Program Specification

Civil Engineering B.Sc. (Civil Engineering program)

Academic Year 2023-2024

Academic Standards of Program

The reference for standards considered in the development of this program is National Academic Reference Standards for Engineering (NARS 2018) which is adopted and approved by institute council in 10 December 2022 meeting No. (3).

1- General Engineering NARS Competencies in 2018		
	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.
1- General Engineering NARS Competencies in 2018		
	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 multi-cultural 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.	

B- Civil NARS Competencies in 2018		
	B1	Select appropriate and sustainable technologies for construction of buildings, infrastructures and water structures; using either numerical techniques or physical measurements and/or testing by applying a full range of civil engineering concepts and techniques of: Structural Analysis and Mechanics, Properties and Strength of Materials, Surveying, Soil Mechanics, Hydrology and Fluid Mechanics.
	B2	Achieve an optimum design of Reinforced Concrete and Steel Structures, Foundations and Earth Retaining Structures; and at least three of the following civil engineering topics: Transportation and Traffic, Roadways and Airports, Railways, Sanitary Works, Irrigation, Water Resources and Harbors; or any other emerging field relevant to the discipline.
	B3	Plan and manage construction processes; address construction defects, instability and quality issues; maintain safety measures in construction and materials; and assess environmental impacts of projects
	B4	Deal with biddings, contracts and financial issues including project insurance and guarantees.