Course Syllabi

1. INGE-00020 ENERGY TECHNOLOGY
2. 96 credits hours.
3. Bibliography
   - Energías renovables, González Velasco, Jaime, 2009
   - Solar Energy Engineering. Processes and Systems / https://research.ebsco.com/linkprocessor/plink?id=e99fdd05-b4cf-3f8a-a5fc-321d6ef0d858, Kalogirou, Soteris A., 2014
   - Energy: Perspectives, Problems, and Prospects / https://research.ebsco.com/linkprocessor/plink?id=a5acdaf5-5e2a-3f25-ba3f-8b44d3893c79, McElroy, Michael B., 2010
4. Specific Course Information
   a. It studies the management of energy, the impact and the problems caused by the use of non-renewable sources, as well as the global energy crisis and the alternatives presented by renewable energies. In addition, it analyzes the principles and applications of solar, wind, hydraulic, biomass and geothermal energies, allowing the student to acquire concepts that allow him to propose alternatives to the impact of non-renewable sources when applying concepts of saving and energy efficiency This subject contributes to the following learning outcomes: RA1. Problem solving. It identifies, formulates and solves complex engineering problems by applying engineering, science and mathematics principles. RA2. Design. It applies engineering design to produce solutions that meet specific needs taking into account public health, safety and well-being, as well as global, cultural, social, environmental and economic factors. RA4. Ethics and responsibility. ethical and professional responsibilities in engineering situations to make informed judgments that should consider the impact of engineering solutions in global, economic, environmental and social contexts.
   b. Prerequisites:
      - INGE-00018 MACHINE TOOLS
5. Learning Objectives of the Course
   a. To know the energy alternatives efficient and according to the environment.
      - To analyze the environmental problems caused by the use of fossil fuels.
      - To provide the student with knowledge to analyze the energy crisis at both the global, regional and national levels.
      - To know and apply technical principles for the design of systems that use renewable energy sources.
      - To know the principles for energy saving and efficiency.
   b. Learning Outcomes
      - Ra1. develops skills and capabilities to propose renewable energy applications.
      - Ra4. understands the advantages and problems arising from the use of fossil fuels.
      - Ra1. develops skills and capabilities to propose renewable energy applications.
      - Ra4. analyzes the advantages, disadvantages and environmental impact of renewable energies.
      - Ra2. it proposes clean energy alternatives as part of the solution to the energy crisis in the country and the region.
      - Ra4. understands the advantages and problems arising from the use of fossil fuels.
6. Course Topics

- Energy: industry problems and perspectives
- Energies not renewable
- Renewable energies
- Energy management in industry