



# 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>	
<b>1-3</b>	World View	Contracts & Safety	Chpt. 1	<div>Introduction</div>
	Engineering Concepts	Calculator Technology		
		Math Review		
		Significant Digits		
<b><u>EXAM 1: Week 1Q-W3</u></b>				
<b>4-6</b>	Describing Motion	Velocity, Speed	Chpt. 2	<div>Linear Motion</div>
		Acceleration		
		Free Fall		
		Gravity		
<b><u>EXAM 2: Week 1Q-W6</u></b>				
<b>7-9</b>	Motion in Space	Vectors	Chpt. 4	<div>Circular Motion</div>
	Pendulums	Projectile Motion		
<b><u>EXAM 3: Week 1Q-W9 (end of 1<sup>st</sup> Quarter)</u></b>				
<b>10-12</b>	Force	Vectors	Chpt. 3	<div>Forces</div>
	Geometry	Newton’s Laws		
	Mass vs Weight	Free Body Diagrams		
<b><u>EXAM 4: Week 2Q-W3</u></b>				
<b>13-15</b>	<div>INDEPENDENT STEM RESEARCH</div>			
<b><u>2<sup>nd</sup> QUARTER RESEARCH PROJECT</u></b>				
<b><u>EXAM 5 in form of PAPER &amp; POWERPOINT PRESENTATIONS: Week 2Q-W6</u></b>				
<b>16-18</b>	Universal Forces	Universal Gravitation	Chpts. 4, 5	<div>Universal Gravitation</div>
	Kepler’s Laws	Satellites		
	Circular Motion	Revisited		
<b><u>EXAM 6: Week 2Q-W9</u></b>				
<b>1<sup>st</sup> SEMESTER FINAL: Week 2Q-W9</b>				



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

**2<sup>nd</sup> 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.