IB Physics

Magnetism and Induction

Chapter 20, 21 Syllabus

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|  | Class | Due on this class | | If you miss this class |
| 1 Feb7 | -Intro to Magnetism  -Magnetic Field lines/Domains/Currents  -Force on current-carrying wires: Magnitude and direction  -Force on charged particles – motion in B fields  -Hand out FA20.1,2 |  | | **Read:** 20.1-3, 5  **Watch:** Videos A, B |
| 2 Feb9 | -Force on charged particles – motion in B fields  -Crossed field problems: Eq = qvB  -The Hall Effect | **Check:** P20.2 1abc, 2abc, 3abc  **Check:** FA20.1 | | **Read:** 20.4,11,12  **Watch:** Videos C, D, E |
| 3 Feb13 | -Hysteresis - a demo I probably shouldn't do...  -Ampere's Law  -Galvanometers and Speakers  -DC Motors | **Check:** P20.2 1de, 2de, 3de  **Turn in:** P20.2 1-3  **Turn in:** FA20.1 | | **Read:** 20.5,6,8,10  **Watch:** Videos G, H1 |
| 4  Feb  15 | -Lenz's discovery and magnetic flux  -Electromagnetic induction  -Lenz's law  -Induced EMF in moving conductors  -Hand out FA21.1,2 | **Video Flip: Solenoids (H2)** | | **Read:** 20.7  **Read:** 21.1-2  **Watch:** Videos H2  **Watch:** Videos A, B, C |
| 5  Feb  20 | -My friend eddy  -Alternators  -Solving voltages, currents and power in transformers  -Transmission of electrical power | **Check:** P21.1 5abc, P21.2 1abc, 2abc  **Check:** FA21.1 | | **Read:** 21.3,5,7  **Watch:** Videos D, E, F |
| 6  Feb  22 | -Magnetic field patterns for Solenoids, Wires, and Flat coils  -Lab Explanations  -Hand out FAs | **Check:** P21.2 1de, 2de, 3de  **Turn in:** P21.2 1-3  **Turn in:** FA21.1 | | **Read:** 20.2,5,7  **Watch:** Videos K (from 20) |
| 7  Feb  26 | -Work on Labs | **Check:** **Ch 20:** 3,9,16(2.5E6 m/s, 4.1 mm) | | Come in before or after school to make up the labs |
| 8  Mar  1 | -Work on Labs | **Check:** **Ch 21:** 5,13,15 | | Come in before or after school to make up the labs |
| 9  Mar  5 | Summative Assessments on:  SA20.1 - Right Hand Rules  SA20.2 - Forces on Wires and Particles  SA21.1 - Lenz's Law  SA21.2 - Electrical Induction | **Turn in:** FA 20.1, 20.2, 20.3, 21.1, 21.2  **Turn In:** **20:** 3,9,16, **21:** 5,13,15 | | Make up the assessments |
| 10  Mar  7 | Atomic and Nuclear!!! | **Turn In:** MagnaProbe Lab  **Turn In:** Magnet Design Lab  **Turn In:** Specific Heat of Water  (**Turn In:** Index of Refraction) - IB only | |  |
| Assignments   * 3 Labs:   + MagnaProbe Lab – Station exploration of magnetic fields   + Magnet Lab – student designed lab – no handout   + Specific Heat of Water lab * 5 Formative, 4 Summative Assessments   + 20.1 – Right Hand Rules   + 20.2 – Forces on Wires and Particles   + 20.3 - Ampere's Law (no summative)   + 21.1 – Lenz's Law   + 21.2 – Electrical Induction * 6 Book Problems: **20:** 3,9,16, **21:** 5,13,15 | | Handouts | |