COLLEGE OF ENGINEERING AND INFORMATION TECHNOLOGY
1st Semester, Academic Year 2019-2020

COURSE SYLLABUS in EE 101 – CIRCUIT 1

Institutional Vision, Mission, and Goals

SSCT Vision:

An innovative, technologically-advanced State College in Caraga.

SSCT Mission:
To provide relevant, high quality and sustainable instruction, research, production and extension programs and services within a culture of credible and responsive institutional governance.

SSCT 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. Innovation and technical skills;
2. Exhibit critical thinking collaboration, and communication;
3. Manifest leadership, adaptability and responsibility.

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.
Programs Educational Objectives:	The BS Electrical Engineering program is geared towards producing graduates who have the following attributes within three to five years from graduation: 1. Graduates demonstrate technical expertise and practical skills in the field of electrical engineering. 2. Graduates demonstrate flexibility in working with multidisciplinary teams and apply professional and ethical responsibility in the practice of electrical engineering. 3. Graduates are engaged in lifelong learning and knowledgeable in contemporary issues relevant to the field of electrical engineering.
Program Outcome(s)	Upon the completion of the course, the students must able to: a. Apply knowledge of mathematics and sciences to solve complex engineering problems; - **enabling** b. Develop and conduct appropriate experimentation, analyze and interpret data; - **demonstrate** c. Function effectively on multi-disciplinary and multi-cultural teams that establish goals, plan tasks, and meet deadlines; - **enabling** d. Communicate effectively with a range of audiences; - **demonstrate** e. Apply techniques, skills, and modern engineering tools necessary for electrical engineering practice; - **enabling** f. Demonstrate knowledge and understanding of engineering and management principles as a member and/or leader in a team to manage projects in multi-disciplinary environment. - **demonstrate**
Course Code	EE 101
Course Title	CIRCUIT 1
Course Credit	3 units lecture, 1 unit laboratory
Pre-requisites/Co-requisites	Physics 102, MATH 107

Course Description: This is a 3-unit course covers the basic concepts and fundamental laws of electrical circuit theory; analysis and application of series, parallel and series-parallel resistive circuits; mesh and nodal analysis theorems; characteristics of inductors and capacitors; analysis of RL, RC, and RLC circuits with excitation.

Course Intended Learning Outcomes	At the end of the course, the students should be able to:

Detailed Course Syllabus

Intended Learning Outcome	Topics	Time Frame	Teaching and Learning Activities	Assessment Tasks	Resources	Values Integration	References	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 Power point presentation of the VMGO Syllabus	Obedience, Punctuality, Diligence	Student Handbook	
Identify basic electrical quantities, electrical units,	**1. BASIC ELECTRICAL QUANTITIES SYSTEM OF**	4 hrs.	*Small Group Discuss* on electrical quantities, electrical units and	*Problem set Compilation* on the Basic Electrical	Whiteboard Marker Handouts	Appreciating the complex of the lesson	Alexander C. & Sadiku M. 4th Edition	

and electrical components Identify and solve Ohm's Law and Kirchhoff's Law	**UNITS; CIRCUIT COMPONENTS** **2. OHM'S LAW AND KIRCHHOFF'S LAWS**	4 hrs.	components *Small Group Discuss* on the Ohm's Law and Kirchhoff's Law	Quantities system of units; Circuit components as well as Ohm's Law and Krchhoff's Laws			(2009) Charles Alexander, Matthew Sadiku-Fundamentals of Electric Circuits (2012, McGraw-Hill Science-Engineering Math)	
Identify and Analyze Series-Parallel Circuits Solve complex Series-Parallel Circuits Problems Learn the application of different types of circuits	**3. ANALYSIS OF SERIES, PARALLEL, SERIES-PARALLEL CIRCUITS** **4. APPLICATIONS OF RESISTIVE CIRCUITS-RESISTANCE BRIDGE CIRCUITS; BIASING CIRCUITS VOLTAGE DIVIDER CIRCUITS; ANALOG METERS**	4 hrs. 4 hrs. 2 hrs.	*Small group discussion and Brainstorming:* Analyze Series-Parallel Circuits and problems *Hands-on Laboratory Activity* on Applications of resistive circuits-resistance bridge circuits.	*Problem set Compilation* on the Analysis of resistive circuits with controlled sources and network theorems Rubrics: Accuracy: 40 Timeliness 30 Attitude/teamwork 30 TOTAL 100	Whiteboard Marker Handouts	Self-confidence in understanding and appreciating the lesson	Alexander C. & Sadiku M. 4th Edition (2009) Charles Alexander, Matthew Sadiku-Fundamentals of Electric Circuits (2012, McGraw-Hill Science-Engineering Math)	
Analyze and Solve complex	**5. ANALYSIS OF RESISTIVE**	4 hrs.	*Small group discussion and*	*Problem set Compilation*	Whiteboard Marker	Awareness in dealing	Alexander C. & Sadiku M.	

Series-Parallel Circuits problems with controlled sources Analyze and Solve Complex Series-Parallel Circuits problems with controlled sources using circuit analysis techniques and network theorems such as Thevenin and Norton Theorems	**CIRCUITS WITH CONTROLLED SOURCES** **6. CIRCUIT ANALYSIS TECHNIQUES AND NETWORK THEOREMS**	4 hrs. 2 hrs.	*Brainstorming:* on Series-Parallel Circuits problems and network theorems of Thevenin and Norton Laws *Hands-on Laboratory Activity* on Circuit analysis techniques and network theorems	on the Analysis of resistive circuits with controlled sources and network theorems Rubrics: Accuracy: 40 Timeliness 30 Attitude/teamwork 30 TOTAL 100	Handouts	with the difficulties in lesson	4th Edition (2009) Charles Alexander, Matthew Sadiku-Fundamentals of Electric Circuits (2012, McGraw-Hill Science-Engineering Math)	
MIDTERM EXAMINATION (3 hours)								
Identify Inductors and Capacitors Analyze the DC response of inductors and capacitors	**7. FUNDAMENTALS OF INDUCTORS AND CAPACITORS**	8 hrs. 2 hrs.	*Small group discussion and Brainstorming:* on characteristics of internal forces in rigid bodies, proper plotting and labelling of structural members *Hands-on Laboratory Activity* on inductors and	*Problem set Compilation* on the Internal Forces Rubrics: Accuracy: 40 Timeliness 30	Whiteboard Marker Handouts	Self-confidence in understanding and appreciating the lesson	Alexander C. & Sadiku M. 4th Edition (2009) Charles Alexander, Matthew Sadiku-Fundamentals of Electric Circuits (2012,	

			capacitors	Attitude/teamwork 30 TOTAL 100			McGraw-Hill Science-Engineering Math)	
Identify and Analyze first order dynamic circuits Solve complex problems	**8. ANALYSIS OF FIRST ORDER DYNAMIC CIRCUITS WITH DC EXCITATION**	8 hrs 2 hrs.	*Small group discussion and Brainstorming:* on First order dynamic circuits and complex problems *Hands-on Laboratory Activity* on first order dynamic circuit with DC excitation	*Problem set Compilation* on the Analysis of first order dynamic circuits with DC excitation Rubrics: Accuracy: 40 Timeliness 30 Attitude/teamwork 30 TOTAL 100	Whiteboard Marker Handouts	Self-confidence in understanding and appreciating the lesson	Alexander C. & Sadiku M. 4th Edition (2009) Charles Alexander, Matthew Sadiku-Fundamentals of Electric Circuits (2012, McGraw-Hill Science-Engineering Math)	
Analysis and solve complex second order dynamic circuits	**9. ANALYSIS OF SECOND-ORDER DYNAMIC CIRCUITS WITH DC EXCITATION**	8 hrs. 2 hrs.	*Small group discussion and Brainstorming:* on the Analysis and complex second order dynamic circuits *Hands-on Laboratory Activity* on second order dynamic circuit with	*Problem set Compilation* on the Analysis of Second-order Dynamic Circuits with DC Excitation Rubrics: Accuracy: 40 Timeliness 30 Attitude/teamwork 30	Whiteboard Marker Handouts	Self-confidence in understanding and appreciating the lesson	Alexander C. & Sadiku M. 4th Edition (2009) Charles Alexander, Matthew Sadiku-Fundamentals of Electric Circuits (2012, McGraw-Hill Science-	

			DC excitation	TOTAL 100			Engineering Math)	
FINAL EXAMINATION (3 hours)								

Course Requirements:

- Individual Reports
- Graphic Organizers
- Group Project
- Midterm & Final Examination

Grading System:

Criteria: Academic Subjects	Lecture Grade	Laboratory Grade
➢ Quizzes/ Problem Sets	20%	
➢ Project	30%	
➢ Laboratory Exercises		50%
➢ Laboratory Reports		50%
➢ Major Examination	50%	
TOTAL	**100%**	**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 sheet will be passed around and the student is responsible to sign to prove his/her presence for that sessions. This is to monitor whether absences incurred by the student is still within the allowed number of absences for a course stipulated in the Student Handbook.
2. Excuse from the class will only be honored 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. It is a part of your education to learn responsibility and self-discipline, particularly with regards to academic honesty. Cheating is defined to include an attempt to defraud, deceive, or mislead the instructor in arriving at honest grade assessment. Plagiarism is a form of cheating that involves presenting as one's own work the ideas or work of another. Therefore, all portions of any test, project, or major examination submitted by you for a grade must be your own work, unless you are instructed to work collaboratively. Cheating in a major course examination by a student will entail a failing mark for the given course. Plagiarism in papers and other works will entail zero score for the said requirement.
4. The use of multiple choice questionnaires is used during the exams. However, detailed solution to the problem should be written legibly in a clean long size bond paper.
5. Unsatisfactory project will not be accepted. However, the student/group will be given a chance to improve their project. Non-submission of the project on the set deadline means an automatic final grade of 5.
6. Exemptions from taking the final examination are as follows: (1) No exam below 60%, (2) No missed quizzes/exams, (3) Laboratory reports are submitted on the specified date, (4) The project is submitted on the specified deadline, and (5) Absences do not exceed the maximum allowed.
7. This class policy serves as our written agreement for the whole semester.

Prepared by:

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