



ODESSA SCIENCE DEPARTMENT

PHYSICS SYLLABUS

Textbook: Physics: A World Vision
 Author: Kirkpatrick & Francis (Thomson)

<u>WEEK</u>	<u>UNIT</u>	<u>CONCEPTS</u>	<u>SUGGESTED READING</u>
1-3	World View Engineering Concepts	Contracts & Safety Calculator Technology Math Review Significant Digits	Chpt. 1

Introduction

EXAM 1: Week 1Q-W3

4-6	Describing Motion	Velocity, Speed Acceleration Free Fall Gravity	Chpt. 2
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Linear Motion

EXAM 2: Week 1Q-W6

7-9	Motion in Space Pendulums	Vectors Projectile Motion	Chpt. 4
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Circular Motion

EXAM 3: Week 1Q-W9 (end of 1st Quarter)

10-12	Force Geometry Mass vs Weight	Vectors Newton's Laws Free Body Diagrams	Chpt. 3
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Forces

EXAM 4: Week 2Q-W3

13-15

**INDEPENDENT
STEM RESEARCH**

2nd QUARTER RESEARCH PROJECT

EXAM 5 in form of PAPER & POWERPOINT PRESENTATIONS: Week 2Q-W6

16-18	Universal Forces Kepler's Laws Circular Motion Revisted	Universal Gravitation Satellites	Chpts. 4, 5
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Universal Gravitation

EXAM 6: Week 2Q-W9

1st SEMESTER FINAL: Week 2Q-W9



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<u>WEEK</u>	<u>UNIT</u>	<u>CONCEPTS</u>	<u>SUGGESTED READING</u>	
19-21	Momentum Impulse Vectors	Linear Elastic Collisions Inelastic Collisions	Chpt. 6	Momentum
<u>EXAM 7: Week 3Q-W3</u>				
22-24	Work Energy Machines	Potential Kinetic Conservation	Chpts. 7	Work / Energy
<u>EXAM 8: Week 3Q-W6</u>				
25-27	Light Translucent Color Addition	Colors, Pigment Opaque Color Subtraction	Chpt. 17	Light: Pigment
<u>EXAM 9: Week 3Q-W9 (end of 3rd Quarter)</u>				
28-30	Light Frequency Wavelength	Refraction, Reflection Polarization Shadows, Mirrors	Chpts. 18, 19	Light: Mechanics
<u>EXAM 11: Week 4Q-W3</u>				
31-33	Waves Music	Sound, Light Water: Properties Characteristics, Types	Chpts. 15, 16	Waves / Sound
<u>EXAM 10: Week 4Q-W6</u>				
34-36	Electricity Robotics Programming	OHMs Law, Electric Current, Circuitry, Resistance	Chpts. 20, 21, 22	Electricity / Robotics
<u>EXAM 12: Week 4Q-W9</u>				

2nd SEMESTER FINAL: Week 4Q-W9

Physics: Grade 11-12, 1 Semester Credit

Physics studies the fundamental principles and laws that govern the behavior of matter and energy in our universe. The laws are presented through student-driven research-based laboratory investigations and thorough algebraic, geometric, and trigonometric problem solving techniques.