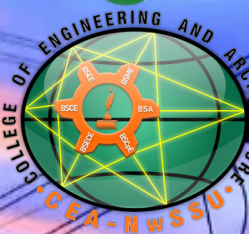


ELECTRICAL ENGINEERING PROGRAM CATALOGUE 2024 EDITION



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NWSSU VISION

The premier technological university in the region providing transformative education where graduates are globally competitive, innovative, and responsive to the demands of a changing world.

NWSSU MISSION

NwSSU shall lead in providing highly technical and professional education and lifelong learning in the trade, fishery, agriculture, science, education, commerce, engineering, forestry, nautical and other emerging programs in the digital age. It shall generate cutting-edge technology and undertake sustainable community development in accordance with the university mandates, thrusts, and directions

NWSSU QUALITY POLICY

Northwest Samar State University commits to provide excellent, relevant, and quality instruction, research, extension, and production by adhering to regulatory and statutory requirements and pledging to continually improve its Quality Management System, thereby satisfying client needs and producing world-class professionals.

NWSSU CORE VALUES

RESILIENCE
INTEGRITY
SERVICE
EXCELLENCE

COLLEGE OF ENGINEERING & ARCHITECTURE'S

GOALS

The College of Engineering and Architecture shall spearhead in the holistic development of students and achieve a status capable of administering effectively outcomes-based education, research, and extension services that meet professional and technical needs of local and international industries.

INSTITUTIONAL

GRADUATE OUTCOMES

- Creative and Critical Thinkers
- Life-long Learners
- Effective Communicators
- Morally and Socially Upright Individuals.

3

NATURE OF THE FIELD STUDY

Electrical Engineering is a profession that involves the conceptualization, development, design, and application of safe, healthy, ethical, economical and sustainable generation, transmission, distribution and utilization of electric energy for the benefit of society and environment through the knowledge of mathematics, physical sciences, information technology and other allied sciences, gained by study, research and practice.

Electrical Engineering is one of the broader fields of the engineering disciplines both in terms of the range of problems that fall within its purview and in the range of knowledge required to solve these problems.



PROFESSIONS/CAREERS FOR GRADUATES

The scope of practice of Electrical Engineering is defined in Section 2a of the prevailing Electrical Engineering Law of RA 7920 and pertains to professional services and expertises including, but not limited to;

- a. Consultation, investigation, evaluation and management of services requiring electrical engineering knowledge;
- b. Design and preparation of plans, specifications and estimates for electric power systems, power plants, power distribution systems including power transformers, transmission lines and network protection, switchgear, building wiring, electrical machines, equipment and others;
- c. Supervision of erection, installation, testing and commissioning of power plants, substations, transmission lines, industrial plants and others;
- d. Supervision of operation and maintenance of electrical equipment in power plants, industrial plants, watercrafts, electric locomotives and others;
- e. Supervision in the manufacture and repair of electrical equipment including switchboards, transformers, generators, motors, apparatus and others;
- f. Teaching of electrical engineering professional courses; and
- g. Taking charge of the sale and distribution of electrical equipment and systems requiring engineering calculations or applications of engineering data.

The fields of specialization may include, but not limited to, the following: power system operation and protection, power plant operation and maintenance, advanced electrical systems design and inspection, sales and entrepreneurship, engineering education and research, instrumentation and control systems, construction and project management, software development, electricity market, and safety engineering.



OUR STEEMED EDUCATORS



MA. RITCHEL F. ALIMAN
Assistant Professor II

Master's in Engineering
Major in Engineering Management

Length of Service: 8 years

MERARY C. CA-ANG
Assistant Professor I

Bachelor of Science in
Electrical Engineering

Length of Service: 30 years



PRIMITIVO C. MONTANEZ
Assistant Professor I

Bachelor of Science in
Electrical Engineering

Length of Service: 31 years



KEVIN JOSE S. MAGISTRADO
Instructor I

Bachelor of Science in
Electrical Engineering

Length of Service: 0 years



6

CURRICULUM CHECKLIST

(SY 2020-2021)

First Year - 1st Semester

Course Code	Subject Description	Units	Hours		Pre-Re/Co-Re
			Lec	Lab	
B1	Engineering Algebra	3	3	0	None
B2	Engineering Trigonometry	3	3	0	None
B3	Solid Mensuration	3	3	0	None
B4	Analytic Geometry	3	3	0	None
BES 2	Computer-Aided Drafting	1	0	3	None
GE 4	Mathematics in the Modern World	3	3	0	None
GEC/ELEC 1	Living in the IT Era	3	3	0	None
NSTP 1	National Service Training Program 1	3	3	0	None
PE 1	Physical Fitness and Gymnastics	2	2	0	None
TOTAL		24	23	3	

First Year - Summer

Course Code	Subject Description	Units	Hours		Pre-Re/Co-Re
			Lec	Lab	
Math 2	Calculus 2	3	3	0	Math 1
PhysE 2	Physics for Engineers 2	4	3	3	Math 1/ Co-Re: Math 2
Math 3	Engineering Data Analysis	3	3	0	Math 1
TOTAL		10	9	3	

Second Year - 1st Semester

Course Code	Subject Description	Units	Hours		Pre-Re/Co-Re
			Lec	Lab	
Math 4	Differential Equations	3	3	0	Math 2
EE 214	Electrical Circuits 1	4	3	3	PhysE 2, Math 2
BES 3	Engineering Mechanics	3	3	0	PhysE 1
BES 4	Engineering Economics	3	3	0	Math 3
GE 6	Art Appreciation	3	3	0	
GE 5	Purposive Communication	3	3	0	
GEC/Elec 3	Indigenous Creative Crafts	3	3	0	
PE 3	Individual/Group Games and Sports	2	2	0	
TOTAL		24	23	3	

First Year - 2nd Semester

Course Code	Subject Description	Units	Hours		Pre-Re/Co-Re
			Lec	Lab	
Math 1	Calculus 1	3	3	0	B1, B2, B3, B4
ChemE	Chemistry for Engineers	4	3	3	None
CpE 2	Computer Programming	1	0	3	None
PhysE 1	Physics for Engineers 1	4	3	3	Co-Re : Math 1
GEC/ELEC 2	The Entrepreneurial Mind	3	3	0	None
GE 1	Understanding the Self	3	3	0	None
NSTP 2	National Service Training Program 1	3	3	0	NSTP 1
PE 2	Rhythmic Activities	2	2	0	None
TOTAL		23	20	9	

Second Year - 2nd Semester

Course Code	Subject Description	Units	Hours		Pre-Re/Co-Re
			Lec	Lab	
Math 5	Engineering Math for EE	3	3	0	Math 4
AC 3	Fundamentals of Deformable Bodies	2	2	0	BES 3
EE 224	Electrical Circuits 2	4	3	3	EE 214
ECE 204	Electronics Circuits: Devices and Analysis	4	3	3	EE 214
AC 4	Basic Thermodynamics	2	2	0	PhysE 1
EE 222	Electromagnetics	2	2	0	PhysE 2, Math 4
GE 3	Contemporary World	3	3	0	None
GE 7	Science, Technology & Society	3	3	0	None
PE 4	Recreational Activities	2	2	0	None
TOTAL		25	23	6	

Third Year - 1st Semester

Course Code	Subject Description	Units	Hours		Pre-Re/Co-Re
			Lec	Lab	
EE 333	Numerical Methods and Analysis	3	2	3	Math 5
CpE 8	Logic Circuits and Switching Theory	2	2	0	ECE 204
EE 312	Management of Engineering Projects	2	2	0	None
ECE 394	Industrial Electronics	4	3	3	ECE 204
ECE 373	Fundamentals of Electronic Communications	3	3	0	ECE 204
EE 332	Electrical Machines 1	2	2	0	EE 222, EE 224
EE Eled 1	Electrical Engineering Electives 1 (Special Studies in Renewable Energy Resources 1)	4	3	3	3rd year Standing
GE 8	Ethics	3	3	0	None
TOTAL		23	20	9	

Third Year - 2nd Semester

Course Code	Subject Description	Units	Hours		Pre-Re/Co-Re
			Lec	Lab	
CpE 14	Microprocessor System	2	2	0	CpE 8
EE 323	Electrical Apparatus and Devices	3	2	3	EE 224
EE 324	Electrical Machines 2	4	3	3	EE 332
AC 6	Basic Occupational Safety and Health	3	3	0	None
AC 5	Fluid Mechanics	2	2	0	PhysE 2
AC 1	Material Science & Engineering	2	2	0	ChemE, AC 3
EE 342	EE Laws, Codes and Professional Ethics	2	2	0	Ethics
ECE 322	Feedback Control Systems	2	2	0	Math 5, ECE 204
EE Eled 2	Electrical Engineering Electives 2 (Special studies in Renewable Energy Resources 2)	4	3	3	3rd year Standing
TOTAL		24	21	9	

Third Year - Summer

Course Code	Subject Description	Units	Hours		Pre-Re/Co-Re
			Lec	Lab	
EE OJT	EE On the Job Training	2	2	240	4th-year Standing
TOTAL		2	2		

Fourth Year - 1st Semester

Course Code	Subject Description	Units	Hours		Pre-Re/Co-Re
			Lec	Lab	
AC 2	Environmental Science and Engineering	2	2	0	None
EE 411	Electrical Standards and Practices	1	0	3	EE 342
EE 415	Electrical Systems and Illumination Eng'g Design	5	3	6	EE 324
Prof. Enh. 1*	EE Correlation Course (MATH & ESAS)	3	3	0	4th year Standing
EE Res 1	Research Methods	1	0	3	Math 3
EE 413	Instrumentation and Control	3	2	3	ECE 322
BES 5	Techpreneurship 101	3	3	0	4th year Standing
TOTAL		18	13	15	

Fourth Year - 2nd Semester

Course Code	Subject Description	Units	Hours		Pre-Re/Co-Re
			Lec	Lab	
EE 424	Power Systems Analysis	4	3	3	EE 411
EE 401	Fundamentals of Power Plant Eng'g Design	1	0	3	Co-Re: EE 424
EE 423	Disturbance Systems & Substation Design	3	2	3	4th year standing
Prof. Enh. 2*	EE Correlation Course (PROFESSIONAL SUBJECTS)	3	3	0	4th year standing
EE Res 2	Research Project or Capstone Design Project	1	0	3	EE Res 1
EE 421	Seminars/Colloquia	1	0	3	4th year standing
GE 2	Readings in Philippine History	3	3	0	None
RRZAL	Life and Works of Rizal	3	3	0	None
TOTAL		19	14	15	

Note: Total Number of Units to Finish the Course - 192 Units

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CURRICULUM CHECKLIST

(SY 2022-2023)

NON-STEM CURRICULUM

First Year - 1st Semester

Course Code	Subject Description	Units	Hours		Pre-Re/Co-Re
			Lec	Lab	
B1	Engineering Algebra	3	3	0	None
B2	Engineering Trigonometry	3	3	0	None
B3	Solid Mensuration	3	3	0	None
B4	Analytic Geometry	3	3	0	None
BES 2	Computer-Aided Drafting	1	0	3	None
GE 4	Mathematics in the Modern World	3	3	0	None
GEC/ELEC 1	Living in the IT Era	3	3	0	None
NSTP 1	National Service Training Program 1	3	3	0	None
PE 1	Movement Competency Training (PATHF11)	2	2	0	None
TOTAL		24	23	3	

First Year - Summer

Course Code	Subject Description	Units	Hours		Pre-Re/Co-Re
			Lec	Lab	
Math 2	Calculus 2	3	3	0	Math 1
PhysE 2	Physics for Engineers 2	4	3	3	Math 1/ Co-Re: Math 2
Math 3	Engineering Data Analysis	3	3	0	Math 1
TOTAL		10	9	3	

Second Year - 1st Semester

Course Code	Subject Description	Units	Hours		Pre-Re/Co-Re
			Lec	Lab	
Math 4	Differential Equations	3	3	0	Math 2
EE 214	Electrical Circuits 1	4	3	3	PhysE 2, Math 2
BES 3	Engineering Mechanics	3	3	0	PhysE 1
BES 4	Engineering Economics	3	3	0	Math 3
GE 6	Art Appreciation	3	3	0	
GE 5	Purposive Communication	3	3	0	
GEC/Elec 3	Indigenous Creative Crafts	3	3	0	
PE 3	Group Exercise (PATHF13)	2	2	0	
TOTAL		24	23	3	

Third Year - 1st Semester

Course Code	Subject Description	Units	Hours		Pre-Re/Co-Re
			Lec	Lab	
EE 333	Numerical Methods and Analysis	3	2	3	Math 5
CpE 8	Logic Circuits and Switching Theory	2	2	0	ECE 204
EE 312	Management of Engineering Projects	2	2	0	None
ECE 394	Industrial Electronics	4	3	3	ECE 204
ECE 373	Fundamentals of Electronic Communications	3	3	0	ECE 204
EE 332	Electrical Machines 1	2	2	0	EE 222, EE 224
EE Eled 1	Electrical Engineering Electives 1 (Special Studies in Renewable Energy Resources 1)	4	3	3	3rd year Standing
GE 8	Ethics	3	3	0	None
TOTAL		23	20	9	

Third Year - Summer

Course Code	Subject Description	Units	Hours		Pre-Re/Co-Re
			Lec	Lab	
EE QJT	EE On the Job Training	2	2	240	4th-year Standing
TOTAL		2	2		

Fourth Year - 1st Semester

Course Code	Subject Description	Units	Hours		Pre-Re/Co-Re
			Lec	Lab	
AC 2	Environmental Science and Engineering	2	2	0	None
EE 411	Electrical Standards and Practices	1	0	3	EE 342
EE 415	Electrical Systems and Illumination Eng'g Design	5	3	6	EE 324
Prof. Enh. 1*	EE Correlation Course (MATH & ESAS)	3	3	0	4th year Standing
EE Res 1	Research Methods	1	0	3	Math 3
EE 413	Instrumentation and Control	3	2	3	ECE 322
BES 5	Techpreneurship 101	3	3	0	4th year Standing
TOTAL		18	13	15	

Note: Total Number of Units to Finish the Course - 192 Units

First Year - 2nd Semester

Course Code	Subject Description	Units	Hours		Pre-Re/Co-Re
			Lec	Lab	
Math 1	Calculus 1	3	3	0	B1, B2, B3, B4
ChemE	Chemistry for Engineers	4	3	3	None
CpE 2	Computer Programming	1	0	3	None
PhysE 1	Physics for Engineers 1	4	3	3	Co-Re: Math 1
GEC/ELEC 2	The Entrepreneurial Mind	3	3	0	None
GE 1	Understanding the Self	3	3	0	None
NSTP 2	National Service Training Program 1	3	3	0	NSTP 1
PE 2	Exercise - based Fitness Activities (PATHF12)	2	2	0	None
TOTAL		23	20	9	

Second Year - 2nd Semester

Course Code	Subject Description	Units	Hours		Pre-Re/Co-Re
			Lec	Lab	
Math 5	Engineering Math for EE	3	3	0	Math 4
AC 3	Fundamentals of Deformable Bodies	2	2	0	BES 3
EE 224	Electrical Circuits 2	4	3	3	EE 214
ECE 204	Electronics Circuits: Devices and Analysis	4	3	3	EE 214
AC 4	Basic Thermodynamics	2	2	0	PhysE 1
EE 222	Electromagnetics	2	2	0	PhysE 2, Math 4
GE 3	Contemporary World	3	3	0	None
GE 7	Science, Technology & Society	3	3	0	None
PE 4	Sports (PATHF14)	2	2	0	None
TOTAL		25	23	6	

Third Year - 2nd Semester

Course Code	Subject Description	Units	Hours		Pre-Re/Co-Re
			Lec	Lab	
CpE 14	Microprocessor System	2	2	0	CpE 8
EE 323	Electrical Apparatus and Devices	3	2	3	EE 224
EE 324	Electrical Machines 2	4	3	3	EE 332
AC 6	Basic Occupational Safety and Health	3	3	0	None
AC 5	Fluid Mechanics	2	2	0	PhysE 2
AC 1	Material Science & Engineering	2	2	0	ChemE, AC 3
EE 342	EE Laws, Codes and Professional Ethics	2	2	0	Ethics
ECE 322	Feedback Control Systems	2	2	0	Math 5, ECE 204
EE Eled 2	Electrical Engineering Electives 2 (Special Studies in Renewable Energy Resources 2)	4	3	3	3rd year Standing
TOTAL		24	21	9	

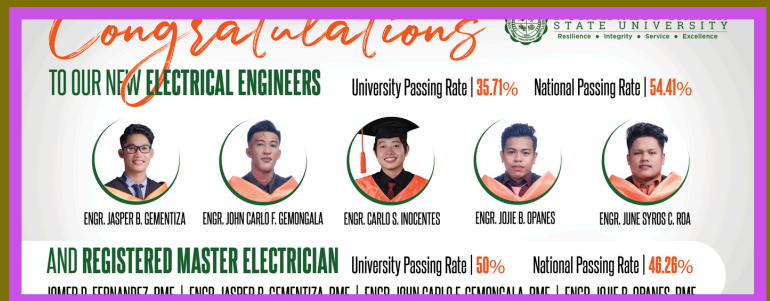
Fourth Year - 2nd Semester

Course Code	Subject Description	Units	Hours		Pre-Re/Co-Re
			Lec	Lab	
EE 424	Power Systems Analysis	4	3	3	EE 411
EE 401	Fundamentals of Power Plant Eng'g Design	1	0	3	Co-Re: EE 424
EE 423	Distribution Systems & Substation Design	3	2	3	4th year standing
Prof. Enh. 2*	EE Correlation Course (PROFESSIONAL SUBJECTS)	3	3	0	4th year standing
EE Res 2	Research Project or Capstone Design Project	1	0	3	EE Res 1
EE 421	Seminars/Colloquia	1	0	3	4th year standing
GE 2	Readings in Philippine History	3	3	0	None
RZAL	Life and Works of Rizal	3	3	0	None
TOTAL		19	14	15	

PROGRAM EDUCATIONAL OBJECTIVES

1

Graduates will pass the licensure examination for Electrical Engineers.



9

PROGRAM EDUCATIONAL OBJECTIVES

2 Graduates will achieve a high level of technical expertise so that they are able to succeed in positions in electrical engineering practice or research, and in other fields they chose to pursue.



PROGRAM EDUCATIONAL OBJECTIVES

3

Graduates will produce engineering designs that are based on sound principles that consider functionality, aesthetics, safety, cost effectiveness and sustainability.



PROGRAM EDUCATIONAL OBJECTIVES

4

Graduates will pursue lifelong learning such as graduate studies and other professional education.



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PROGRAM EDUCATIONAL OBJECTIVES

5

Graduates will engage in professional service such as participation in professional society and community service.



Institute of Integrated Electrical Engineers of the Phil. (IIEE)
CALBAYOG CHAPTER

OPLAN DAGITAB Brigada Eskwela 2024

"Enhancing the safety and efficiency of the school's
electrical infrastructure"

Bantian Elementary School
July 22, 2024



PROGRAM EDUCATIONAL OBJECTIVES

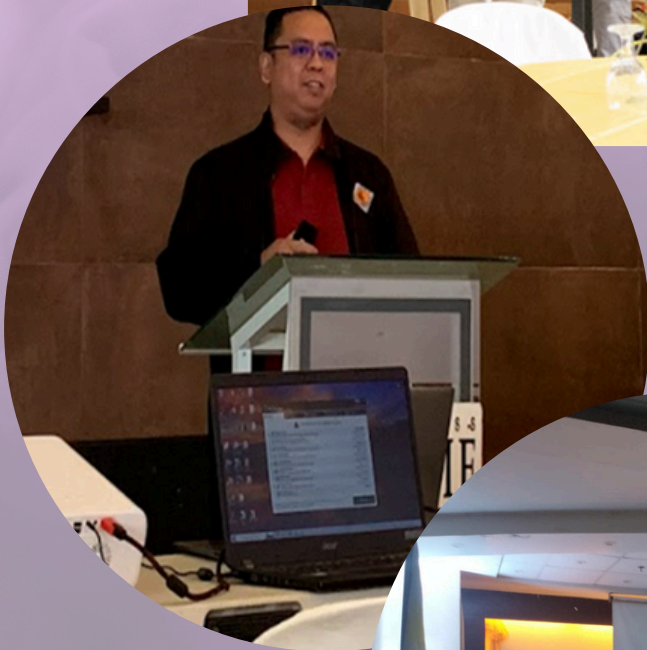
6 Graduates will fulfill values, professional and ethical responsibilities in the practice of electrical engineering, including social, environmental and economic considerations.



PROGRAM EDUCATIONAL OBJECTIVES

7

Graduates will be leaders, both in their chosen profession and in other activities.



PROGRAM OUTCOMES

1. Apply knowledge of mathematics and sciences to solve complex engineering problems
2. Develop and conduct appropriate experimentation, analyze and interpret data.
3. Design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability, in accordance with standards.
4. Function effectively on multi-disciplinary and multi-cultural teams that establish goals, plan tasks, and meet deadlines.
5. Identify, formulate and solve complex problems in electrical engineering
6. Recognize ethical and professional responsibilities in engineering practice.
7. Communicate effectively with a range of audiences.
8. Understand the impact of engineering solutions in a global, economic, environmental, and societal context
9. Recognize the need for additional knowledge and engage in lifelong learning.
10. Articulate and discuss the latest developments in the field of electrical engineering.
11. Apply techniques, skills, and modern engineering tools necessary for electrical engineering practice.
12. Demonstrate knowledge and understanding of engineering and management principles as a member and/or leader in a team to manage projects in multidisciplinary environments..



JIEE SPOT

INTEGRATED ELECTRICAL ENGINEERS
"NO RESISTANCE CAN DROP OUR POTENTIALS"
NWSSU STUDENT CHAPTER OFFICERS
A.Y. 2021-2022

VERNICE JOY A. PUNZALAN PRESIDENT					
JIAZZY G. AQUINO VICE PRESIDENT	MONTANI L. MEMORADO SECRETARY	JAMES L. DOBLIN TREASURER	EDWIN C. DADUMAN ALCOCK	TONI LOUISE Q. TRODIN PRO	ZENNY JANI L. FRENCILLO PRO
[Name]	[Name]	[Name]	[Name]	[Name]	[Name]
[Name]	[Name]	[Name]	[Name]	[Name]	[Name]

EMIR HA. BUSTOS F. ALMORA
EMOR. NEMEA A. MALAIT
EMOR. HENRY E. CANE





THANK YOU!
To GOD be
the Glory!