



Course specification

University/Academy: Damanhour

Faculty/Institute: Science

Department: Physics

1. course Data:

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| Course code: PHY (201) | Course title: physics 1 | Academic year/level: 2008-2009 2 nd year (first term) |
| Specialization: Physical science group | No. of instructional units: lecture <input type="text" value="4hrs/week"/> tutorial <input type="text" value="2hrs/week"/> practical <input type="text" value="4hrs/week"/> | |

2. course Aim

- The course provides the student with a clear and logical presentation of the basic concepts and principles of Thermodynamics, and to strengthen an understanding of the concepts and principles through a broad range of interesting applications to the real world.
- The course introduces the students and to understand the general electronics specially the semiconductor devices such as Diodes and transistors and then applications in overall diodes.
- The course Prepare the student to be familiar with the environmental aspects and the ship pollutions due to the conventional energy. The



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| | <p>students have to know all sources of renewable energy alternatives such as solar, wind, waves, tide and geothermal. They have to be capable of marine propulsion systems using the new energy alternatives and applications.</p> |
| 3. Intended learning outcome | |
| a) Knowledge and understanding | <p>A1: Describe the Reversible and Irreversible Processes Macroscopic Description of an Ideal Gas.</p> <p>A2 Explain the relation to determine the Temperature, the Zeroth Law of Thermodynamics and thermal Expansion of Solids and Liquids.</p> <p>A3: Describe the First Law of Thermodynamics, Thermodynamic Processes and the Kinetic Theory of Gases.</p> <p>A4: List the characteristics of semi conductor devices.</p> <p>A5: Recognize the theoretical principles of The Second Law of Thermodynamics and Heat Engines, Entropy.</p> <p>A6: List of the new and renewable sources of energy.</p> |
| b) Intellectual skills | <p>B1: Planning Heat and Work diagrams for use in solving simple problems in the First Law of Thermodynamics, thermodynamic Processes, the Kinetic theory of Gases, Maxwell Distribution, the Second Law of thermodynamics and Heat Engines, the third Law of</p> |



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| | <p>Thermodynamics and entropy.</p> <p>B2: Formulate some simple electronic circuits.</p> <p>B3: Planning and installing of the energy storage systems.</p> <p>B4: Evaluate the new and renewable sources of energy.</p> |
| c) Professional skills | <p>C1: Conduct 1st and 2nd Law of Thermodynamics to the solution of predictable and unpredictable problems.</p> <p>C2: Examine a well-structured solution, with clearly-explained reasoning and appropriate presentation.</p> <p>C3: conduct semi-inductors in electronics.</p> <p>C4: Dissect the optimum energy storage methods on shipboard.</p> |
| d) General skills | <p>D1: <u>use of technology tools like</u> internet/electronic resources to obtain subject specific information,. - use a number of computer packages to present information.</p> <p>D2: <u>The ability to work in groups</u>: work with other as a part of a team to collect data and/or to produce reports and presentations.</p> <p>D3: <u>Write reports</u> : - study independently, set realistic targets and plan work and time to met targets within deadlines.</p> <p>D4: <u>Prpblem solving</u>: - Regular problem exercises</p> |



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| | <p>and example will give students the chance to develop their theoretical understanding and problem.</p> <p>D5: <u>Communication</u>: Students will have write reports and give oral presentation.</p> |
| 4. course content | <ul style="list-style-type: none">- Reversible and Irreversible Processes, Temperature and work and Zeroth Law of Thermodynamics- Fundamental of AC circuit.- Conventional energy and environmental aspects and Ship and pollution.- Thermal Expansion of Solids and Liquids, Thermal Expansion of Solids and Liquids and Heat and Work.- Semiconductor theory.- New and renewable energy (solar, wind, wave, tide, and geothermal, etc...)- The First Law of Thermodynamics, Thermodynamic Processes, The Kinetic Theory of Gases- Maxwell Distribution and The Second Law of Thermodynamics. Electronic diodes and Transistors and characteristics.- The third Law of Thermodynamics, Heat Engines and Entropy.- Common(collector- base- emitter) configuration, Transistor in active –saturation –and cut off.- Transistor as: amplifiers, multivibrators, oscillators and summing amplifier.- Application of new and renewable energy in marine field and Methods of energy storage. |
| 5. Teaching and learning methods | <ul style="list-style-type: none">5.1. lecture using PowerPoint presentations.5.2. practical sections.5.3. independent reading throughout basic text books and research papers. |
| 6. teaching and learning | Data show – computer – blackboard – |



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| methods for students with special need | Student oral presentations | | | | | | | | | | | | |
| 7. Student Assessment | <p>7-1. Semester Work.</p> <p>7-2. Mid-Term Examination .</p> <p>7-3. Practical Examination</p> <p>7-4. Final Term Examination</p> | | | | | | | | | | | | |
| a) Procedures used: | <p>7.1. Reaserch and presentation to assess skills of presenting data and discussion.</p> <p>7.2. Mid-Term Examination To accesses ability to continue in course</p> <p>7.3. practical exam. To access professional and practical skills.</p> <p>7.4. written exam. To accesses ability to remember &.understand scientific background.</p> | | | | | | | | | | | | |
| b) Schedule: | <p>Assessment 1:Semesterwork Week: 4-8</p> <p>Assessment 2: Mid-term Week: 10</p> <p>Assessment 3: Practical final Week: 12</p> <p>Assessment 4: Written final Week: 14</p> | | | | | | | | | | | | |
| c) Weighing of Assessment: | <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 70%;">Mid-Term Examination:</td> <td style="text-align: right;">10</td> </tr> <tr> <td>Final-Term Examination:</td> <td style="text-align: right;">200</td> </tr> <tr> <td>Practical Examination:</td> <td style="text-align: right;">30</td> </tr> <tr> <td>Semester Work:</td> <td style="text-align: right;">10</td> </tr> <tr> <td colspan="2" style="border-top: 1px solid black; height: 10px;"></td> </tr> <tr> <td style="text-align: right;">Total:</td> <td style="text-align: right;">250</td> </tr> </table> | Mid-Term Examination: | 10 | Final-Term Examination: | 200 | Practical Examination: | 30 | Semester Work: | 10 | | | Total: | 250 |
| Mid-Term Examination: | 10 | | | | | | | | | | | | |
| Final-Term Examination: | 200 | | | | | | | | | | | | |
| Practical Examination: | 30 | | | | | | | | | | | | |
| Semester Work: | 10 | | | | | | | | | | | | |
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| Total: | 250 | | | | | | | | | | | | |



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| 8. List of Textbooks and References: | ----- |
| a) Course Notes | Lecturer private notes |
| b) Required Books (Textbooks) | <p>1- M.M. El-Wakil, "Power Plant Technology", McGraw-Hill, New york1985.</p> <p>2- S. Rao and B.B.Parulekar, "Energy Technology", Khanna Pub 3rd edition 2005.</p> <p>3 P.Breeze, "Power Generation Technologies", 1st edition, Elsevier 2005.</p> <p>4- SPICE for Power Electronics and Electric Power, Second Edition , Muhammad H. Rashid Hasan M. Rashid (2005-11-02)</p> <p>5-Teach Yourself Electricity And Electronics 3Rd – Gibilisco</p> |
| c) Recommended Books | <p>1- Twidell, J.W. and Weir, A.D., "Renewable Energy Resources", E& F.N Spond Ltd, London 1986.</p> <p>2- Archie, W. Culp, "Principles of Energy Conversion", McGraw Hill, New York 1991.</p> <p>3- P.L. Surman, "Alternative energy sources", Electrical engineering reference book, 15th edition, Oxford, 1993.</p> |
| d) Periodicals, web sites,....,etc | <ul style="list-style-type: none">• Imare and ASME web sites• Power & Energy, Solar Today and ASME periodicals• http://hyperphysics.phy- |



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| | <p>astr.gsu.edu/hbase/electronic/icomp.html</p> <ul style="list-style-type: none">• http://www.appliedelectronics.com/http://www.appliednn.com/ |
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Course Instructor: Dr. Adly helmy
Dr. Yehya keshk

Dr. Shaker Ebrahim

Head of Department

Date: -----/-----/-----

Prof. Dr. El. M. Elmaghrby