**IB Physics**

Currents and Circuits - Chapter 18&19 Syllabus

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| Block | Class | Due on this class | |
| 1 Jan 5 | -Batteries and electric current  -Ohm's Law  -Electric Power  -Alternating Current and RMS | **Read:** 18.1-7 | |
| 2 Jan 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 | |
| 4 Jan 13 | -Work on double circuit reductions in class | **Video Flip: Reducible Networks – Double popper (J.2)**  **Chapter 18:** 43, 45 | |
| 5 Jan 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 |  | |
| 6 Jan 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 | |
| 8 Jan 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 | |
| 10 Feb 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-CurrentsAndCircuits  NoteGuide-SeriesParallel  Worksheet-CircuitExercises  NoteGuide-NetExamples  Lab-GraphingPreLab  Lab-LightBulbAndDiode | |