St. John Baptist De La Salle Catholic School, Addis Ababa

Grade 11 Physics Annual Lesson Plan - 2023/2024 Academic Year

Important Information

- 5 classes per week
- 196 working school days
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- Class website & weekly contents - physics.kebede.org

Quarter	Unit	Dates	Learning Goals	Assessments	Activities	Teaching Methods	Teaching Aid & References	Evaluation Methods	Remark
1	**Introduction to Physics and Human Society**	September 18 - October 2, 2023	Define physics and explain its importance to society. Identify different branches of physics and describe some of the careers available in physics.	Quiz on the definition of physics, its importance to society, and different branches of physics. Short essay explaining why you are interested in physics and what you hope to learn in the physics course.	Watch a video about physics and its applications in the real world. Suggest a research project on a specific branch of physics or physics career .	Lecture, discussion	- OpenStax AP Physics - PHeT Simulations - Open Research Repositories - New MOE Texts	Observation of student participation in class discussions and activities. Review of student research projects.	Two canceled school days due to Mawlid and Meskel.

	Vectors	October 3-October 28, 2023	Define vectors and explain the difference between scalar and vector quantities. Perform basic vector operations (addition, subtraction, dot product, cross product). Apply vectors to solve physics problems.	Quiz on the definition of vectors, scalar and vector quantities, and vector operations. Physics problem set involving vectors.	Participate in a hands-on activity to explore vector addition and subtraction. Use a computer simulation to study the dot product and cross product of vectors.	Lecture, demonstration, group work	- OpenStax University Physics - PHeT Simulations - arXiv, Lab - New MOE Texts	Review of student performance on quiz and problem set. Observation of student participation in hands-on activities and group work.	Some classes won't be in because of midterms.
2	**Motion in One and Two Dimensions**	October 30 - November 30, 2023	Describe the motion of an object using kinematic equations. Apply Newton's laws of motion to solve physics problems. Analyze the motion of an object in one and two dimensions.	Quiz on the kinematic equations, Newton's laws of motion, and motion in one and two dimensions. Physics problem set involving motion in one and two dimensions.	Participate in a hands-on activity to collect data on the motion of an object. Use a computer simulation to study the motion of an object under different conditions.	Lecture, demonstration, discussion	- OpenStax AP Physics - PHeT Simulations - Open Research Repositories - New MOE Texts	Review of student performance on quiz and problem set. Observation of student participation in hands-on activities and class discussions.	
	Dynamics	December 1 - January 19, 2023	Apply Newton's laws of motion to solve physics problems involving forces, friction, and circular motion. Calculate work, energy, and power. Analyze the motion of an object using the concepts	Quiz on Newton's laws of motion, forces, friction, circular motion, work, energy, and power. Physics problem set involving dynamics.	Participate in a hands-on activity to explore friction and circular motion. Use a computer simulation to study the work and energy of an object.	Lecture, demonstration, group work	- OpenStax AP Physics/Libretexts - PHeT Simulations - Open Research	Review of student performance on quiz and problem set. Observation of student participation in hands-on activities and	Two classes canceled due to Christmas.

			of work and energy.				Repositories - New MOE Texts	group work.	
3	**Heat Conduction and Calorimetry**	January 20 - March 7, 2023	Describe the process of heat transfer. Calculate the amount of heat transferred in a given situation. Apply the principles of calorimetry to solve physics problems.	Quiz on the process of heat transfer, the amount of heat transferred in a given situation, and the principles of calorimetry. Physics problem set involving heat conduction and calorimetry.	Conduct a laboratory experiment to measure the rate of heat transfer. Use a computer simulation to study the process of heat transfer.	Lecture, demonstration, laboratory experiment	- OpenStax AP Physics - PHeT Simulations - Open Research Repositories - New MOE Texts	Review of student performance on quiz and problem set. Laboratory report on heat transfer experiment.	Canceled classes due to Timket & Ketera celebrations.
3	**Electrostatics and Electric Circuit**	March 8 - April 19, 2023	Describe the properties of electric charge. Calculate the electric force between two charges. Apply the principles of electrostatics to solve physics problems. Analyze the behavior of electric circuits.	Quiz on the properties of electric charge, the electric force between two charges, the principles of electrostatics, and the behavior of electric circuits. Physics problem set involving electrostatics and electric circuits.	Conduct a laboratory experiment to measure the electric force between two charges. Build and analyze a simple electric circuit.	Lecture, demonstration, laboratory experiment	- OpenStax AP Physics - PHeT Simulations - EM Texts & Papers - New MOE Texts	Review of student performance on quiz and problem set. Laboratory report on electrostatics experiment.	Classes canceled due to Adwa victory day, Good Friday and Easter-related festivities..

4	**Nuclear Physics**	April 20 - June 6, 2023	Describe the structure of the atom. Explain the process of nuclear decay. Calculate the energy released in a nuclear reaction. Apply the principles of nuclear physics to solve physics problems.	Quiz on the structure of the atom, the process of nuclear decay, the energy released in a nuclear reaction, and the principles of nuclear physics. Physics problem set involving nuclear physics.	Conduct a laboratory experiment to study the properties of radioactivity. Use a computer simulation to study the process of nuclear decay.	Lecture, demonstration, laboratory experiment	- OpenStax AP Physics - PHeT Simulations - Open Research Repositories - INSPIRE-HEP - New MOE Texts	Review of student performance on quiz and problem set. Laboratory report on nuclear physics experiment.	Classes canceled due to Eid-Al-Fitr, May Day, Patriot's Victory Day and Derg Downfall