**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: |
| 1Jan 5/6 | -Batteries and electric current-Ohm's Law -Electric Power-Alternating Current and RMS |  | **Read:** 18.1-7**Watch:** Videos A, B, D, E |
| 2Jan 9/10 | -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 Jan 11/12 | -Resistances in series and parallel-Resistance Networks-Solving single reduction circuits**-Noteguides for networks (handout)** | **Check:** Practice 19.1 #1-3 | **Watch:** Videos J |
| 4Jan 13/17 | -Work on double circuit reductions in class | **Video Flip: Reducible Networks – Double popper (J.2)** | **Watch:** Videos J |
| 5Jan 18/19 | -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** |  |  |
| 6Jan 20/23 | -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 |
| 7Jan 24/25 | -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 |
| 8Jan 26/27 | -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 |  |  |
| 9Feb 6/7 | -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 |
| 10Feb 8/9 | -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:  |