

St Bonaventure College and High School
Subject : Physics (combined) NSS3
Teaching Schedule (2011-2012)

Duration : 5/9/2011 – 24/2/2012

SP = Scheduled number of period

AP = Actual number of period

Date	Topic	Focus/ Objective (Knowledge & Generic Skills Acquired)	SP	AP	Learning & teaching activities (including IT learning activities)	Homework /Test	Learning Resources	Civic Ed./ Values
5/9 – 16/9	Simple circuits	<ol style="list-style-type: none"> 1. Measure I, V and R in simple circuits 2. Assign the electrical potential of any earthed points as zero 3. Compare the e.m.f. of a source and the terminal voltage across the source experimentally and relate the difference to the internal resistance of the source 4. Explain the effects of resistance of ammeters and voltmeters on measurements 5. Solve problems involving simple circuits 	6		Designing and constructing an electric circuit to perform a simple function	Book 4 P.102 No.1, 6,14, 16 Chapter Test (Ch 2)	Computer simulations Exp. Videos from internet	
19/9 – 7/10	Electrical power Domestic electricity	<ol style="list-style-type: none"> 1. Examine the heating effect when a current passes through a conductor 2. Apply $P = VI$ to solve problems 3. Use kilowatt-hour (kW h) as a unit of electrical energy 	9		Investigating the need for and the functioning of circuit breakers in household circuits	Book 4 P.140 No.1, 5, 9, 12	Computer simulations Exp.	The views of some environmentalists on the necessity to return to a more primitive or natural lifestyle with minimum reliance on technology

(Note: The underlined text represents the extension component)

Date	Topic	Focus/ Objective (Knowledge & Generic Skills Acquired)	SP	AP	Learning & teaching activities (including IT learning activities)	Homework /Test	Learning Resources	Civic Ed./ Values
	Current-carrying conductor in magnetic field	<p>through a long straight wire, a circular coil and a long solenoid</p> <p>7. Examine the factors affecting the strength of an electromagnet</p> <p>8. Examine the existence of a force on a current-carrying conductor in a magnetic field and determine the relative directions of force, field and current</p> <p>9. Determine the turning effect on a current-carrying coil in a magnetic field</p> <p>10. Describe the structure of a simple d.c. motor and how it works</p> <p>11. Solve problems involving current-carrying conductors in a magnetic field</p>			<p>Performing demonstrations to show the relative directions of motion, force and field in electromagnetic devices</p> <p>Constructing electric motor kits and generator kits</p>			
7/11 – 25/11	Electromagnetic induction	<p>1. Examine induced e.m.f. resulting from a moving conductor in a steady magnetic field or a stationary conductor in a changing magnetic field</p> <p>2. Apply Lenz's law to determine the direction of induced e.m.f./current</p> <p>3. Describe the structures of simple</p>	6			<p>Book 4 P.249 No.4, 6, 8</p> <p>Chapter Test (Ch 4)</p>	<p>Computer simulations</p> <p>Demo Exp.</p> <p>Videos from textbook</p>	

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		d.c. and a.c. generators and how they work 4. Discuss the occurrence and practical uses of eddy currents						
28/11 – 9/12	<u>Transformer</u> <u>High voltage transmission of electrical energy</u>	1. <u>Describe the structure of a simple transformer and how it works</u> 2. <u>Relate the voltage ratio to turn ratio and apply it to solve problems</u> 3. <u>Examine methods for improving the efficiency of a transformer</u> 4. <u>Discuss the advantages of transmission of electrical energy with a.c. at high voltages</u> 5. <u>Describe various stages of stepping up and down of the voltage in a grid system for power transmission</u>	6		Model of transmission power line	Book 4 P.285 No.3, 5 Chapter Test (Ch 5)	Computer simulations	The effects on health of living near high-power transmission cables
12/12 – 3/1	Revision		2					
4/1 – 17/1	Mock Examination							
17/1 – 19/1	Exam Evaluation							
2/2 – 24/2	Overall revision & drilling of CE/AL past papers		9					

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