**IB Physics**

Currents and Circuits - Chapter 18&19 Syllabus

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| Block | In class : | Due on this class: | | If you miss this class: |
| 1 Jan5/6 | -Batteries and electric current  -Ohm's Law  -Electric Power  -Alternating Current and RMS |  | | **Read:** 18.1-7  **Watch:** Videos A, B, D, E |
| 2 Jan9/10 | -Series Circuits  -Parallel circuits  -Work on circuits in class | **Check:** Practice 18.1 #1-3  **Video: Series Circuits (F)**  **Video: Parallel Circuits (G)** | | **Read:** 19.1-2  **Watch:** Videos F, G |
| 3 Jan11/12 | -Resistances in series and parallel  -Resistance Networks  -Solving single reduction circuits  **-Noteguides for networks (handout)** | **Check:** Practice 19.1 #1-3 | | **Watch:** Videos J |
| 4 Jan13/17 | -Work on double circuit reductions in class | **Video Flip: Reducible Networks – Double popper (J.2)** | | **Watch:** Videos J |
| 5 Jan18/19 | -Kirchhoff's Laws  -Work on Kirchhoff's laws problems in class  **-**Intro to internal resistance of a battery lab  -Graphing PreLab **(handout)** | **Check:** Practice 19.2 #1-3  **Video: Kirchhoff’s Laws (L)** | | **Read:** 19.3-4  **Watch:** Videos L |
| Jan 18 | **Research Symposium 7:00-9:00 in Lecture Hall** |  | |  |
| 6 Jan20/23 | -Resistivity intro/Video Flip  -Electron drift velocity intro/Video Flip  -Lab intros - Wire/Light bulb/Spreadsheet/Osc.  -Hand out the Formative Assessments  -Reminder of book problems | **Check:** Practice 19.3 #1-3  **Video Flip: Graphing Prelab (optional)**  **Check:** Graphing Prelab  **Turn In:** Graphing Pre-Lab | | **Watch:** Videos C.1, C.2 |
| 7Jan24/25 | -Lab Work | **Check:** Ch 18 #2(1.2E5 C), 5, 7  **Video Flip: Resistivity (C.1)**  **Video Flip: Electron Drift Velocity (C.2)** | | **Read:** 18.4,8  **Watch:** Videos C.1, C.2 |
| 8 Jan26/27 | -Lab Work | **Check:** Ch 18 #12(0.47 mm), 31, 45  **Video Flip: Capacitors in Series and Parallel (N)**  **Turn In:** Practice 18.1, 19.1, 19.2, 19.3 #1-3 | | **Watch:** FA19.2 2 different ways (optional) (J.3) |
| Feb 2 | **Final** – Cumulative – See the website |  | |  |
| 9Feb6/7 | -Capacitor addition intro/Video Flip  -Lab Work | **Check:** Ch 19 #17, 20(4.55kΩ), 27  **Turn In:** Ch 18 #2, 5, 7, 12, 31, 45 | | **Read:** 19.5  **Watch:** Videos N |
| 10 Feb8/9 | -Lab Work | **Check:** Ch 19 #29, 35, 37  **Turn In:** Ch 19 #17, 20, 27, 29, 35, 37 | |  |
| 11  Feb  10/13 | Summative Assessments on: **SA18.1 - Current, Voltage, Power**  **SA19.1 - Series and Parallel Circuits**  **SA19.2 - Network Circuits** SA19.3 - Kirchhoff's Laws (But not 18.2) | **Turn In:** FA 18.1, 18.2, 19.1, 19.2, 19.3  **Turn In:** Resistance of a Light bulb and Diode  **Turn In:** Resistance of a Wire  **Turn In:** Internal Resistance of a Battery/Circuit building  **Turn In:** Oscilloscope Lab  **Turn In:** Circuit Spreadsheet | |  |
| Feb  10/13 | Freakin' MAGNETS!!!How do they work??? |  | |  |
| Assignments   * 6 Labs/Pre Lab   + Graphing Prelab (20 pts)   + Resistance of wire – You design the DCP (30 pts)   + Resistance of light bulb and diode (30 pts)   + Internal resistance of a battery/Circuit Building (20 pts)   + Oscilloscope Lab – Quick thing with the oscilloscope (20 pts)   + Circuit Spreadsheet – Spreadsheet that models a circuit (20 pts) * 4 summative/6 Formative Assessments   + 18.1 - Ohm’s law, current, power   + 18.2 - Resistivity and electron drift speed (No summative)   + 19.1 - Simple series and parallel circuits   + 19.2 - Networks of circuits   + 19.3 - Kirchhoff's Laws   + 19.4 - Capacitors in parallel and series * Book Problems: Ch 18 #2, 5, 7, 12, 31, 45 Ch 19 #17, 20, 27, 29, 35, 37 | | | Handouts: | |