

New Learning Areas

National Qualification Framework

Saudi Arabia

National Qualification Framework (NQF)

The NQF aims to provide an integrated system that incorporates a high level of quality, competitiveness, and international recognition of national qualifications.

The NQF represents a comprehensive and uniform system for building, organizing and categorizing qualifications into levels based on learning outcomes.

The Framework also provides a common language and a sound reference for comparison purposes.

It is a functional tool to better facilitate the transfer of knowledge, skills, and values across the various work environments at both national and international levels.

Importance of the Framework

A Term of Reference to Design Qualifications

Realizing Equity and Equality

Alignment with Development and Labor Market Requirements.

Increase Confidence in National Capabilities

International Alignment

Tool to Compare Qualifications

National Qualification Framework Levels



Placement requirements for bachelor's degree

Passing at least 120 credit hours

Duration of Study: At least 3 academic years

Target Learning Outcomes (Knowledge & understanding, skills and values)

Qualification level: 6

Admission Requirement: Secondary education

Placement requirements for master's degree

Passing at least 24 credit hours and a dissertation OR 30 credit hours -course based and 3 units for research project.

Duration of Study: At least four semesters

Target Learning Outcomes (Knowledge & understanding, skills and values)

Qualification level: 7

Admission Requirement: Bachelor's degree

New Learning Areas

Learning areas describe the education which a learner needs including the necessary knowledge, understanding, skills, and values learners are expected to exhibit at specific qualification level.

Learning outcomes detail specific requirements under a given learning area category.

They are organized according to each level specified in the Framework. These levels are progressive in terms of scope and sequence, from level 1 (early childhood education) to level 8 (doctoral education).

They are expressed in terms of cognitive dimensions, skills, and values according to the following criteria.

NQF Old Learning Domains	NQF New Learning Areas	Detailed Explanation of New Learning Areas
Knowledge	Knowledge & Understanding	This includes the knowledge and understanding of a learner in the area of learning, work or profession: Extensive deep knowledge, <i>understanding of facts, concepts, principles, theories, processes, and procedures</i> provided for in the area of learning, work, or profession. <ul style="list-style-type: none">• Depth of knowledge can be general or specialized.• Breadth of knowledge can range from a single topic to multi-disciplinary area of knowledge.

		<ul style="list-style-type: none"> • Types of knowledge range from concrete to abstract, from segmented to cumulative. • Complexity of knowledge type, depth and breadth.
Cognitive Skills	Skills	The Learning area includes skills what a graduate can exhibit in applied settings (such as in school, training, internships, work, etc.).
Communication, Information Technology, Numerical	Skills	The various types of skills are: Cognitive skills:
Psychomotor	Skills	These include critical thinking and problem-solving skills, inquiry, and creativity. Practical and physical skills:
		These include using appropriate materials, devices, and tools, and applying motor and manual skills with ingenuity. Communication and information technology skills:
Interpersonal Skills & Responsibility	Values, Autonomy & Responsibility	These include what a learner exhibits in terms of principles, ethics and standards for personal and professional success and well-being. <ul style="list-style-type: none"> • Academic, professional values, and ethics. • Continued self-learning and autonomy. • Teamwork and responsibility.

NQF learning Areas for Qualification Level -6 (Bachelor's Degree)

Knowledge and Understanding

- The graduate at this level will have:
- broad in-depth integrated body of knowledge and understanding of the underlying theories, principles, and concepts in one or more disciplines or field of work.
- in-depth knowledge and understanding of processes, materials, techniques, practices, conventions and/or terminology.
- a broad range of specialized knowledge and understanding informed by current developments of a discipline, profession, or field of work.
- knowledge and understanding of research methodology and inquiry techniques.

Skills

The graduate at this level will have a broad range of advanced cognitive, practical, and physical, and communication and ICT skills to:

Cognitive Skills

- Apply broad integrated underlying theories, principles, and concepts in various contexts, in a discipline, profession or field of work.
- solve problems in various complex contexts in one or more disciplines or field of work.
- use critical thinking and develop creative solutions to current issues and problems, in various complex contexts, in a discipline, profession or field of work.
- practice methods of inquiry, investigation and research for complex issues and problems.

Practical and Physical Skills

- use and adapt processes, techniques, tools, instruments, and/or materials that are advanced to deal with various complex practical activities.
- carry out various complex practical tasks and procedures related to a discipline, professional practice, or field of work.

Communication and ICT Skills

- communicate in main forms to demonstrate an understanding of theoretical knowledge and transfer.
- specialized knowledge, skills, and complex ideas to a variety of audiences.
- use mathematical operations and quantitative methods to process data and information in various complex contexts, related to a discipline or field of work.
- select, use, and adapt various standard and specialized digital technology and ICT tools and applications to process and analyze data and information, and to support and enhance research and/or projects.

Values, Autonomy and Responsibility

The graduate at this level, within various complex contexts, will:

Values and Ethics

- demonstrate commitment to professional and academic values and standards and ethical code of conduct and represent responsible citizenship and coexistence with others.

Autonomy and Responsibility

- develop plans for academic and / or professional self-development, and work to achieve them effectively, assess own learning and performance, and take decisions regarding self-development and /or tasks based on convincing evidence, with autonomy.
- manage tasks and activities related to the discipline and /or work in a professional manner and with autonomy.
- work collaboratively and constructively and lead diverse teams to perform a wide range of tasks with responsibility and play a major role in joint work planning and evaluation.
- participate actively in development of the discipline and society.

NQF learning Areas for Qualification Level -7 (Master level Degree)

Knowledge and Understanding

- The graduate at this level will have:
- in depth and specialized body of knowledge and understanding that covers theories, principles, and concepts in main areas of a discipline, profession or field of work.
- critical knowledge and understanding of processes, materials, techniques, practices, conventions and/or terminology relevant to a certain discipline, profession, or field of work.
- advanced knowledge and understanding of recent development in one or more disciplines or areas of practice or profession.
- advanced knowledge and understanding of a range of established and specialized techniques of research and/or inquiry in a discipline,

Skills

The graduate at this level will have a range of advanced and specialized cognitive, practical and physical, and communication and ICT skills to:

Cognitive Skills:

- apply specialized theories, principles, and concepts in advanced contexts, in a discipline, profession or field of work.
- solve problems in complex and advanced contexts, in a discipline, profession or field of work.
- assess, critically review, and reflect on the main concepts, principles, and theories; and provide creative solutions, in complex and advanced contexts, to current issues and problems, in a discipline, profession or field of work.
- carry out advanced research or professional project using specialized techniques of research and enquiry in a discipline, profession, or field of work.

Practical and Physical Skills

- use processes, techniques, tools, instruments, and/or materials that are advanced and specialized to deal with complex and advanced practical activities.
- carry out complex and advanced practical tasks and procedures in specialized area related to a discipline, professional practice, or field of work.

Communication and ICT Skills

- communicate in various forms to disseminate knowledge, skills, research results, and innovations related to a discipline or field of work to specialist and non-specialist audiences.
- use quantitative and/or qualitative methods to process data and information in complex and advanced contexts, related to a discipline, professional practice, or field of work.

- select, use, and adapt advanced digital technology and ICT tools and applications to process and analyze a variety of data and information forms to support and enhance leading research and/or projects, related to a discipline, professional practice.

Values, Autonomy and Responsibility

The graduate at this level, within complex and advanced contexts, will:

Values and Ethics

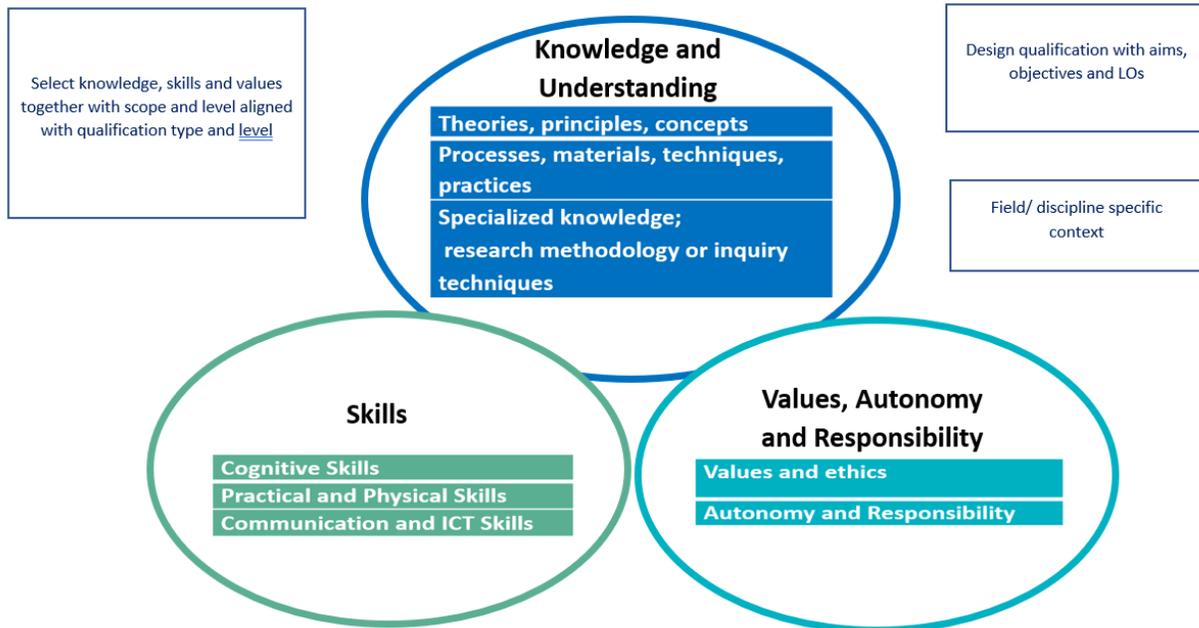
- represent integrity and professional and academic values when dealing with various issues.

Autonomy and Responsibility

- initiate professional planning for learning and/or work, and professional development, monitor learning and performance, and take part in academic and / or professional strategic decisions, with high autonomy.
- manage specialized tasks and activities in a discipline, work, or field of practice effectively, with high autonomy.
- collaborate and participate effectively with research or professional projects or groups, take leadership role, and take high responsibility of the work.
- contribute to the fostering of the quality life for the community.

Program Learning Outcomes Alignment with NQF [For Program Leaders]

Figure 1: Constructive Alignment of PLOs with NQF-SA



Steps to align program learning outcomes with NQF-KSA.

Step 1

- Identify the level of the qualification in the NQF-KSA that is being dealt with
- Ensure that the title of qualification matches this level.

Step 2

- Identify the essentials of each domain of learning at that level.
- Interpret these for the specific program as a series of learning outcome statements.

Step 3

- For each domain, identify [teaching and learning strategies/methods](#) that will enable students to develop the knowledge, skills, values, and attitudes required and the [assessment methods](#) that are linked to the learning outcomes and will enable them to demonstrate achievement of the PLOs.

Relationships among National Qualifications Framework and Learning Outcomes at the Program Levels – An Illustrative Example: Engineering Discipline

NQF	PLOs
Knowledge and Understanding	
<p>The graduate at this level will have:</p> <ul style="list-style-type: none"> - a broad, in depth integrated body of knowledge and understanding of the underlying theories, principles, and concepts in one or more disciplines or field of work. - in-depth knowledge and understanding of processes, materials, techniques, practices, conventions and/or terminology. - a broad range of specialized knowledge and understanding informed by current developments of a discipline, profession, or field of work. - knowledge and understanding of research methodology and inquiry techniques. 	<p>Graduates of a bachelor’s degree in engineering will be able to demonstrate:</p> <ul style="list-style-type: none"> -a comprehensive, coherent, knowledge and understanding of the fundamentals and underlying theories, principles, and concepts of mathematics, science, and engineering fundamentals relevant to engineering specialization, -advanced knowledge and understanding of processes, materials, techniques, conventions, and terminology associated with the specialization. -knowledge and understanding of societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to professional engineering practice. -Understanding of research principles and methods. - in- depth, current knowledge and understanding of specific subject area and branch of engineering.

NQF	PLOs
Skills	
<p>The graduate at this level will have a broad range of advanced cognitive, practical, and physical, and communication and ICT skills to:</p> <p><u>Cognitive Skills</u></p> <ul style="list-style-type: none"> - apply broad integrated underlying theories, principles, and concepts in various contexts, in a discipline, profession or field of work. - solve problems in various complex contexts in one or more disciplines or field of work. - use critical thinking and develop creative solutions to current issues and problems, in various complex contexts, in a discipline, profession or field of work. - practice methods of inquiry, investigation and research for complex issues and problems. <p><u>Practical and Physical Skills</u></p> <ul style="list-style-type: none"> - use and adapt processes, techniques, tools, instruments, and/or materials that are advanced to deal with various complex practical activities. - carry out various complex practical tasks and procedures related to a discipline, professional practice, or field of work. <p><u>Communication and ICT Skills</u></p> <ul style="list-style-type: none"> - communicate in main forms to demonstrate an understanding of theoretical knowledge and transfer specialized knowledge, skills, and complex ideas to a variety of audiences. 	<p>Graduates will be able to:</p> <p><u>Cognitive Skills</u></p> <ul style="list-style-type: none"> -identify, formulate, analyze and solve complex and unpredictable engineering problems in general and in the subject area, using the principles of mathematics, natural sciences, and engineering sciences in a range of complex contexts. -conduct critical evaluation and provide innovative solutions to contemporary issues and problems, taking into account interdisciplinary set of requirements and multiple perspectives. - perform creative design of components, systems, engineering works, or products that meet specified needs. -conduct investigations of complex and unpredictable problems using a structured process of inquiry and evidence-based research. <p><u>Practical and Physical Skills</u></p> <ul style="list-style-type: none"> -select and apply appropriate techniques, resources, and modern engineering tools, equipment to complex engineering activities. - develop and operate appropriate experimentation. <p><u>Communication and ICT Skills</u></p> <ul style="list-style-type: none"> - use diverse methods to communicate effectively with the engineering community and with the community at large. -present information, ideas, concepts and quantitative and/or qualitative data, drawing on a wide range of

- use mathematical operations and quantitative methods to process data and information in various complex contexts, related to a discipline or field of work.
- select, use, and adapt various standard and specialized digital technology and ICT tools and applications to process and analyse data and information, and to support and enhance research and/or projects.

- current sources, including the use of ICT as appropriate to the subject(s).
- apply appropriate quantitative methods and computer software, in order to solve problem, interpret the data and draw conclusions.
 - produce digital products relevant to engineering discipline.

NQF	PLOs
Values, Autonomy, and Responsibility	
<p>The graduate at this level, within various complex contexts, will:</p> <p>Values and Ethics</p> <ul style="list-style-type: none"> - demonstrate commitment to professional and academic values and standards and ethical code of conduct and represent responsible citizenship and coexistence with others. <p>Autonomy and Responsibility</p> <ul style="list-style-type: none"> - develop plans for academic and / or professional self-development, and work to achieve them effectively, assess own learning and performance, and take decisions regarding self-development and /or tasks based on convincing evidence, with autonomy. - manage tasks and activities related to the discipline and /or work in a professional manner and with autonomy. - work collaboratively and constructively and lead diverse teams to perform a wide range of tasks with responsibility and play a major role in joint work planning and evaluation. 	<p>Graduates will be able to:</p> <p>Values and Ethics</p> <ul style="list-style-type: none"> - apply ethical principles and commit to professional ethics, responsibilities, and norms of engineering practice. <p>Autonomy and Responsibility</p> <ul style="list-style-type: none"> - assess own learning and performance autonomously and engage in independent life-long learning. - take responsibility for managing professional development of individuals and groups. - plan and manage engineering projects with high responsibility and autonomy, and function effectively as an individual, and as a member or leader in diverse teams and in multi-disciplinary settings

- participate actively in development of the discipline and society.

Program Learning Outcomes (PLOs) Template

Create a table showing the mapping of the approved PLOs with the three (3) Learning Areas.

Name of the Program Document: Program Specification

Users: Program Chairs

* Add a table for each track and exit Point (if any)

Domains of Learning		Program Learning Outcomes	Teaching & Learning Strategies	Assessment Methods
Knowledge and Understanding				
Skills	Cognitive Skills			
	Practical and Physical Skills			
	Communication and ICT Skills			
Values, Autonomy, and Responsibility	Values and Ethics			
	Autonomy and Responsibility			

Note: Ensure that the right verb selected for a PLO is aligned with the learning area.

Summarized Descriptions of Domains of Learning

Domains of Learning		
Knowledge and Understanding	Theoretical, factual, and procedural knowledge	
	Knowledge of processes, materials, techniques, practices, conventions and/or terminology	
	Specialized knowledge	
	Knowledge of research and inquiry	
Skills	Cognitive Skills	Application of knowledge
		Critical thinking and problem solving
		Creative thinking
		Research and inquiry
	Practical and Physical Skills	Using processes, techniques, tools, instruments, and/or materials
		Carrying out practical tasks and procedures
	Communication and ICT Skills	Communication
		Quantitative literacy (Literacy & Numeracy)
		Digital technology and information literacy
	Values, Autonomy, and Responsibility	Values and Ethics
Autonomy and Responsibility		Self-development (lifelong learning), decisions making, and autonomy
		Managing tasks and activities
		Collaboration, leadership, and responsibility
		Health and civic engagement

Checklist to Review Program Learning Outcome Statement

The checklist shown below may be of help to double check that the program learning outcomes have been written according to the standard guidelines.

Criteria	Yes	No
1. Does it describe what students should know, able to do, and value (represent, demonstrate, or produce)?		
2. Does it use action verbs?		
3. Does it align with collective intentions translated into the curriculum and co-curriculum?		
4. Is it distinct and specific?		
5. Is it expressed in terms of the overall program and not individual courses?		
6. Does it map to curriculum, co-curriculum, and educational practices?		
7. Is collaboratively authored and collectively accepted?		
8. Is it student-centered?		
9. Does it specify appropriate conditions for performance?		
10. Is it written in terms of observable, behavioral outcomes?		
11. Does it measure a range of educational outcomes?		
12. Is it designed so that it can be assessed by various methods of assessment?		
13. Does it include professional organization standards (if any)?		
14. Can it be assessed quantitatively and/or qualitatively?		
15. Is it aligned with the institutional learning outcomes?		
16. Is it aligned with NQF-KSA and the degree level descriptors?		

*Source: How to Develop Academic Program Learning Outcomes (PLOs) According to the New National Qualifications Framework (NQF) – Workshop, International Conference on Education and Training Evaluation 2020

Course Learning Outcomes (CLOs) Template

Map the CLOs with the relevant Learning Area and the PLO.

Name of the Program Document: Course Specification

Users: Course Coordinators/Instructors

Course Learning Outcomes

	CLOs	Aligned PLOs	Teaching & Learning Strategies	Assessment Methods
1	Knowledge and Understanding			
1.				
1				
1.				
2				
1.				
3				
1.				
..				
2	Skills :			
2.				
1				
2.				
2				
2.				
3				
2.				
..				
3	Values:			
3.				
1				
3.				
2				
3.				
3				
3.				
..				

Important Points to Remember

Ensure the PLO Statements have been written with a right Verb.

Given that PLOs focus on **observable** and **measurable** actions performed **by students**, the selection of an **action verb** for each outcome is crucial.

Note: Determining the best verb to use in a learning outcome can be challenging because of its need to accurately reflect the learning areas namely: knowledge, skills and abilities being studied.

Verbs that should be avoided:

Certain verbs are unclear and subject to different interpretations in terms of what action they are specifying.

According to ETEC-NCAAA, the following suggested ***verbs/verb phrases should be avoided*** when writing measurable and assessable learning outcomes because they frequently denote behavior that is not easily observed or measured. They are as follows:

Understand

Realize

Know

Learn

Comprehend

Practice

Appreciate

Become proficient in

Be familiar with

Demonstrate ability to

Study

Do

Be aware

Have an understanding of

Become acquainted with

Have a working knowledge of

Gain knowledge of

Practice

Cover

Respect

Faculty can also use **Bloom's Taxonomy** for identifying the right verb.

PLOs are often organized around Bloom's taxonomy (Bloom, 1956), which is a classification of different ways of learning, from lower-to higher-order levels. Refer to table below for a detailed list of suggested verbs or verb phrases using in developing Learning Outcomes.

NQF Learning Area	Suggested Verbs used for the Learning Outcomes
KNOWLEDGE & UNDERSTANDING	list, name, record, define, label, outline, state, describe, recall, memorize, reproduce, recognize, record, tell, write
SKILLS	
Cognitive Skills	estimate, explain, summarize, write, compare, contrast, diagram, subdivide, differentiate, criticize, calculate, analyze, compose, develop, create, prepare, reconstruct, reorganize, summarize, explain, predict, justify, rate, evaluate, plan, design, measure, judge, justify, interpret, appraise
Communication and Information Technology Skills	demonstrate, calculate, illustrate, interpret, research, question, operate, appraise, evaluate, assess, and criticize
Practical and physical skills	demonstrate, show, illustrate, perform, dramatize, employ, manipulate, operate, prepare, produce, draw, diagram, examine, construct, assemble, experiment, and reconstruct
VALUES, AUTONOMY & RESPONSIBILITY	demonstrate, judge, choose, illustrate, modify, show, use, appraise, evaluate, justify, analyze, question, and write

References:

1. National Qualification Framework in Saudi Arabia.
2. ETEC- NCAAA Course and Program Specification templates