

**General competences of the engineer of the institute (C):**

- C1. Identify, formulate, and solve complex engineering problems by applying engineering fundamentals, basic science and mathematics.
- C2. Develop and conduct appropriate experimentation and/or simulation, analyze and interpret data, assess and evaluate findings, and use statistical analyses and objective engineering judgment to draw conclusions.
- C3. Apply engineering design processes to produce cost-effective solutions that meet specified needs with consideration for global, cultural, social, economic, environmental, ethical and other aspects as appropriate to the discipline and within the principles and contexts of sustainable design and development.
- C4. Utilize contemporary technologies, codes of practice and standards, quality guidelines, health and safety requirements, environmental issues and risk management principles.
- C5. Practice research techniques and methods of investigation as an inherent part of learning.
- C6. Plan, supervise and monitor implementation of engineering projects, taking into consideration other trades requirements.
- C7. Function efficiently as an individual and as a member of multi-disciplinary and multicultural teams.
- C8. Communicate effectively – graphically, verbally and in writing – with a range of audiences using contemporary tools.
- C9. Use creative, innovative and flexible thinking and acquire entrepreneurial and leadership skills to anticipate and respond to new situations.
- C10. Acquire and apply new knowledge; and practice self, lifelong and other learning strategies.

**Specialized competencies of the electrical engineering for the program (CR)**

- CR1. Select, model and analyze electrical power systems applicable to the specific discipline by applying the concepts of generation, transmission and distribution of electrical power systems.
- CR2. Design, model and analyze an electrical/electronic/digital system or component for a specific application; and identify the tools required to optimize this design.
- CR3. Design and implement elements, modules, sub-systems, or systems in electrical/electronic/digital engineering using technological and professional tools.
- CR4. Estimate and measure the performance of an electrical/electronic/digital system and circuit under specific input excitation and evaluate its suitability for a specific application.
- CR5. Adopt suitable national and international standards and codes to design, build, operate, inspect, and maintain electrical/electronic/digital equipment, systems and services.

## **Sub-Specialized competencies of the Computers and Systems engineering for the program (CS)**

CS1: Design, model, and analyze an electrical/electronic/digital/software system or component for

a specific application.

CS2: Design and implement elements, modules, sub-systems or systems in the field of computer

engineering using technological and professional tools.

CS3: Estimate and measure the performance of an electronic/digital/software system and circuit

under specific input excitation and evaluate its suitability for a specific application.

CS4: Adopt suitable national and international standards and codes to design, build, operate, inspect,

and maintain electrical/electronic/digital/software systems and services.

CS5: Apply computer-based solutions for the contemporary problems in the field of data and digital transformation.