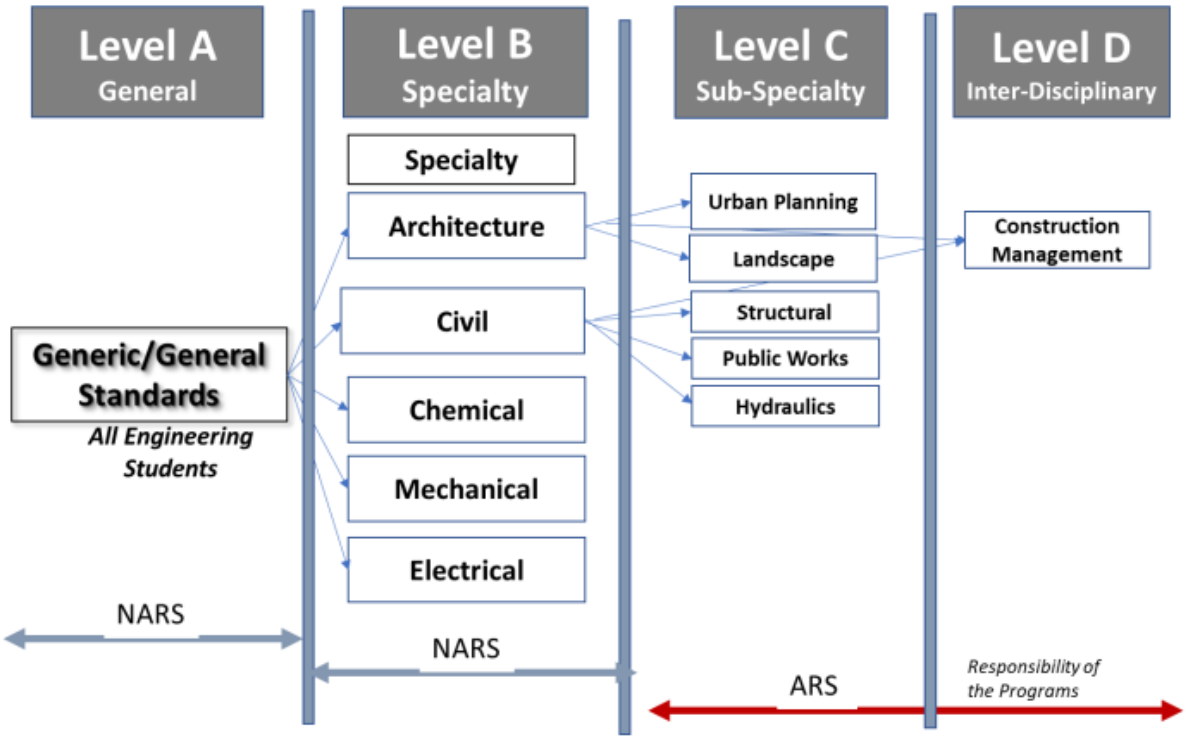
Electronics and Communications engineering

Program competencies



Level A
General

The Engineering Graduate must be able to:

A1- Identify, formulate, and solve complex engineering problems by applying engineering fundamentals, basic science and mathematics.
A2- 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.
A3- 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.
A4- Utilize contemporary technologies, codes of practice and standards, quality guidelines, health and safety requirements, environmental issues and risk management principles.
A5- Practice research techniques and methods of investigation as an inherent part of learning.
A6 - Plan, supervise and monitor implementation of engineering projects, taking into consideration other trades requirements.
A7- Function efficiently as an individual and as a member of multi-disciplinary and multicultural teams.
A8- Communicate effectively – graphically, verbally and in writing – with a range of audiences using contemporary tools.
A9- Use creative, innovative and flexible thinking and acquire entrepreneurial and leadership skills to anticipate and respond to new situations.
A10- Acquire and apply new knowledge; and practice self, lifelong and other learning strategies.

Level B
Specialty

Electrical

B1- 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.

B2- Design, model and analyze an electrical/electronic/digital system or component for
a specific application; and identify the tools required to optimize this design.

B3- Design and implement: elements, modules, sub-systems or systems in electrical/electronic/digital engineering using technological and professional tools.

B4- 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.

B5-Adopt suitable national and international standards and codes to: design, build, operate, inspect and maintain electrical/electronic/digital equipment, systems and services

Level C

Sub-Specialty

Electronics and communications engineering

C1 - Explain, Design, model, analyze and Identify required tools for electrical , analog /digital electronic and control systems and applications.

C2- Explain, Describe, Practice, Design model, analyze and Identify required tools for electromagnetic waves , microwave systems , antennas and applications.

C3- Explain, Describe, Practice, Design, model, analyze and Identify required tools for signal processing, analog /digital Communications systems and applications.

C4- Explain, Design and Practice microprocessor, computer architecture and connections , data structure and operating systems with different tools.