Surigao City Campus

Bachelor of Science in Electrical Engineering

SURIGAO STATE COLLEGE OF TECHNOLOGY

SSCT

"For Nation's Greater Heights"

S.4. Copies of all course syllabi in previous semesters are filed for reference purposes.

COLLEGE OF ENGINEERING AND INFORMATION TECHNOLOGY

First Semester, AY 2020 – 2021

MONITORING FORM FOR FACULTY REQUIREMENTS

NAME OF FACULTY	SUBJECT(S) TAUGHT	Syllabus with Signatories		Learning Module - pdf		Laboratory Manual - pdf		Midterm TOS		Midterm Test Questionnaire		Final TOS		Final Test Questionnaire		Grade Sheet				REMARKS
		Date	Sig.	Date	Sig.	Date	Sig.	Date	Sig.	Date	Sig.	Date	Sig.	Date	Sig.	Date	Sig.	Date	Sig.	
BS IN ELECTRICAL ENGINEERING PROGRAM																				
ESCABAL, Ingrid B.	Logic Circuits and Switching Theory	8/17/20		8/24/20																
	Modern Communication Systems	8/17/20		8/24/20																
	ECE Elective 3 Electronics Review	8/17/20		8/24/20																
DELOSA, Conrado Jr. B.	Electrical Machines 1	8/21/20		8/24/20																
	Circuits 3	8/21/20		8/24/20																
	Instrumental and Control	8/21/20		8/24/20																
	DC Machinery	8/21/20		8/24/20																
	Electrical System Design	8/21/20		8/24/20																
FIDELES, Jemielou M.	Statics of Rigid Bodies	8/20/20		8/24/20																
	Physics 2	8/20/20		8/24/20																
	Fundamentals of Deformable Bodies	8/20/20		8/24/20																
	ECE Elective 1 (Math Review)	8/20/20		8/24/20																
	Engineering Mechanics	8/20/20		8/24/20																
	Feedback and Control Systems	8/20/20		8/24/20																
GALILA, Galgen B.	Industrial Electronics	8/20/20		8/24/20																
	Fluid Mechanics	8/20/20		8/24/20																
	Circuits 2	8/20/20		8/24/20																
	Mechanics of Fluid	8/20/20		8/24/20																
LIZA, Vernon V.	Engineering Data Analysis	8/21/20		8/24/20																
	Materials Science and Engineering	8/21/20		8/24/20																
	Electrical Transmission & Distribution System	8/21/20		8/24/20																
	Electrical Circuits 1	8/21/20		8/24/20																
	Illumination Engineering Design	8/21/20		8/24/20																

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NAME OF FACULTY	SUBJECT(S) TAUGHT	Syllabus with Signatories		Learning Module - pdf		Laboratory Manual - pdf		Midterm TOS		Midterm Test Questionnaire		Final TOS		Final Test Questionnaire		Grade Sheet				REMARKS
		Date	Sig.	Date	Sig.	Date	Sig.	Date	Sig.	Date	Sig.	Date	Sig.	Date	Sig.	Date	Sig.	Date	Sig.	
PAGLINAWAN, Mark Marvin	Environmental Science and Engineering	8/17/20		8/25/20																
	Fundamentals of Electronics Communications	8/17/20		8/25/20																
	Information and Communication Technology	8/17/20		8/25/20																
	Introduction to Electrical Engineering	8/17/20		8/25/20																
NAVARRO, Andy Bong F.	Mechanics of Fluid	8/17/20		8/25/20																
	Calculus 1	8/17/20		8/25/20																
	EE Elective 3	8/17/20		8/25/20																
ACIDO, Josephine V.	Engineering Economics	8/17/20		8/25/20																
	Engineering Materials	8/17/20		8/25/20																
	Engineering Management	8/17/20		8/25/20																

Prepared and Monitored by:

ENGR INGRID B. ESCABAL, MSEE
Program Chair, BSEE

Noted by:

ENGR ROBERT R. BACARRO, MECE, MBA
Dean, CEIT

COLLEGE OF ENGINEERING AND INFORMATION TECHNOLOGY

First Semester, AY 2020 – 2021

MONITORING FORM FOR FACULTY REQUIREMENTS

NAME OF FACULTY	SUBJECT(S) TAUGHT	Syllabus with Signatories		Learning Module - pdf		Laboratory Manual - pdf		Midterm TOS		Midterm Test Questionnaire		Final TOS		Final Test Questionnaire		Grade Sheet				REMARKS
		Date	Sig.	Date	Sig.	Date	Sig.	Date	Sig.	Date	Sig.	Date	Sig.	Date	Sig.	Date	Sig.	Date	Sig.	
BS IN CIVIL ENGINEERING PROGRAM																				
BADIOLA, Richard A.	Geotechnical Engineering II -Foundation Engineering	8/17/20		8/25/20																
	Numerical Solution to CE Problems	8/17/20		8/25/20																
	Geotechnical Engineering 1-Soil Mechanics	8/17/20		8/25/20																
ANDALUZ, Rosanne E.	Highway and Railroad Engineering	8/21/20		8/25/20																
	Construction Materials & Testing	8/14/20		8/25/20																
	Water Resources Engineering	8/14/20		8/25/20																
PORTUGUES, Virne P.	Civil Engineering Orientation	8/18/20		8/25/20																
	Construction Materials & Testing	8/18/20		8/25/20																
POTENTE, Lufrey B.	Engineering Utilities 2 - Basic ME	8/18/20		8/25/20																
	Building Design 1	8/18/20		8/25/20																
	Building Systems Design	8/18/20		8/25/20																
SOLLOSO, Marlon C.	Engineering Utilities 1 - Basic EE	8/19/20		8/25/20																
	Computer-Aided Drafting	8/19/20		8/25/20																
DONOSO, Flora mae	Structural Design I - SC (Petition)	8/20/20		8/25/20																
	CE Laws, Codes, Contracts Specs and Ethics - SC (Petition)	8/24/20		8/25/20																
ALCALDE, Flynne	Fundamentals of Surveying	8/21/20		8/25/20																
	Structural Theory 1	8/21/20		8/25/20																
	Statistics of Rigid Bodies - BSCE 2 (CLVR)	8/21/20		8/25/20																
	Engineering Economics - BSCE 2 (CLVR)	8/21/20		8/25/20																
BALBERAN, Jair	CE Elective 2	8/20/20		8/25/20																
	CE Elective 4 - SC (Petition)	8/21/20		8/25/20																
	Hydraulics Engineering - SC (Petition)	8/21/20		8/25/20																

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NAME OF FACULTY	SUBJECT(S) TAUGHT	Syllabus with Signatories		Learning Module - pdf		Laboratory Manual - pdf		Midterm TOS with Test Questionnaires		Final TOS with Test Questionnaire		Grade Sheet		Class Record - pdf		Documentation of Strategies used in Class		Student Portfolio - pdf		REMARKS
		Date	Sig.	Date	Sig.	Date	Sig.	Date	Sig.	Date	Sig.	Date	Sig.	Date	Sig.	Date	Sig.	Date	Sig.	
GEGONA, Archie C.	Structural Design III - Steel Design	8/17/20																		
JUMAWAN, Emmanuel J.	Structural Theory	8/17/20																		
	Fundamentals of Deformable Bodies	8/17/20																		
	Mechanics of Deformable Bodies - SC	8/17/20																		
ORIT, Erlito M.	Structural Design II - Reinforced Concrete 2	8/17/20																		
PEJAN, Elmario	Highway Engineering	8/17/20																		
	Construction Methods and Project Management	8/17/20																		
DONOSO, Carlos H.	Chemistry for Engineers	8/17/20																		

Prepared and Monitored by:

ENGR RICHARD A. BADIOLA, M.Eng
Program Chair, BSCE

Noted by:

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Dean, CEIT

SURIGAO STATE COLLEGE OF TECHNOLOGY

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COLLEGE OF ENGINEERING AND INFORMATION TECHNOLOGY

First Semester, AY 2020 – 2021

MONITORING FORM FOR FACULTY REQUIREMENTS

NAME OF FACULTY	SUBJECT(S) TAUGHT	Syllabus with Signatories		Learning Module - pdf		Laboratory Manual - pdf		Midterm TOS		Midterm Test Questionnaire		Final TOS		Final Test Questionnaire		Grade Sheet				REMARKS
		Date	Sig.	Date	Sig.	Date	Sig.	Date	Sig.	Date	Sig.	Date	Sig.	Date	Sig.	Date	Sig.	Date	Sig.	
BS IN ELECTRONICS ENGINEERING PROGRAM																				
MANGCA, Darwin C.	Principles of Communications	8/21/20		8/25/20																
	Principles of Communication Systems	8/21/20		8/25/20																
BACARRO Robert	ECE Project Study 1	8/21/20		8/25/20																
	EE Project Study 1	8/21/20		8/25/20																
	CE Project Study 1	8/21/20		8/25/20																
	Differential Equations - Claver	8/21/20		8/25/20																
YLAYA, Vrian Jay V.	Instrumentation and Control	8/17/20		8/25/20																
	Transmissions Media and Antenna System	8/17/20		8/25/20																
	Signals, Spectra, Signal Processing	8/17/20		8/25/20																
MADELO, Aurea M.	Introduction to Electronics Engineering	8/17/20		8/25/20																
	Electronics 3	8/17/20		8/25/20																
	Electronic Circuit Analysis and Design	8/17/20		8/25/20																
	Fundamentals of Electrical Circuits	8/17/20		8/25/20																
CALINAWAN, Aldrich B.	Numerical Methods	8/17/20		8/25/20																
	Fundamentals of Deformable Bodies	8/17/20		8/25/20																
	Numerical Methods and Analysis	8/17/20		8/25/20																

Prepared and Monitored by:

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Program Chair, BSECE

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Dean, CEIT

SURIGAO STATE COLLEGE OF TECHNOLOGY

"For Nation's Greater Heights"

COLLEGE OF ENGINEERING AND INFORMATION TECHNOLOGY

First Semester, AY 2020 – 2021

MONITORING FORM FOR FACULTY REQUIREMENTS

NAME OF FACULTY	SUBJECT(S) TAUGHT	Syllabus with Signatories		Learning Module - pdf		Laboratory Manual - pdf		Midterm TOS		Midterm Test Questionnaire		Final TOS		Final Test Questionnaire		Grade Sheet				REMARKS
		Date	Sig.	Date	Sig.	Date	Sig.	Date	Sig.	Date	Sig.	Date	Sig.	Date	Sig.	Date	Sig.	Date	Sig.	
BS IN COMPUTER ENGINEERING PROGRAM		8/15/20																		
CORVERA,. Levi A	Programming Logic and Design	8/15/20		8/25/20																
	Fundamentals of Mixed Signals and Sensors	8/15/20		8/25/20																
	Data Communication and Networking 3	8/15/20		8/25/20																
	Advanced Logic Circuit	8/15/20		8/25/20																
	Microprocessor System	8/15/20		8/25/20																
MORITE, Analyn S.	Computer Engineering as a Discipline	8/15/20		8/25/20																
	System Analysis & Design	8/15/20		8/25/20																
	CpE Project Study 1	8/15/20		8/25/20																
	Elective 2	8/15/20		8/25/20																
	Elective 3	8/15/20		8/25/20																
BORJA, Lucilyn C.	Mathematics in the Modern World	8/15/20		8/25/20																
	Data Communication and Networking 1	8/15/20		8/25/20																
	Logic Circuits and Design	8/15/20		8/25/20																
	Logic Circuits and Switching Theory	8/15/20		8/25/20																
GALILA, Ghandi B.	Data Structures and Algorithms	8/15/20		8/25/20																
	Computer Programming (Object-Oriented Programming)	8/15/20		8/25/20																
	Object Oriented Programming	8/15/20		8/25/20																
	Numerical Methods	8/15/20		8/25/20																
	Data and Digital Communications	8/15/20		8/25/20																
PASCUA, Gracechell M.	Computer System Architecture w/ Interfacing Technique	8/15/20		8/25/20																
	Operating Systems	8/15/20		8/25/20																

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COLLEGE OF ENGINEERING AND INFORMATION TECHNOLOGY

First Semester, AY 2020 – 2021

MONITORING FORM FOR FACULTY REQUIREMENTS

NAME OF FACULTY	SUBJECT(S) TAUGHT	Syllabus with Signatories		Learning Module - pdf		Laboratory Manual - pdf		Midterm TOS		Midterm Test Questionnaire		Final TOS		Final Test Questionnaire		Grade Sheet				REMARKS
		Date	Sig.	Date	Sig.	Date	Sig.	Date	Sig.	Date	Sig.	Date	Sig.	Date	Sig.	Date	Sig.	Date	Sig.	
BS IN INFORMATION TECHNOLOGY PROGRAM		8/17/20		8/24/20																
REYNA, Alma Christie C.	Capstone Project II	8/17/20		8/24/20																
	Web Based Programming and Applications	8/17/20		8/24/20																
BUCTUAN, Renz M.	Integrative Programming and Technologies	8/17/20		8/24/20																
	Elective 2 (Intelligent System)	8/17/20		8/24/20																
	Data Structures and Algorithm	8/17/20		8/24/20																
CABAÑERO, Ralph Aran C.	3D Animation	8/17/20		8/24/20																
	Fundamentals of Programming	8/17/20		8/24/20																
DUMAICOS, Trashy P.	Installation of Hardware and Software	8/17/20		8/24/20																
HAMBRE, Jessa G.	Integrative Programming and Technologies 2	8/17/20		8/24/20																
	Teaching Common Competencies in ICT	8/17/20		8/24/20																
NOGUERRA, Kaelf Dave	Human Computer Interaction 2	8/17/20		8/24/20																
	Application Development & Emerging Technologies	8/17/20		8/24/20																
	Elective 2 (Intelligent System)	8/17/20		8/24/20																
SALVADOR, Arvin	System Integration and Architecture 1	8/17/20		8/24/20																
SALUBRE, Hasmer	Object Oriented Programming	8/17/20		8/24/20																
	Object Oriented Programming	8/17/20		8/24/20																
	Free Elective 3 (Mobile Application)	8/17/20		8/24/20																
REYNA, Ritchie A.	Advanced Database System	8/18/20		8/24/20																
	Free Elective 3 (Mobile Application)	8/18/20		8/24/20																
RUAYA, Perfecto Jr. R.	Networking 2	8/18/20		8/24/20																
	Network Administration	8/18/20		8/24/20																

Prepared and Monitored by:

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Program Chair, BSIT

Noted by:

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Dean, CEIT

SURIGAO STATE COLLEGE OF TECHNOLOGY
Narciso St., Surigao City

"For Nation's Greater Heights"

MONITORING FORM FOR COURSE REQUIREMENTS

1st Semester, AY 2018 - 2019

NAME OF FACULTY	SUBJECT(S) TAUGHT	Syllabus		Midterm Test Questionnaire		Midterm TOS		Final Test Questinnaire		Final TOS		Grade Sheet		Seat Plan		Returned Quiz Form					
		Date	T.I.	Date	T.I.	Date	T.I.	Date	T.I.	Date	T.I.	Date	T.I.	Date	T.I.	Date	T.I.	Date	T.I.	Date	T.I.
MANGCA, DARWIN C.	Circuits 1	7-16-18																			
	Signals Spectra, Signal Processing	8-16-18																			
	Principles of Comunications	8-16-18																			
	Computer Fundamentals with Software Application	8-16-18																			
ESPALDON, ALEXIS P.	Safety Management											1-7-19	ok								
	EE Project Study 1											1-7-19	ok								
	DC Machinery	8/16/18		10/17/18		10/16/18						1-7-19	ok								
DELOSA, CONRADO JR. B.	Differential Equations											1-7-19	OK								
	Circuits 3											1-7-19	ok								
	Calculus 1											-									
BALDAPAN, JOSELITO S.	Illumination Engineering Design		✓									1-9-19	ok								
	Electrical Transmission and Distribution System											1-9-19	ok								
	Electrical System Design		✓									1-9-19	ok								

NAME OF FACULTY	SUBJECT(S) TAUGHT	Syllabus		Midterm Test Questionnaire		Midterm TOS		Final Test Questinnaire		Final TOS		Grade Sheet		Seat Plan		Returned Quiz Form					
		Date	T.I.	Date	T.I.	Date	T.I.	Date	T.I.	Date	T.I.	Date	T.I.	Date	T.I.	Date	T.I.	Date	T.I.	Date	T.I.
	EE Elective 3											1-11-19	ok								
FIDELES, JEMIELOU M.	Basic Electrical Engineering	8/7/19										1-10-19	ok								
	Intruduction to Electrical Engineering	8/7/19										1-10-19	ok								
	Instrumentation and Control	8/7/19										1-10-19	ok								
	Chemistry for Engineers											1-10-19	ok								
	Basic Econ Tax											1-10-19	ok								
GALILA, GALGEN B.	Engineering Economy																				
	Pre-Calculus		ok									1-15-19	ok								
NAVARRO, ANDY BONG F.	Chemistry for Engineers	8/8/19										1-11-19	ok								
	Integral Calculus	8/8/19										1-11-19	ok								
	College Physics 1	8/8/19										1-11-19	ok								
	De Machinery											OC 1-11-19	ok								
LIZA, VERNON V.	Analytic and Solid Geometry											1-10-19	ok								
	Mathematics of the Modern World											1-10-19	ok								
	Chemistry For Engineers											1-10-19	ok								
PAYNANDOS, KEVIN M.	General Filipino	8/8/19		8/14/19		10/8/19		12/4/19		11/4/19		1-10-19	ok								

SURIGAO STATE COLLEGE OF TECHNOLOGY
Narciso St., Surigao City

"For Nation's Greater Heights"

MONITORING FORM FOR PROGRAM REQUIREMENTS

1st Semester, AY 2018 - 2019

NAME OF FACULTY	Research Output		Extension Output		Travel Narrative Report		Accomplishment Report													
	Date	T.I.	Date	T.I.	Date	T.I.	Date	T.I.	Date	T.I.	Date	T.I.	Date	T.I.	Date	T.I.	Date	T.I.	Date	T.I.
MANGCA, DARWIN C.																				
ESPALDON, ALEXIS P.																				
DELOSA, CONRADO JR. B.																				
BALDAPAN, JOSELITO S.																				
FIDELES, JEMIELOU M.																				
GALILA, GALGEN B.																				
NAVARRO, ANDY BONG F.																				
LIZA, VERNON V.																				

SURIGAO STATE COLLEGE OF TECHNOLOGY
Narciso St., Surigao City

"For Nation's Greater Height"

MONITORING FORM FOR COURSE REQUIREMENTS

1st Semester, AY 2018 - 2019

NAME OF FACULTY	SUBJECT(S) TAUGHT	Syllabus		Midterm Test Questionnaire		Midterm TOS		Final Test Questinnaire		Final TOS		Grade Sheet		Seat Plan		Returned Quiz Form					
		Date	T.I.	Date	T.I.	Date	T.I.	Date	T.I.	Date	T.I.	Date	T.I.	Date	T.I.	Date	T.I.	Date	T.I.	Date	T.I.
BACARRO, ROBERT R.	Transmissions Media & Antenna System	8/14/18	✓			10/8/18	✓					1-8-19	ok	8/21/18	✓	11/12/18	✓				
	Vector Analysis	8/14/18	✓			10/9/18	✓					1-8-19	ok	8/22/18	✓	11/19/18	✓				
	Statics of Rigid Bodies	8/15/18	✓			10/9/18	✓					1-8-19	ok	8/23/18	✓	11/14/18	✓				
	ECE Project Study 1	8/16/18	✓			10/10/18	✓					1-8-19	ok	8/23/18	✓	11/15/18	✓				
MADELO, AUREA M.	Electronics 1	2/1/19	ok	2/1/19		2/1/19		2/1/19		2/1/19		1-8-19	ok	2/1/19		2/1/19					
	ECE Elective 1	2/1/19		2/1/19		2/1/19		2/1/19	ok	2/1/19		1-8-19	ok	2/1/19		2/1/19					
	Intoduction to Electronics Engineering	2/1/19	ok	2/1/19	ok	2/1/19	ok	2/1/19	ok	2/1/19		1-8-19	ok	2/1/19		2/1/19					
RUAYA, PERFECTO JR. R.	Advance Logic Circuit											1-9-19 1-9-19	ok ok								
	Data Communications and Networking 1	8/16/18	✓			10/9/18	✓	12/4/18		12/4/18	✓	1-9-19	ok								
	Logic Circuits & Switching Theory	8/16/18	✓			10/5/18	✓	12/4/18		12/4/18	✓	1-9-19	ok								
	Modern Communication Systems											1-9-19	ok								
CALINAWAN, ALDRICH B	Dynamics of Rigid Bodies	12/17/18										1-14-19	ok								
	Mechanics of Deformable Bodies	12/17/18	ok									1-14-19	ok								

NAME OF FACULTY	SUBJECT(S) TAUGHT	Syllabus		Midterm Test Questionnaire		Midterm TOS		Final Test Questinnaire		Final TOS		Grade Sheet		Seat Plan		Returned Quiz Form					
		Date	T.I.	Date	T.I.	Date	T.I.	Date	T.I.	Date	T.I.	Date	T.I.	Date	T.I.	Date	T.I.	Date	T.I.	Date	T.I.
	Numerical Methods	12/17/18										1-14-19									
	Calculus	12/17/18										1-14-19		12/17/18		12/17/18					
ACIDO, JOSEPHINE V.	Mathematics in Modern World	8/14/18		10/9/18		10/9/18		12/3/18		12/3/18		1-7-19		8/21/18		11/13/18					
	Differential Calculus	8/14/18		10/11/18		10/10/18		12/4/18		12/3/18		1-7-19		8/21/18		11/13/18					
	Discrete Mathematics	8/16/18		10/10/18		10/11/18		12/3/18		12/4/18		1-7-19		8/22/18		11/14/18					
	Engineering Materials	8/12/18		10/11/18		10/11/18		12/4/18		12/4/18		1-7-19		8/22/18		11/14/18					
Alipao, Archie B.	PE 101											1-07-19									
Madelo, Cristine P.	Jeep 3 & Jeep 4 Jelp 1											1-14-19									
Madelo, Aurea M.	ECE laws, Code & Ethics	2/1/19																			
	Electronics 2	2/1/19																			
	Industrial Electronics	2/1/19																			

SURIGAO STATE COLLEGE OF TECHNOLOGY
Narciso St., Surigao City

MONITORING FORM FOR PROGRAM REQUIREMENTS

___ Semester, SY ______ - _______

NAME OF FACULTY	Research Output		Extension Output		Travel Narrative Report		Accomplishment Report													
	Date	T.I.	Date	T.I.	Date	T.I.	Date	T.I.	Date	T.I.	Date	T.I.	Date	T.I.	Date	T.I.	Date	T.I.	Date	T.I.
BACARRO, ROBERT R.																				
MADELO, AUREA M.																				
RUAYA, PERFECTO JR. R.																				
CALINAWAN, ALDRICH B																				
ACIDO, JOSEPHINE V.																				

COLLEGE OF ENGINEERING AND INFORMATION TECHNOLOGY
First Semester, Academic Year 2020-2021

COURSE SYLLABUS in EE 201 – ELECTRICAL CIRCUITS 1

Institutional Vision, Mission, and Goals

Vision:

An innovative an d technologically-advanced State College in Caraga.

Mission:

To provide relevant,

a. high quality and sustainable instruction,
b. research, production and extension programs and
c. services within a culture of credible and responsive institutional governance.

Goals:

1. Foster application of the discipline and provide its learner with industry-based training and education particularly in engineering, technology and fisheries.
2. Conduct and utilize studies for the development of new products, systems and services relevant to Philippine life and of the global village.
3. Promote transfer of technology and spread useful technical skills, thus empowering its learners and their activities.

Institutional Intended Learning Outcomes

: SSCT graduates are expected to:

1. Demonstrate globally competitive skills;
2. Manifest positive work ethics and flexibility in various work condition;
3. Exhibit knowledge deemed essential towards work requirements.

Programs Goals:

The Electrical Engineering program aims to design and apply the generation, transmission, and distribution of electrical energy to produce competent engineers that exhibit positive work ethics and flexibility in work conditions for the development of Caraga.

Program Educational Objectives and Relationship to Institutional Mission

Program Educational Objectives	Mission		
	a	b	c
PEO 1. Innovative and knowledgeable in the latest trends in electrical engineering and demonstrate in their jobs as professional the technical expertise and practical skills.	✓	✓	✓
PEO 2. Flexible in working with multidisciplinary teams, responsible for providing solutions in electrical engineering showing attributes of professionalism and critical thinking.	✓	✓	✓
PEO 3. Engage in lifelong learning and are taking leadership roles in electrical engineering organization that are valuable to the advancement of the society.	✓	✓	✓

Program Outcomes and Relationship to Program Educational Objectives

Program Outcomes	Program Educational Objectives		
	1	2	3
a. Apply knowledge of mathematics and sciences to solve complex engineering problems	✓	✓	✓
b. Develop and conduct appropriate experimentation, analyze and interpret data;	✓	✓	✓
c. 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.	✓	✓	✓
d. Function effectively on multi-disciplinary and multi-cultural teams that establish goals, plan tasks, and meet deadlines;	✓	✓	✓
e. Identify, formulate, and solve complex problems in electrical engineering;	✓	✓	✓
f. Recognize ethical and professional responsibilities in engineering practice;	✓	✓	✓
g. Communicate effectively with a range of audiences;	✓	✓	✓
h. Understand the impact of engineering solutions in a global, economic, environmental, and societal context;	✓	✓	✓
i. Recognize the need for additional knowledge and engage in lifelong learning;	✓	✓	✓

j. Articulate and discuss the latest developments in the field of electrical engineering	✓	✓	✓
k. Apply techniques, skills, and modern engineering tools necessary for electrical engineering practice; and	✓	✓	✓
l. Demonstrate knowledge and understanding of engineering and management principles as a member and/or leader in a team to manage projects in multidisciplinary environments.	✓	✓	✓

Course Code EE 201
Course Title Electrical Circuits 1
Course Credit 3 units lecture, 1 unit laboratory
Pre-requisites/Co-requisites Physics 122, Math 112

Course Description
The course covers nodal and mesh analysis; application of network theorems in circuit analysis; analysis of circuits with controlled sources and ideal op-amps; fundamentals of capacitors and inductors; analysis of dc-driven RL, RC, and RLC circuits; sinusoidal steady-state analysis of general RLC circuits.

Course Outcomes and Relationship to Program Outcomes

Course Outcomes: After completing this course, the students must be able to	Program Outcomes												
	a	b	c	d	e	f	g	h	i	j	k	l	m
CO1. Define the basic concepts of electrical quantities, electrical units, and electrical circuit elements.		E			E		E						
CO2. Solve problems utilizing the basic concepts of electric circuits.		E			E		E						
CO3. Identify the practical applications of the basic concepts.		E			E		E						
CO4. Identify the fundamental laws that govern electric circuits.		E			E		E						
CO5. Solve given circuit problems using the fundamental laws of electric circuits.		E			E		E						
CO6. Apply the basic laws and techniques to real-life problems related to resistive circuits.		E			E		E						
CO7. Develop an understanding of how to use the two Kirchhoff's Laws to write nodal and mesh equations.		E			E		E						
CO8. Solve linear electrical circuit problems using		E			E		E						

nodal and mesh analysis.													
CO9. Recognize the circuit analysis techniques used to analyze electrical circuits.		E			E		E						
CO10. Develop and enhance their skills in using nodal analysis and mesh analysis to analyze basic circuits.		E			E		E						
CO11. Define the basic concept of operational amplifiers.		E			E		E						
CO12. Solve complex circuits using circuit analysis techniques.		E			E		E						
CO13. Identify the volt-amp characteristics of capacitors and inductors and their use in basic circuits.		E			E		E						
CO14. Describe how capacitors behave when combined in parallel and in series.		E			E		E						
CO15. Describe how inductors behave when combined in parallel and in series.		E			E		E						
CO16. Solve series, parallel, and series-parallel inductors and capacitors circuits.		E			E		E						
CO17. Analyze the solutions to unforced, first-order linear differential equations.		E			E		E						
CO18. Comprehend singularity equations and know their importance in solving linear differential equations.		E			E		E						
CO19. Analyze the effect of unit step sources on first-order linear differential equations.		E			E		E						
CO20. Solve first-order electric circuit problems.		E			E		E						
CO21. Develop a better understanding of the solution of general second order differential equations.		E			E		E						
CO22. Learn how to determine initial and final values.		E			E		E						
CO23. Analyze the response of source-free series and parallel RLC circuits.		E			E		E						
CO24. Analyze the step response of series and parallel RLC circuits.		E			E		E						
CO25. Describe the general second-order circuits.		E			E		E						
CO26. Solve second-order RLC electric circuit problems.		E			E		E						
CO27. Analyze the concepts of sinusoids and phasors.		E			E		E						

CO28. Describe the phasor relationships for circuit elements.		E			E		E						
CO29. Analyze the concepts of impedance and admittance		E			E		E						
CO30. Describe Kirchhoff's laws in the frequency domain.		E			E		E						
CO31. Solve circuit problems on sinusoids, phasors, impedance and admittance.		E			E		E						
Level: I – Introductory E – Enabling D - Demonstrative													

Detailed Course Syllabus

Course Outcomes	Topics	Time Frame	Teaching and Learning Activities	Assessment Tasks	Resources	Values Integration	Remarks

Express understanding of the Vision and Mission statements of SSCT, including its Goals and Objectives; Analyze the syllabus by looking into the ILOs, Subject Matter, TLAs, Assessment Strategies, Values and References; and Design strategies that will help meet the requirements and obtain desired grades/marks for the course	**ORIENTATION ON THE COURSE** **VMGO** **Syllabus** **Grading System**	1 hr.	*Big Group Discussion* on VMGO *Documentary Analysis* of Syllabus and Grading System *Concept Mapping (Sunflower Map/Fishbone Map)* on strategies to meet course requirements		Computer/ Projector for PowerPoint presentation of the VMGO Syllabus	Obedience, Punctuality, Diligence	
CO1. Define the basic concepts of electrical quantities, electrical units, and electrical circuit elements. CO2. Solve problems utilizing the basic concepts of electric circuits.	**1. BASIC CONCEPTS** **1.1 Charge and Current** **1.2 Voltage** **1.3 Power and Energy** **1.4 Circuit Elements** **1.5 Applications**	2 hrs.	Instructor provides reading module for each subtopic 1.1 to 1.5 which can be available online and offline/hardcopy (upon request). Students can ask	Objectives and problem solving quiz on the basic concepts of electric circuits.	Module from Instructor Computer/laptop/cellular phone (optional) Online	Attentiveness and appreciation of the lesson.	

CO3. Identify the practical applications of the basic concepts.			the clarifications and questions through Google Classroom, Messenger Group Chat, or text message		Resources (optional)		
CO4. Identify the fundamental laws that govern electric circuits. CO5. Solve given circuit problems using the fundamental laws of electric circuits. CO6. Apply the basic laws and techniques to real-life problems related to resistive circuits.	**2. BASIC LAWS** **2.1 Ohm's Law** **2.2 Nodes, Branches and Loops** **2.3 Kirchhoff's Laws** **2.4 Series Resistors and Voltage Division** **2.5 Parallel Resistors and Current Division** **2.6 Application**	4 hrs.	Instructor provides reading module for each subtopics 2.1 to 2.6 which can be available online and offline/hardcopy (upon request) Students can ask clarifications and question through Google Classroom, Messenger PM/GC, or thru text messages.	Problem solving quiz on the basic laws of electric circuits	Module from Instructor Computer/laptop/cellular phone (optional) Online Resources (optional)	Diligence and appreciation of the basic laws of electric circuits.	
CO7. Develop an understanding of how to use the two Kirchhoff's Laws to	**3. NODAL AND MESH ANALYSIS** **3.1 Nodal Analysis** **3.2 Nodal Analysis with Voltage Sources** **3.3 Mesh Analysis** **3.4 Mesh Analysis**	6 hrs.	Instructor provides reading module for each subtopics 3.1 to 3.5 which can be available online	Assignment and problem solving quiz on nodal and mesh analysis.	Module from Instructor	Attentiveness, diligence and analytical thinking.	

write nodal and mesh equations. CO8. Solve linear electrical circuit problems using nodal and mesh analysis.	**with Current Sources** **3.5 Nodal Versus Mesh Analysis**		and offline/hardcopy (upon request) Students can ask clarifications and question through Google Classroom, Messenger PM/GC, or thru text messages.		Computer/laptop/cellular phone (optional) Online Resources (optional)		
CO9. Recognize the circuit analysis techniques used to analyze electrical circuits. CO10. Develop and enhance their skills in using nodal analysis and mesh analysis to analyze basic circuits. CO11. Define the basic concept of operational amplifiers. CO12. Solve complex circuits using circuit analysis techniques.	**4. CIRCUIT ANALYSIS TECHNIQUES** **4.1 Linearity Property** **4.2 Superposition** **4.3 Source Transformation** **4.4 Thevenin's Theorem** **4.5 Norton's Theorem** **4.6 Maximum Power Transfer** **4.7 Wye-Delta Transformations** **4.8 Operational Amplifiers**	10 hrs.	Instructor provides reading module for each subtopics 4.1 to 4.8 which can be available online and offline/hardcopy (upon request) Students can ask clarifications and question through Google Classroom, Messenger PM/GC, or thru text messages.	Assignment and problem solving quiz on the different circuit analysis techniques	Module from Instructor Computer/laptop/cellular phone (optional) Online Resources (optional)	Perseverance, Analytical thinking and patience	
MIDTERM EXAMINATION (2 hours)							

CO13. Identify the volt-amp characteristics of capacitors and inductors and their use in basic circuits. CO14. Describe how capacitors behave when combined in parallel and in series. CO15. Describe how inductors behave when combined in parallel and in series. CO16. Solve series, parallel, and series-parallel inductors and capacitors circuits.	**5. CHARACTERISTICS OF ENERGY-STORING ELEMENTS** **5.1 Capacitors** **5.2 Series and Parallel Capacitors** **5.3 Inductors** **5.4 Series and Parallel Inductors**	6 hrs.	Instructor provides reading module for each subtopic 5.1 to 5.4 which can be available online and offline/hardcopy (upon request). Students can ask the clarifications and questions through Google Classroom, Messenger Group Chat, or text message.	Objectives and problem solving quiz on the characteristic of energy storing elements.	Module from Instructor Computer/laptop/cellular phone (optional) Online Resources (optional)	Appreciation, self-confidence and diligence.	
CO17. Analyze the solutions to unforced, first-order linear differential equations. CO18. Comprehend singularity equations and know their importance in solving linear differential equations.	**6. ANALYSIS OF RL AND RC CIRCUITS** **6.1 The Source-Free RC Circuit** **6.2 The Source-Free RL Circuit** **6.3 Singularity Functions** **6.4 Step Response of an RC Circuit** **6.5 Step Response of**	7 hrs.	Instructor provides reading module for each subtopics 6.1 to 6.5 which can be available online and offline/hardcopy (upon request)	Problem solving quiz on first-order circuits.	Module from Instructor Computer/laptop/cellular phone (optional)	Perseverance, Attentiveness and analytical thinking.	

CO19. Analyze the effect of unit step sources on first-order linear differential equations. CO20. Solve first-order electric circuit problems.	**an RL Circuit**		Students can ask clarifications and question through Google Classroom, Messenger PM/GC, or thru text messages.		Online Resources (optional)		
CO21. Develop a better understanding of the solution of general second order differential equations. CO22. Learn how to determine initial and final values. CO23. Analyze the response of source-free series and parallel RLC circuits. CO24. Analyze the step response of series and parallel RLC circuits. CO25. Describe the general second-order circuits. CO26. Solve second-order RLC electric circuit problems.	**7. ANALYSIS OF RLC CIRCUITS** **7.1 Finding Initial and Final Values** **7.2 The Source-Free Series RLC Circuit** **7.3 The Source-Free Parallel RLC Circuit** **7.4 Step Response of a Series RLC Circuit** **7.5 Step Response of a Parallel RLC Circuit** **7.6 General Second-Order Circuits** **8. SINUSOIDS AND**	7 hrs.	Instructor provides reading module for each subtopic 7.1 to 7.6 which can be available online and offline/hardcopy (upon request). Students can ask the clarifications and questions through Google Classroom, Messenger Group Chat, or text messages.	Assignment and problem solving quiz on second-order circuits.	Module from Instructor Computer/laptop/cellular phone (optional) Online Resources (optional)	Attentiveness, Perseverance, self-confidence and analytical thinking.	

CO27. Analyze the concepts of sinusoids and phasors. CO28. Describe the phasor relationships for circuit elements. CO29. Analyze the concepts of impedance and admittance. CO30. Describe Kirchhoff's laws in the frequency domain. CO31. Solve circuit problems on sinusoids, phasors, impedance and admittance.	**PHASORS** **8.1 Sinusoids** **8.2 Phasors** **8.3 Phasor Relationships for Circuit Elements** **8.4 Impedance and Admittance** **8.5 Kirchhoff's Laws in the Frequency Domain** **8.6 Impedance Combinations**	5 hrs.	Instructor provides reading module for each subtopics 8.1 to 8.6 which can be available online and offline/hardcopy (upon request) Students can ask clarifications and question through Google Classroom, Messenger PM/GC, or thru text messages.	Problem solving quiz on the concepts of sinusoids, phasors, impedance and admittance.	Module from Instructor Computer/laptop/cellular phone (optional) Online Resources (optional)	Appreciation, Patience and diligence.	
FINAL EXAMINATION (3 hours)							

References:

- Charles Alexander, Matthew Sadiku-*Fundamentals of Electric Circuits* (McGraw-Hill Education; 6th ed. 2016)
- Mahmood Nahvi, PhD. & Joseph A. Edminister- *Schaum's Outlines of Electric Circuits* (McGraw-Hill Education; 7th ed. 2017)

Course Requirements:

- Assignment and Quizzes
- Laboratory Experiments
- Midterm & Final Examination

Course Evaluation:

Criteria Lecture Grade

- Quizzes and Online outputs/interaction 20%
- Laboratory Activities 40%
- Major Exams (Midterm & Finals) 40%

TOTAL 100%

Grade Point	Description
1.0	Excellent
1.5 – 1.1	Very Good
2.0 – 1.6	Highly Satisfactory
2.5 – 2.1	Good
2.9 – 2.6	Satisfactory
3.0	Passing
5.0	Failed due to poor performance, absences, withdrawal without notice
DRP	Dropped with approved dropping slip
INC	Incomplete requirements but w/ passing class standing. INC is for non-graduating students only

Source: *SSCT Student Handbook*

Course Policies:

1. Attendance will be checked in every class sessions to prove the students' presence in the class. This is to monitor whether absences incurred by the student is still within the allowed number of absences for a course as stipulated in the Student Handbook.
2. Excuse from the class will only be honoured if a Memo from the school is issued before the absence or valid excuse letter from parents/guardians is presented after the absence. No other excuses will be entertained.
3. The use of multiple choice questionnaires is used during the midterm and final examination. However, for problem solving, a detailed solution is required written legibly in a separate long size bond paper or newsprint.
4. Cheating in midterm and final examination will entail a zero score. Cheating is defined to include an attempt to defraud, deceive, or mislead the instructor in arriving at honest grade assessment.
5. Plagiarism in papers and other works will entail zero score. Plagiarism is a form of cheating that involves presenting as one's own work the ideas or work of another.

6. Students who fail to take the midterm and final examination as scheduled shall be required to write an explanation letter address to the Program Chair, noted by the parents/guardian, and approved by the Dean. After that, he/she can take the missed examination.
7. Clearance is required when the student take the final examination based on No Clearance No Examination Policy.
8. Project shall be submitted on the set deadline by the instructor. Unsatisfactory project will not be accepted. However, the student will be given a chance to improve their project. Non-submission of the project on the set deadline means a zero score.

Revision History:

Revision No.	Date of Revision	Date of Implementation	Highlight of Revision
1	August 2019	1st Sem, AY 2019-2020	Followed school OBTL Format as per CMO #101 S. 2017
2	December 5, 2020	1st Sem, AY 2020-2021	Followed suggestion from ChED COPC.

Preparation, Review, and Approval:

Preparation, Review, and Approval:

Prepared by:

ENGR. VERNON V. LIZA
Guest Lecturer
Date: Aug 11, 2020

Checked and Reviewed by:

ENGR. VICENTE Z. DELANTE, MEng'g
Program Chair, BSEE
Date: Aug 11, 2020

Noted:

ENGR. ROBERT R. BACARRO, MECE, MBA
Dean, CEIT
Date: Aug 13, 2020

Recommending Approval:

DR. RONITA E. TALINGTING
Campus Director
Date: Aug 14, 2020

Approved by:

DR. EMMYLOU A. BORJA
VP for Academic Affairs
Date: Aug. 14, 2020