Course Syllabi

1. INGE-00016 ELECTRICAL ENGINEERING AND TECHNOLOGY
2. 144 credits hours.
3. Bibliography
   - Electrotecnia, Alcalde, Pablo, 2012
   - Introducción al análisis de circuitos, Boylestad, Robert, 2017
4. Specific Course Information
   a. The subject provides students with the necessary tools to understand the principles of electrical circuits and introduce students to the field of Electrical Engineering, addressing topics such as: fundamental laws and theorems used in circuit analysis, transient analysis, capacitors and inducers, motors in C.C and C.A., C.C and C.A. Generator. The subject provides in points 5, 6 and 9 of the discharge profile: 5. Design and implement management models oriented to the optimi. 6. Build simulation models based on different industrial engineering methodologies. 9. Interprets information based on mathematical, physical, chemical models and their interrelation.
   b. Prerequisites:
      - CCFF-00030 PHYSICS II
5. Learning Objectives of the Course
   a. •Understand the basic concepts of electrical devices and apply properly and effectively the techniques, methods of analysis and theorems in the resolution of problems of direct and alternating current, as well as the principle of operation of machines in permanent regime.
      - Perform with precision and safety the measurements of the fundamental electrical magnitudes (voltage, intensity, resistance and power), using in each case, the appropriate instrument.
      - Analyze the electrical phenomena.
      - Identify the active and passive elements of a circuit in current (CC) and AC (AC)
      - Analyze the structure, principle of operation and characteristics of static and rotary electric machines.
   b. Learning Outcomes
      - It solves problems of electrical circuits of direct current (cc) and current (ca), applying the concept of electricity, methods, theorems and fundamental laws in the study of such circuits.
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- It solves problems of electrical circuits of direct current (cc) and current (ca), applying the concept of electricity, methods, theorems and fundamental laws in the study of such circuits.
- Accurately and safely perform the measurements of the fundamental electrical magnitudes (voltage, intensity, strength and power), using in each case the appropriate measuring instrument.
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6. Course Topics

- Law of ohm, power and energy.
- Network theorems.
- Circuite seie, parallelo and mixed.
- Methods of analysis.
- Condensators and inducers
- Continuous current generators, motors
- Transitional analysis of circuits