ASEAN ELECTRONICS ENGINEERING INFORMATION EXCHANGE 2024

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FOREWORD

The Institute of Electronics Engineers of the Philippines (IECEP), Inc, with the supervision of the Professional Regulation Commission - Board of Electronics Engineering (PRC-BECE), proudly presents this comprehensive compilation of its standards and practices, basically under Philippine Republic Act 9292 – otherwise known as "the Act providing for a more responsive and comprehensive regulation for the registration, licensing and practice of Professional Electronics Engineers, Electronics Engineers and Electronic Technicians" – and similar other applicable legal references.

This book, pieced together by electronics practitioners with national and international competencies from the academe, industry, research and development, offers an enriching and strengthening learning reference for appreciation by both Philippine and ASEAN Electronics Engineering stakeholders.

Banking on the fundamentals, the book illustrates contemporary as well as dynamic and emerging technologies. Sharing, at best, the Philippine experience and welcoming what is ASEAN and beyond. By providing this information, we hope to promote international cooperation vis-à-vis protection of national interests.

PRC-BECE and IECEP are grateful to all contributors who helped ensured success. As an expression of love and commitment, may this book be helpful in improving humanity and society.

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Professional Regulatory Board of Electronics Engineering
Professional Regulation Commission
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ELECTRONICS ENGINEERING IN THE PHILIPPINES

SECTION 1. ELECTRONICS ENGINEERING IN THE PHILIPPINES

1.1 Educational Institutions

The Bachelor of Science in Electronics Engineering (BS ECE) is a prestigious program offered by various higher educational institutions (HEIs) in the Philippines. This degree is designed to provide students with a comprehensive understanding of electronics principles, but not limited to communication systems, microelectronics, and other related fields defined in the scope of RA9292, **The Electronics Engineering Law of 2004**. The program prepares graduates for careers in various electronics fields of practice such as, telecommunications, information technology, and allied industries.

In the Philippines, the offering of the Bachelor of Science in Electronics Engineering program is approved and regulated by the Commission on Higher Education (CHED), the governing body responsible for maintaining the quality of higher education in the country. CHED ensures that the institutions offering this program adhere to strict academic standards and provide high-quality education that meets both national and international benchmarks.

Several universities and colleges across the country offer the BS ECE program, from premier state universities to private institutions. These institutions are equipped with modern laboratories, qualified faculty members, and strong industry linkages, providing students with practical knowledge and skills necessary for the global job market. Graduates from these CHED-approved programs have gone on to excel in various sectors, including electronics manufacturing, telecommunications, automation, research and development, and allied industries including the emerging technologies. These higher education institutions (HEI) contribute to the nation's technological advancements, fostering innovation and producing highly skilled professionals who drive progress in the engineering sector.

CHED also acknowledges the efforts of HEIs in upholding the quality of their programs through voluntary assessments and evaluations by various accrediting agencies. The accreditation system in the Philippines has played a crucial role in maintaining and improving the quality of higher education. Accrediting bodies were created to assess and certify academic institutions and degree programs, verifying they meet or surpass established standards of excellence. This system is intended to promote continuous improvement in education quality, foster public trust, and prepare graduates for national and global competitiveness.

1.1.1 Accrediting Bodies for Public and Private Educational Institutions

The **Federation of Accrediting Agencies of the Philippines (FAAP***),* established in 1977, serves as the umbrella organization for the three major accrediting bodies: ***PACUCOA, ACSCU-AAI, and AACCUP.*** FAAP was established in response to the growing need for a unified accreditation system that standardizes the recognition of degree programs and upholds quality across both public and private educational institutions. It is officially recognized by the

Commission on Higher Education (CHED) to certify accreditation levels awarded by its member agencies.

A. The Philippine Association of Colleges and Universities Commission on Accreditation (PACUCOA)

PACUCOA, founded in 1973, is a private accrediting body in the Philippines that accredits academic programs of member institutions. It is one of the leading accrediting bodies in the country and is known for accrediting various programs, including undergraduate and graduate degrees in fields like engineering, business, education, and more. PACUCOA operates under the authority of the Federation of Accrediting Agencies of the Philippines (FAAP), which confers accreditation status based on its evaluation standards.

B. Association of Christian Schools, Colleges, and Universities Accrediting Agency Inc. (ACSCU-AAI)

Established in 1976, ACSCU-AAI is a faith-based accrediting body in the Philippines. It accredits educational programs of Christian higher education institutions, with an emphasis on integrating Christian values into the academic framework. Like PACUCOA, ACSCU-AAI operates under the umbrella of FAAP.

C. Accrediting Agency of Chartered Colleges and Universities in the Philippines (AACCUP)

AACCUP was founded in 1987 to accredit academic programs in state universities and colleges (SUCs). It aims to elevate the academic standards and institutional quality of public higher education. It focuses primarily on accrediting degree programs of government-funded institutions across a wide range of disciplines, including engineering, business, agriculture, and education.

D. Philippine Accrediting Association of Schools, Colleges, and Universities (PAASCU)

PAASCU, founded in 1957, is the oldest accrediting agency in the Philippines and is one of the most prominent and internationally recognized certifying bodies. It accredits institutions and academic programs in areas such as engineering, liberal arts, sciences, business, and medical fields. PAASCU is an active member of several international accreditation networks, making it a significant player in the global education landscape. PAASCU's efforts have had a lasting impact on the educational quality in the country.

E. Philippine Technological Council Certification and Accreditation System for Engineering Education (PTC CASEE)

The Philippine Technological Council (PTC) is the sole organization recognized by the Commission on Higher Education to accredit engineering programs in the Philippines, in accordance with international standards adopted by and adhered to by signatories to accords, arrangements and agreements such as, among others, the Washington Accord to which PTC, in behalf of the Philippine jurisdiction, is now a full member. PTC, consistent with its policy accreditation, provides its criteria for accreditation to the public. These criteria are the basis for decisions on accreditation of engineering programs submitted by higher educational institutions (HEIs). It is the responsibility of HEIs seeking accreditation of an engineering program to clearly demonstrate that the program fulfils or exceeds the prescribed criteria.

1.1.2 List of University/Colleges Offering BS Electronics Engineering and Electronics Technicians

There are several universities and colleges offering Bachelor's degree in Electronics Engineering, alongside institutions providing Associate, Technician, Trade, or Vocational programs that qualify students to take Electronics Engineering and/or Electronics Technicians Board Exams.

Below is the list of institutions offering programs for Electronics Engineering and Electronics Technician.

*Universities/Colleges offering BS ECE that qualify students for the Electronics Engineering Licensure Exams		**Universities/Colleges with Associate, Technician, Trade or Vocational courses that qualify students for the Electronics Technician Exams	
No.	University/College	No.	University/College
1	Adamson University	1	Adamson University
2	Aemilianum Institute	2	Aemilianum Institute
3	Agusan Del Sur State College Of Agriculture & Technology	3	Agusan Del Sur State College Of Agriculture & Technology
4	Alejandro College	4	Ama Computer College- Binan, Laguna
5	Ama Computer College- Angeles City	5	Ama Computer College- Davao City
6	Ama Computer College- Binan, Laguna	6	Ama Computer College- Malolos

7	Ama Computer College-Calamba	7	Ama Computer College-San Fernando, Pampanga
8	Ama Computer College- Davao City	8	Ama Computer College-Santiago City
9	Ama Computer College-East Rizal	9	Ama Computer College- Tarlac City
10	Ama Computer College- Laoag City	10	Ama Computer College-Zamboanga City
11	Ama Computer College- Makati City	11	Angeles University Foundation
12	Ama Computer College- Malolos	12	Aquinas University
13	Ama Computer College-San Fernando, Pampanga	13	Ateneo De Davao University
14	Ama Computer College-Santiago City	14	Ateneo De Manila University-Q.C.
15	Ama Computer College- Tarlac City	15	Ateneo De Naga University
16	Ama Computer College-Zamboanga City	16	Ateneo De Zamboanga University
17	Ama Computer Learning Center Foundation, Inc- Zamboanga	17	Baliuag University (Baliuag Colleges)
18	Andres Bonifacio College	18	Bataan Heroes Memorial College
19	Angeles University Foundation	19	Bataan Peninsula State University-Main Campus
20	Aquinas University	20	Batanes Polytechnic College
21	Asia Pacific College	21	Batangas State University - Alangilan
22	Ateneo De Davao University	22	Beti College Of Technology
23	Ateneo De Manila University-Q.C.	23	Bicol State College Of Applied Sciences & Tech.
24	Ateneo De Naga University	24	Bicol University Ind'L Tech.(Bucit)-Legazpi
25	Ateneo De Zamboanga University	25	Bicol University-Polangui
26	Baliuag University (Baliuag Colleges)	26	Bohol Island State University - Tagbilaran
27	Bataan Heroes Memorial College	27	Bohol Northern Star College
28	Bataan Peninsula State University-Main Campus	28	Bukidnon State University
29	Batangas State University - Alangilan	29	Bulacan State University - Sarmiento Campus
30	Bicol State College Of Applied Sciences & Tech.	30	Bulacan State University-Malolos
31	Bicol University-Polangui	31	Cagayan State University-Tuguegarao
32	Bohol Institute Of Technology-Tagbilaran	32	Cagayan Valley Computer & Information Technology Coll.,Inc

33	Bulacan State University-Malolos	33	Camarines Sur Polytechnic College-Nabua
34	Cagayan De Oro College	34	Camiguin Polytechnic State College
35	Cagayan State University-Tuguegarao	35	Capitol University (For.Cagayan Capitol Coll.)
36	Cagayan Valley Computer & Information Technology Coll.,Inc	36	Caraga State University- Butuan City
37	Camarines Sur Polytechnic College-Nabua	37	Cavite State University (Don Severino Agr'L. Coll.)
38	Camiguin Polytechnic State College	38	Cavite State University-Carmona
39	Capitol University (For.Cagayan Capitol Coll.)	39	Cebu Institute Of Technology - University
40	Caraga State University- Butuan City	40	Cebu Technical School
41	Cavite State University (Don Severino Agr'L. Coll.)	41	Cebu Technological University-Main (For.Cscst)
42	Cebu Institute Of Technology - University	42	Central Ilocandia College Of Science & Technology
43	Cebu Technological University-Main (For.Cscst)	43	Central Philippine University
44	Central Colleges Of The Philippines	44	Central Radio & Electronics School
45	Central Ilocandia College Of Science & Technology	45	Colegio De Dagupan (For.Computronix Coll)
46	Central Philippine University	46	Colegio De San Gabriel Arcangel
47	Colegio De Dagupan (For.Computronix Coll)	47	Colegio De San Juan De Letran-Abucay
48	Colegio De San Gabriel Arcangel	48	Colegio De San Juan De Letran-Calamba
49	Colegio De San Juan De Letran-Abucay	49	Colegio De San Juan De Letran-Intramuros
50	Colegio De San Juan De Letran-Intramuros	50	Colegio San Agustin- Bacolod City
51	Colegio De Sebastian-Pampanga,Inc	51	Columban College-Olongapo City
52	Colegio San Agustin- Bacolod City	52	Computer Arts & Technology School-Old Albay
53	College Of Technological Sciences-Cebu	53	Cor Jesu College (Holy Cross Of Digos)
54	Columban College-Olongapo City	54	De La Salle University-Dasmariñas
55	Computer Arts & Technology School-Old Albay	55	De La Salle University-Lipa
56	Cor Jesu College (Holy Cross Of Digos)	56	De La Salle University-Manila
57	De La Salle University-Dasmariñas	57	Devera Institute Of Technology
58	De La Salle University-Lipa	58	Divine Word College Of Calapan

59	De La Salle University-Manila	59	Don Bosco Technical College-Mandaluyong
60	Devera Institute Of Technology	60	Don Honorio Ventura Technological State Univ.
61	Divine Word College Of Calapan	61	Dualtech Training Center Foundation, Inc.- Canlubang
62	Don Bosco Technical College-Mandaluyong	62	Eastern Samar State University-Guiuan Campus
63	Don Honorio Ventura Technological State Univ.	63	Eastern Visayas State Univ. (For. L.I.T.)-Ormoc Campus
64	Eastern Visayas State University (For.Lit)Tacloban	64	Eastern Visayas State University (For.Lit)Tacloban
65	Emilio Aguinaldo College-Dasmariñas	65	Emilio Aguinaldo College-Dasmariñas
66	Eulogio (Amang) Rodriguez Institute Of Science & Tech.	66	Eulogio (Amang) Rodriguez Institute Of Science & Tech.
67	Far Eastern University- Manila	67	Far Eastern University- Manila
68	Feati University	68	Fellowship Baptist College
69	Fellowship Baptist College	69	Feu Alabang
70	Feu Alabang	70	Feu Institute Of Technology (For Feu-E.A.C.)
71	Feu Institute Of Technology (For Feu-E.A.C.)	71	Filamer Christian College
72	Filamer Christian College	72	First Asia Institute Of Technology & Humanities
73	First Asia Institute Of Technology & Humanities	73	Fullbright College
74	Fullbright College	74	Holy Angel University
75	Holy Angel University	75	Holy Cross Of Davao College
76	Holy Cross Of Davao College	76	Holy Name University (For.Divine Word-Tagbilaran)
77	Holy Name University (For.Divine Word-Tagbilaran)	77	Icct Colleges Found ,Inc(Inst.Of Creative Comp Tech Inc)
78	Icct Colleges Found ,Inc(Inst.Of Creative Comp Tech Inc)	78	Iloilo Science & Tech. University(For W.V.C.S.T.-Main
79	Iloilo Science & Tech. University(For W.V.C.S.T.-Main	79	John Paul Ii College
80	Jose Rizal Memorial State University-Dapitan	80	Jose Rizal Memorial State University-Dapitan
81	Jose Rizal University (For.Jrc)	81	Jose Rizal University (For.Jrc)

82	La Salle University (For.Imma.Concepcion-La Salle)	82	La Salle University (For.Imma.Concepcion-La Salle)
83	Laguna State Polytechnic University - San Pablo (Lspc)	83	Laguna Science & Technology College
84	Laguna State Polytechnic University-Sta.Cruz (Lspc)	84	Laguna State Polytechnic University - San Pablo (Lspc)
85	Liceo De Cagayan University	85	Laguna State Polytechnic University-Sta.Cruz (Lspc)
86	Lyceum Northwestern University-Dagupan City	86	Lyceum Northwestern University-Dagupan City
87	Lyceum Of Northern Luzon	87	Lyceum Of Northern Luzon
88	Lyceum Of The Philippines - Cavite	88	Lyceum Of The Philippines - Cavite
89	Lyceum Of The Philippines University-Manila	89	Lyceum Of The Philippines-Laguna
90	Lyceum Of The Philippines-Laguna	90	Lyceum Subic Bay, Inc.
91	Lyceum Subic Bay, Inc.	91	Manuel S. Enverga Univ. Foundation-Lucena City
92	Manuel L. Quezon University	92	Mapua Malayan Colleges Laguna(For Malayan Coll. Laguna)
93	Manuel S. Enverga Univ. Foundation-Lucena City	93	Mapua University (For M.I.T.) - Manila
94	Mapua Malayan Colleges Laguna(For Malayan Coll. Laguna)	94	Mariano Marcos State Univ.-Laoag-Coll. Of Educ.
95	Mapua Malayan Colleges Mindanao	95	Mariano Marcos State Univ-Laoag-Coll.Of Technology
96	Mapua University (For M.I.T.) - Manila	96	Marinduque State College-Boac
97	Mariano Marcos State Univ.-Batac	97	Mary Our Help Technical Institute For Women(Cebu), Inc.
98	Marinduque State College- Boac	98	Mats College Of Technology
99	Mary Our Help Technical Institute For Women(Cebu), Inc.	99	Mfi Foundation, Inc. (For Meralco Found. Inc.)
100	Microcity Computer Colleges Foundation	100	Mindanao State University-Gen. Santos City
101	Mindanao State University- Gen. Santos City	101	Mindanao State University-Iligan Institute Of Tech.
102	Mindanao State University- Iligan Institute Of Tech.	102	Mindanao State University-Marawi City
103	Mindanao State University-Marawi City	103	Mn Institute Of Technology
104	Mondriaan Aura College	104	Mondriaan Aura College
105	National College Of Science & Technology-Dasmarinas	105	National College Of Science & Technology-Dasmarinas

106	National College Of Science & Technology-San Fernando	106	National Radio School & Institute Of Technology
107	National University-Manila	107	National University-Manila
108	Negros Oriental State University (Cvpc)-Dumaguete	108	Negros Oriental State University (Cvpc)-Dumaguete
109	New Era University	109	New Era University
110	Northwest Samar State University -Calbayog	110	Northwest Samar State University -Calbayog
111	Notre Dame Of Dadiangas University, Inc	111	Northwestern Mindanao State Coll. Of Science & Tech.
112	Notre Dame Of Kidapawan College	112	Notre Dame Of Dadiangas University, Inc
113	Notre Dame Of Midsayap College	113	Notre Dame Of Kidapawan College
114	Notre Dame University	114	Notre Dame Of Midsayap College
115	Nueva Vizcaya State University (Nvpc)-Bambang	115	Nueva Ecija Univ. Of Science & Technology-Cabanatuan
116	Pamantasan Ng Cabuyao	116	Nueva Vizcaya State University (Nvpc)-Bambang
117	Pamantasan Ng Lungsod Ng Maynila	117	Palompon Institute Of Technology-Palompon
118	Pamantasan Ng Lungsod Ng Pasig	118	Pamantasan Ng Cabuyao
119	Philippine College Of Science & Technology- Calasiao	119	Pamantasan Ng Lungsod Ng Maynila
120	Polytechnic University Of The Philippines-Main-Sta. Mesa	120	Pamantasan Ng Lungsod Ng Pasig
121	Polytechnic University Of The Philippines-Maragondon	121	Pangasinan State University-Asingan
122	Polytechnic University Of The Philippines-Sta. Rosa	122	Polytechnic Institute Of Tabaco
123	Polytechnic University Of The Philippines-Sto. Tomas	123	Polytechnic University Of The Philippines-Bataan
124	Polytechnic University Of The Philippines-Taguig	124	Polytechnic University Of The Philippines-Main-Sta. Mesa
125	Quezon City University (For Q.C Polytechnic Univ.)	125	Polytechnic University Of The Philippines-Maragondon
126	Rizal Technological University	126	Polytechnic University Of The Philippines-Sta. Rosa
127	Rogationist College	127	Polytechnic University Of The Philippines-Sto. Tomas
128	Saint John Technological College Of The Philippines	128	Polytechnic University Of The Philippines-Taguig
129	Saint Joseph Institute Of Technology	129	Quezon City University (For Q.C Polytechnic Univ.)
130	Saint Louis University	130	Rizal Memorial College
131	Saint Mary'S University	131	Rizal Technological University

132	Saint Michael'S College- Iligan City	132	Rogationist College
133	Saint Paul University- Surigao	133	Saint Joseph Institute Of Technology
134	Saint Peter'S College-Iligan City	134	Saint Louis University
135	Samar State University (Samar S.P.C.)	135	Saint Mary'S University
136	San Sebastian College-Recoletos,Cavite	136	Saint Paul University-Tuguegarao
137	Southern Luzon State University-Lucban (Slpc)	137	Saint Peter'S College-Iligan City
138	Sti West Negros University (For West Negros Coll)	138	Samar State University (Samar S.P.C.)
139	Surigao Education Center	139	Santa Monica Institute Of Technology
140	Surigao State College Of Technology-Main Campus	140	Sorsogon State University(For Sorsogon Sc- Sorsogon
141	Systems Plus College Foundation,Inc-Angeles City(Spccf)	141	Southern Luzon State University-Lucban (Slpc)
142	Tarlac State University (Tarlac College Of Tech.)	142	St. Nicolas College Of Business & Technology- Pampanga
143	Technological Institute Of The Philippines-Manila	143	Sti College - Cotabato City
144	Technological Institute Of The Philippines-Quezon City	144	Sti College - Naga Campus
145	Technological University Of The Philippines-Manila	145	Sultan Kudarat State University-Tacurong
146	Technological University Of The Philippines-Taguig	146	Surigao Education Center
147	Technological University Of The Philippines-Visayas	147	Surigao State College Of Technology-Main Campus
148	Universal Colleges Of Parañaque	148	Systems Plus College Foundation,Inc-Angeles City(Spccf)
149	Universidad De Manila (City Coll. Of Manila)	149	Tagoloan Community College
150	Universidad De Zamboanga (For.Zaec)	150	Talisay City College
151	University Of Antique- Sibalom	151	Tanauan City College
152	University Of Baguio	152	Tarlac State University (Tarlac College Of Tech.)
153	University Of Batangas	153	Technological Institute Of The Philippines-Manila
154	University Of Bohol	154	Technological Institute Of The Philippines-Quezon City
155	University Of Cebu	155	Technological University Of The Philippines-Cavite
156	University Of Cebu In Lapulapu & Mandaue	156	Technological University Of The Philippines-Manila

157	University Of Cebu-Banilad	157	Technological University Of The Philippines-Taguig
158	University Of La Salette-Santiago	158	Technological University Of The Philippines-Visayas
159	University Of Luzon (Luzon Coll.)	159	Universal Colleges Of Parañaque
160	University Of Mindanao- Davao City	160	Universidad De Manila (City Coll. Of Manila)
161	University Of Mindanao- Tagum	161	Universidad De Zamboanga (For.Zaec)
162	University Of Negros Occidental-Recoletos	162	University Of Antique- Sibalom
163	University Of Northeastern Philippines	163	University Of Baguio
164	University Of Nueva Caceres	164	University Of Batangas
165	University Of Pangasinan	165	University Of Bohol
166	University Of Perpetual Help System Dalta --Calamba Campus	166	University Of Cebu
167	University Of Perpetual Help System Dalta-Las Pinas	167	University Of Cebu In Lapulapu & Mandaue
168	University Of Perpetual Help System Dalta-Molino Campus	168	University Of Cebu-Banilad
169	University Of Perpetual Help System-Laguna	169	University Of Eastern Philippines-Laoang Campus
170	University Of Rizal System-Morong	170	University Of La Salette-Santiago
171	University Of Saint La Salle	171	University Of Luzon (Luzon Coll.)
172	University Of Saint Louis-Tuguegarao	172	University Of Makati
173	University Of San Agustin	173	University Of Mindanao- Davao City
174	University Of San Carlos	174	University Of Mindanao- Tagum
175	University Of San Jose-Recoletos	175	University Of Negros Occidental-Recoletos
176	University Of Santo Tomas	176	University Of Northern Philippines-Vigan
177	University Of Science & Tech.Of Southern Phils- Cdo(For Must-Cdo	177	University Of Nueva Caceres
178	University Of Southeastern Philippines-Davao City	178	University Of Pangasinan
179	University Of Southern Mindanao-Kabacan	179	University Of Perpetual Help System Dalta --Calamba Campus
180	University Of Southern Philippines	180	University Of Perpetual Help System Dalta-Las Pinas
181	University Of The Cordilleras (For.Baguio C.F.)	181	University Of Perpetual Help System-Laguna

182	University Of The East- Caloocan	182	University Of Rizal System-Antipolo
183	University Of The East-Manila	183	University Of Rizal System-Morong
184	University Of The Immaculate Conception-Davao	184	University Of Saint La Salle
185	University Of The Philippines-Diliman	185	University Of Saint Louis-Tuguegarao
186	University Of The Visayas- Cebu City	186	University Of San Agustin
187	Urdaneta City University (Ccu)	187	University Of San Carlos
188	Virgen Milagrosa University Foundation	188	University Of San Jose-Recoletos
189	Wesleyan University- Philippines-Cabanatuan City	189	University Of Santo Tomas
190	Western Mindanao State U-Zamboanga City	190	University Of Science & Tech.Of Southern Phils- Cdo(For Must-Cdo
191	Westmead International School	191	University Of Southeastern Philippines-Bislig Campus
192	Xavier University	192	University Of Southeastern Philippines-Davao City
		193	University Of Southern Mindanao-Kabacan
		194	University Of Southern Philippines
		195	University Of The Cordilleras (For.Baguio C.F.)
		196	University Of The East-Caloocan
		197	University Of The East-Manila
		198	University Of The Philippines-Diliman
		199	University Of The Visayas-Cebu City
		200	Urdaneta City University (Ccu)
		201	Virgen Milagrosa University Foundation
		202	Wesleyan University-Philippines-Cabanatuan City
		203	Western Mindanao State U-Zamboanga City
		204	Westmead International School
		205	Xavier University
		206	Zamboanga City State Polytechnic College

		207	Zamboanga State College Of Marine Sciences & Tech.

* Data is taken from the Professional Regulation Commission list of HEIs' BSECE graduates who took the most recent licensure examinations in Electronics Engineering and are recognized by the Commission on Higher Education.
** Data is taken from the Professional Regulation Commission list of Higher Education Institutions and Technology Centers with Electronics Technology and Technician graduates.

1.2 Policies, Standards, and Guidelines for the Bachelor of Science in Electronics Engineering Program (CMO 101, S. 2017)

1.2.1 Definition

Electronics is the science dealing with the development and application of devices and systems involving the flow of electrons or other carriers of electric charge, in a vacuum, in gaseous media, in plasma, in semiconductors, in solid-state and/or in similar devices, including, but not limited to, applications involving optical, electromagnetic and other energy forms when transduced or converted into electronic signals. (RA 9292, 2004).

1.2.2 Degree Name

As defined in Republic Act 9292, also known as Electronics Engineering Law, the degree program that qualifies an examinee to take the board exams for electronics engineering is a graduate of **BACHELOR OF SCIENCE IN ELECTRONICS ENGINEERING (BSECE).**

1.2.3 Curriculum Description

The Electronics Engineering curriculum is designed to meet the BSECE Program Outcomes stated in Article IV, Section 6.2 of the CHED Memorandum Order No. 101 Series of 2017 – *"Policies, Standards And Guidelines For The Bachelor Of Science In Electronics Engineering (BSECE) Program".* The curriculum requires engineers to have sufficient background in mathematics, natural, physical and allied sciences. As such, the curriculum covers subjects in mathematics, physics, chemistry, materials and environmental sciences. The Electronics Engineering curriculum also contains mandated general education and elective courses relevant to the desired program outcomes. It guarantees that the Electronics engineering graduates can apply and articulate the nature of their special roles in the society and the impact of their work on the environment. It is likewise designed for the graduates to have a certain breadth of knowledge of the Electronics Engineering disciplines through a set of core courses. To provide depth and focus to a certain field of Electronics Engineering discipline, a completion of at least one specialized field with elective courses is required. The list of specialized fields with the required minimum elective courses per field is also included in CMO 101 S. 2017. The choices and offering of such specialized fields based on the capability and available resources of the HEI shall comply with the suggested minimum required elective courses. A minimum of 240 hours of immersion in electronics engineering activities outside the institution; design and a capstone project in electronics engineering design are the final requirements of the curriculum. Curriculum shall have major learning experiences like OJT or local/ international immersion experience, research, conferences, leadership seminars, etc.

1.2.4 Summary of the BSECE Curriculum*

Classification/Field	Minimum No. Of Hours		Total No. of Units
	Lecture	Laboratory	
I. Technical Courses			
A. Mathematics	12	0	12
B. Natural/Physical Sciences	6	6	8
C. Basic Engineering Courses	8	3	9
D. Allied Courses	15	15	20
E. Professional Core Courses	46	45	61
F. Technical Electives	6	6	8
G. On-the-Job Training (240 hours)	3	0	3
Sub-Total	**96**	**75**	**121**
II. Non-Technical Courses			
A. General Education Courses	24	0	24
B. GEC Elective/Mandated Courses	12	0	12
C. Physical Education			8
D. National Service Training Program			6
Sub-Total	**36**	**0**	**50**
GRAND TOTAL			**171**

CMO 101, S.2017 prescribes the minimum requirements and HEIs may opt to add more courses as deemed appropriate.

1.2.5 Description of Professional Core Subjects

Descriptive Title	Description
ELECTRONIC DEVICES AND CIRCUITS	This course introduces the following topics: fundamentals of vacuum tubes and other devices; Introduction to quantum mechanics of solid state electronics; diode and transistor characteristics and models (BJT and FET); diode circuit analysis and applications; transistor biasing; small signal

	analysis; large signal analysis; transistor amplifiers;
ELECTRONIC CIRCUIT ANALYSIS AND DESIGN	A Study on high frequency transistor models; analysis of transistor circuits; multi-stage amplifier, feedback, differential amplifiers and operational amplifiers; integrated circuit families (RTL, DTL, TTL, ECL, MOS).
ELECTRONIC SYSTEMS AND DESIGN	This course deals with the theory, operating characteristics, and design of electronic devices and control circuits for industrial processes; It also deals with industrial control applications, electronic instrumentation, transducers, data acquisition system, interfacing techniques, and sensors.
LOGIC CIRCUITS AND SWITCHING THEORY	Review of number systems, coding and Boolean algebra; inputs and outputs; gates and gating networks; combinational circuits; standard form; minimization; sequential circuits; state and machine equivalence; asynchronous sequential circuits; race conditions; algorithmic state machines; design of digital subsystems.
MICROPROCESSOR AND MICROCONTROLLER SYSTEMS	This course provides understanding of architecture of microprocessor-based systems; registers, study of microprocessor operation, assembly language, arithmetic operations, and interfacing.
ADVANCED ENGINEERING MATHEMATICS FOR ECE	A study on selected topics in mathematics and their applications in advanced courses in engineering and other allied sciences. It covers the study of Complex numbers and complex variables, Laplace and Inverse Laplace Transforms, Power series, Fourier series, Fourier Transforms, z-transforms,

	power series solution of ordinary differential equations, partial differential equations and numerical methods in engineering.
PRINCIPLES OF COMMUNICATIONS	Bandwidth; filters; linear modulation; angle modulation; phase locked loop; pulse modulation; multiplexing techniques ; noise analysis; radio transmitters and receivers.
SIGNALS, SPECTRA, AND SIGNAL PROCESSING	Review of Fourier transform, z transform and convolution; FIR filters; IIR filters; random signal analysis; correlation functions; DFT; FFT; spectral analysis; applications of signal processing to speech, image, etc.
MODULATION & CODING TECHNIQUES	Random variables, bit error rate; matched filter; Digital modulation techniques; ASK, FSK, QAM, PSK/QPSK, CDMA and W-CDMA systems; signal space; generalized orthonormal signals; information measures-entropy; channel capacity; efficient encoding; error correcting codes information theory; data compression; coding theory.
TRANSMISSION MEDIA AND ANTENNA SYSTEM	This course deals with transmission media,radiowave propagation, wire and cable transmission systems,fiber-optic transmission system, transmission lines and antenna systems.
DATA COMMUNICATIONS	Data communication systems; terminals, modems; terminal control units; multiplexers; concentrators; front-end processors; common carrier services; data communication system design; computer network models; TCP/IP principles; LAN; WAN; sample case studies.

FEEDBACK AND CONTROL SYSTEM FOR ECE	This course deals with time and frequency response of feedback control systems. The topics covered include, time response of first order and second order systems, modeling, transfer functions, pole-zero map, stability analysis, root locus, bode plots, compensators, PID controllers, and introduction to statespace techniques.
ECE ENGINEERING LAWS, CONTRACTS, ETHICS, STANDARDS AND SAFETY	Contracts; warranties; liabilities; patents; bids; insurance; other topics on the legal and ethical positions of the professional engineer.
ENGINEERING ELECTROMAGNETICS FOR ECE	This course deals with vector algebra, vector calculus, vector analysis, and their applications in electric and magnetic fields, resistive, dielectric and magnetic materials, coupled circuits, magnetic circuits and fields, time-varying electromagnetic fields, and Maxwell's equations.
SYSTEM DESIGN 1 / CAPSTONE PROJECT 1	The thesis/project requirement shall focus on the recommended track electives as follows: Communications; Microelectronics; Power Electronics; Biotech/ Biomedical Engineering; Instrumentation and Control; Information and computing
SYSTEM DESIGN 2 / CAPSTONE PROJECT 2	The thesis/project requirement shall focus on the recommended track electives as follows: Communications; Microelectronics; Power Electronics; Biotech/ Biomedical Engineering; Instrumentation and Control; Information and computing
SEMINARS, COLLOQUIUM	This course covers seminars related to Electronics Engineering seminars on topics in electronics engineering.

RESEARCH METHODS	This course deals with research preparation methods, research tools, research proposals, and the implementation, presentation and publication of research work.

1.2.6 Nature and Scope of the Practice of an ECE Graduate

As stipulated in Sec, 5 Art. IV of RA 9292, "the scope and nature of practice of the Electronics Engineer shall embrace and consist of 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 (ICT), 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, electromagnetics, 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".

1.3 Continuing Professional Development

Continuing Professional Development (CPD), as mandated by Republic Act No. 10912 (Continuing Professional Development Act of 2016) and Republic Act No. 9292 (Electronics Engineering Law) along with its Implementing Rules and Regulations (IRR), is a program of learning and development activities aimed at maintaining, enhancing, and upgrading the knowledge, skills, and competencies of professionals throughout their careers. The act mandates that all registered and licensed professionals in the Philippines engage in CPD as a prerequisite for the renewal of their Professional Identification Cards (PICs).

As such, all registered Professional Electronics Engineers, Electronics Engineers, and Electronics Technicians shall comply with the pertinent rules and regulations under continuing professional development and/or other similar/related programs.

1.3.1 CPD Units and Requirements

Electronics engineers are required to accumulate a specified number of CPD units (ranging from 15 to 45 units) within the three-year renewal cycle, as determined by the PRC.

The types of activities that qualify for CPD units include:

- o Workshops and seminars
- o Conferences and technical presentations
- o Online courses and training programs
- o Self-directed learning and professional readings
- o Participation in professional organizations and relevant volunteer work

1.3.2 Accreditation and Providers

Continuing Professional Development (CPD) accreditation and providers are established to guarantee that professional development activities for electronics engineering practitioners meet quality standards. Accreditation is a formal process that evaluates the quality and effectiveness of CPD programs, verifying they comply with the standards set by the Professional Regulation Commission (PRC) and align with the requirements of RA 10912 and RA 9292.

PRC designates a CPD Council for Electronics Engineering, and sets specific criteria for CPD programs. The criteria include the relevance of the program to electronics engineering, quality of instruction, measurable learning outcomes, and effective delivery formats such as workshops, webinars/seminars and online courses.

The CPD providers are responsible for creating relevant and high-quality educational content, providing participant support during training, and implementing feedback mechanisms for continuous improvement based on evaluations and industry trends. CPD providers must submit their programs for PRC review, which involves documenting the curriculum, instructional materials, and assessment tools, as well as demonstrating the capacity to deliver quality training and reviewing participant feedback to assess program effectiveness.

Various organizations serve as CPD providers for electronics engineers, including:
- **Professional Organizations:** APOs like the Institute of Electronics Engineers of the Philippines (IECEP) and its Chapters offer CPD programs tailored to the needs of its members.

- **Academic Institutions:** Universities and colleges often provide courses and workshops that can qualify for CPD units.
- **Training Centers:** Specialized training centers may offer CPD activities focused on specific skills or technologies relevant to electronics engineering.
- **Industry Partners:** Companies and corporations within the electronics sector can develop and deliver CPD programs, especially on emerging technologies or industry best practices.

Professionals may choose accredited programs to ensure the activities contribute to their required CPD units.

1.3.3 Access to CPD Programs

For electronics engineering practitioners seeking to enhance their skills and knowledge, the Institute of Electronics Engineers of the Philippines (IECEP) offers a variety of both free and paid CPD activities. These programs can be easily accessed through the MyIECEP platform, providing valuable opportunities for professionals to engage in ongoing education and stay updated in their field.

MyIECEP.net is an online platform created by the Institute of Electronics Engineers of the Philippines (IECEP) to serve as a resource hub for its members. The platform provides these services:

- *Access to CPD Programs:* Members can find a wide range of Continuing Professional Development (CPD) activities, including seminars, workshops, and training sessions, both free and paid.
- *Member Services:* The platform facilitates various member services such as registration, renewal of membership, and updates on professional regulations.
- *Event Registration:* Members can register for upcoming events, conferences, and activities organized by IECEP through the platform.

LICENSURE AND REGULATORY LAWS

SECTION 2. LICENSURE AND REGULATORY LAWS

2.1 Licensing Authority

The **Professional Regulatory Board of Electronics Engineering**, also referred to as the "***Board***", under the supervision of the *Professional Regulation Commission*, composed of a Chairman and two (2) Members, administers the licensure exams and sets the requirements for licensing Electronics Engineering practitioners.

The Board also prepares, adopts, and issues the syllabi of the subjects for the Electronics Engineer (ECE) and Electronics Technician (ECT) licensure exams, and prepares the questions in conformance with the scope of the syllabi.

For licensure purposes, the Board adopts recommendations from the Commission on Higher Education (CHED) and the Technical Education and Skills Development Authority (TESDA) regarding approved courses and curricula.

Upon passing the examination, the Board issues Certificates of Registration and Professional Identification Cards to PECEs, ECEs, and ECTs, and maintains a roster of practitioners across different categories in the Electronics Engineering field.

2.2 Categories of Practice

As defined in the Implementing rules and regulations of RA 9292, the three electronics engineering and technician categories and their abbreviations as follows:

a. Professional Electronics Engineer, (PECE)
b. Electronics Engineer, (ECE)
c. Electronics Technician, (ECT)

2.3 Licensure Examination

All applicants seeking to be registered and licensed as ECEs and ECTs shall undergo the required examinations to be given by the Board in such places and dates as the Commission may designate in accordance with the provisions of Republic Act No. 8981.

2.3.1 Qualification for Examination for ECE or ECT

To be allowed to take the examination for ECE or ECT, an applicant must, at the time of the filing of his/her application, establish to the satisfaction of the Board that:

a) He/She is a citizen of the Philippines or of a foreign country qualified to take the examination as provided for in Section 33, Article V of R.A. No. 9292;

b) He/She is of good moral character and had not been convicted by a court of law of a criminal offense involving moral turpitude;

c) For the ECE examinations, He/She is a holder of a degree of Bachelor of Science in Electronics and Communications Engineering or Electronics Engineering, or subject to compliance with minimum requirements to be prescribed by the Board through an appropriate Resolution, such equivalent and/or related engineering course or program from any school, institute, college, or university recognized by the Government or the State where it is established, after completing a resident collegiate course equivalent to that of a full baccalaureate degree. For graduates of equivalent and/or related engineering course or programs who are allowed to take the ECE licensure examination, the Board shall issue the corresponding Resolution/s identifying the concerned applicants and citing the basis for compliance with the minimum requirements it has prescribed that would allow them to take the licensure examination.

d) For the ECT examinations:

   i. He/She is a graduate of an Associate, Technician, Trade or Vocational course in electronics or, subject to the evaluation of the Board, such equivalent and/or related formal or non-formal course or program from any school, college, university or training institution recognized by the Government or the State where it is established, after completing a resident course or program of not less than two (2) years. For graduates of related formal or non-formal course or programs who will be allowed to take the ECT licensure examination, the Board shall issue the corresponding Resolution/s identifying the applicants and citing the basis for compliance with the minimum requirements it has prescribed that would allow them to take the licensure examination; or

   ii. He/she has completed at least the minimum third-year equivalent of a Bachelor of Science program in Electronics and Communications Engineering or Electronics Engineering program according to CHED guidelines, or, subject to the evaluation of the Board, such equivalent and/or related engineering course or program from any school, institute, college or university recognized by the Government or State where it is established. For undergraduates of Bachelor of Science in Electronics and Communications or Electronics Engineering programs, submission of transcript of records would be deemed satisfactory for compliance. For graduates of related engineering course or programs, the Board shall issue the corresponding Resolution/s identifying the applicants and citing compliance with the minimum requirements it has prescribed that would allow them to take the licensure examination

2.3.2 Scope of Examinations

a. For Electronic Engineers

The examination for ECEs shall consist of written test which shall be divided into **four (4) general areas: Mathematics (20%), General Engineering and Applied Sciences (20%), Electronics Engineering (30%) and Electronics Systems and Technologies (30%).** The subjects to be covered shall include the following: **Mathematics, Applied Sciences, Engineering Economics, Laws and Ethics, Electronics, Communications, Computers and Information and Communications Technology (ICT).**

b. For Electronics Technicians

The examinations for ECT shall consist of written and/or practical tests covering subjects to be prescribed by the Board and shall cover topics specific to the practice of ECTs. For this purpose, the Board may adopt recommendations from the TESDA in relation to approved course curricula and/or subjects covered in similar examinations that the latter is administering and/or conducting for accreditation of electronics technicians.

2.3.3 Ratings

To pass the licensure examination, a candidate for ECE or ECT must obtain a passing rating of seventy percent (70%) in each of the four (4) tests given during the examination. If a candidate obtains a passing rating in three (3) tests, but obtains a rating in one test below 70%, but not lower than 60%, shall be allowed to take one removal examination in any scheduled board examination on the test where he/she failed to obtain the passing rating. Should the examinee fail to obtain a passing rating in the removal examination, he/she shall be considered as having failed the entire licensure examination.

2.4 ECE to PECE Licensure Upgrade

2.4.1 Qualifications and Application for Registration as a Professional Electronics Engineer (PECE)

As stipulated in Section 18 of RA9292 or the "Electronics Engineering Law of 2004", the applicant may apply for licensure upgrade. The following are the qualifications for upgrade from ECE to PECE:

a) Valid Certificate of Registration and Professional Identification Card as an ECE;

b) Valid/current membership identification card or certificate of membership of good standing from the APO;

c) Certified experience record of active self-practice and/or employment either in government service or in the private sector, in the format to be prescribed by the Board, indicating the inclusive dates, companies worked for, description of specific responsibilities, relevant accomplishments and name, position of immediate supervisors for a period of at least seven (7) years (inclusive and/or aggregate), at least two (2) years of which are in responsible charge of significant engineering work, from the date applicant took his/her oath as an Electronics and Communications Engineer or Electronics Engineer; the seven years inclusive or aggregate experience includes those which have been accumulated when the applicant was still holding the Electronics and Communications Engineering registration under Republic Act No. 5734; and

d) Three (3) certifications signed by three (3) PECEs attesting that the experience record submitted by the applicant is factual. The Board shall specify the format for such certifications.

Those who have been registered and licensed as Electronics and Communications Engineers under Republic Act No. 5734 for at least seven (7) years upon the effectivity of RA9292 need only to submit items (a), (b), (c).

Those who have been registered and licensed as Electronics and Communications Engineers under Republic Act No. 5734 for less than seven (7) years after the effectivity of RA9292 shall submit their certified experience records and certifications from three (3) Professional Electronics Engineers as in items (c) and (d) above.

Applications for registration as PECE may be submitted anytime to the Commission. The Board shall then schedule an *en banc* oral interview of the applicant for the purpose of verifying, authenticating and assessing the submittals and establishing the competency of the applicant according to rules, regulations and competency standards to be formulated by the Board.

2.4.2 Application Process for Professional Electronics Engineer (PECE)

As a benefit of IECEP membership, applicants can seek assistance from IECEP for the licensure upgrade application process. The procedure is outlined below:
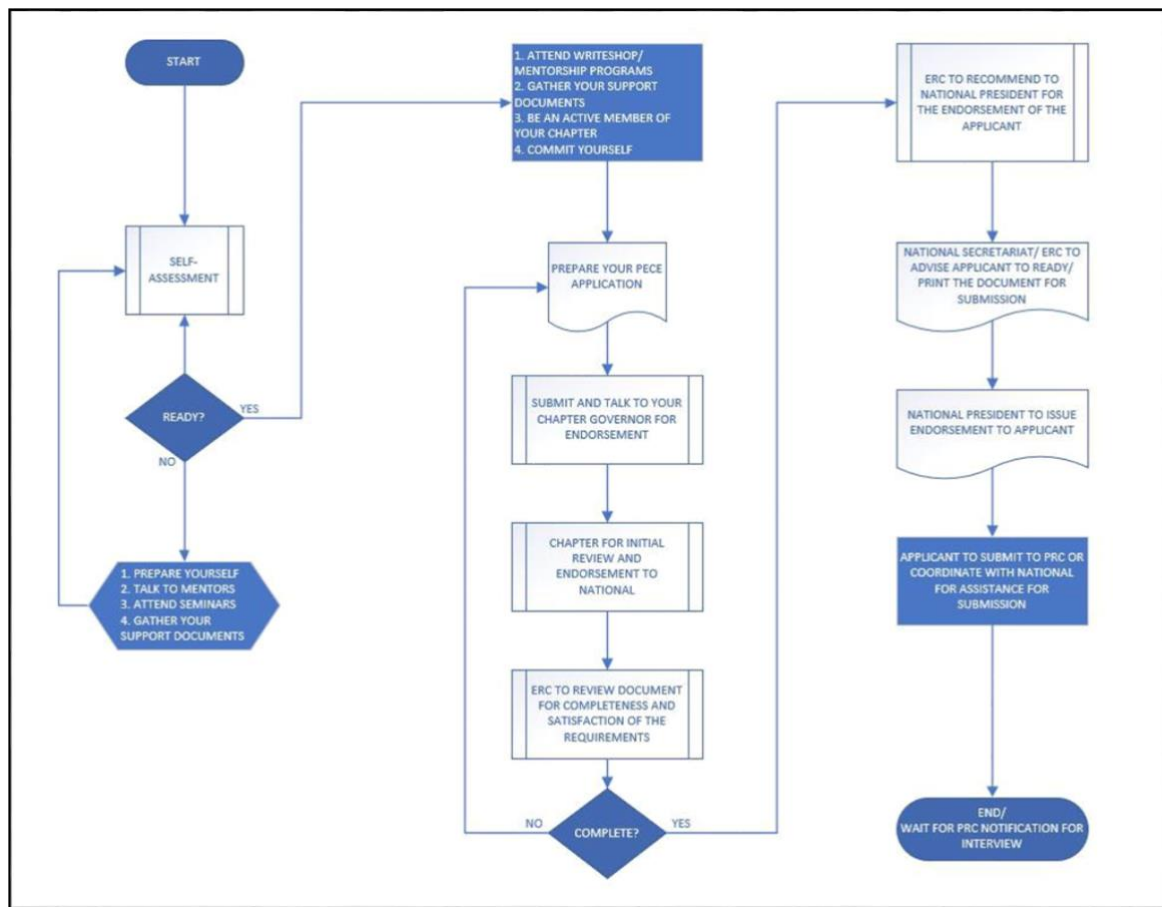
All PECE applicants must submit the necessary documents to the IECEP Engineering Registry Committee for review to confirm their compliance with the qualification standards.

List of Requirements

1. Letter of Intent
2. Resume with passport size picture, white background (coat and tie for men; blazer for women)
3. Qualification Requirements
1. Copy of valid Professional Identification Card (PIC)
2. Copy of valid AIPO ID
3. Copy of Certificates/Awards/Other Significant Achievements
4. Copy of valid AIPO COGS issued by AIPO National Office
5. Certified experience record of active self-practice and/or employment either in government service or in private sector totaling 7 years of practice and at least 2 years of which are in responsible charge of significant engineering work
6. Essay not less than 300 words describing the 2 years significant engineering work with emphasis on the involvement in the "independent responsible in-charge" of project or work highlighted with proofs such

engineering design or conceptual plans, implementation procedures, technical or engineering accomplishment report, project proposal, or completed project report, etc.

7. Three (3) Certifications signed by three (3) PECEs (preferably the applicant's senior or mentor) attesting to the veracity of the applicant's service record
8. Copy of Diploma
9. Copy of PRC Certificate of Registration
10. Original valid NBI Clearance
11. Original valid Ombudsman Clearance, if government employee
12. Applicant Declaration

NOTES:

1. Five (5) sets of print copy of the duly accomplished application form, including copies of all supporting documents must be submitted, with all pages of the documents originally signed by the applicant. Each set must have softcopy in a USB flash disk. Should an electronic signature be used, the applicant must provide evidence that it had been digitally signed by him.
2. The print copies must be submitted using A4-size paper with thickness not less than substance 20 (80 gsm). Photocopies of documents shall be reduced to fit A4-sized paper.
Each set shall be submitted in a loop wires (spiral binder) with each paper pages in a back-back format. Application documents in ANY plastic holder and the like will not be accepted.
3. Soft copy of the signed accomplished application form, including all supporting documents must be in PDF format and must be saved in USB flash disk.

2.5 Renewal of Professional Licenses

The Professional License for PECEs, ECEs, and ECTs must be renewed every three (3) years during the licensee's birth month. Renewal is contingent upon meeting the Continuing Professional Development (CPD) requirements under Republic Act No. 10912, unless exempted, maintaining active membership in the accredited professional organization, and completing the required membership renewal payment. Additionally, the registration fees for the full three-year period must be paid.

2.6 Regulatory Laws

Regulatory laws governing the practice of the Electronics Engineering profession are established to uphold the highest standards of professional competence, ethics, and accountability. These laws define the qualifications for licensure, accreditation of electronics engineering program in academic institutions, set the scope of professional practice, and establish guidelines for continuing professional development. They are enforced by government bodies, ensuring that practitioners uphold both national and international standards, thereby safeguarding public safety and promoting the advancement of the Electronics Engineering field.

2.6.1 Republic Act No. 9292 "Electronics Engineering Law of 2004"

The act that governs the practice of electronics engineering in the Philippines. It provides the legal framework for the regulation, supervision, and control of individuals practicing as Professional Electronics Engineers (PECEs), Electronics Engineers (ECEs), and Electronics Technicians (ECTs).

Key provisions of RA 9292 include:

- Establishing qualifications for licensure and practice in the profession.
- Outlining the responsibilities of the Professional Regulatory Board of Electronics Engineering in administering licensure exams and regulating the profession.
- Setting standards for ethical practice, professional development, and disciplinary actions.
- Practice of the profession adheres to both local and global technological advancements and best practices.

RA 9292 was enacted to promote high standards of technical expertise and professional integrity, ensuring public safety and the growth of the electronics industry in the Philippines.

2.6.1.1 Implementing Rules and Regulations (IRR) by the Professional Regulatory Board of Electronics Engineering (Board of Electronics Engineering Resolution No. 02 Series of 2007)

The IRR provides the detailed guidelines for the implementation of Republic Act No. 9292 (Electronics Engineering Law of 2004). These rules serve to clarify, interpret, and apply the provisions of the law, ensuring its proper enforcement.

Key aspects of the IRR include:

- ***Licensure and Examination***: Procedures for conducting licensure exams for Professional Electronics Engineers (PECEs), Electronics Engineers (ECEs), and Electronics Technicians (ECTs), including the preparation of syllabi and exam content.
- ***Registration and Licensing***: Detailed requirements for the issuance of Certificates of Registration and Professional Identification Cards, and the conditions for maintaining active professional status.
- **Scope *of Practice***: Defining the scope of professional practice for PECEs, ECEs, and ECTs, including the legal responsibilities and boundaries of each level of professional qualification.
- ***Continuing Professional Development (CPD)***: Guidelines on the requirements for CPD compliance, in line with Republic Act No. 10912, as a condition for the renewal of professional licenses.
- ***Professional Ethics and Accountability***: Rules regarding professional conduct, including the imposition of penalties for violations of professional standards, malpractice, or unethical behavior.

The IRR facilitates the full implementation of the provisions of RA 9292 and effectively governs the profession, promoting standards that align with global practices while safeguarding the public interest in Electronics Engineering.

2.6.2 Code of Professional Ethics and Conduct for Registered and Licensed Electronics Practitioners (Board of Electronics Engineering Resolution No. 01 Series of 2013)

The code outlines the ethical standards and professional responsibilities expected of all licensed electronics engineering practitioners in the Philippines, including Professional Electronics Engineers (PECEs), Electronics Engineers (ECEs), and Electronics Technicians (ECTs). This code serves as a guide for maintaining the integrity, professionalism, and ethical conduct of all registered and licensed electronics practitioners in the Philippines.

Key principles of the code include:

- ***Professional Competence and Integrity:*** Practitioners must maintain high levels of knowledge, competence, and skill in their work. They are expected to engage in continuous learning and self-improvement to stay current with industry standards and technological advancements.
- ***Responsibility to the Public:*** Electronics practitioners are expected to prioritize public safety, welfare, and the environment in all their professional activities. They must ensure that their work complies with all legal standards and promotes the well-being of society.

- **Professional Conduct:** Practitioners must uphold honesty, transparency, and fairness in all professional dealings. This includes refraining from unethical practices such as fraud, misrepresentation, and conflicts of interest.
- **Confidentiality:** Electronics practitioners are obligated to respect the confidentiality of information obtained in the course of their work. They must not disclose proprietary or sensitive information without proper authorization or legal justification.
- **Respect for Others:** Practitioners must treat colleagues, clients, and the public with respect, fostering a collaborative and professional environment. This includes fair treatment regardless of race, gender, religion, or socioeconomic status.
- **Accountability:** Electronics practitioners are responsible for the outcomes of their work. They must accept responsibility for their professional decisions and actions, and take corrective measures when necessary.

2.6.3 Adoption, Issuance and Promulgation of the Enhanced Tables of Specifications for the Subjects in the Electronics Engineers Licensure Examination (Board of Electronics Engineering Resolution No. 10 Series of 2022)

The resolution introduces a revised and standardized framework for the content and scope of the licensure examination for Electronics Engineers (ECEs) in the Philippines. The adoption of this resolution ensures that the licensure examination remains a valid and reliable measure of an Electronics Engineer's qualifications, reflecting the latest developments in the profession and maintaining the integrity of the exam process.

Key points of the resolution include:

- **Enhanced Table of Specifications:** The resolution outlines an updated and comprehensive set of topics and subtopics that will be covered in the Electronics Engineers Licensure Examination. This ensures that the exam content is aligned with current industry practices, technological advancements, and the evolving demands of the profession.
- **Standardization of Exam Content:** The updated tables provide a clear, structured guide to the weight and distribution of topics across different subjects in the examination. This promotes fairness and consistency in the exam process as candidates are tested on relevant knowledge areas and competencies essential for electronics engineering practice.
- **Alignment with Global Trends:** The enhanced specifications take into account international best practices and global standards in the field of electronics engineering. This helps ensure that Filipino Electronics Engineers remain competitive in the global workforce by being tested on the most relevant and up-to-date topics in the field.

- *Preparation of Exam Questions:* The updated tables serve as the basis for the preparation of questions for the licensure examination. This ensures that the scope and difficulty of the questions accurately reflect the competencies required for professional practice as an Electronics Engineer.
- *Implementation and Monitoring:* The resolution mandates that the enhanced tables of specifications be implemented in subsequent licensure examinations. The Professional Regulatory Board of Electronics Engineering will also monitor the effectiveness of the updated framework to ensure it meets the evolving needs of the profession.

2.6.4 Guidelines on the Creation of a Career Progression and Specialization Program for the Electronics Engineering Profession (Board of Electronics Engineering Resolution No. 01 Series of 2021)

This resolution establishes a structured pathway for career advancement and specialization for registered Electronics Engineers (ECEs) in the Philippines. The resolution aims to elevate the professional practice of Electronics Engineers by promoting expertise in specialized fields, improving career growth opportunities, and aligning the profession with global standards.

Key objectives of the program include:

- *Career Advancement:* The program provides clear guidelines for Electronics Engineers to progress in their careers, offering pathways to achieve higher professional standing such as becoming a Professional Electronics Engineer (PECE) or pursuing specializations in particular fields of electronics engineering.
- *Specialization Tracks:* Electronics Engineers can pursue specific areas of specialization based on industry needs, technological advancements, and personal career goals. These specializations ensure that professionals develop expertise in fields that are essential for the growth of the profession and the electronics industry in general.
- *Competency Standards:* The program sets competency-based standards for career progression and specialization. These standards outline the skills, knowledge, and experience required at different levels of professional practice, meeting both local and international benchmarks.
- *Continuing Professional Development (CPD):* The guidelines emphasize the importance of lifelong learning through CPD. Electronics Engineers are encouraged to engage in ongoing education and training to enhance their expertise and remain competitive in a rapidly evolving technological landscape.
- *Recognition of Specialization:* Upon meeting the necessary qualifications and standards, Electronics Engineers will receive formal recognition of their specialization. This recognition improves their

professional standing and provides greater opportunities for career advancement, both locally and globally.

2.6.5 Promulgation and Adoption of the Tables of Specification for Oral Examination/Technical Evaluation for the Upgrading as Professional Electronics Engineers (Board of Electronics Engineering Resolution No. 02 Series of 2019)

This resolution establishes a formal framework for conducting oral examinations and technical evaluations for candidates seeking to upgrade their licensure to Professional Electronics Engineer in the Philippines. It provides structured tables outlining specific competencies, and skills that candidates must demonstrate during the oral examination through a standardized assessment process with clear evaluation criteria. By defining these requirements, the resolution enhances the professionalization of the field and ensures that only qualified individuals attain the Professional Electronics Engineer designation, ultimately contributing to the integrity and quality of the licensure process.

2.6.6 Republic Act No. 10912 "Continuing Professional Development (CPD) Act of 2016"

This law mandates the continuous enhancement of competencies among all regulated professionals in the Philippines. It establishes the requirement for professionals to undergo continuing education and development activities to ensure they remain knowledgeable, updated, and competitive in their respective fields.

Key points of RA 10912 include:

- *CPD Requirement for License Renewal:* All licensed professionals, including Professional Electronics Engineers (PECEs), Electronics Engineers (ECEs), and Electronics Technicians (ECTs), must comply with CPD requirements as a condition for the renewal of their Professional Identification Cards. The required number of CPD units varies by profession.
- *CPD Programs and Providers:* The Professional Regulation Commission (PRC) accredits CPD programs and providers, confirming compliance with the standards for professional development. These programs may include seminars, workshops, training, self-directed learning, and other related activities.
- *Objective:* The CPD Act aims to foster lifelong learning and professional growth making certain that professionals keep pace with advancements, technologies, and innovations relevant to the field. It also promotes ethical practice and global competitiveness.
- *Exemptions and Grace Periods:* In some cases, professionals may be exempted from CPD requirements or granted a grace period, subject to

PRC regulations. These exemptions typically apply to newly licensed professionals or those facing extenuating circumstances.

2.6.7 Republic Act No. 10968 "Philippine Qualifications Framework (PQF) Act"

An act enacted to establish a national system for recognizing and standardizing qualifications for educational achievements, training, and employment across different sectors in the Philippines. RA 10968 provides a structured framework for ensuring quality education and training in the Philippines, aligning it with the needs of the workforce and promoting international recognition of Filipino qualifications.

Key elements of RA 10968 include:

- **Establishment of the PQF**: The Philippine Qualifications Framework (PQF) is a system that defines the levels of educational qualifications and sets standards for learning outcomes. It aligns educational and training systems to ensure graduates possess the necessary skills and competencies for the workforce.
- **Qualification Levels**: The PQF consists of levels that classify qualifications from basic education to post-graduate studies, including technical-vocational education and training (TVET). Each level corresponds to a set of knowledge, skills, and competencies, helping to streamline transitions between educational systems and industries.
- **Lifelong Learning and Global Recognition**: The PQF promotes lifelong learning by providing clear pathways for career advancement, skill development, and continuing education. It also aims to make Philippine qualifications comparable to international standards, improving global mobility for Filipino workers and professionals.
- **Interagency Collaboration**: The law creates the Philippine Qualifications Framework-National Coordinating Council (PQF-NCC), comprising representatives from the Department of Education (DepEd), Commission on Higher Education (CHED), Technical Education and Skills Development Authority (TESDA), Department of Labor and Employment (DOLE), and the Professional Regulation Commission (PRC). This council is tasked with overseeing and implementing the PQF.
- **Benefits to Employers and Learners**: The PQF ensures that educational institutions and training programs produce graduates with relevant competencies, making it easier for employers to identify qualified candidates. It also helps learners plan and navigate their educational and career pathways more effectively.

CODES AND STANDARDS UTILIZATION IN THE PHILIPPINES

SECTION 3. CODES AND STANDARDS UTILIZATION IN THE PHILIPPINES

3.1 Philippine Electronics Codes

The Philippine Electronics Code serves as a comprehensive framework for the standards and practices in the field of electronics engineering across various critical applications.

- **Philippine Electronics Code Volume 1 "Telecommunications Facilities Distribution System"**

    Philippine Electronics Code Volume 1 provides basic provisions considered necessary for safety, good workmanship, proper installation, operation and maintenance of a building's cable system, wiring and equipment facilities.

- **Philippine Electronics Code Volume 2 "Fire Detection and Alarm System"**

    Philippine Electronics Code Volume 2 covers the design and application, installation, maintenance, testing, and inspection of fire detection and alarm system. It defines the means of signal initiation, transmission, notification, annunciation, emergency two-way communication, and emergency voice evacuation in fire detection and alarm system. It also establishes the minimum

required levels of performance and quality of installation, however, this code does not cover fire suppression system.

- **Philippine Electronics Code Volume 3 "Cable Television System"**

    Philippine Electronics Code Volume 3, harmonizing with various local and international cable television system standards, provides design and application, installation, maintenance, testing, and inspection of Cable TV system. Relevant data from other standards, which are compatible and applicable to the cable TV operations in the Philippines, were chosen and incorporated in this Code. However, this code is not a replacement for reading and understanding the actual standards to which it refers.

- **Philippine Electronics Code Volume 4 "Distributed Antenna System**

    Philippine Electronics Code Volume 4 covers the design, installation, maintenance, and testing of wireless in-building system to include, services using 4G, 5G and even future 6G wireless access technology.

3.2 International Codes and Standards

The following standards bodies and professional organizations are significant in developing industry-related technologies and standards. The primary goal of these organizations is to develop and share technology and information for the benefit of the industry.

- **International Organization for Standardization,** based in Geneva, Switzerland, is the largest developer and publisher of International Standards. A non-governmental organization, ISO is a network of the national standards institutes in many countries around the world. Some of the ISO standards used in the electronics engineering field include the following:

    o IEC 60603-7:1996-11, Connectors for electronic equipment – Part 7-1: Detail specification for connectors, 8 way, shielded free and fixed connectors with common mating features, with assessed quality.

    o IEC 60603-7-1:2002-01, Connectors for frequencies below 3 MHz for use with printed boards – Part 7: Detail specification for connectors, 8 way, including fixed and free connectors with common mating features.

    o IEC 60603-7-2: Detail specification for 8 way connectors, with assessed quality, including fixed and free connectors with common mounting features; test methods and related requirements for use at frequencies up to 100 MHz

- IEC 60603-7-3: Detail specification for 8 way connectors, with assessed quality, including fixed and free connectors with common mounting features; test methods and related requirements for use at frequencies up to 100 MHz

- IEC 60603-7-4: Connectors for electronic equipment: Detail specification for an 8 way connector, with performance up to 250 MHz

- IEC 60603-7-5: Detail specification for 8 way connectors, with assessed quality, including fixed and free connectors with common mounting features; test methods and related requirements for use at frequencies up to 100 MHz

- IEC 60603-7-7:2002, Connectors for use in d.c., low frequency analogue and in digital high speed data applications – Part 7-7: 8 way connectors for frequencies up to 600 MHz [Category 7 Detail Specification]

- EC 60793-2-10, Optical fibers – Part 2-10: Product specifications - Sectional specification for Category A1 multimode fibers

- IEC 60793-2-50, Optical fibers – Part 2-50: Product specifications - Sectional specification for Class B single-mode fibers

- IEC 60794-3 (all parts): Optical fiber cables – Part 3: Sectional specification - Outdoor cables

- IEC 60794-7: Optical fiber cables – Part 2: Product specification (indoor cable)

- IEC 60825 (all parts): Safety of laser products

- IEC 60874-1:1999 Connectors for optical fibers and cables – Part 1: Generic specification

- IEC 60874-14 (all parts), Connectors for optical fibers and cables – Part 14: Sectional specification for fiber optic connector – Type SC

- IEC 60874-19 (all parts), Connectors for optical fibers and cables – Part 19: Sectional specification for fiber optic connector – Type SC Duplex

- IEC 60874-19-1:1999, Connectors for optical fibers and cables – Part 19-1: Fiber optic patch cord connector type SC-PC (floating duplex) standard terminated on multimode optical fiber type A1a, A1b – Detail specification

o IEC 60874-19-2:1999, Connectors for optical fibers and cables – Part 19-2: Fiber optic adaptor (duplex) type SC for single-mode fiber connectors – Detail specification

o IEC 60874-19-3:1999, Connectors for optical fibers and cables – Part 19-3: Fiber optic adaptor (duplex) type SC for multimode fiber connectors – Detail specification

o IEC 61073-1: Mechanical splices and fusion splice protection for optical fibers and cables – Part 1: Generic specification

o IEC 61076-3-104: Connectors for electronic equipment – Part 3-104: Detail specification for 8 way, shielded free and fixed connectors, for data transmission with frequencies up to 1000 MHz

o IEC 61156 (all parts), Multicore and symmetrical pair/quad cables for digital communications

o IEC 61156-1:1994, Multicore and symmetrical pair/quad cables for digital communications – Part 1: Generic specification

o IEC 61156-1 Am2:2001-06, Amendment 2

o IEC 61156-2, Multicore and symmetrical pair/quad cables for digital communications – Part 2: Horizontal floor wiring - Sectional specification

o IEC 61156-3, Multicore and symmetrical pair/quad cables for digital communications – Part 3: Work area wiring - Sectional specification

o IEC 61156-4, Multicore and symmetrical pair/quad cables for digital communications – Part 4: Riser cables - Sectional specification

o IEC 61156-5:2002-03, Multicore and symmetrical pair/quad cables for digital communications – Part 5: Symmetrical pair/quad cables with transmission characteristics up to 600 MHz – Horizontal floor wiring - Sectional specification

o IEC 61156-6:2002-03, Multicore and symmetrical pair/quad cables for digital communications – Part 6: Symmetrical pair/quad cables with transmission characteristics up to 600 MHz – Work area wiring - Sectional specification

o IEC 61300-3-34:2001-12, Fiber optic interconnecting devices and passive components – Basic Test and measurement procedures – Part 3-34: Examinations and measurements – Attenuation of random mated connectors

- o IEC 61753-1-1:2000-11, Fibre optic interconnecting devices and passive component performance standard – Part 1-1: General and guidance – Interconnecting devices (connectors)

- o IEC 61935-1, Generic specification for the testing of generic cabling in accordance with ISO/IEC 11801 – Part 1: Installed cabling

- o IEC 61935-2, Generic cabling systems – Specification for testing of balanced communication cabling in accordance with ISO/IEC 11801 – Part 2: Patch cord and work area cabling ISO/IEC 11801 Ed.1:1995, Information Technology – Generic cabling for customer premises

- o ISO/IEC 11801 Ed.1.2:2000, Information technology – Generic cabling for customer premises

- o ISO/IEC 14763-1: Information technology – Implementation and operation of customer premises cabling – Part 1: Administration

- o ISO/IEC 14763-2: Information technology – Implementation and operation of customer premises cabling – Part 2: Planning and installation

- o ISO/IEC 14763-3: Information technology – Implementation and operation of customer premises cabling – Part 3: Testing of optical fibre cabling

- o ITU-T Rec. G652:1993, Characteristics of a single-mode mode optical fibre cable

- **American National Standards Institute** facilitates the development of American National Standards (ANS) by accrediting the procedures of standards developing organizations. The Institute oversees the creation, circulation and use of thousands of rules and guidelines that directly affect businesses in nearly every sector. Pertinent provisions, especially safety guidelines on the installations, operations and maintenance of electronics systems and equipment are adopted as applicable.

- **British Standards Institute (BSI),** a non-profit distributing organization, publishes technical standards on a wide range of products and services. It also supplies certification and standards-related services. Selected BSI standards are used as reference in the design, installations, operations and maintenance of electronics systems and equipment. Some of these are:

  - o BS EN 62676-4:2015 Video Surveillance Systems for use in security applications. Applications Guidelines
  - o BS 7958:2015 Closed Circuit Television (CCTV). Management and operation. Code of Practice

- o BS 8495:2007 Code of Practice for Digital CCTV recording systems for the purpose of image export to be used as evidence
- o BS EN 50130-4:2011+A1:2014 Immunity requirements for components of fire, intruder, hold up, CCTV, access control and social alarm systems
- o BS 8418:2015+A1:2017 Installation and remote monitoring of detector-activated CCTV systems. Code of Practice.
- o BS EN ISO 1106404:2013 Ergonomic design of control centers. Layout and dimensions of workstations.

- **National Electric Code (NEC)or NFPA 70/NEC** is the benchmark for addressing electronics/electrical installations in residential, commercial, and industrial settings. The NEC Codes specific to electronics engineering field are:

  - o NEC Article 800 – Communications Circuits
  - o NEC Article 270 – Optical Fibers Cables and Raceways
  - o NEC Article 250 – Grounding and Bonding

- **Canadian Standards Association** is a standards development organization that serves the public and private industries and consumers in Canada and abroad. The CSA develops standards that address public safety and health.

- **Canadian Electric Code or CSA 22.1** is the national electric code recognized in Canada. CEC Codes that address electronics systems are:

  - o Section 60 – Electrical Communications System
  - o Section 56 – Optical Fiber Cables
  - o Section 10 – Grounding and Bonding

3.3 International Institutes and Organizations

- **Institute of Electrical and Electronics Engineers (IEEE)** is the world's leading professional association for the advancement of technology. IEEE is the principal authority on areas ranging from aerospace systems, computers and telecommunications to biomedical engineering, electric power and consumer electronics. It promotes the engineering process of creating, developing, integrating, sharing and applying knowledge. IEEE provisions related to electronics engineering are as follows:

  - o 802.3 – Ethernet Standards
  - o 802.3af – Power over Ethernet (PoE) Standard
  - o 802.3at – Power over Ethernet (PoE) + (Plus) Standard
  - o 802.3bt – 4-Pair Power over Ethernet (4PPoE) Standard
  - o 802.11 – Wireless Local Area Networks (WLANs)

- **Telecommunications Industry Association (TIA)** is the primary standard used in North America representing the telecommunications portion of the EIA. The TIA standards create a universal, structured cabling topology to support voice, data and video for the commercial, campus and residential environments. The TIA standards associated to electronics engineering field of practice are as follows:

  - TIA 568-C: Commercial Building Telecommunications Cabling Standard
  - TIA 568-C.4: Broadband Coaxial Cabling and Components Standard
  - ANSI/TIA/EIA 568-B: Commercial Building Telecommunications Cabling Standard (2001)
  - ANSI/TIA-568.0-E: Generic Telecommunications Cabling for Customer Premises.
  - ANSI/TIA-568.1-E: Commercial Building Telecommunications Cabling.
  - ANSI/TIA-862-C: Structured Cabling Infrastructure Standard for Intelligent Building Systems
  - TIA 569: Commercial Building Standard for Pathways and Spaces
  - TIA 570: Residential and Light Commercial Telecommunications Cabling Standard
  - TIA 606: Administration Standard for Commercial Telecommunications Infrastructure
  - TIA 607: Commercial Building Grounding and Bonding Requirements for Telecommunications
  - TIA 758: Customer Owned Outside Plant Telecommunications Standard
  - TIA 942: Telecommunications Infrastructure Standard for Data Centers
  - TIA 1005-A: Telecommunications Infrastructure Standard for Industrial Premises
  - TIA 1179-A: Healthcare Facility Telecommunications Infrastructure Standard

- **British Security Industry Association (BSIA)** is a trade association representing the professional security industry in the UK and serves as the main trade body for security companies, providing services and standards across various sectors such as Physical security (e.g., security guarding, access control, CCTV systems), Cybersecurity, Fire protection, and Cash and valuables in transit. It also includes guidelines on:

  - Planning, Design, Installation and Operation of CCTV Surveillance Systems Code of Practice and Associated Guidance Issue 4, July 2014
  - Cyber Secure It – Best Practice Guidelines for Connected Security Systems Form No. 335 Issue 1.0 January 2019

- **Building Industry Consulting Service International (BICSI)** is a professional association supporting the information transport systems (ITS) industry. BICSI provides information, education and knowledge assessment for individuals and companies in the ITS industry. This includes the following:

- o Telecommunication Distribution Methods Manual 14th Edition
- o Electronic Safety and Security Design Reference Manual

- **Open Network Video Interface Forum (ONVIF)** is a global, industry-led standardization initiative focused on facilitating the interoperability of IP-based physical security products, such as network cameras, video recorders, and access control systems. Founded in 2008 by leading security companies, ONVIF's primary goal is to create a common protocol for the exchange of information between devices from different manufacturers, enabling seamless integration across systems. This includes:

  - o Profile A Specification (for Access Control Configuration)
  - o Profile C Specification (for Door Control and Event Management)
  - o Profile G Specification (for Edge Storage and Retrieval)
  - o Profile Q Specification (for Quick Installation)
  - o Profile S Specification (for Basic Video Streaming)
  - o Profile T Specification (for Advanced Video Streaming)

- **Armed Forces Communications and Electronics Association (AFCEA)** is a non-profit membership association serving the military, government, industry, and the academic world as an ethical forum for the advancing professional knowledge and relationships in the fields of communications, information technology, intelligence, and global security.

  Some publications associated with the electronics engineering field of practice:

  - o National Institute of Standards and Technology (NIST) Special Publication 800-115
  - o PCI Data Security Standard (PCI DSS) Version 1.1

LOCAL LAWS ON PERMITS

SECTION 4. LOCAL LAWS ON PERMITS

4.1 Laws, Circulars, and Ordinances Relevant to Electronics Permit Implementation

4.1.1 Board of Electronics Engineering Memorandum Circular No. 2009-23 Series of 2009

In accordance with Sections 3 and 29 of RA 9292, Board Resolution No. 01 Series of 2007, and the revised Implementing Rules and Regulations of the National Building Code, ***all City and Municipal Building Officials and Engineers are directed to comply with specific requirements for processing and approval of Electronics Permits for buildings and structures***. These regulations, aligned with the Philippine Electronics Engineering Act of 2004, and the directives from the Department of Public Works and Highways, under P.D. No. 1096, the National Building Code of the Philippines, are summarized below:

1. To require that the Electronic Plan for Buildings and Structures, submitted by the building owner(s) as part of their building permit application, be prepared, signed, and sealed by a registered and licensed Professional Electronics Engineer (PECE).

   The design plans, which the registered and licensed Professional Engineer shall prepare, sign, and seal, include the following:

   a) Location and Vicinity Plan;
   b) General layout plans with legends
   c) Rider Diagram
   d) Isometry of the system
   e) Equipment specifications
   f) Design analysis, As Applicable
   g) Cost Estimates

2. To require building owners who have been issued a building permit to engage the services of duly licensed and registered Professional Electronics Engineers (PECEs) to undertake the full-time inspection and supervision of the works. Additionally, to require that the certificate of completion for the project be prepared and signed by licensed and registered Professional Electronics Engineers, stating that the works conform to the approved plans and specifications.

3. To engage and assign only a licensed and registered PECE/ECE as part of the staff of the Office of the City/Municipal Building Official to evaluate Electronics Engineering plans, designs, and other related documents for compliance with the Philippines Electronic Code adopted and promulgated by the Board.

All licensed Professional Electronics Engineers must use a Board-prescribed seal with their name, registration number, and title. The seal, which must include the engineer's current Professional Tax Receipt (PTR) number, payment details, and Accredited Professional Organization membership number, should be stamped on each page of technical documents they prepare or supervise when submitting to government authorities or for professional use.

4.1.2 Department of Interior and Local Government Memorandum Circular No. 2013-01 Series of 2013

The circular provides guidelines for the implementation of the Philippine Electronics Engineering Act of 2004 (Republic Act No. 9292) at the local government level. It reiterates the responsibilities of the local government units (LGUs) in enforcing the provisions of the law, including the issuance of electronics permits, compliance with technical standards, and the qualification of professionals involved in electronics projects. It emphasizes the need for coordination among various government agencies to simplify the permitting processes and to enhance the delivery of services related to electronics engineering works.

The memorandum aims to strengthen the local government's capacity to effectively regulate and oversee electronics engineering activities within their jurisdictions.

4.1.3 DILG-DPWH-DICT-DTI Amended Joint Memorandum Circular No. 2021-01 Series of 2021

Amended Joint Memorandum Circular No. 2021-01 serves to revise the previously established DILG-DPWH-DICT-DTI Joint Memorandum Circular 2018-01, which outlines the guidelines for processing construction-related permits. This amendment focuses on improving the efficiency and effectiveness of the permitting processes, emphasizing the need for a more streamlined approach to handling various types of construction permits, including those related to electronics.

In relation to electronics permits, the following are stipulated:

1. The circular provides updated instructions for local government units (LGUs) and other relevant authorities on the proper processing of electronics permits in compliance with the Philippine Electronics Engineering Act and related regulations.

2. It emphasizes the importance of coordination between the Department of the Interior and Local Government (DILG), Department of Public Works and Highways (DPWH), Department of Information and Communications Technology (DICT), and Department of Trade and Industry (DTI) to facilitate the efficient approval of electronics permits.

3. The circular establishes standardized procedures for the submission and evaluation of electronics permits, reducing delays and uncertainties in the permitting processes.

4. It reinforces the necessity for compliance with technical standards and requirements specific to electronics projects and underpins that all permits issued meet the necessary regulations for safety and quality.

4.2 Permit Requirements

4.2.1 Electronics Permit

Following national standards and safety regulations, electronics permits serve as a formal acknowledgment that the proposed designs, plans, and installations have been thoroughly reviewed and approved by qualified electronics engineering professionals, as stipulated in RA 9292 and related laws. These permits safeguard public welfare and promote accountability in all electronics engineering projects, enhancing the overall quality and integrity of engineering practices and facilitating regulatory oversight in the implementation of electronics system installations within various structures.

To apply for and secure an Electronics Permit for building and structure projects under the National Building Code of the Philippines, the NBC Form No. A-07 (shown in the images below) is utilized. The form requires detailed information about the project, including technical specifications, the qualifications of the involved professionals, and compliance with relevant safety and engineering standards.

Checklist of Requirements for Electronics Permit

1. Electronics plans (coincide with other plans of all sections)
2. General layout plans with legends
3. Single line diagram
4. Riser diagram
5. Isometry of the system
6. Unit/Equipment specifications
7. Design analysis (as applicable)
8. Cost estimates

NBC FORM NO. A-07

Republic of the Philippines
City/Municipality
OFFICE OF THE BUILDING OFFICIAL

ELECTRONICS PERMIT

APPLICATION NO.	ELP No.	BUILDING PERMIT NO.
☐☐☐☐☐☐☐☐☐☐	☐☐☐☐☐☐☐☐☐☐	☐☐☐☐☐☐☐☐☐☐

BOX 1 (TO BE ACCOMPLISHED IN PRINT BY THE APPLICANT)

OWNER/APPLICANT	LAST NAME	FIRST NAME	M.I	TIN
FOR CONSTRUCTION OWNED BY AN ENTERPRISE	FORM OF OWNERSHIP		USE OR CHARACTER OF OCCUPANCY	

ADDRESS: NO. STREET	BARANGAY	CITY CEBU	ZIP CODE 3000	CONTACT NO./EMAIL ADDRESS

LOCATION OF CONSTRUCTION: LOT NO.   BLK NO.   TCT NO.   TAX DEC. NO.

STREET _____ BARANGAY _____ CITY .

SCOPE OF WORK

NEW INSTALATION   ANNUAL INSPECTION   OTHERS (Specify)

BOX 2 (TO BE ACCOMPLISHED BY THE DESIGN PROFESSIONAL)

NATURE OF INSTALLATION WORKS/EQUIPMENT SYSTEM:

☐ TELECOMMUNICATION SYSTEM   ☐ ELECTRONICS FIRE ALARM SYSTEM   ☐ ELECTRONICS COMPUTERIZED PROCESS CONTROLS AUTOMATION SYSTEM

☐ BROADCASTING SYSTEM   ☐ SOUND COMMUNICATION SYSTEM   ☐ BUILDING AUTOMATION MANAGEMENT AND CONTROL SYSTEM

☐ TELEVISION SYSTEM   ☐ CENTRALIZED CLOCK SYSTEM

☐ INFORMATION TECHNOLOGY SYSTEM   ☐ SOUND SYSTEM   ☐ BUILDING WIRING UTILIZING COPPER CABLE FIBER OPTIC CABLE OR OTHER MEDIAL ELECTRONICS SYSTEM

☐ SECURITY AND ALARM SYSTEM   ☐ ELECTRONICS CONTROL AND CONVEYOR SYSTEM

☐ ANY OTHER ELECTRONICS AND I.T SYSTEMS, EQUIPMENT, APPARATUS, DEVICE AND/OR COMPONENT (Specify)

PREPARED BY: _____

BOX 3	BOX 4
DESIGN PROFESSIONAL, PLANS AND SPECIFICATION	FULL-TIME INSPECTOR AND SUPERVISOR OF CONSTRUCTION WORKS

	Date:			Date:
PROFESSIONAL ELECTRONICS ENGINEER (Signed and Sealed Over Printed name)			ELECTRONICS ENGINEER (Signed and Sealed Over Printed name)	
Address		Address	
PRC. No.	Validity	PRC. No.	Validity
PTR No.	Date Issued	PTR No.	Date Issued
Issued at	TIN	Issued at	TIN

BOX 5	BOX 6
BUILDING OWNER	WITH MY CONSENT: LOT OWNER

_____ (Signature over Printed name) Date:_____			_____ (Signature over Printed name) Date:_____		
Address			Address		
C.T.C. No.	Date Issued	Place Issued	C.T.C. No.	Date Issued	Place Issued

BOX 7

RECEIVED BY:	DATE:

<table>
<tr><td colspan="2" align="center">FIVE (5) SETS OF ELECTRONICS DOCUMENTS</td></tr>
<tr><td>☐ELECTRONICS PLAN AND SPECIFICATIONS</td><td>☐ COST ESTIMATE</td></tr>
<tr><td>☐BILL OF MATERIALS</td><td>☐OTHERS (Specify) _____</td></tr>
</table>

BOX 8

	IN		OUT		PROCESSED BY
PROGRESS FLOW					
	DATE	TIME	DATE	TIME	
ELECTRONICS					
OTHERS (Specify)					

BOX 9

ACTION TAKEN:

PERMIT IS HEREBY ISSUED SUBJECT TO THE FOLLOWING:

1. That the proposed electronics works shall be in accordance with the electronics plans filed with this Office and in conformity with the latest Electronics Code of the Philippines, the National Building Code and its IRR.

2. That prior to any electronics installation, a duly accomplished prescribed "Notice of Construction" shall be submitted to the Office of the Building Official.

3. That upon completion of the electronics works, the licensed supervisor/in-charged shall submit the entry to the logbook duly signed and sealed to the building official including as-built plans and other documents and shall also accomplish the Certificate of Completion stating that the electronic works conform to the provision of the Electronics Code of the Philippines, the National Building Code and its IRR.

4. That this permit is null and void unless accompanied by the building permit.

PERMIT ISSUED BY:

_____
BUILDING OFFICIAL
(Signature Over Printed Name)
Date _____

4.2.2 Certificate of Annual Inspection

Authorized government building officials conduct inspections of various structures within their jurisdiction to verify the structural stability of buildings and compliance with architectural, electrical, mechanical, electronics, plumbing, sanitary, and safety standards before issuing or renewing Certificates of Occupancy or Permits to Use.

To obtain Annual Inspection Certificates, compliance with requirements outlined by the National Building Code is necessary, with details available from the Office of the Building Official. These requirements may vary by locality, making it essential to consult local ordinances and regulations for any specific conditions.

4.3 Authority to Contact

The process of obtaining electronics permits is guided by both national regulations and local ordinances, with designated authorities overseeing compliance and enforcement. Electronics Engineering professionals involved in electronics engineering projects must familiarize themselves with the local regulations and engage with the relevant departments and agencies to facilitate a smooth permitting process.

1. *Department of the Interior and Local Government (DILG):* Oversees local government units and monitors compliance with regulations related to electronics permits.

    o   https://www.dilg.gov.ph/

2. *Department of Public Works and Highways (DPWH):* Responsible for the implementation of building codes and regulations, including those relevant to electronics engineering.

    o   https://www.dpwh.gov.ph/

3. *Department of Information and Communications Technology (DICT):* Provides guidance on telecommunications and electronics standards that may be applicable to projects.
    o   https://dict.gov.ph/

4. *Department of Trade and Industry (DTI):* Facilitates business permits and may offer additional resources related to electronics engineering standards and practices.

    o   https://www.dti.gov.ph/

5. *Local Government Units (LGUs):* The specific local offices responsible for processing permits and verifying compliance with local ordinances and regulations.

6. *Bureau of Fire Protection (BFP):* Verifies compliance with fire safety regulations.

    o   https://bfp.gov.ph/

7. *Environmental Management Bureau (EMB):* If applicable, may provide guidance on environmental compliance and permits related to electronics engineering projects.

    o   https://emb.gov.ph/

Section 5

SPECIALIZATION

SECTION 5. SPECIALIZATION

Specialty Societies of Electronics Engineers of the Philippines

5.1 General Provisions

The **Specialization Program for Electronics Engineers of the Philippines** aims to support members in their professional practice and career advancement, aligning with the definitions and interpretations established in RA 9292 and RA 10968 (Philippine Qualifications Framework). The *Electronics Engineering Societies* are dedicated to meeting the needs of their members as outlined in RA 9292, promoting growth in the global arena, including participation in the ASEAN and APEC Engineers Registry under the World Trade Organization (WTO) mandate.

Operating under the principle of "unity in diversity," the integrated Specialty Society, in coordination with the Institute of Electronics Engineers of the Philippines (IECEP Inc.), empowers members by directing programs and activities for their collective benefit.

The Electronics Engineering Specialty Societies holds several classes of meetings, including:

- *Annual General Meeting:* Conducted alongside the Annual Convention of IECEP Inc.
- *Society Meetings:* Held at least once a month or as needed by each respective Society.
- *Special Meetings:* Convened for urgent matters that cannot wait for the annual meeting, initiated by Specialty Society Officers or requested in writing by at least 25 voting members.
- *Specialty Officer Meetings:* Monthly meetings for Specialty Officers to conduct official business.
- *Electronics Engineering Specialty Conferences:* Organized by various specializations or sub-specializations, requiring approval from the IECEP National Board of Directors (BOD).
- *IECEP National Specialization Governance Meetings:* Monthly meetings between the IECEP National Specialty Societies and IECEP Inc., led by the IECEP-NSS Chairman.

5.1.1 Duties and Responsibilities of the Electronics Engineering Specialty Societies

- Identify qualification requirements and standards of professional practice as required by the qualification title.
- Recognize specialty board which conducts assessment.
- Endorse the professional portfolio of their accredited Specialists to the Career Progression and Specialization Program – Credit and Accreditation Transfer System (CPSP-CATS) Committee for validation.

- Guarantee the authenticity of duly accomplished application forms and supporting documents submitted by the applicants for assessment of competencies and qualifications.
- Apply for accreditation with the concerned CPD Council the programs, trainings, seminars, and/or workshops for the trainees to earn CPD credit units for the renewal of their PICs.
- Conduct faculty enhancement programs to update faculty members teaching the specific subjects of specialty and continuing development programs for their members.
- Provide required data sets of its members to the Board of Electronics Engineering (BECE) and the Professional Regulatory Commission (PRC), if requested, if requested.
- Perform such other duties and responsibilities as reasonably directed by the PRC and/or BECE.
- Establish a Technical Working Group within their Specialization to adopt, release, and implement technical standards in their line of Specialization, which will be regularly reviewed, updated, and incorporated in the PECE Book.
- Establish a Safety Board to serve as the Technical Consultant that will be the Subject Matter Experts for investigations pertaining to any accident or incident of all Electronic Systems, Assets, infrastructures, or any related end-user devices that are covered under the Specialty Societies.
- Select and award an Outstanding Electronics Engineer of their respective Specialization announced at every Annual General Membership Convention. Criteria and processes will be agreed upon by corresponding Specialty Societies and will be approved by their respective Society Officers and the IECEP BODs through the endorsement of the IECEP NSS Chairman.

5.2 Organizational Structure and Membership

The organizational structure of the Electronics Engineering Specialty Societies consists of two core groups: **the IECEP National Specialty Societies (IECEP-NSS) and the Specialty Boards (SB).**

The IECEP-NSS, led by the IECEP-NSS Chairman, includes Specialty Society Officers, Assessors, and Sub-Specialization Leads, while each Specialty Board is composed of a chairman and two members.

The Institute of Electronics Engineers of the Philippines (IECEP Inc.), as the Accredited Professional Organization (APO), appoints an Overall Chairman to oversee the status of the IECEP-NSS. The IECEP-NSS collaborates with National Committees by submitting interests and activities for approval, whereas the Specialty Boards operate independently in matters of assessment and certification for Level 8 Qualifications.

Membership in each IECEP NSS is limited to active IECEP members within the specific specialization, with the national body managing the membership database. Specialty Officers for the IECEP NSS are elected every three years and may serve a maximum of six consecutive years. Each Specialty Board functions autonomously from the IECEP-NSS and IECEP Inc.

Number	Specialization
1	Biomedical Electronics
2	Computer / Information and Communications Technology (ICT)
3	Broadcasting
4	Telecommunications
5	Building Electronics and Auxiliary Systems
6	Instrumentation and Control
7	Microelectronics
8	Power Electronics
9	Emerging Technologies and Related / Convergent Fields
10	Project Management and Engineering Management
11	Electronics Engineering Education

5.3 Membership and Qualifications

The membership structure for the Society is categorized into three grades:

a. **Honorary Member**: Individuals of notable social standing or leadership can be nominated to this grade by invitation, requiring unanimous approval from Specialty Officers and written acceptance from the nominee. A maximum of two Honorary Members may be conferred annually.

b. **Member**: Practicing Electronics Engineering (ECE) professionals with valid licenses are automatically eligible for membership at no cost, provided they notify IECEP Inc. and the National Specialty Society.

c. **Associate Member**: Candidates with at least three years of active practice in electronics or related fields, but without valid licenses, must fill out an application and pay dues. Approval is required from Specialty Society Officers and endorsement by the IECEP Board of Directors.

All members receive a membership certificate free of charge, while elected officers receive an election certificate detailing their position. An official roster of members is maintained by the National Specialization Society's Secretary and submitted to IECEP Inc.

Specialty and Sub-Specialty Field

Specialty Field	Specialty Sub-Field
1. Biomedical Electronics	Healthcare Technology Management Research and Development / Academe Regulatory
2. Computer / Information and Communications Technology	Infrastructure (Hardware, Networks, Systems, Cloud, Data Center, IoT) Application (Enterprise Application, Application Development) Security (Network Security, Cybersecurity) Management, Strategy, and Governance (ICT Governance, ICT Management, Stakeholder Relations, Service Management, Risk Management, Project Management)
3. Broadcasting	Audio Engineering Video Engineering Transmission Engineering RF Engineering Network Engineering Post-Production Engineering Technical Operations Studio Engineering
4. Telecommunications	Data communications Wireless communications Microwave communications Terrestrial communications
5. Building Electronics and Auxiliary Systems	Building Management and Integration Systems Fire Detection and Alarm Systems Closed Circuit Television Door Access Control Systems Background Music and Public Address System Data Center Monitoring Systems

6. Instrumentation and Control	SCADA	
	Communications and Signal Processing	
	Robotics / Mechatronics	
	Instrumentation and Metrology	
7. Microelectronics	Integrated Circuit Design	
	Analog Electronics	
	Digital Electronics	
	Semiconductor Fabrication	
	VLSI Design	
	Photonics	
	Embedded Systems	
8. Power Electronics	Renewable Energy	
	Telecommunication, ICT and Data Center Power Systems	
	Consumer Power Electronics	
	Automobile and Mass Transportation Power Systems	
	Industrial and Control Power Systems	
	Space and Military Power Systems	
	Utility and Smart Grid Power Systems	
	Research and Development	
	Regulatory and Compliance	
9. Emerging Technologies and Related / Convergent Fields	Emerging Technologies (A.I., Machine Learning, Data Science, GIS)	
10. Project Management and Engineering Management	AGILE	
	SCRUM	
	Project Scheduling	
	Cash Flow Analysis	
	Risk Management	
	Leadership	
11. Electronics Engineering Education	Basic Electronics	
	Advanced Electronics	
	Basic Communications	

	Advanced Communications
	Advanced Mathematics
	General Engineering and Applied Sciences

MUTUAL RECOGNITION ARRANGEMENT COMPLIANCE

SECTION 6. MUTUAL RECOGNITION ARRANGEMENT COMPLIANCE

The **ASEAN Mutual Recognition Arrangement (MRA) on Engineering Services** represents a significant initiative among the ASEAN Member Countries, including ***Brunei Darussalam, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Vietnam***. This agreement aims to enhance cooperation in the engineering services sector, thereby improving the efficiency and competitiveness of service providers across the region.

The arrangement is rooted in the objectives of the ASEAN Framework Agreement on Services (AFAS), which seeks to liberalize trade in services by reducing barriers and enhancing the mobility of skilled professionals within ASEAN. It acknowledges that qualifications obtained in one member country can be recognized in another, thereby facilitating the movement of engineering professionals and addressing the region's growing demand for skilled labor.

The objectives of the MRA include promoting the exchange of information and best practices related to engineering standards and qualifications, fostering regional collaboration, and strengthening professional capabilities.

Likewise, the MRA aims to support the sustainable development of engineering services in ASEAN, ultimately contributing to the broader vision of free trade and regional integration.

This MRA is particularly relevant to electronics engineering practitioners, as it encourages the sharing of expertise and innovations across borders. It enables engineers from various ASEAN countries to collaborate more effectively on projects, allowing for access to a diverse range of skills and knowledge. Through the harmonization of standards and qualifications, the MRA not only enhances the professional landscape for electronics engineers but also contributes to the advancement of technological development within the region.

6.1 Recognized Field of Engineering Practice Offered in the Philippines

- Agricultural and Biosystems
- Aeronautical
- Chemical
- Civil
- Electrical
- Electronics
- Geodetic
- Mechanical
- Metallurgical
- Mining
- Naval Architecture
- Sanitary

Electronics engineering is recognized as a significant field within the ASEAN Mutual Recognition Agreement (MRA) on Engineering Services. This recognition promotes the mobility of qualified electronics engineers across member countries, facilitating collaboration and knowledge exchange, and enhancing regional technological advancement and economic growth.

6.2 Professional Regulatory Authority in the Philippines

Professional Regulatory Authority (PRA) refers to the designated government body or its authorized agency in charge of regulating the practice of engineering services.

In the Philippines, the PRA is the Professional Regulation Commission, with the Professional Regulatory Board of Electronics Engineering as the regulatory body.

6.2.1 Monitoring Committee

The ASEAN Monitoring Committee on Engineering Services for the Philippines (AMCESP) was created in 2010 to serve the function of the Monitoring Committee for the Philippines. The AMCESP is established to develop, maintain, and oversee the ASEAN Chartered Professional Engineers Register (ACPER). The MC handles the registration and licensing of professional engineers, and it certifies the qualifications and experience of individual engineers. Its specific responsibilities include establishing compliance with registration criteria, monitoring Continuing Professional Development (CPD) requirements, and facilitating the renewal of registrations, thereby promoting the integrity and professionalism of the engineering practice within the ASEAN region.

It is composed of:

- Professional Regulation Commission (PRC) as Chairperson or Authorized Representative
- Two (2) members of the respective Professional Regulatory Board of Engineering,
- Commission on Higher Education (CHED), and
- Philippine Technological Council (PTC)

6.3 ASEAN Chartered Professional Engineer (ACPE) Recognition, Qualifications and Eligibility

6.3.1 ACPE Definition

Under the ASEAN Mutual Recognition Arrangement (MRA) on Engineering Services, an *ACPE* is a professional engineer or practitioner who holds the nationality of an ASEAN member country and who possesses qualifications and experience that comply with the specified requirements. The professional engineer may apply to be registered on the ASEAN Chartered Professional Engineers

Register (ACPER) and he/she shall be accorded the title of **ASEAN Chartered Professional Engineer (ACPE).**

6.3.2 ACPE Qualifications

- Must be a Professional Electronics Engineer
- Completed a recognized engineering program or its equivalent in a university or school accredited by CHED
- Possesses a PRC Certificate of Registration and a Professional Identification Card which entitles the Engineer to practice engineering in the Philippines
- Acquired practical and diversified engineering experience of not less than seven (7) years of active and practical engineering experience
- Spent at least two (2) years in responsible charge of significant engineering works within the seven (7) years of prescribed practice
- Complied with the CPD program of Electronics Engineering
- Has not been charged or convicted of any crime involving moral turpitude and illegal practices

6.3.3 ACPE Eligibility

An ASEAN Chartered Professional Engineer (ACPE) shall be eligible to apply to the Professional Regulation Commission to be registered as a Registered Foreign Professional Engineer (RFPE). The applicant shall submit with his application a sworn undertaking to:

(a) be bound by local and international codes of professional conduct in accordance with the policy on ethics and conduct established and enforced by the Country of Origin;

(b) be bound by prevailing laws and regulations of the Host Country; and

(c) work in collaboration with local Professional Engineers in the Host Country subject to domestic laws and regulations of the Host Country governing the practice of engineering thereto.

Upon approval, the successful ASEAN Chartered Professional Engineer (ACPE) applicant shall, subject to domestic laws and regulations and where applicable, not making submissions to statutory authorities of the Host Country, be permitted to work as a Registered Foreign Professional Engineer (RFPE), not in independent practice, but in collaboration with designated Professional Engineers in the Host Country, within such area of his competency as may be recognized and approved by the Professional Regulatory Authority (PRA) of the Host Country.

Section 7

SAFETY STANDARDS AND PRACTICES

SECTION 7. SAFETY STANDARDS AND PRACTICES

Philippine Labor Code & Occupational Safety and Health (OSH) Standards

7.1 Philippine Labor Code

The Labor Code of the Philippines 2024 encompasses a wide range of individuals within the employment sphere, aiming to provide comprehensive protections and standards across various employment types. It covers:

Regular employees: those who perform activities necessary to the usual business operations of the employer, signifying a long-term relationship.
Project employees: individuals with fixed employment for a specific project, of which the employer specifies the duration and scope of the engagement time.
Seasonal employees: workers employed for tasks or activities that are seasonal in nature and their employment is limited to the duration of the season.
Casual employees: those engaged in work that is not part of the employer's regular business and is lonely occasionally and temporary.
Probational employees: employees on trial during a given period, allowing the employer to determine their suitability for regular employment based on standards made known to the employee at the time of engagement.

Additionally, the Labor Code provides specific provisions for the domestic workers, known locally as "Kasambahay", covering their rights and welfare distinctly.

However, the Labor Code excludes certain groups from its coverage, including government employees governed by civil service regulations, international organizations with diplomatic immunities, and individuals in the informal sector under specific conditions.

This broad coverage ensures that the vast majority of the workers, including those practicing the electronics profession, in the Philippines are protected under labor laws, promoting fair treatment in the company and providing mechanisms for resolving employment disputes. Understanding this coverage as HR Teams and business owners is essential in developing policies compliant with the Labor Code of the Philippines 2024, fostering a sound and supportive environment.

7.2 Occupational Safety and Health

The primary purpose of occupational health and safety programs, universally in all electronics industries, is to create a safe and healthy work environment. When companies implement OHS standards, it allows workers to perform their roles in a safer and more secure environment, free from any major hazards.

7.2.1 Republic Act 11058 "Enhanced OSH Law"

"Act Strengthening Compliance with Occupational Safety and Health Standards," is a landmark legislation in the Philippines that mandates strict adherence to Occupational Safety and Health (OSH) Standards.

Coverage

- all establishments, project sites, including PEZA establishments;
- all other places where work is being undertaken in all branches of economic activity
- EXCEPTION: Public Sector

Duties of Employers

- furnish the workers a place of employment free from hazardous conditions that are causing or are likely to cause death, illness, or physical harm to the workers;
- give complete job safety instructions or orientation to all the workers, especially to those entering the job for the first time, including those relating to familiarization with their work environment.
- require all workers to undergo a mandatory eight (8) hours safety and health seminar as required by the DOLE
- inform the workers of the hazards associated with their work, health risks involved or to which they are exposed to, preventive measures to eliminate or minimize the risks, and steps to be taken in cases of emergency;
- use only approved devices and equipment for the workplace;
- comply with OSH standards including training, medical examination, and where necessary, provision of protective and safety devices such as personal protective equipment (PPE) and machine guards;
- allow workers and their safety and health representatives to participate actively in the process of organizing, planning, implementing, and evaluating the safety and health program to improve safety and health in the workplace;
- provide, where necessary, measures to deal with emergencies and accidents including first-aid arrangements;
- install safety signage and devices in prominent positions at strategic locations to warn the workers and the public of the hazards in the workplace;
- create and implement an Occupational Safety and Health (OSH) program;
- organize an OSH Committee to ensure that the safety and health program is observed and enforced;
- designate a Safety Officer to ensure that a safety and health program is duly followed and observed;

- have qualified occupational health personnel such as physicians, nurses, certified first-aiders, and dentists duly complemented with the required medical supplies, equipment, and facilities;
- submit all safety and health reports and notifications prescribed by the DOLE;
- require all safety and health personnel to undergo the mandatory training on basic occupational safety and health for safety officers as prescribed by the DOLE; and
- establish a welfare facility to provide humane working conditions with an adequate supply of safe drinking water, sanitary and washing facilities, and suitable living accommodations for workers, as may be applicable.

Duties of Workers

- participate in maintaining compliance with OSH standards in the workplace;
- make proper use of all safeguards and safety devices furnished for the worker's protection and that of others, and shall observe instructions to prevent accidents or imminent danger situations in the workplace; and
- observe the prescribed steps to be taken in cases of emergency;
- report to the supervisor any work hazard that may be discovered in the workplace.

Duties of Other Persons (builder/contractor who visits, builds, or renovates, other persons)

- comply with the provisions of this Act and all other regulations issued by the Labor Secretary
- collaborate in the application of OSH standards

Rights of Workers

- right to be informed by the employer about all types of hazards in the workplace and to be provided access to training and education on chemical safety, electrical safety, mechanical safety and ergonomical safety;
- right to refuse unsafe work without threat or reprisal from the employer if, as determined by the DOLE, an imminent danger situation exists in the workplace that may result in illness, injury, or death, and corrective actions to eliminate the danger have not been undertaken by the employer;
- right to report accidents, dangerous occurrences, and hazards to the employer, to DOLE, and other concerned government agencies;
- right to personal protective equipment (for the eyes, hands and feet, and lifeline, safety belt or harness, gas or dust respirators or masks, and protective shields whenever necessary by reason of the hazardous work process or environment, chemical, radiological, mechanical, and other irritants or hazards capable of causing injury or impairment through

absorption, inhalation or physical contact; PPE must be provided FREE OF
CHARGE;

Prohibited Acts and Corresponding Penalties

For violations that expose workers to death, serious injury, or serious
illness, a penalty of ₱100,000 is imposed. If multiple violations occur, penalties for
each will apply, but the total daily penalty cannot exceed ₱100,000. Penalties are
calculated daily until full compliance.

A willful failure to comply with OSH standards results in a daily fine of
₱100,000 from the issuance date of the Notice of Results or Compliance Order
until full compliance. Repeat violations incur an additional fine of 50% of the original
amount per instance. Furthermore, an additional ₱100,000 fine is imposed for
repeated obstruction or refusal to provide access, misrepresentation, or retaliatory
measures.

7.2.2 Department of Labor and Employment (DOLE) OSH Standards

The Occupational Safety and Health Standards (OSH Standards), as
amended in 1989, serve as the country's central legislation in promoting a safe and
healthy workplace for all working people by protecting them against all hazards in
their work environment. These standards apply to all private establishments,
construction sites, agricultural enterprises, and any workplace where there are
potential risks to employee health and safety.

Section 8

ENVIRONMENTAL REGULATIONS

SECTION 8. ENVIRONMENTAL REGULATIONS

Compliance with Environmental Regulations – Republic Acts (RA)

Regulatory compliance refers to staying within the bounds of laws, guidelines, and standards that govern the business operation. Environmental regulatory compliance includes guidelines related to the environment. The number and scope of environmental regulations have grown in recent years – especially related to emerging electronics technologies.

Electronics environmental management activities generally include:
- Environmental audit.
- Environmental management system.
- Environmental impact assessment.
- Mitigation plan to conform to government requirements.
- Sourcing of environmental grants and third-party recognitions

8.1 RA 6969 of 1990 "Toxic Substances, Hazardous and Radiological/Nuclear Waste Act"

An Act to control toxic substances and hazardous and nuclear wastes providing penalties for violations thereof, and for other purposes.

The implementing rules and regulations of Republic Act 6969 is the policy of the State to regulate, restrict or prohibit the importation, manufacture, processing, sale, distribution, use, and disposal of chemical substances and mixtures that present unreasonable risk and/or injury to health or the environment; to prohibit the entry, even in transit, of hazardous and nuclear wastes and their disposal into Philippine territorial limits and to provide advancement and facilitate research.

8.2 RA 9003 "Ecological Solid Waste Management Act"

The law provides for a comprehensive ecological solid waste management program by creating the necessary institutional mechanisms and incentives, appropriating funds, declaring certain acts prohibited, and providing penalties.

8.3 RA 8749 "The Clean Air Act"

The Act provides for the creation of a national program of air pollution management focusing primarily on pollution prevention; for the promotion of mass media communication in order to create social awareness and active participation in air quality planning and monitoring.

8.4 RA 9275 "Clean Water Act"

This Act provides for the abatement and control of pollution from land based sources, and lays down water quality standards and regulations. The Act shall apply to water quality management in all water bodies: fresh, brackish and marine waters.

TECHNOLOGY AND INNOVATION

SECTION 9. TECHNOLOGY AND INNOVATION

Technology and innovation are central to the evolving landscape of the electronics engineering profession. As outlined in RA 9292, electronics engineers are expected to stay at the forefront of technological advancements, continuously adapting and applying emerging innovations in their practice.

The dynamic fields of electronics engineering are constantly shaped by breakthroughs in both hardware and software. Electronics engineers explore how key innovations in areas such as wireless communication, automation, digital signal processing, and the Internet of Things (IoT) are integrated into the electronics engineering profession, enhancing the capacity of engineers to design, develop, and implement cutting-edge solutions that meet the demands of modern society.

9.1 Scope and Technologies (as outlined in RA 9292)

RA 9292, also known as the Electronics Engineering Law of 2004, defines the practice and scope of electronics engineering in the Philippines. Under this law, electronics engineers are expected to engage in various fields of technology, particularly those directly related to electronics, telecommunications, and computer systems. The key areas of technology that are particularly relevant for electronics engineers, in alignment with RA 9292, include the following:

9.1.1 Telecommunications and Networking

Electronics engineers are responsible for the planning, design, installation, operation, and maintenance of telecommunications systems, including wired and wireless communications networks.

Relevant Technologies

a. Cellular and wireless communication systems
b. Fiber optics and broadband technology
c. Internet of Things (IoT) networks
d. Data communication systems
e. Satellite and microwave communication systems
f. Voice over IP (VoIP) technology

Relevant Laws associated with this technology

In the Philippines, telecommunications and networking systems are regulated through a combination of laws and policies designed for efficient, fair, and secure service delivery. These laws and/or government policies ensures that the industry remains responsive to the growing needs of the digital economy while

safeguarding the interests of consumers and promoting national development. The following are the associated Philippine laws and/or policy:

a. Republic Act No. 7925 (RA 7925) - The Public Telecommunications Policy Act of the Philippines (1995)
b. Republic Act No. 10929 - Free Internet Access in Public Places Act (2017)
c. Republic Act No. 11032 - Ease of Doing Business and Efficient Government Service Delivery Act (2018)
d. National Telecommunications Commission (NTC) Regulations
e. Republic Act No. 10844 - Department of Information and Communications Technology Act of 2015
f. Republic Act No. 3846 - Radio Control Law (1931, as amended)
g. Cybercrime Prevention Act of 2012 (Republic Act No. 10175)
h. The Data Privacy Act of 2012 (Republic Act No. 10173)

9.1.2 Broadcasting

Electronics engineers are involved in the design, installation, operation, and maintenance of broadcasting systems for radio, television, and online streaming platforms.

Relevant Technologies

a. Analog and digital broadcasting systems (e.g., AM/FM radio, digital TV)
b. Audio and video signal processing
c. Cable TV and satellite broadcasting
d. Digital audio and video broadcasting (DVB, DAB)

9.1.3 Instrumentation and Control Systems

Electronics engineers handle instrumentation and control systems in industrial and commercial applications, including process automation and robotics.

Relevant Technologies

a. Programmable Logic Controllers (PLCs)
b. Sensors and actuators
c. Process control systems (e.g., SCADA)
d. Industrial automation and robotics
e. Industrial Internet of Things (IIoT)

9.1.4 Semiconductor and Electronics Manufacturing

Electronics engineers are responsible for designing, testing, and manufacturing electronic circuits, devices, and systems.

Relevant Technologies

a. Semiconductor device fabrication and microelectronics
b. Printed Circuit Board (PCB) design and manufacturing
c. Integrated circuit (IC) design and testing
d. Surface-mount technology (SMT)
e. Quality assurance and testing methodologies for electronics

9.1.5 Information and Communication Technology (ICT)

Electronics engineers contribute to the design, development, and management of ICT infrastructure.

Relevant Technologies

a. Cloud computing and data centers
b. Cybersecurity systems and protocols
c. Virtualization technologies
d. IT networks and infrastructure management
e. Unified communication systems

9.1.6 Medical Electronics/Biomedical

Electronics engineers engage in the design and maintenance of medical electronic devices and systems, including hospital infrastructure.

Relevant Technologies

a. Medical imaging devices (e.g., MRI, CT scans)
b. Biomedical instruments and wearable health devices
c. Electronic health records (EHR) systems
d. Telemedicine and remote patient monitoring systems

9.1.7 Computer Hardware and Embedded Systems

Electronics engineers are tasked with designing and developing computer hardware and embedded systems for a variety of applications.

Relevant Technologies

a. Microcontrollers and microprocessors
b. Embedded system design (e.g., firmware development)
c. System-on-Chip (SoC) technologies
d. Hardware/software integration and prototyping

9.1.8 Power Electronics and Renewable Energy Systems

Electronics engineers are involved in power electronics and renewable energy systems, especially for energy conversion and distribution.

Relevant Technologies

    a. Solar, wind, and other renewable energy systems
    b. Power converters (e.g., inverters, rectifiers)
    c. Energy storage technologies (e.g., battery systems)
    d. Electric vehicle (EV) systems and charging infrastructure
    e. Smart grid and energy management systems

9.1.9 Signal Processing

Electronics engineers apply signal processing techniques in various fields, including communications, audio-visual systems, and medical diagnostics.

Relevant Technologies

    a. Digital signal processing (DSP)
    b. Image, audio, and video processing
    c. Speech recognition and synthesis
    d. Data compression algorithms

9.1.10 Aviation and Aerospace Electronics (Avionics)

Electronics engineers are tasked with developing and maintaining avionics systems used in aircraft and space exploration.

Relevant Technologies

    a. Navigation and communication systems for aircraft
    b. Radar and GPS technologies
    c. Unmanned aerial vehicle (UAV) electronics
    d. Space electronics and satellite systems

9.1.11 Consumer Electronics

Electronics engineers are involved in the research, development, and production of consumer electronic products and systems.

Relevant Technologies

    a. Smart home devices and IoT appliances

b. Mobile devices, wearables, and portable electronics
c. Audio and visual consumer electronics (e.g., TVs, home theater systems)
d. Smart appliances and automation for home use

PROFESSIONAL NETWORKING AND ASSOCIATIONS

SECTION 10. PROFESSIONAL NETWORKING AND ASSOCIATIONS

10.1 Professional Associations

- **Institute of Electronics Engineers of the Philippines (IECEP), Inc**

The **Institute of Electronics Engineers of the Philippines (IECEP), Inc** is the Accredited Professional Organization (APO), duly recognized by the Professional Regulation Commission (PRC), with Accreditation No. 003, for Professional Electronics Engineers (PECEs), Electronics Engineers (ECEs), and Electronics Technicians (ECTs). IECEP currently has 48 active chapters, consisting of 13 foreign-based chapters and 35 local chapters.

The national office is located at 52A P. Gomez Street, Poblacion, 1550 Mandaluyong City, Metro Manila, Philippines.

Website: https://iecepnational.com/

Membership Benefits and Requirements

Membership in the Institute shall be through the local chapters or foreign-based chapters. There shall be no direct individual membership in the national and regional organizations. In case there is no existing chapter in a member's domicile, he can join the chapter of his choice nearest his residence or place of work or, for the time being, retain his membership in the national organization until such time when a local chapter shall have been organized in his domicile.

IECEP members are required to utilize the MyIECEP (https://myiecep.net/) platform for managing their membership, accessing continuing professional development (CPD) activities, and staying updated on organizational events and certifications.

- **Institute of Electrical and Electronics Engineers (IEEE)**

The **Institute of Electrical and Electronics Engineers (IEEE)** is the world's largest professional association dedicated to advancing technology in various fields like electronics, electrical engineering, computer science and other related disciplines. IEEE focuses on fostering technological innovation and excellence for the benefit of humanity. It offers educational resources, publishes scholarly journals, sets industry standards, and organizes conferences to support professionals in these fields.

Website: https://www.ieee.org/

Membership Benefits and Requirements

IEEE membership offers access to technical innovation, cutting-edge information, networking opportunities, and exclusive member benefits. Members support IEEE's mission to advance technology for humanity and the profession, while memberships build a platform to introduce careers in technology to learners around the world.

- o Keeping Technically Current
- o Career Resources and Recognition
- o Professional Networking
- o Continuing Education
- o Discounts
- o Humanitarian Programs

IEEE members can access local events and activities through IEEE Collabratec®. Through the platform, the members can:

- o Network with other technology professionals
- o Establish a professional profile highlighting your accomplishments
- o Join and participate in discussions on various technical interests
- o Create a group to share and collaborate on projects
- o Discover IEEE events and activities throughout the world

- **ASEAN Federation of Engineering Organisation (AFEO)**

The **ASEAN Federation of Engineering Organisations (AFEO)** is a non-governmental body that brings together engineering organizations from member countries of the Association of Southeast Asian Nations (ASEAN). Its members are the engineering institutions and organizations of ASEAN countries with the following main objectives:

- To promote goodwill and mutual understanding
- To establish and develop an ASEAN baseline standard for the engineering profession with the objective of facilitating the mobility of engineers within the ASEAN countries

Website: https://afeo.org/

Membership Benefits and Requirements

The ASEAN Federation of Engineering Organisations (AFEO) is formed by 10 ASEAN member organizations, namely:

- o Persatuan Insinyur Indonesia (PII)
- o The Institution of Engineers, Malaysia (IEM)
- o The Philippine Technological Council (PTC)

- o The Institution of Engineers Singapore (IES)
- o The Engineering Institute of Thailand (EIT)
- o Pertubuhan Ukur, Jurutera dan Arkitek (PUJA)
- o Vietnam Union of Science and Technological Associations (VUSTA)
- o Federation of Myanmar Engineering Societies (Fed.MES)
- o Board of Engineers Cambodia (BEC)
- o Lao Union of Science and Engineering Associations (LUSEA)

ASEAN Engineering Register are as follows:

A. ASEAN Engineers Register
- o ASEAN Engineers (AE)
- o Associate ASEAN Engineers (AAE)

B. ASEAN Engineering Technologists Register
- o ASEAN Engineering Technologists (AET)
- o Associate ASEAN Engineering Technologists (AAET)

C. ASEAN Technicians Register
- o ASEAN Technicians (AT)
- o Associate ASEAN Technicians (AAT)

- **Philippine Technological Council (PTC)**

The Philippine Technological Council (PTC) was formed in 1978 as one of the sectoral components of the Federation of Professional Associations (FPA now known as PFPA) and was incorporated in 1980 as non-stock and non-profit corporation under the Securities and Exchange Commission (SEC) by a group of concerned and selfless individuals who shared the common ideal of fostering the adoption and utilization of technological and engineering expertise of engineers to improve the quality of life of peoples and to contribute to the socio-economic development agenda of the communities where they operate.

Website: https://ptc.org.ph/

Member Organizations

1. Society of Aerospace Engineers of the Philippines (SAEP)
2. Philippine Society of Agricultural and Biosystems Engineers (PSABE)
3. Philippine Institute of Chemical Engineers (PIChE)
4. Philippine Institute of Civil Engineers (PICE)
5. Institute of Integrated Electrical Engineers of the Philippines (IIEE)
6. Institute of Electronics Engineers of the Philippines (IECEP)
7. Geodetic Engineers of the Philippines (GEP)
8. Philippine Institute of Industrial Engineers (PIIE)

9. Philippine Society of Mechanical Engineers (PSME)
10. Society of Metallurgical Engineers of the Philippines (SMEP)
11. Philippine Society of Mining Engineers (PSEM)
12. Society of Naval Architects and Marine Engineers (SONAME)
13. Philippine Society of Sanitary Engineers (PSSE)

CASE STUDIES AND BEST PRACTICES

SECTION 11. CASE STUDIES AND BEST PRACTICES

11.1 Area of Telecommunications

Challenge: **Delivering connectivity in remote and hard-to-reach areas.**

Project Name: **Village Base Station Project**

The VBTS Project is "a telecommunications research activity that aims to develop novel and innovative, low-cost GSM base stations that addresses the lack of fundamental mobile communications service in rural areas.

Link: https://up.edu.ph/up-globe-sign-moa-for-village-base-station-project/

Challenge: **How to reduce the downtime of cell sites and ensure business continuity during typhoons and other natural disasters.**

Project Name: **G-Climate**

G-Climate is a cloud-native service that uses predictive analytics on various data points such as weather information, weather patterns, and cell site outage data to identify potential outages specifically during the typhoon season. G-Climate was developed to address the impact of severe weather disturbances, which roughly cause 10 to 20 percent of outages at Globe's cell sites.

Link: https://manilastandard.net/business/314321563/globe-to-roll-out-new-system-to-cut-downtime.html

Section 12

LEGAL AND ETHICAL CONSIDERATIONS

SECTION 12. LEGAL AND ETHICAL CONSIDERATIONS

12.1 Legal Basis

The Republic Act (RA) 9292, otherwise known as "Electronics Engineering Law of 2004", is the primary legal basis for the practice of the electronics engineering profession in the Philippines. This law is applied in conjunction with the existing regulatory and statutory regulations of the Philippines.

The practice of foreign nationals in the Philippines is governed by Republic Act 8981 "Professional Regulation Commission (PRC) Modernization Act of 2000" (specifically Section 7), by the pertinent provisions of the "Professional Regulatory Laws", the general agreement on "Trade-in-Services' and by other international agreements on the practice of foreign professionals in the Philippines.

The "PRC Modernization Act" recognizes the important role of professionals in nation-building, promotes their development and competence gauged by licensure examinations.

The Board of Electronics Engineering (BECE), under the PRC, attached to the Department of Labor and Employment (DOLE), has a three-man membership that sets forth the direction, coordination, and guidelines in the regulation of the profession.

12.2 Comprehensive Framework for Ethical Decision-Making in the Electronics Engineering Profession

As the electronics engineering profession continues to evolve within the ASEAN region, engineers are faced with increasingly complex challenges that necessitate adherence to high ethical standards. Ethical dilemmas, if unresolved, can not only harm professional relationships but also jeopardize public safety, trust, and the overall reputation of the engineering profession.

This document establishes comprehensive guidelines for resolving ethical issues in a professional manner, adhering to the Code of Ethics of Electronics Engineers

12.2.1 Objectives of the Framework

The primary objectives of the framework are:

1. To provide a consistent, transparent process for addressing ethical dilemmas faced by electronics engineers in the Philippines
2. To ensure that all members of the profession act in accordance with shared ethical principles, promoting fairness, accountability, and public trust.

3. To harmonize ethical decision-making across local and national diverse regulatory environments, while respecting local cultural and professional contexts.
4. To uphold the honor and dignity of the electronics engineering profession, by reinforcing core ethical standards.

12.2.2 Core Values and Ethical Principles

The ethical foundation of this organization is based on a set of shared core values and principles derived from the **Board of Electronics Engineering Resolution No. 01 Series of 2013 - Code of Professional Ethics and Conduct for Registered and Licensed Electronics Practitioners.** These core values guide the decision-making process and help electronics engineers resolve ethical issues.

As outlined in the **Code of Ethics**, integrity is fundamental to professional conduct for electronics engineers. They are expected to fulfill their duties faithfully to the public, employers, and clients while promoting public welfare and using their expertise for the greater good. Engineers should uphold the honor of their profession, avoid questionable associations, and engage with fellow engineers fairly and tolerantly. This commitment to ethical standards fosters trust and respect within the profession and society.

12.2.3 The Ethical Decision-Making Framework

The Ethical Decision-Making Framework for the electronics engineering profession provides a systematic approach to addressing ethical issues, emphasizing fairness, transparency, and accountability. Its purpose is to guide professionals in making ethical decisions that uphold the integrity of the field while safeguarding public welfare. The decision-making process encompasses several steps: identifying the issue, facilitating accurate reporting and documentation, performing a thorough committee review and assessment, conducting a formal investigation, and engaging in deliberation that culminates in a final decision, with provisions for appeals throughout the process.

SUPPORT AND RESOURCES

SECTION 13. SUPPORT AND RESOURCES

13.1 Technical Support

To facilitate operations, a provision for technical support through multiple channels is extended. This includes direct contact information for technical assistance, access to online resources, and help desks to address any issues promptly.

13.1.1 Institute of Electronics Engineers of the Philippines (IECEP), Inc

Address:
52A P. Gomez, Mandaluyong City, Metro Manila, Philippines

Contact Numbers:
GLOBE: +63 927 984 9011
SMART: +63 968 682 7532
Landline: (02) 8687 7187 / (02) 8636 6976

Inquiries:
General Inquiry:
secretariat@iecepnational.com

Financial and Remittance-Related Inquiry:
finance@iecepnational.com

Membership-Related Inquiry:
membership@iecepnational.com

CPD-Related Inquiry:
cpd@iecepnational.com

Social Media and Website:
Facebook: @iecepnationalofficial | @iecepnationalevents
Website: www.iecepnational.com

	CHAPTER	ESTABLISHED YEAR	OFFICIAL EMAIL
1	DAVAO	1976	davao.chapter@iecepnational.com
2	CAR	1980	cordilleraadministrativeregion.chapter@iecepnational.com
3	VRC	1991	inactive

4	NORTH MINDANAO	1995	northmindanao.chapter@iecepnational.com
5	BICOL	2004	bicol.chapter@iecepnational.com
6	EASTERN VISAYAS	2004	easternvisayas.chapter@iecepnational.com
7	BOHOL	2004	bohol.chapter@iecepnational.com
8	CALABARZON	2006	inactive
9	CARAGA	2006	caraga.chapter@iecepnational.com
10	ILOCOS NORTE	2006	ilocosnorte.chapter@iecepnational.com
11	KSA-ERC	2007	ksaeasternregion.chapter@iecepnational.com
12	UAE	2008	uae.chapter@iecepnational.com
13	WESTERN VISAYAS (ILOILO)	2008	iloilowesternvisayas.chapter@iecepnational.com
14	MANILA	2009	manila.chapter@iecepnational.com
15	PAGADIAN	2009	inactive
16	NEGROS OCCIDENTAL	2009	negrosoccidental.chapter@iecepnational.com
17	SOCCSKSARGEN	2009	soccsksargen.chapter@iecepnational.com
18	CAGAYAN VALLEY	2009	cagayanvalley.chapter@iecepnational.com
19	ZAMBOANGA	2009	zamboanga.chapter@iecepnational.com
20	NCR-NORTH EAST (QUEZON CITY)	2009	ncrnortheast.chapter@iecepnational.com
21			inactive
22	CEBU	2009	cebu.chapter@iecepnational.com
23	NEGROS ORIENTAL	2009	negrosoriental.chapter@iecepnational.com
24	MINDANAO REGIONAL CHAPTER	2009	inactive
25	KSA-CRC	2010	ksacentralregion.chapter@iecepnational.com
26	BATAAN	2010	bataan.chapter@iecepnational.com
27	ILIGAN BAY	2010	iliganbay.chapter@iecepnational.com
28	PAMPANGA	2010	pampanga.chapter@iecepnational.com
29	BATANGAS	2011	batangas.chapter@iecepnational.com
30	CAVITE	2011	cavite.chapter@iecepnational.com
31	LAGUNA	2011	laguna.chapter@iecepnational.com
32	QUEZON PROVINCE	2011	quezonprovince.chapter@iecepnational.com

33	**MINDORO**	**2011**	mindoro.chapter@iecepnational.com
34	**ZAMBALES**	**2012**	zambales.chapter@iecepnational.com
35	**PALAWAN**	**2013**	palawan.chapter@iecepnational.com
36	**QATAR**	**2013**	qatar.chapter@iecepnational.com
37	**NUEVA ECIJA**	**2014**	nuevaecija.chapter@iecepnational.com
38	**SINGAPORE**	**2014**	singapore.chapter@iecepnational.com
39	**BAHRAIN**	**2013**	bahrain.chapter@iecepnational.com
40	**LUPANG**	**2015**	lupang.chapter@iecepnational.com
41	**KSA-WRC**	**2016**	ksawesternregion.chapter@iecepnational.com
42	**KUWAIT**	**2017**	kuwait.chapter@iecepnational.com
43	**OMAN**	**2017**	oman.chapter@iecepnational.com
44	**RIZAL**	**2017**	rizal.chapter@iecepnational.com
45	**ZAMBOANGA DEL NORTE**	**2018**	zamboangadelnorte.chapter@iecepnational.com
46	**JAPAN**	**2018**	japan.chapter@iecepnational.com
47	**BULACAN**	**2019**	bulacan.chapter@iecepnational.com
48	**TARLAC**	**2019**	tarlac.chapter@iecepnational.com
49	**MARINDUQUE**	**2019**	marinduque.chapter@iecepnational.com
50	**MISAMIS OCCIDENTAL**	**2021**	misamisoccidental.chapter@iecepnational.com
51	**AMERICAS**	**2022**	americas.chapter@iecepnational.com
52	**EUROPE**	**2023**	europe.chapter@gmail.com
53	**AUSTRALIA**	**2024**	

13.1.2 Philippine Technological Council (PTC)

The PTC is the umbrella organization for professional engineering organizations in the Philippines, including IECEP.

Address:
Unit 704, 7th Floor, Cityland Shaw Tower, Shaw Blvd.
Mandaluyong City 1152, Philippines

Contact Numbers:
Telephone: +632 70000441

Mobile No.: +63 9176085810

Email Addresses:
enggrregister@ptc.ph | aer@ptc.ph

13.1.3 National Telecommunications Commission (NTC)

The National Telecommunications Commission is an attached agency of the Department of Information and Communications Technology responsible for the supervision, adjudication and control over all telecommunications services and radio and television networks throughout the Philippines.

Address:
NTC Bldg., BIR Road, East Triangle, Diliman, Quezon City
1104 Metro Manila

Contact Numbers:
(+632) 8924.4024 | 8924.4026 | 8924.4006

Email Address:
ntc@ntc.gov.ph

13.1.4. Department of Information and Communications Technology (DICT)

DICT is a government agency that focuses on the development of the country's Information and Communications Technology (ICT) sector, including telecoms and electronics.

Address:
DICT Central Office, Carlos P. Garcia Ave, Diliman, Quezon City
1101, Metro Manila

Contact Number:
+63 (02) 8920-0101

Email Address:
information@dict.gov.ph

Website:
dict.gov.ph

13.1.5 Philippine Information Communications Technology Organization (PICTO) (formerly *Philippine Electronics and Telecommunications Federation, Inc – PETEF*)

PICTO supports the ICT sector by advocating for improvements in technology, promoting development in telecommunications, and supporting professionals in electronics and ICT.

Address:
Unit 317, 3rd Floor Mile Long Building, Amorsolo St. cor. Dela Rosa St., Legaspi Village, Makati City

Contact Number:
+63 (02) 8824-8647

Email Address:
picto.secretariat@gmail.com

Website:
petef.org.ph

13.1.6 Philippine Federation of Professional Associations (PFPA)

The Philippine Federation of Professional Associations is the umbrella organization of all professional associations in the Philippines. It has four councils as members: the Philippine Technological Council (PTC), the Council of Professional Health Associations (COPHA), the Council for Business and Management Professionals (CBMP), and the Council for Built and Natural Environments (CBNE). Each council has professional associations as members.

Address:
Room 305, Don Lorenzo Building, 889 P. Paredes St., Sampaloc, Manila

Contact Number:
+63 (02) 8250-6534

Email Address:
pfpa.secretariat@gmail.com

Website:
pfpa.org.ph

13.1.7 Philippine Integrated Fire Protection Organization (PIFPO)

PIFPO focuses on advancing fire protection technologies and safety standards, including areas related to electronics and ICT systems in fire safety.

Address:

     Blk 17, Lot 17 Celina Homes 2, Brgy. 168 Deparo Road, Caloocan City

Contact Number:

     +63 (02) 8521-1234

Email Address:

     info@pifpo.org.ph

Website:

     https://www.pifpo.org

13.1.8 Philippine Cable and Telecommunications Association (PCTA)

The PCTA is home to a great number of Electronics Professionals with the collaboration between IECEP and PCTA being envisaged to enable both organizations to pursue mutual interests in the fields of cable TV broadcasting, telecommunications and information and communications technology (ICT), all identified to be the disciplines within the scope of practice of electronics engineering professionals.

Address:

     Unit 504 Taipan Place Condominium, F. Ortigas Jr. Road, Ortigas Center, Pasig City, 1605 Philippines

Contact Number:

     +63 917 869 6803

Email Address:

     info@pcta.org.ph

Website:

     https://pcta.org.ph/

13.2 Educational Resources

13.2.1 Access to Laws and Codes

Law
- **R.A. 9292:** The Electronics Engineering Law of 2004. It regulates the practice of professional electronics engineers, electronics engineers, and electronics technicians in the Philippines. This law established the Professional Regulatory Board of Electronics Engineering (PRBECE) to oversee the registration, licensing, and practice of these professionals.

  https://lawphil.net/statutes/repacts/ra2004/ra_9292_2004.html

Codes

- **Philippine Electronics Code Volume 1 "Telecommunications Facilities Distribution System":** It is defined as a complete collective configuration of cabling and associated hardware that is installed at a given site to provide a comprehensive information transportation system infrastructure.

- **Philippine Electronics Code Volume 2 "Fire Detection and Alarm System":** This document provides an overview of electronics engineering applications in building safety and security systems. It discusses fire detection and alarm systems, including relevant laws/standards, fire alarm signals, types of fire alarm systems, and system components like detectors, notification devices, and control panels.

- **Philippine Electronics Code Volume 3 "Cable Television System":** The purpose of the code is to provide the necessary specifications, installation guidelines, procedures, and measurements to assure the delivery of quality television signal and reliability of cable TV facility and protect other communication utilities from interference.

- **Philippine Electronics Code Volume 4 "Distributed Antenna System":** This technical standard is provided as a guide for the deployment of Distributed Antenna Systems as a means for providing and/or improving indoor coverage of digital cellular service.

13.2.2 Access to Journals

Suggested Journals

- **IECEP Journal:** This is the official page of the IECEP Journal. The IECEP Journal with ISSN: 2244-2146 is a scientific journal published by the Institute of Electronics Engineers of the Philippines, Inc. https://www.facebook.com/iecepjournal