



The University of Jordan

Accreditation & Quality Assurance Center

COURSE Syllabus

1	Course title	Special Topics
2	Course number	0302496
3	Credit hours (theory, practical)	4 theory
	Contact hours (theory, practical)	0
4	Prerequisites/corequisites	Department approval
5	Program title	Physics
6	Program code	0302
7	Awarding institution	The University of Jordan
8	Faculty	Faculty of Science
9	Department	Department of Physics
10	Level of course	4 th year
11	Year of study and semester (s)	Upon request by students
12	Final Qualification	
13	Other department (s) involved in teaching the course	None
14	Language of Instruction	English
15	Date of production/revision	

16. Course Coordinator:

Office numbers, office hours, phone numbers, and email addresses should be listed.

Prof. Tareq Hussein

Office hours: 2 hours/week depending on the semester and teaching load of the coordinator

Office: Physics 209

Ext: 22060

Email: t.hussein@ju.edu.jo

17. Other instructors:

Office numbers, office hours, phone numbers, and email addresses should be listed.

18. Course Description:

As stated in the approved study plan.

The course *Special Topics* (0 302 496) is dedicated to make the prospective student familiar with topics not covered by Physics 101 and Physics 102 or deeper learning in some topics presented in Physics 101 and Physics 102.

Specifically, the topics include:

- Rotational motion/dynamics and torque
- Equilibrium
- Fluid mechanics
- Thermal properties of matter, energy and temperature, laws of thermodynamics
- Induction
- Alternating current and reactance

19. Course aims and outcomes:

A- Aims:

The main objective is to make the prospective student familiar with topics not covered by the courses Physics 101 and Physics 102.

B- Intended Learning Outcomes (ILOs):

By the end of this course, the students will be able to:

- Give a deeper learning for the dynamics of rotational motion.
- Solve problems related to objective in equilibrium conditions.
- Apply the principles of fluid dynamics.
- Elaborate and describe the thermal properties matter and energy transfer.
- Apply the laws of thermodynamics.\
- Deal with the inductance and mutual induction.
- Describe the applications of alternative current and reactance.

20. Topic Outline and Schedule:

- Rotational of Rigid Bodies (Chapter 9)
- Dynamics of Rotational Motion (Chapter 10)
- Equilibrium and Elasticity (Chapter 11)
- Fluid Mechanics (Chapter 12)
- Temperature and Heat (Chapter 17)
- Thermal Properties of Matter (Chapter 18)
- The First Law of Thermodynamics (Chapter 19)
- The Second Law of Thermodynamics (Chapter 20)
- Electromagnetic Induction (Chapter 29)
- Inductance (Chapter 30)
- Alternating current (Chapter 31)

21. Teaching Methods and Assignments:

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

The teaching method used in this course is interactive where students participate in topics discussion and problem solving.

22. Evaluation Methods and Course Requirements:

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

Exams.

23. Course Policies:

A- Attendance policies:

All students are obliged to attend the course according to the university rules of attendance.

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

The instructor will approve excused absences. He will also arrange a make-up for the absent students.

C- Health and safety procedures:

This is based on the university general rules.

D- Honesty policy regarding cheating, plagiarism, misbehavior:

This is based on the university general rules.

E- Grading policy:

The students are expected to interactively participate in this course through discussion and problem solving. The evaluation will be as follows:

- Quiz 20%
- Midterm 30%
- Final Exam 50%

F- Available university services that support achievement in the course:

Online teaching. eLearning/Moodle and Microsoft Teams.

24. Required equipment:

IT tools for online lectures.

25. References / Textbooks:

Textbook: Young and Freedman, "University Physics with Modern Physics", 14th Edition, Pearson, 2016.

Additional references:

Douglas C. Giancoli, "Physics", Seventh Edition, Pearson, 2015

Halliday, Resnick and Krane, Physics, Volume 2, 5th edition, published by Wiley.

Raymond A. Serway and John W. Jewett Jr., "Physics For Scientists and Engineers with Modern Physics" 7th Edition, (Thomson Learning, Belmont, CA, USA, 2007)

Joseph W. Kane and Morton M. Sternheim, "Physics", 3rd Edition, (John Wiley & Sons, 1988)

26. Additional information:

Name of Course Coordinator: -----Signature: ----- Date: ----- Head

of curriculum committee/Department: ----- Signature: -----

Head of Department: ----- Signature: -----

Head of curriculum committee/Faculty: ----- Signature: -----

Dean: ----- -Signature: -----

Copy to:

Head of Department
Assistant Dean for Quality Assurance
Course File