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| Electronics 101 - Direct Current |
| |  |  | | --- | --- | | Instructor | Michael Szymkewicz | | Office Phone | 360-475-7375 | | Office Address | Technology Building Room 115 | | Office Hours | M-F 1 pm - 2 pm | | E-mail | [mszymkewicz@olympic.edu](mailto:mszymkewicz@olympic.edu) | | Location | Online | | Times | Open Lab: Monday - Friday 10:00 AM - 12:00 Noon | | Start Date | 03/28/2011 End Date: 06/08/2011 | | Course Credits | 5 | | Notes | Assistant: Rebecca Evenhus email: revenhus@olympic.edu phone: 360-475-6814 |   **Required Text**  Grob's Basic Electronics Mitchel E. Schultz ISBN: 0-07-301946-1  **Suggested Text**   * Problems Manual for Grob’s Basic Electronics, 11e by Mitchel E. Schultz * Scientific Calculator * MultiSim Student Edition, v11 from National Instruments (available in OC Bookstore)   **Course Description**  Fundamentals of direct current from Ohm’s Law through network theorems.  **Course Objectives**   * Perform basic addition, subtraction, multiplication and division of whole and fractional numbers. * Demonstrate knowledge of applied electronics algebra. * Demonstrate knowledge of applied electronics trigonometry in the solution of technical problems. * Use and manipulate algebraic equations, functions, factors, ratios and proportions to solve technical problems. * Solve radical and linear equations. * Solve technical problems requiring the application of exponential and logarithmic functions. * Solve technical problems involving inequalities. * Determine equations from technical data that yield straight lines when plotted on regular, log-log or semi-log graph paper. * Demonstrate knowledge of the electrical laws (Ohm’s, Kirchhoff’s and Watts’ Laws). * Apply atomic theory to determine the structure of elements. * Use the periodic table to classify and/or predict the physical and chemical properties of elements. * Solve technical problems involving work, energy, power, motion, momentum, efficiency, and mechanical advantage. * Solve technical problems involving electron/conventional current flow, bonding, valence structure and conduction bands, ions, gases and related electron theory fundamentals. * Demonstrate knowledge of basic electronic components. * Define/draw the schematic symbol and write the designating letter for electronic components, circuits and devices appropriate to this section. * Demonstrate understanding of sources of electricity in dc circuits: generators, chemical, photovoltaic, piezoelectric. * Demonstrate knowledge of series, parallel and complex circuit configurations. * Solve dc and ac circuit problems using network theorems (Thevenin’s, Norton’s and Superposition Theorems) and Kirchhoff’s voltage and current laws. * Demonstrate knowledge of maximum power transfer theorems. * Describe knowledge of different wire size and type.   **Course Requirements**   |  |  |  | | --- | --- | --- | | **Reading Assignment** | **Homework Assignment** | **Test** | | Chapter 1 | Do even numbered PROBLEMS |  | | Chapter 2 | Do even numbered PROBLEMS | Ch. 1 & 2 | | Chapter 3 | Do even numbered PROBLEMS | Ch. 3 | | Chapter 4 | Do even numbered PROBLEMS | Ch. 4 | | Chapter 5 | Do even numbered PROBLEMS | Ch. 5 | | Chapter 6 | Do even numbered PROBLEMS | Ch. 6 | | Chapter 7 | Do even numbered PROBLEMS | Ch. 7 | | Chapter 8 | Do even numbered PROBLEMS | Ch. 8 | | Chapter 9 | Do even numbered PROBLEMS |  | | Chapter 10 | Do even numbered PROBLEMS |  | | Chapter 11 | Do even numbered PROBLEMS |  | | Chapter 12 | Do even numbered PROBLEMS | Ch. 9, 10, 11, 12 |   **Course Prerequisites**  MATH 094 or equivalent.  **Grading Policy**  *Grading will be done on an absolute scale rather than a curve.*    Grading Scale  A         95 - 100%  A-        90 - 94  B+        86 - 89  B          82 - 85  C+        78 - 81  C          74 - 77  D+       70 - 73  D         64 - 69  D-        60 - 63  F          59 and Below  **Exam Policy**   * All tests have been made available.  This means that as soon as you have completed the homework associated with the test and the labs (if enrolled in the lab class), you can take the test.  You will have 2 hours to take the test.  **You will need to average about 1 test per week in order to complete the course on time.**  If you find that you are having difficulty with a particular chapter, then please contact us immediately.  Do not allow yourself to get behind.   Tests are open book, but you must work alone. Do not assume that open book means easy. These tests can be challenging and may require critical thinking. |