dynamics, CAMBRIDGE UNIVERSITY PRESS, United Kingdom 2014.

Course Educational Objectives (CEOs):

1.	Apply fundamental knowledge of Engineering Dynamics
2.	Apply fundamental knowledge of Engineering Dynamics
3.	Understand the appropriate Computer tools
4.	Work effectively in teams to develop solutions to Engineering Dynamics

Intended Learning Outcomes (ILO's):

1.	Intended Learning Outcomes (ILO's)	**Relationship to CEOs**	**Contribution to PLOs**
2. A	Knowledge and Understanding:		
3. A1	Understand the Design Standards of Engineering Dynamics	1	1
4. A2			
5. A3			
6. B	Intellectual skills:		
7. B1	Apply fundamental knowledge of transportation engineering of Railroad and Airport	1,2	1,7
8. B2	Apply the appropriate Computer tools to design of Railroad and Airport Facilities	3	1
9. B3			
10. C	Subject specific skills:		
11. C1			
12. C2			
13. C3			
14. D	Transferable skills:		

15. D1	Work effectively in teams to develop solutions to Railroad and Airport Design of Facilities problems.	4	4
16. D2			
17. D3			

Weekly Schedule *(please chose the type of teaching)*

☐ *(**3 hrs** Face – To - Face)*

☐ *(**2 hrs** Face – To - Face **+1 hr** Asynchronous)* **(Hybrid)**

☐ *(**3 hrs** Online)*

Week	First Hour (……..)	Second Hour (……..)	Third Hour (……..)	Ach. ILOs	Ach. PLOs	Descriptors*
1	Introduction to railways			A1, B1		K
2	Track gauge and alignment			A1, B1		K & S
3	Ballast, fitting and fastening			A1, B1		K & S
4	Subgrade and formation			A1, B1		K
5	Geometric design of tracks			A1, B1, D1		K & C
6	Introduction to airport engineering			A1, B2		k
7	Aircrafts			A1, B2		K
8	Geometric design of the airfield			A1, B2		K & S

* **K: Knowledge, S: Skills, C: Competency**

Teaching Methods and Assignments:

Development of ILOs is promoted through the following teaching and learning methods:

- Lectures
- (3 hrs Face – To - Face)
- (2 hrs. Face – To - Face +1 hr Asynchronous) (Hybrid)
- Discussion Forums
- Quizzes
- Other Interactive online activates

Course Policies:

A- Attendance policies:

15% of 48 lecturing hours

B- Absences from exams and handing in assignments on time:

Midterm exam can be retaken based on approval of excuse by the instructor's discretion.

Not handing assignment on time will incur penalties.

C- Health and safety procedures: NA

D- Honesty policy regarding cheating, plagiarism, and misbehaviour:

Cheating, plagiarism, misbehaviour will result in zero grade and further disciplinary actions may be taken.

E- Grading policy:

- All homework is to be posted online through the e-learning system.
- Exams will be marked within 72 hours and the marked exam papers will be handed to the students.
- Online Activities (Course Videos, Practice labs, Discussion Forums, Quizzes) **20%**
- Midterm **30%**
- Final Exam **50%**

F- Available university services that support achievement in the course: **E-Learning Platform, Labs, Library,** Software, Java and C#

Required equipment:

- **PC / Laptop with webcam and mic**
- **Internet Connection**
- **Access to Online Compiles such as:**
  Access to the IU E-Learning Platform at: https://elearn.iu.edu.jo/

- **Software (Microsoft Excel), AutoCAD, Civil3D**

Assessment Tools implemented in the course:

i. Midterm Exam.
ii. Final Exam.
iii. Quizzes.
iv. Homework.
v. Participation in Lecture.

Program Learning Outcome (PLOs):

Program Learning Outcomes describe what students are expected to know and be able to do by the time of graduation. These relate to the knowledge, skills, and behaviours that students acquire as they progress through the program. A graduate of the (_____) program will demonstrate		Bloom Taxonomy Levels*
a	An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.	
b	An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.	
c	An ability to communicate effectively with a range of audiences.	
d	An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.	
e	An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.	
f	An ability to develop and conduct appropriate experimentation, analyse and interpret data, and use engineering judgment to draw conclusions.	
g	An ability to acquire and apply new knowledge as needed, using appropriate learning strategies.	

***Bloom Taxonomy Levels**

Level #	1	2	3	4	5	6
Level Name	Knowledge	Comprehension	Application	Analysis	Evaluation	Synthesis

Responsible Persons and their Signatures:

Course Coordinator	Dr. Hussein Saraireh	Completed Date	/ /
		Signature	

Received by (Department Head)	Dr. Ibrahiem Varouqa	Received Date	/ /
		Signature	