

**YEAR 11 PHYSICS OVERVIEW 2020**

**VANUATU SENIOR SECONDARY SCHOOL CERTIFICATE**

**TERM 1 (Week 9) – TERM 2 (Week 8)**

<b>TERM 1</b>	<b>STRAND</b>	<b>SUB-TOPICS</b>	<b>LEARNING OUTCOMES</b>	<b>ASSESSMENTS</b>		<b>RESOURCES</b>
<b>Week s</b>				<b>Formative</b>	<b>Summative</b>	
<b>Week 9</b>			-solve problems where torques act in opposition, and where equilibrium is established		Exercise 5.40 (2%)	p.35-37
		Review	- above LO'S	QUIZ		
		-Mechanical energy	-define work -define power -define kinetic energy -define gravitational potential energy.			p. 61-67 esa level 1 p.33-50 video
			-define conservation of energy -calculate kinetic energy -calculate gravitational potential energy			p. 66-68 video
			-measure the extension and force on a spring or rubber band		Practical	video
<b>Week 10</b>			-draw and label a graph of force vs extension -identify the slope of the graph of force vs extension as a spring constant			
			-identify the area under the graph of force vs extension as the energy -calculate the area under graph of force vs extension			Esa level 1 p.43-44
			-solve complex problems involving conservation of energy			
			-solve complex problems involving workdone and power			p.47, 49-50
		Review	All above LO'S		<b>Strand 2 test (5%)</b>	Test papaer
<b>Week 11 &amp;12</b>	<b>Strand 3</b> E L E C T R I	Electrical circuits	-Define electric circuit, voltage and current -Identify a circuit symbol -List symbols used to represent electrical components eg: battery, resistor, wire, ammeter, voltmeter			Yr11 txtbk p.136-141
			-Describe the function of ammeter, voltmeter and variable resistor		practical	Electricity kit Yr11 p.141-143

	C I T Y		-Draw circuit diagram for series or parallel circuit -Construct a simple series and parallel circuit			
	AND	GOOD FRIDAY	PUBLIC HOLIDAY			
	M A G N E T I S	EASTER MONDAY	PUBLIC HOLIDAY			
			-Compare parallel and series circuit in terms of total resistance, current flow and voltage -Explain why ammeters and voltmeters are connected differently in circuits.			p. 144-146
<b>Week 13</b> 27/04	M	-Ohm's law and resistance	-Define resistance -State the factors affecting resistance of wire eg. Temp, length and thickness -Describe the influence of temperature on the resistance of wire			p. 138-140
			-Define ohmic conductor -Calculate the voltage, current or resistance using ohm's law -Plot a graph of voltage vs current -Calculate the resistance given a voltage-current graph			Esa level 2 p.201-203
			-Calculate the total resistance in series combinations - Calculate the total resistance in parallel combination			Yr11 txtbk p. 142-144
		-Electrical energy and power	-Define power as energy per unit time in an electrical context -Calculate the power output using either $P = VI$ , or $P = V^2/R$ or $P = I^2R$ -Calculate the electrical energy in kilowatt-hour			P. 145- 146
<b>TWO</b>	<b>WEEKS</b>		<b>HOLIDAY.</b>			
<b>TERM 2</b>	<b>STRAND</b>	<b>SUB-TOPIC</b>	<b>LEARNING OUTCOME</b>	<b>SUMATIVE</b>	<b>FORMATIV E</b>	<b>RESOURCES</b>
<b>WEEK 1</b> 18/05	E L E C T	Review	-Above ILO'S -Calculate the cost of electricity		Exercise 15.90 (2%)	p.147 p.150-153 p. 147-149
			-Explain the UNELCO electricity bill by identifying the units of electricity			

	R I C I T Y  AND  M A G N E T I S M		used and confirming the calculation of the total bill -Describe the dangers of electricity			
			-List the renewable energy used in Vanuatu, eg. Windmill, hydroelectricity, solar -Explain how renewable energy sources are used to produce electrical energy -Discuss the need for use of renewable sources of energy in Vanuatu -Discuss the disadvantages of use of non-renewable energy sources in Vanuatu			Talk from renewable resource person
			INTERNAL ASSESSMENT #1		IA #1 (10%)	
			CONTINUE IA			
<b>WEEK 2</b> 25/05		Magnetism and electromagnetism	-Use the right hand grip rule to identify the direction of a magnetic field around a wire carrying current. -Draw a magnetic field around a wire carrying current			Yr11 txtbk p.154-157  video
			-Use the modified right hand grip rule to identify the direction of a magnetic field around a solenoid -Draw a magnetic field around a solenoid Define electromagnet		Exercise 16.80 (2%)	p. 157-158  p. 167-169
			-Explain the effect of increasing the current, the number of turns and the magnetic field on the strength of the electromagnet			p. 158-160  video
			<b>Public holiday</b>			
<b>WEEK 3</b> 1/06	<b>Strand 4</b>  L I G H T  &  W A		-Explain how electric bell, relay, reed switch or loud speakers work			p.160
			- Above LO'S		<b>Strand 3 test (5%)</b>	
		-Propagation of light	-Introduction to light- what is light? -Define rectilinear propagation of light		Video quiz	Esa level 2 p.63 p. 100
		-Reflection of light	-Define reflection -State the two examples of reflection -State the three laws of reflection			p.105-107

	V E S		-Determine angle of incidence or reflection			
			-Describe the production of shadows, eclipses and pin hole camera in terms of rectilinear propagation of light -Explain the production of shadows in terms of rectilinear propagation of light			p. 101-104
WEEK 4 8/06			-Discuss the application of rectilinear propagation of light in real life situations using diagrams and examples.			video
			-Use a ray diagram to locate the image of an object in a plane mirror.	Activity 1-4		p. 106-110
			-Continue with ray diagrams			video
			Internal assessment # 2		Internal assessment # 1 (15%)	
			REVISION			
WEEK 5 15/06		<b>Strand 1, 2 &amp; 3</b>	<b>Mid</b>			
			<b>Year</b>		<b>Exam (60%)</b>	Exam paper
			<b>Revision</b>			
			<b>And</b>			
			<b>Exams</b>			
WEEK 6 22/ 06		-Refraction of light	-Define refraction of light -State the angle of incidence or partial reflection of light entering a different optical medium -Identify the angle of reflection of a ray entering a different medium -State the angle of refraction of a ray entering a different medium -Describe how a light ray behaves when it enters an optical denser material			p.111  esa level 1 p. 123-124,128-129  video
			-Describe the relationship contain in the formula $n_1 \sin \theta_1 = n_2 \sin \theta_2$ . -Calculate the value of an unknown in a situation involving $n_1 \sin \theta_1 = n_2 \sin \theta_2$ .			Yr12 txtbk p.97-98 video
			-Plot and label a graph of $n_1 \sin \theta_1$ against $n_2 \sin \theta_2$ . -Calculate values from graph (as the relative refractive index for two materials $n_1 \sin \theta_1$ against $n_2 \sin \theta_2$			Yr12 p.99-101

			CORRECTION OF MID YEAR EXAM PAPER			MID-YR EXAM PAPER
			CORRECTION OF MID YEAR EXAM PAPER			
<b>WEEK 7</b> 29/06			-Solve problem that involve using $n_1 \sin \theta_1 = n_2 \sin \theta_2$			Yr12.p.102  Video Esa level 2 p. 78-83
			-Explain the partial reflection that occurs as light rays are mainly refracted at the boundary between two media of different optical densities			
			-Explain the condition for critical angle within an optical denser medium when a ray meets a boundary with an optically less dense medium.			
			-Calculate the angle for a given pair of optical media and describe total internal reflection			
<b>WEEK 8</b> 6/07			-Investigate/Discuss real life applications of light rays travelling across boundaries between different media and report on the results and processes			Yr11 txtbk. P.116-117
	Review		-Above LO'S		Exercise 12.90 (2%)	Yr11 txtbk. p. 118-121
	Wave properties and propagation		-Define/identify amplitude, wavelength and frequency of waves -Describe the concepts of amplitude, wavelength and frequency of waves			p. 122- 125  video esa level 1p. 105-114
			- Use the relationship $v = f\lambda$ to calculate an unknown in a given problem.			Esa level 2 p.47-54
			- Calculate the average displacement of vibrating particles involved in wave progress		Exercise 13.40 (2%)	Yr11 txt bk (Fiji) p.125