



PROFESSIONAL REGULATORY BOARD OF ELECTRONICS ENGINEERING

Resolution No. 01
Series of 2021

**GUIDELINES ON THE CREATION OF A CAREER PROGRESSION AND
SPECIALIZATION PROGRAM FOR THE
ELECTRONICS ENGINEERING PROFESSION**

WHEREAS, Section 2 of Republic Act (R.A.) No. 10968 or the “Philippine Qualifications Framework (PQF) Act” states that it is the policy of the State to institutionalize the PQF to encourage lifelong learning of individuals, provide employee specific training standards and qualifications aligned with industry standards;

WHEREAS, Section 4 of R.A. No. 10968 states that a PQF shall be established which shall describe the levels of educational qualifications and set the standards for qualification outcomes. It is a quality assured national system for development, recognition and award of qualifications based on standards of knowledge, skills and values acquired in different ways and methods by learners and workers of the country;

WHEREAS, Section 5 (c) of the Implementing Rules and Regulations of R.A. No. 10968 provides for the objective of the PQF which is to align domestic qualification standards with the international qualifications framework thereby enhancing recognition of the value and comparability of Philippine qualifications and supporting the mobility of Filipino students, workers and professionals;

WHEREAS, Section 8 of R.A. No. 10968 states that PQF shall incorporate the qualifications level descriptors defined in terms of knowledge, skills and values, application, and degree of independence;

WHEREAS, Section 4 (a), Article II of R.A. No. 10912 or the Continuing Professional Development Act of 2016 states that there shall be formulated and implemented Continuing Professional Development (CPD) Programs in each of the regulated professions in order to enhance and upgrade the competencies and qualifications of professionals for the practice of their professions pursuant to the PQF, the ASEAN Qualifications Reference Framework (AQRFF) and the ASEAN Mutual Recognition Arrangements;

WHEREAS, Section 12, Article III of R.A. No. 10912 mandates the Professional Regulation Commission (PRC) and the Professional Regulatory Boards (PRBs) to formulate and implement a Career Progression and Specialization Program (CPSP) for every profession;

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WHEREAS, Section 2, Article I of R.A. No. 9292 known as "Electronics Engineering Law of 2004" states that the State recognizes the importance of electronics engineering in nation-building and development and that the State shall therefore develop and nurture competent, virtuous, productive and well-rounded Professional Electronics Engineers, Electronics Engineers and Electronics Technicians whose standards of practice and service shall be excellent, qualitative, world- class and globally competitive through inviolable, honest, effective and credible licensure examinations and through regulatory measures, programs and activities that foster their integrity, continuing professional education, development and growth;

WHEREAS, Section 7 (n), Article II of R.A. No. 9292 states that Professional Regulatory Board of Electronics Engineering (PRB-ECE) shall promulgate a program for continuing professional education and/or development of Professional Electronics Engineers, Electronics Engineers and Electronics Technicians;

WHEREAS, Section 31, Article V of R.A. No. 9292 states that all registered Professional Electronics Engineers, Electronics Engineers, and Electronics Technicians, shall comply with pertinent rules and regulations already prescribed by and/or as may be prescribed and promulgated by the PRC and/or the PRB-ECE, the Accredited Professional Organization and other government agencies, pursuant to this Act and other relevant laws, international treaties, agreements and/or covenants to which the Philippines is a signatory and has ratified, with respect to continuing professional education and/or development and/or other similar/related programs;

WHEREAS, Section 7 (v), Article II of R.A. No. 9292 states that the PRB-ECE shall discharge such other powers and functions as the PRB-ECE and the PRC may deem necessary for the practice of the profession and the upgrading, enhancement, development and growth of the Professional Electronics Engineer, Electronics Engineer and Electronics Technician professions in the Philippines;

WHEREAS, there is a necessity and demand from the industry to create a specialization program; upon recommendation of the stakeholders; to align with the PQF and other internationally recognized accreditation bodies;

WHEREAS, there is a need to issue guidelines for the PRBs in the formulation of a CPSP for their respective professions for inclusion in the Philippine Qualifications Register (PhQuaR);

WHEREAS, the PRB-ECE formulated the CPSP for Electronics Engineering profession to address the Pathways and Equivalencies of PQF and which was subjected to various national consultations with the Professional Organizations, concerned national government agencies, academe, and industry.

NOW THEREFORE, the Professional Regulatory Board of Electronics Engineering **RESOLVES**, as it hereby **RESOLVED**, to issue these Guidelines on the Creation of a CPSP for the Electronics Engineering Profession, as follows:

Section 1. Definition of Terms

1. **Accredited Integrated Professional Organization (AIPO)** refers to the concerned Board and PRC Accredited Integrated Professional Organization for a given profession which is specifically mandated by the provision of the Professional Regulatory Law to integrate the professionals into one national organization and where the membership therein by professionals is automatic and mandatory¹;
2. **Accredited Professional Organization (APO)** refers to the PRC Accredited Professional Organization where membership therein by professionals is only voluntary²;
3. **ASEAN Qualifications Reference Framework (AQRF)** is a common reference framework which functions as a device to enable comparisons of qualifications across ASEAN Member States³;
4. **Career Progression in professional life** is the process of developing or moving towards a more advanced state in a person's job, title, position, or profession; it outlines the route one may follow in order to reach identified career development goals⁴;
5. **Competence** refers to an ability that extends beyond the possession of knowledge and skills, which include cognitive, functional, personal and ethical competence⁵;
6. **Competency** refers to the capability to apply or use a set of knowledge, skills and abilities required to successfully perform and implement critical work functions or tasks in a defined work setting⁶;
7. **Electronics Engineer** is a person who is qualified to hold himself/herself out as a duly registered/licensed Electronics Engineer under RA No. 9292 and to affix to his/her name the letters "ECE"; ⁷
8. **Equivalency** refers to a process that involves assigning equivalent credits to the competencies demonstrated by a learner through assessment, thereby providing entry points to different levels of qualifications, the purpose of which is to provide opportunities to the learner to continue to learn and to re-enter the educational and

¹ Sec. 1(e) of PRC Resolution No. 1089, s. 2018 (Revised Rules on the Accreditation of Professional Organizations and Integrated Professional Organizations)

² Sec. 1(f) of PRC Resolution No. 1089, s. 2018 (Revised Rules on the Accreditation of Professional Organizations and Integrated Professional Organizations)

³ Annex 2 (Glossary) of AQRF document

⁴ Sec. 3 (c) of IRR of PQF Act

⁵ Sec. 3 (3.7), Rule I of PRC Resolution No. 1032, s. 2017 (Implementing Rules and Regulations of R.A. No. 10912, known as the Continuing Professional Development Act of 2016)

⁶ Sec. 3 (3.8), Rule I of PRC Resolution No. 1032, s. 2017 (Implementing Rules and Regulations of R.A. No. 10912, known as the Continuing Professional Development Act of 2016)

⁷ Sec. 3 (c) Article 1 of R.A. No. 9292

training programs at various higher levels without retaking courses on which a learner has already demonstrated competence and knowledge⁸;

9. **Learning Outcomes** are clear statements of what a learner is expected to know, understand and/or do as a result of a learning experience⁹;
10. **Level Alignment Matrix of the Table of Specifications to the corresponding Policies, Standards and Guidelines and the PQF descriptors** which serves as evidence of the Licensure Examination Quality Assurance system. It is also a requirement in the National Referencing Committee procedures for listing and updating of Professional Qualifications in the PhQuaR as issued/conferred by the PRC;
11. **Level Descriptor** is a general statement that summarizes the learning outcomes appropriate to a specific level in the PQF grouped in domains of learning. It describes what an individual should be able to know, perform or demonstrate at a particular level¹⁰;
12. **Lifelong Learning** refers to all learning activities whether formal, non-formal or informal, undertaken throughout life, which results in improving knowledge, know-how, skills, competencies and/or qualifications for personal, social and/or professional reasons¹¹;
13. **Pathways** refers to mechanisms or access ramps which provide access to qualifications and assist people to move easily and readily between the different education and training sectors and between these sectors and the labor market¹² which includes professional work experience;
14. **Philippine Qualifications Framework (PQF)** describes the levels of educational qualifications and set the standards for qualification outcomes. It is a quality assured national system for the development, recognition and award qualifications based on standards of knowledge, skills and values acquired in different ways and methods by learners and workers of the country¹³;
15. **Philippine Qualifications Register (PhQuaR)** is the national database of quality assured qualifications authorized under the PQF. It provides information to employers, education and training providers and students. The information includes the Qualification title, Qualification Descriptors, the PQF Level, the Authority granting Agency, the Qualification Code, the Instrument and Date of Authorization. It also includes information on the quality assurance system and

⁸ Sec. 3 (d) of IRR of PQF Act

⁹Sec. 3 (h) of IRR of PQF Act

¹⁰Sec. 3 (i) of IRR of PQF Act

¹¹Sec. 3 (j) of IRR of PQF Act

¹²Sec. 3 (l) of IRR of PQF Act

¹³Sec. 4 of R.A. No. 10968 (PQF Act)

procedures applied to the awarding/conferment of the qualifications and the agencies mandated to authorize/issue such qualification¹⁴;

16. **Practice of Registered Electronics Engineering** refers to any work or activity relating to the application of engineering sciences and/or principles to the investigation, analysis synthesis, planning, design, specification, research and development, provision, procurement, marketing and sales, manufacture and production, construction and installation, tests/measurements/control, operation, repair, servicing, technical support and maintenance of electronic components, devices, products, apparatus, instruments, equipment, systems, networks, operations and processes in the fields of electronics, including communications and/or telecommunications, information and communications technology, computers and their networking and hardware/firmware/software development and applications, broadcast/broadcasting, cable and wireless television, consumer and industrial electronics, electro-optics/photonics/opto-electronics, electro-magnetics, avionics, aerospace, navigational and military applications, medical electronics, robotics, cybernetics, biometrics and all other related and convergent fields; it also includes the administration, management, supervision and regulatory aspects of such works and activities; similarly included are those teaching and training activities which develop the ability to use electronic engineering fundamentals and related advanced knowledge in electronics engineering, including lecturing and teaching of technical and professional subjects given in the electronics engineering and electronics technician curriculum and licensure examinations;¹⁵
17. **Profession** refers to the career for someone that wants to be part of society, who becomes competent in his chosen field of practice through training, maintains knowledge and skills through continuing professional development; and commits to behaving ethically to protect the interests of the public;
18. **Professional** refers to a person formally certified by a professional regulating body by virtue of having completed the required course of studies and/or practice and whose competence can be measured against an established set of standards;
19. **Professional Electronics Engineer** refers to a person who is qualified to hold himself/herself out as a duly registered/licensed Professional Electronics Engineer under RA No. 9292 and to affix to his/her name the letters "PECE"¹⁶;
20. **Qualification** refers to a formal certification that a person has successfully achieved specific learning outcomes relevant to the identified academic, industry or community requirements. A qualification confers official recognition of value in the labor market and in further education and learning¹⁷; and

¹⁴ <https://pqf.gov.ph/PhQuaR>

¹⁵ Section 5(a) Article 1 of R.A. No. 9292

¹⁶ Section 3 (b) Article 1 of R.A. No. 9292

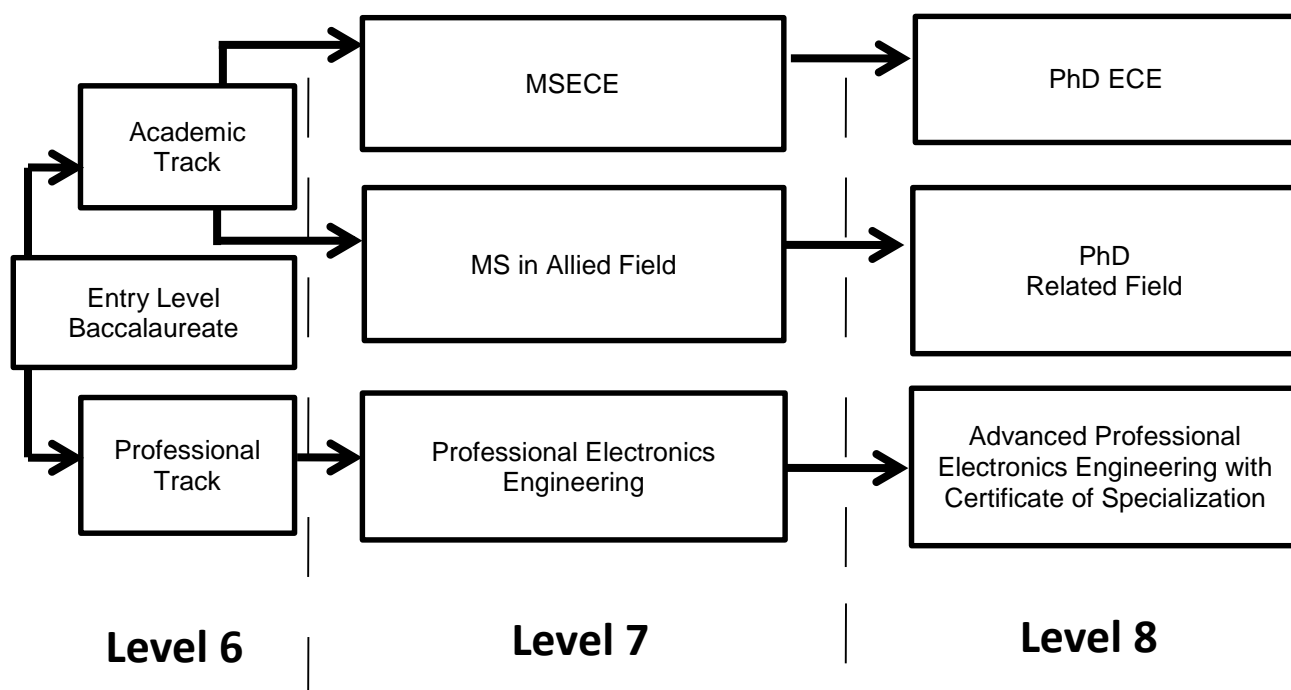
¹⁷Sec. 3 (m) of IRR of PQF Act

21. **Specialization** refers to the field of practice of a profession for a particular area of knowledge or the process of becoming an expert in a particular field of professional practice.

Section 2. Creation of CPSPs

a. Career Pathways

The Career Pathways of the Electronics Engineering profession is from Registered Electronics Engineering Practice (Level 6) to Professional Electronics Engineering Practice (Level 7) and to Advanced Professional Electronics Engineering Practice (level 8) as diagrammed below.



b. Identification of CPSPs

Initially, the Professional Electronics Engineering has been identified as a pathway to career progression. The CPSPs shall be identified in the future.

c. CPSPs

The Philippine Electronics Engineering CPSP as herein envisioned shall be governed by enabling Rules and Guidelines as prescribed and promulgated by the PRB-ECE in accordance with the provisions of the Electronics Engineering Law of 2004 (R.A. No. 9292) and PRC Resolution No. 1117 (s. 2018)¹⁸.

Each specialty Group shall develop its own CPSP guided by the rules and guidelines mentioned above.

¹⁸ Formulation of Guidelines on the Creation and Implementation of a Career Progression and Specialization Program for the Regulated Professions

1. **Philippine Qualifications Register (PhQuaR)**

Qualification Code	Qualification Title	Descriptor	Level	Authority Granting Agency/ Organizations
PECE 70714-1	Professional Electronics Engineering	The practice of the Professional Electronics Engineering embraces and consists of the practice of the Registered Electronics Engineering plus the sole authority to provide consulting services as defined in R.A. No. 9292 and to sign and seal electronics plans, drawings, permit applications, specifications, reports and other technical documents prepared by himself/herself and/or under his direct supervision.	7	PRC upon recommendation of PRB-ECE

2. **PQF Level Alignment**

The qualification and professional practice outcomes of the abovementioned qualification title is shown in Annex A.

This Resolution shall take effect after fifteen (15) days following its publication in the Official Gazette or in major newspaper of general circulation in the country.

Let a copy hereof be furnished the U.P. Law Center.

Done in the City of Manila this **18th** day of **May**, 2021.

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ALNAR L. DETALLA
Chairman



HERMINIO J. ORBE
Member



ENRICO CLARO R. DELMORO
Member

Attested by:



ATTY. OMAIMAH E. GANDAMRA
Officer-in-Charge, PRB Secretariat Division

Approved by:



TEOFILO S. PILANDO, JR.
Chairman



YOLANDA D. REYES
Commissioner



JOSE Y. CUETO, JR.
Commissioner

DATE OF PUBLICATION IN THE
OFFICIAL GAZETTE : August 2, 2021
Date of Effectivity : August 17, 2021

ANNEX A. LINKS BETWEEN QUALIFICATION OUTCOMES TO THE PQF LEVEL 7 DESCRIPTORS

NAME OF QUALIFICATION	Professional Electronics Engineering
QUALIFICATION CODE	PECE 70714-1

PROFESSIONAL PRACTICE OUTCOMES	PQF Level 7		
	Knowledge, Skills and Values	Application	Degree of Independence
	Demonstrated advanced knowledge and skills in a specialized or multi-disciplinary field of study for professional practice, self-directed research and/or lifelong learning	Applied in professional/ creative work or research that requires self-direction and/or leadership in a specialized or multi-disciplinary professional work/research	High substantial degree of independence that involves exercise of leadership and initiative individual work or in teams of multi-disciplinary
<p>1. Applies knowledge of mathematics, physical sciences, Information Technology, and engineering principles.</p> <p>1.1 Uses relevant and appropriate applied science, engineering principles and techniques in formulating process design and operations improvement.</p> <p>1.2 Develops computer programs to solve electronics engineering problems.</p> <p>1.3 Manages and supervises multi-disciplinary team.</p>	<p>1.1</p> <p>1.2</p>	<p>1.1</p> <p>1.2</p> <p>1.3</p>	<p>1.2</p> <p>1.3</p>
<p>2. Identifies, formulates, researches literature and analyses complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences and engineering sciences.</p> <p>2.1 Proposes changes to achieve the desired outputs.</p>	<p>2.1</p>		

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2.2 Applies results research literature and other technological advances in design and operations improvement. 2.3 Manages and supervises multi-disciplinary team.	2.2	2.2 2.3	2.3
3. Designs solutions for complex engineering problems and design systems, components or processes that meet specified needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations 3.1 Studies, investigates and gathers data related to problems and prepares proposals to implement solutions while incorporating ethics, safety and environmental considerations. 3.2 Develops prototypes; test runs and prepares final recommendations based on results gathered. 3.3 Manages and supervises multi-disciplinary team.	3.1 3.2	3.1 3.2 3.3	3.3

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<p>4. Conducts investigations of complex problems using research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of information to provide valid conclusions.</p> <p>4.1 Uses available database information, coordinates with other technical experts.</p> <p>4.2 Plans and designs experiments in conducting investigations of complex engineering problems.</p> <p>4.3 Conducts lab-scale and plants scale trials as may be deemed necessary to validate conclusions.</p> <p>4.4 Prepares reports and makes presentations to concerned entities on the proposed solutions to the complex engineering problems.</p> <p>4.5 Manages and supervises multi-disciplinary team.</p>	<p>4.1</p> <p>4.2</p> <p>4.3</p>	<p>4.1</p> <p>4.2</p> <p>4.3</p> <p>4.4</p> <p>4.5</p>	<p>4.4</p> <p>4.5</p>

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<p>5. Creates, selects, and applies appropriate techniques, resources, and modern engineering and IT tools, including prediction and modeling, to solve complex engineering problems, with an understanding of the limitations.</p> <p>5.1 Be familiar with the appropriate techniques, resources, and modern engineering and IT tools, including prediction and modeling, to complex engineering problems, with an understanding of the limitations.</p> <p>5.2 Consolidates applicable techniques and modern tools that can be used to solve complex engineering problems.</p> <p>5.3 Prepares recommendations based on results considering practical applications and limitations of process parameters and equipment.</p> <p>5.4 Manages and supervises multi-disciplinary team.</p>	<p>5.1</p> <p>5.2</p>	<p>5.1</p> <p>5.3</p> <p>5.4</p>	<p>5.4</p>

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<p>6. Applies reasoning informed by contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to professional engineering practice and solutions to complex engineering problems.</p> <p>6.1 Be familiar with relevant policies, laws, regulations and technical standards both locally and internationally in conjunction with the Electronics Engineering Professional Practice.</p> <p>6.2 Prepares plans and designs to address industrial process problems while taking into consideration moral, ethical and environmental concerns.</p> <p>6.3 Imparts learning to peers.</p>	<p>6.1</p> <p>6.2</p>	<p>6.1</p> <p>6.2</p> <p>6.3</p>	<p>6.2</p> <p>6.3</p>

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<p>7. Understands and evaluates the sustainability and impact of professional engineering work in the solution of complex engineering problems in societal and environmental contexts.</p> <p>7.1 Be familiar with relevant applicable technical and engineering standards that can be applied in professional electronics engineering practice.</p> <p>7.2 Uses gained experience in industrial professional practice to measure impacts on society and environment.</p> <p>7.3 Imparts learning to peers.</p>	<p>7.1</p> <p>7.2</p>	<p>7.2</p> <p>7.3</p>	<p>7.2</p> <p>7.3</p>
<p>8. Applies ethical principles and commits to professional ethics and responsibilities and norms of engineering practice.</p> <p>8.1 Be familiar with the Philippine Code of Ethical Standards of Electronics Engineers and apply and behave according to this code in professional practice.</p> <p>8.2 Be familiar with corporate and industrial policies.</p>	<p>8.1</p> <p>8.2</p>		

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8.3 Applies ethical principles in conjunction with engineering practice incorporating public safety as a priority. 8.4 Be an example to upcoming engineers in terms of integrity, morality and ethics.	8.3	8.3 8.4	8.4
9. Functions effectively as an individual, and as a member or leader in diverse teams and in multi-disciplinary settings. 9.1 Plans, leads, coordinates, and implements designated tasks either as a team leader or member. 9.2 Handles small to medium-sized projects. 9.3 Interacts with a network of professionals and participate in projects or activities.	9.1 9.2	9.1 9.2	9.3

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<p>10. Communicates effectively on complex engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.</p> <p>10.1 Prepares reports, presentations and other engineering documents in an organized way and relay information related to these effectively.</p> <p>10.2 Prepares policies, procedures and other documents related to an activity or project and cascade to subordinates, peers and superiors effectively.</p> <p>10.3 Conducts trainings to subordinates and peers.</p> <p>10.4 Communicates clearly with legal entities/ authorities regarding engineering activities.</p> <p>10.5 Manages and supervises multi-disciplinary team.</p>	<p>10.1</p> <p>10.2</p> <p>10.3</p>	<p>10.1</p> <p>10.2</p> <p>10.4</p> <p>10.5</p>	<p>10.1</p> <p>10.2</p> <p>10.5</p>

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<p>11. Demonstrates knowledge and understanding of engineering management principles and economic decision-making and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.</p> <p>11.1 Plans, leads, organizes and controls small to medium-sized projects or tasks as may be deemed necessary in the practice of Electronics engineering.</p> <p>11.2 Manages financial aspects of the project.</p> <p>11.3 Prepares reports related to projects.</p> <p>11.4 Supervises subordinates and peers when needed.</p>	<p>11.1</p> <p>11.2</p>	<p>11.2</p> <p>11.3</p> <p>11.4</p>	<p>11.2</p> <p>11.3</p> <p>11.4</p>
<p>12. Recognizes the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.</p> <p>12.1 Attends trainings, seminars, conferences and participates in professional organizations that encourage continued learning in the electronics engineering profession.</p>	<p>12.1</p> <p>12.2</p>		<p>12.2</p>

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12.2 Pursues graduate studies. 12.3 Complies with CPD units required annually. 12.4 Conducts research studies and imparts results to peers.		12.3 12.4	12.3 12.4
13. Provides significant contribution to science and to the development of electronics engineering practice. 13.1 Develops or applies new engineering concepts or principles. 13.2 Formulates or develops new codes, or technical standards in the practice of engineering profession. 13.3 Introduces technical innovations to enhance the effectiveness of engineering practice. 13.4 Introduces, implements policies and guidelines in the practice of engineering profession. 13.5 Helps in the promulgation of engineering body of knowledge. 13.6 Shares technical skills or know-how to fellow professionals.	13.1 13.2 13.3	13.2 13.3 13.4 13.5	13.5 13.6

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14. Demonstrates technical skills and know-how in the chosen area of specialization through the ability to design, invent, or analyses to fulfill objectives and requirements with limitations imposed by practicality, regulation, safety, and cost.			
14.1 Exhibits unique features and functionality in engineering system design.	14.1	14.3	14.5
14.2 Identifies technical problems and provides technical solutions.	14.2	14.4	14.6
14.3 Identifies or evaluates risks and its potential impact and developed risk minimization plan.	14.3	14.5	14.7
14.4 Employs the latest technology and facilitates innovation.	14.4	14.6	14.8
14.5 Creates a demonstration model.		14.7	
14.6 Prepares supporting (design) documentations.		14.8	
14.7 Considers practicality, regulation, safety, and cost.			
14.8 Reviews and evaluates design outcome to achieve acceptance.			

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PROFESSIONAL PRACTICE OUTCOMES	PQF Level 7		
	Knowledge, Skills and Values	Application	Degree of Independence
	Demonstrated advanced knowledge and skills in a specialized or multi-disciplinary field of study for professional practice, self-directed research and/or lifelong learning	Applied in professional/ creative work or research that requires self-direction and/or leadership in a specialized or multi-disciplinary professional work/research	High substantial degree of independence that involves exercise of leadership and initiative individual work or in teams of multi-disciplinary
15. Demonstrates ability to lead or manage project within the area of specialization.			
15.1 Establishes and manages engineering business/ organization.	15.1	15.3	15.5
15.2 Implements planning and designs processes.	15.2	15.4	15.6
15.3 Facilitate improvements and innovations.	15.3	15.5	15.7
15.4 Manages significant engineering projects.	15.4	15.6	15.8
15.5 Manages a multi-disciplined team.		15.7	
15.6 Initiates and leads workplace change.			
15.7 Motivates and mentors other professionals.			
15.8 Helps and provides guidance to other professionals.			
16. Demonstrates knowledge and understanding in research and development.			
16.1 Identifies opportunities for new or improved processes or initiated concept of developments.	16.1		

RESOLUTION NO. 01, SERIES OF 2021
 GUIDELINES ON THE CREATION OF A CAREER
 PROGRESSION AND SPECIALIZATION PROGRAM
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	Knowledge, Skills and Values	Application	Degree of Independence
	Demonstrated advanced knowledge and skills in a specialized or multi-disciplinary field of study for professional practice, self-directed research and/or lifelong learning	Applied in professional/ creative work or research that requires self-direction and/or leadership in a specialized or multi-disciplinary professional work/research	High substantial degree of independence that involves exercise of leadership and initiative individual work or in teams of multi-disciplinary
16.2 Analyzes situation or required outcomes and explored solutions. 16.3 Patents or publishes research outputs.	16.2 16.3	16.3	16.3