**IB Physics**

Currents and Circuits - Chapter 18&19 Syllabus

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| Block | Class  | Due on this class |
| 1Jan 5 | -Batteries and electric current-Ohm's Law -Electric Power-Alternating Current and RMS | **Read:** 18.1-7 |
| 2Jan 7 | -Series Circuits-Parallel circuits-Work on circuits in class | **Video: Series Circuits (F)****Video: Parallel Circuits (G)****Chapter 18:** 18: 2(1.2E5 C), 5, 7**Read:** 19.1-2 |
| 3 Jan 11 | -Resistances in series and parallel-Resistance Networks-Solving single reduction circuits**-Noteguides for networks (handout)** | **Chapter 18:** 27, 31 |
| 4Jan 13 | -Work on double circuit reductions in class | **Video Flip: Reducible Networks – Double popper (J.2)****Chapter 18:** 43, 45 |
| 5Jan 15 | -Kirchhoff's Laws-Work on Kirchhoff's laws problems in class**-**Intro to internal resistance of a battery lab-Graphing PreLab **(handout)** | **Video: Kirchhoff’s Laws (L)****Read:** 19.3-4**Chapter 19:** 17 |
| **Jan 19/20** | Research Symposia 6:00-9:00 in Lecture Hall |  |
| 6Jan 20 | -Resistivity intro/Video Flip-Electron drift velocity intro/Video Flip-Lab intros - Wire/Light bulb/Spreadsheet/Oscill.-Hand out the Formative Assessments | **Video Flip: Graphing Prelab (optional)****Check:** Graphing Prelab**Chapter 19:** 20(4.55kΩ)**Turn In:** Graphing Pre-Lab |
| 7Jan 22 | -Lab Work | **Video Flip: Resistivity (C.1)****Video Flip: Electron Drift Velocity (C.2)****Read:** 18.4,8**Chapter 18:** 12(0.47 mm), 13, 49 |
| 8Jan 26 | -Lab Work | **Video: FA19.2 2 different ways (optional) (J.3)****Chapter 19:** 27, 29 |
|  | **Final** - do 4 of 6 pages. 8/10 = 100% |  |
| 9Feb 3 | -Capacitor addition intro/Video Flip-Lab Work | **Video Flip: Capacitors in Series and Parallel (N)****Read:** 19.5**Chapter 19:** 35, 37  |
| 10Feb 5 | -Lab Work | **Turn In: Ch 18:** 2, 5, 7, 27, 31, 43, 45, 12, 13, 49 **Ch 19:** 17, 20, 27, 29, 35, 37 |
| 11 **Feb 9** | Summative Assessments on:**SA18.1 - Current, Voltage, Power****SA19.1 - Series and Parallel Circuits****SA19.2 - Network Circuits**SA19.3 - Kirchhoff's Laws | **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 |
| 12**Feb 11** | 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, 27, 31, 43, 45, 12, 13, 49 **Ch 19:** 17, 20, 27, 29, 35, 37
 | Handouts:Syllabus-18-19-CurrentsAndCircuitsNoteGuide-SeriesParallelWorksheet-CircuitExercisesNoteGuide-NetExamplesLab-GraphingPreLabLab-LightBulbAndDiode |