

Jordan University of Science and Technology
Department of Physics
Course Syllabus
Fall 2020/2021

Course Information	
Course Number: Phys. 103	Course Name: General Physics
Credit Hours: 3	Contact Hours: 3
E-learning web address: www.just.edu.jo/e-learning	

Instructor Information	
Coordinator: Prof. Dr. Ahmad Alsaad	Instructor:
E-mail: alsaad11@just.edu.jo	Office Location:
Office Location: PH3 Level 1	
Office Hours: By appointment	

Course Catalog
Course Description: Classical Physics, Vectors, One dimensional motion, Newton's laws, Work and energy, Rotational motion, Static equilibrium of rigid bodies, Elasticity, Vibrations and waves, Sound waves, flow of non-viscous fluids, Electric Charge and Electric Field, Electric potential and electric potential energy, Capacitors, Electric current, DC circuits, Magnetism, Light: Geometrical Optics.
Textbook: Physics Principles with Applications 7 th edition, Douglas C. Giancoli, Pearson and Prentice Hall.
References and Supplement Materials: 1) College Physics by Knight, Jones, and Field 2) College Physics by Serway & Faughn. 3) Contemporary College Physics by Jones & Childers. 4) Physics by Kane and Sternheim 3 rd Edition, John Wileys & Sons, New York, 1988.

Evaluation		
Mid-term	40	%
Final Exam	60	%
Total	100	%

Week	Topics to be covered	Suggested Problems
1,2	Ch. 2: Describing Motion: Kinematics in one dimension: Reference frames and Displacement, Average velocity, Instantaneous velocity, Acceleration, Motion at constant acceleration, Solving problems, Falling Objects. 2.1 (Pg. 22), 2.2 (Pg. 23), 2.3 (Pg. 25), 2.4 (Pg. 26), 2.5 (Pg. 28), 2.6 (Pg. 30) and 2.7 (Pg. 33).	CH 2: 3, 5, 6, 7, 14, 17, 19, 22, 28, 35, 42, 47
3,4	Ch. 3: Kinematics in Two Dimensions; Vectors: Vectors and Scalars, Addition of Vectors-Graphical Methods, Subtraction of Vectors, and Multiplication of a Vector by a Scalar, Adding Vectors in terms of Components. 3.1 (Pg. 50), 3.2 (Pg. 50), 3.3 (Pg. 52), 3.4 (Pg. 53).	CH 3: 1, 2, 3, 4, 7, 9, 11, 12, 14
5	Ch. 4: Dynamics: Newton's Laws of Motion: Newton's First Law of Motion, Newton's Second Law of Motion, Newton's Third First Law of Motion, Weight-the Force of Gravity; and the Normal Force, Solving Problems with Newton's Laws: Free Body Diagrams, Problems Involving Friction, Inclines. 4.2 (Pg. 76), 4.4 (Pg. 78), 4.5 (Pg. 81), 4.6 (Pg. 84), 4.7 (Pg. 87), 4.8 (Pg. 93).	CH 4: 3, 5, 7, 10, 12, 19, 25, 27, 31, 35, 48, 52, 63
6	Ch. 6: Work and Energy: Work done by a constant force, Kinetic energy, and the Work-Energy Principle, potential energy. 6.1 (Pg. 138), 6.3 (Pg. 142), 6.4 (Pg. 145).	CH 6: 2, 5, 8, 12, 16, 18, 25, 40, 43
7	Ch. 8: Rotational Motion: Torque. 8.4 (Pg. 206). Ch. 9 Static Equilibrium; Elasticity and Fracture: The Concept of Equilibrium, Solving Statics Problems, Elasticity; Stress. 9.1 (Pg. 231), 9.2 (Pg. 233), 9.3 (Pg. 238), 9.5 (Pg. 241).	CH 8: 24, 25, 78 CH 9: 5, 15, 16, 18, 20, 39, 40, 41
8	Ch. 10: Fluids: Pressure in fluids, Atmospheric Pressure and Gauge Pressures, Buoyant and Archimedes' Principle, Fluids in Motion; Flow Rate and the Equation of Continuity; Streamline Flow, Bernoulli's Equation, Static Consequences of Bernoulli's Equation, Applications of Bernoulli's Principle. 10.3 (Pg. 262), 10.4 (Pg. 264), 10.7 (Pg.266), 10.7 (Pg. 268), 10.8 (Pg. 272), 10.9 (Pg. 274).	CH 10: 7, 8, 9, 14, 16, 22, 25, 29, 46, 48, 72, 77
9	Ch. 11: Vibrations and Waves: Wave Motion, Speed of Transverse and Longitudinal waves. 11.7 (Pg. 305), 11.8 (Pg. 307).	CH 11: 37, 38, 40, 41

10	Ch. 12: Sound: Characteristic of sound, Intensity of sound: Decibels, The Ear and Its Response; Loudness. 12.1 (Pg. 329), 12.2 (Pg. 331), 12.3 (Pg. 334).	CH 12: 1, 2, 8, 9, 10, 14, 16, 18, 21, 22
11	Ch. 16: Electric Charge and Electric Field: Coulombs Law, Solving Problems Involving Coulombs Law and Vectors, The Electric Field, Field Lines. 16.5 (Pg. 447), 16.6 (Pg. 450), 16.7 (Pg. 453), 16.8 (Pg. 457).	CH 16: 1-5, 6, 12- 15, 17, 18, 23, 36
12	Ch.17: Electric Potential: Electric Potential and Potential Energy, Relation between Electric Potential and Electric Field, Electric Potential Due to Point Charges, Capacitance, Stored of Electric Energy. 17.1 (Pg. 474), 17.2 (Pg. 477), 17.5 (Pg. 479), 17.7 (Pg. 482), 17.9 (Pg. 486).	CH 17: 1-6, 9, 11, 12, 14-16, 18, 20, 24, 26, 31-34, 36
13	Ch. 18: Direct Currents: Electric Current (No internal resistance), Ohm's law Resistance and Resistors (No temperature effect), Resistivity, 18.2 (Pg. 504), 18.3 (Pg. 505), 18.4 (Pg. 508). Ch. 19 DC Circuits: Resistors in Series and Parallel 19.2 (Pg. 528)	CH 18: 1-5, 8, 11- 14, 21 CH 19: 5-8, 12
14	Ch. 23: Light: Geometrical Optics: Thin Lenses; Ray Tracing, The Thin Lens Equation; Magnification. 23.7 (Pg. 661), 23.8 (Pg. 664).	CH 23: 43-45, 50- 53, 56

تعليمات مهمه يجب التقيد التام بتطبيقها:

- في حال تغيب طالب عن امتحان لأسباب طارئة وخارجة عن إرادته يجب أن يقدم عذرة الكترونيًا خلال أسبوع كحد أقصى.
- لا تقبل الأعدار الطارئة الا في حال عذر قهري وبحالات خاصة جدا وعن طريق رئيس القسم.
- على كل طالب الالتزام بقاعته الصفية وقاعات الامتحانات وترصد علامة صفر في حال تغيير قاعة الامتحان
- يجب على كل طالب إحضار الهوية الجامعية بحيث يكون الاسم والصورة واضحتين.
- لا يجوز استعارة أي شيء من زميلك في وقت الامتحان وخاصة الآلة الحاسبة.