COURSE SYLLABUS

Course number and name	**203 phys-3 General Physics 2**
Credits hours	3 Credit hours
Contact hours	5 Contact hours; 2 for lecture, 1 for Tutorial and 2 for practical
Instructor name	Dr Hany Talaat Mohsen
Textbook	Raymond A. Serway and John W. Jewett, Jr., Physics for Scientists& Engineers with Modern Physics, 9th edition, Brooks/Cole, 2014
Other supplemental materials	Raymond A. Serway, Jerry S. Faughn, Chris Vuille, College Physics, 8th Edition, Brooks/Cole, 2009
Specific course information	
Catalog description	This course provides fundamental physics in fluid mechanics, thermodynamics, electrostatics, electric current and magnetic field. The course covers static and dynamic fluids, work, heat, energy transfer, heat engines and laws of thermodynamics, Coulomb's law, Gauss' law, resistance, electric current, potential, electric energy, capacitor and magnetic field. A set of lab experiments related to this course also provided.
Prerequisite	101 phys
Required / Elective	English – Mathematics
Specific goals for the course	
Course Learning Outcomes (CLO)	By the end of this course, the student should be able to: **CLO#1.1 Describe** fundamental knowledge of fluid mechanics and laws of thermodynamics. **CLO#1.2 Define** basic of electricity and magnetism. **CLO#2.1 Discuss** fluid mechanics including the Pascal's law, buoyant force continuity equation and Bernoulli's equation. **CLO#2.2 Explain** thermodynamic laws, heat in thermodynamic processes, hea transfer mechanisms and heat engines. **CLO#2.3 Explain** the electrostatics, current in series and parallel circuits electric potential and magnetic field. **CLO#2.4 Conduct** experiments related to the fluids, thermodynamics electricity and magnetic.
List of topics to be covered	1. **Fluid Mechanics: (**Pressure-Pascal's law-Archimedes' principle-Continuity equation-Bernoulli's equation). 2. **Thermodynamics: (**Temperature-Work and heat-First law of thermodynamics-Heat transfer mechanisms-Heat engines-Second law of thermodynamics). 3. **Electrostatics: (**Coulomb's law-Electric field-Gauss's law-electric flux-Electric potential-Capacitors). 4. **Current and Resistors: (**Electric current-Resistance-Electric power-Resistors in series and parallel). 5. **Magnetic Field: (**Ampere's law-Faraday's law).