Surigao City Campus

Bachelor of Science in Electrical Engineering

SURIGAO STATE COLLEGE OF TECHNOLOGY

SSCT

"For Nation's Greater Heights"

I.3. The faculty revise and enhance their syllabi preferably every two years and *as needed.*

College : **College of Engineering**
Program : **Bachelor of Science in Electrical Engineering**
Job/ Occupation : **ELECTRICAL ENGINEER**

DUTIES	**TASKS**					
1. **diagnose electrical problems using the electrical diagrams or blue print (as built electrical plans)**	Gather information	Understand the malfunction	Identify the parameters to be diagnose	Identify the source of the problem	Correct and verify the repair	Performed root cause analysis
WORK BEHAVIORS						
DUTY 1: diagnose the problem						
SKILLS:		KNOWLEDGE:		ATTITUDES:		
Problem solving skills		Excellent understanding in all electrical circuit analysis		Efficient in problem solving with a timely fashion without difficulty Can easily and effectively identify root causes and recommend exact solution		

DUTIES 2	TASKS					
2. install, repair, and maintenance electrical power systems(building wiring, controls, electrical machines and transformers)	Install an ideal method of reducing possible issues that may arise in the future Perform four fundamental operations	Perform basic installation , repair and maintenance of electric power systems equipment.	Determine the best course of action in starting the work	Protect delicate pieces of installation		

WORK BEHAVIORS		
DUTY 2: Install and repair electrical system		
SKILLS:	KNOWLEDGE:	ATTITUDES:
Strong technical, theoretical and hands - on ability.	Well experience in installation, repair and maintenance of electrical power systems.	Team player

DUTIES 3	TASKS					
FACILITIES MANAGER	**Know electrical operation of the building**	**Provide strong leadership**	**Work under time pressure**	**Disseminate communicatio n effectively.**		
WORK BEHAVIORS						
SKILLS:		KNOWLEDGE:		ATTITUDES:		
Proven managerial ability that commands strong leadership who can work under pressure with an effective communication skills to his subordinate		Expert in managerial and organizational functions		Output oriented		

DUTIES 4	**TASK**					
Power Plant Manager	Manage power plant operation	Supervise the work and duties of electrical engineers	Provide knowledge to subordinate through effective communication	Assign specific duties and responsibilities	Schedule technical work.	

SKILLS:	KNOWLEDGE:	ATTITUDES:
Proven managerial and power plant operation ability	Expert in managerial and operational functions.	GOAL oriented

Republic of the Philippines
SURIGAO STATE COLLEGE OF TECHNOLOGY
Narciso Street, Surigao City

DUTIES	TASKS					
5. **ELECTICAL RESEARCHERS, PROFESSOR AND FACULTY**	Conduct research	Perform as an educator	Coordinate LGU'S and non-LGU's in research			
WORK BEHAVIORS						
SKILLS:	KNOWLEDGE:	ATTITUDES:				
Highly skilled in electrical engineering practices and applications	Has an in-depth understanding in all electrical engineering foundation and sciences.	Passionate in electrical work and knowledge-sharing.				

Prepared by

ENGR. VICENTE Z. DELANTE
EE CHAIRPERSON

Check and Reviewed by

ENGR. RICHARD T. SAING
UNIDO / UNDP SR. EE ADVISOR

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Workshop on Revision of Course Syllabi – Session 2

Presented by:

ENGR ROBERT R. BACARRO

Workshop 2

INSTRUCTION: Using MS-Word, fill in the matrix below. Then save it under the filename: ***Workshop2-College-LastName***.

ILO-CC-TLE-T-V MATRIX

Intended Learning Outcome (ILO)	Course Content (CC)	Teaching and Learning Activity (TLE)	Resources (R)	Values

Sample 2: Scope and Sequence Grid

Intended Learning Outcome (ILO)	Course Content (CC)	Teaching Learning & Activity (TLA)	Resources (R)	Values (V)
ECE361-ILO1. Identify the signal characteristics used in signal processing	1. Signal Characteristics and its classifications	Class discussion on the characteristics and classifications of signals *Synchronous*	Visual aids on signal characteristics and classifications	Core Value: *Socially responsive* Sub-Value: *Sympathetic classifications of signals*
ECE361-ILO2. Interpret signal samples taken from analog signal	2. Sampling theorem and Aliasing	Viewing a video about sampling and aliasing with guide questions *Asynchronous*	Video clip in signal sampling	Core Value: *Service oriented* Sub-Value: *Diligent sampling of signals*
ECE361-ILO3. Analyze the convolution process in a given system	3. Convolution of Signals *MIDTERM EXAM*	Demonstration in convolution of two signals *Synchronous*	Visual aids in signal convolution	Core Value: *Committed* Sub-Value: *Determined to convolve signals*
ECE361-ILO4. Solve Fourier transform of a given analog signal	4. Fourier transform	Concept mapping the formulas used in Fourier transform *Synchronous*	Audio-Visual aids on Fourier Transform	Core Value: *Transformational* Sub-Value: *Adaptive application of Fourier Transform*
ECE361-ILO5. Solve Z transform of a given digital signal	5. Z transform	Class discussion about z-transform *Synchronous*	Audio-Visual aids on Z Transform	Core Value: *Transformational* Sub-Value: *Optimistic application of Z Transform*
ECE361-ILO6. Design FIR and IIR filters used in signal processing	6. Filtering and the design of FIR and IIR filters *FINAL EXAM*	Viewing a video about filtering and FIR and IIR filters *Asynchronous*	Video clip on FIR and IIR Filters	Core Value: *Service oriented* Sub-Value: *Authentic design of filters*

Sample 2: Scope and Sequence Grid

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ECE361-ILO1. Identify the signal characteristics used in signal processing	1. Signal Characteristics and its classifications	Class discussion on the characteristics and classifications of signals *Synchronous*	Visual aids on signal characteristics and classifications	
ECE361-ILO2. Interpret signal samples taken from analog signal	2. Sampling theorem and Aliasing	Viewing a video about sampling and aliasing with guide questions *Asynchronous*	Video clip in signal sampling	
ECE361-ILO3. Analyze the convolution process in a given system	3. Convolution of Signals *MIDTERM EXAM*	Demonstration in convolution of two signals *Synchronous*	Visual aids in signal convolution	
ECE361-ILO4. Solve Fourier transform of a given analog signal	4. Fourier transform	Concept mapping the formulas used in Fourier transform *Synchronous*	Audio-Visual aids on Fourier Transform	
ECE361-ILO5. Solve Z transform of a given digital signal	5. Z transform	Class discussion about z-transform *Synchronous*	Audio-Visual aids on Z Transform	
ECE361-ILO6. Design FIR and IIR filters used in signal processing	6. Filtering and the design of FIR and IIR filters *FINAL EXAM*	Viewing a video about filtering and FIR and IIR filters *Asynchronous*	Video clip on FIR and IIR Filters	

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Intended Learning Outcome (ILO)	Course Content (CC)	Teaching Learning & Activity (TLA)	Resources (R)	Values (V)
ECE361-ILO1. Identify the signal characteristics used in signal processing	1. Signal Characteristics and its classifications	Class discussion on the characteristics and classifications of signals *Synchronous*		
ECE361-ILO2. Interpret signal samples taken from analog signal	2. Sampling theorem and Aliasing	Viewing a video about sampling and aliasing with guide questions *Asynchronous*		
ECE361-ILO3. Analyze the convolution process in a given system	3. Convolution of Signals *MIDTERM EXAM*	Demonstration in convolution of two signals *Synchronous*		
ECE361-ILO4. Solve Fourier transform of a given analog signal	4. Fourier transform	Concept mapping the formulas used in Fourier transform *Synchronous*		
ECE361-ILO5. Solve Z transform of a given digital signal	5. Z transform	Class discussion about z-transform *Synchronous*		
ECE361-ILO6. Design FIR and IIR filters used in signal processing	6. Filtering and the design of FIR and IIR filters *FINAL EXAM*	Viewing a video about filtering and FIR and IIR filters *Asynchronous*		

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Sample 2: Scope and Sequence Grid

Intended Learning Outcome (ILO)	Course Content (CC)	Teaching Learning & Activity (TLA)	Resources (R)	Values (V)
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ECE361-ILO3. Analyze the convolution process in a given system	3. Convolution of Signals *MIDTERM EXAM*			
ECE361-ILO4. Solve Fourier transform of a given analog signal	4. Fourier transform			
ECE361-ILO5. Solve Z transform of a given digital signal	5. Z transform			
ECE361-ILO6. Design FIR and IIR filters used in signal processing	6. Filtering and the design of FIR and IIR filters *FINAL EXAM*			

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Sample 1: Scope and Sequence Grid

Intended Learning Outcome (ILO)	Course Content (CC)	Teaching Learning & Activity (TLA)	Resources (R)	Values (V)
ECE482-ILO1: Identify real-world problems. (ECE482-CO2)	Scanning of Real-World Problems (ECE482-ILO1) • *Selecting Research Problems, Choosing the Project Study*	Paired critiquing on real-world problems *Synchronous*	Video clip on real-world problems	Core Value: *Committed* Sub-Value: *Perseverant in scanning real-world problems*
ECE482-ILO2: Apply project development process in capstone project. (ECE482-CO3)	Engineering Project Development (ECE482-ILO2) • *Problem Analysis, System Design and Development, Project Implementation, System Evaluation*	Video viewing in youtube in engineering project development *Asynchronous*	Website in engineering project development	Core Value: *Transformational* Sub-Value: *Adaptive application of engineering project development*
ECE482-ILO3: Apply project management in implementation of capstone project. (ECE482-CO3)	Project Management (ECE482-ILO3) • *Project Initiation, Project Planning, Project Execution, Project Monitoring and Controlling, Project Closing*	Video viewing in youtube in project management *Asynchronous*	Website in project management	Core Value: *Service oriented* Sub-Value: *Diligent implementation in project management*
ECE482-ILO4: Design system models and simulations of systems operation. (ECE482-CO1)	System Modelling (ECE482-ILO4) • *Software Modelling, Software Simulation* *MIDTERM EXAMINATION*	Perform a system modelling and simulations of system operation *Synchronous*	Video clip in system modelling	Core Value: *Transformational* Sub-Value: *Optimistic system modelling*
ECE482-ILO5: Design the evaluation process of the developed system. (ECE482-CO1)	System Performance Evaluation (ECE482-ILO5) • *Technical Standards, Environmental Issues, Health and Safety, Ethics*	Design an evaluation process of a developed system *Synchronous*	Website in system performance evaluation	Core Value: *Socially responsive* Sub-Value: *Accountable in performance evaluation*
ECE482-ILO6: Apply engineering economy in the profitability of the project. (ECE482-CO3)	Engineering Economy in Project Profitability (ECE482-ILO6) • *Project Costing, Break-Even Analysis, Return of Investment*	Exhibitions in economic feasibility of the capstone project *Asynchronous*	Website in engineering economy	Core Value: *Socially responsive* Sub-Value: *Empathetic in project profitability*
ECE482-ILO7: Design the research journal for presentation in research conference. (ECE482-CO1)	Engineering Research Journal (ECE482-ILO7) • *IEEE Citation, IEEE Research Journal* *FINAL EXAMINATION*	Participate in crafting the capstone project research journal *Synchronous*	Website in IEEE research journal	Core Value: *Committed* Sub-Value: *Determined in crafting the research journal*

Sample 1: Scope and Sequence Grid

Intended Learning Outcome (ILO)	Course Content (CC)	Teaching Learning & Activity (TLA)	Resources (R)	Values (V)
ECE482-ILO1: Identify real-world problems. (ECE482-CO2)	Scanning of Real-World Problems (ECE482-ILO1) • *Selecting Research Problems, Choosing the Project Study*	Paired critiquing on real-world problems *Synchronous*	Video clip on real-world problems	
ECE482-ILO2: Apply project development process in capstone project. (ECE482-CO3)	Engineering Project Development (ECE482-ILO2) • *Problem Analysis, System Design and Development, Project Implementation, System Evaluation*	Video viewing in youtube in engineering project development *Asynchronous*	Website in engineering project development	
ECE482-ILO3: Apply project management in implementation of capstone project. (ECE482-CO3)	Project Management (ECE482-ILO3) • *Project Initiation, Project Planning, Project Execution, Project Monitoring and Controlling, Project Closing*	Video viewing in youtube in project management *Asynchronous*	Website in project management	
ECE482-ILO4: Design system models and simulations of systems operation. (ECE482-CO1)	System Modelling (ECE482-ILO4) • *Software Modelling, Software Simulation* *MIDTERM EXAMINATION*	Perform a system modelling and simulations of system operation *Synchronous*	Video clip in system modelling	
ECE482-ILO5: Design the evaluation process of the developed system. (ECE482-CO1)	System Performance Evaluation (ECE482-ILO5) • *Technical Standards, Environmental Issues, Health and Safety, Ethics*	Design an evaluation process of a developed system *Synchronous*	Website in system performance evaluation	
ECE482-ILO6: Apply engineering economy in the profitability of the project. (ECE482-CO3)	Engineering Economy in Project Profitability (ECE482-ILO6) • *Project Costing, Break-Even Analysis, Return of Investment*	Exhibitions in economic feasibility of the capstone project *Asynchronous*	Website in engineering economy	
ECE482-ILO7: Design the research journal for presentation in research conference. (ECE482-CO1)	Engineering Research Journal (ECE482-ILO7) • *IEEE Citation, IEEE Research Journal* *FINAL EXAMINATION*	Participate in crafting the capstone project research journal *Synchronous*	Website in IEEE research journal	

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Sample 1: Scope and Sequence Grid

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ECE482-ILO3: Apply project management in implementation of capstone project. (ECE482-CO3)	Project Management (ECE482-ILO3) • *Project Initiation, Project Planning, Project Execution, Project Monitoring and Controlling, Project Closing*	Video viewing in youtube in project management *Asynchronous*		
ECE482-ILO4: Design system models and simulations of systems operation. (ECE482-CO1)	System Modelling (ECE482-ILO4) • *Software Modelling, Software Simulation* *MIDTERM EXAMINATION*	Perform a system modelling and simulations of system operation *Synchronous*		
ECE482-ILO5: Design the evaluation process of the developed system. (ECE482-CO1)	System Performance Evaluation (ECE482-ILO5) • *Technical Standards, Environmental Issues, Health and Safety, Ethics*	Design an evaluation process of a developed system *Synchronous*		
ECE482-ILO6: Apply engineering economy in the profitability of the project. (ECE482-CO3)	Engineering Economy in Project Profitability (ECE482-ILO6) • *Project Costing, Break-Even Analysis, Return of Investment*	Exhibitions in economic feasibility of the capstone project *Asynchronous*		
ECE482-ILO7: Design the research journal for presentation in research conference. (ECE482-CO1)	Engineering Research Journal (ECE482-ILO7) • *IEEE Citation, IEEE Research Journal* *FINAL EXAMINATION*	Participate in crafting the capstone project research journal *Synchronous*		

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Intended Learning Outcome (ILO)	Course Content (CC)	Teaching Learning & Activity (TLA)	Resources (R)	Values (V)
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ILO-V Alignment

INTENDED LEARNING OUTCOMES	TOPICS	TIME FRAME	TEACHING-LEARNING ACTIVITIES	ASSESSMENT TASKS	RESOURCES	VALUES INTEGRATION	REMARKS
Perform managerial functions in the hotel setting ***efficiently***						CV: Committed Sub-value: Efficiency	
Perform managerial functions in the hotel setting ***with efficiency***							

ILO-V Alignment

Values integration must be purposive,

NOT accidental or incidental

Specify the SSCT Core Value and its sub-value

Core Value:	**Commitment**
Sub-Value:	**Efficiency**
HM_ILO:	*Perform managerial functions efficiently in the hotel setting*

Core Value:	**Socially responsive**
Sub-Value:	**Empathy**
BEED_LO:	Assess the learners' needs and background with empathy

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ILO-V Alignment

Integrate values either naturally or through the activities

Approach 1: Natural Integration (Lesson)

Topic: OSH Laws and Standards

Possible Values: ***SAFETY in the workplace***
RESPECT for the rights of others

Approach 2: Activity-based Integration

Activity: Preparing financial statements

Possible Values: ***HONESTY***
ACCURACY

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ILO-V Alignment

Transformational To be transformational means to enable remarkable and significant advancements in the system, setting aside mediocre strategies. A transformational institution adapts to recent trends and developments and continues to strive for novelty and creativity to better attain its quality objectives.	• ***Innovative*** To be innovative is to create something new and trendy. It entails utilizing new ways of doing things and engaging in strategies leading to achieving practical results. • ***Adaptive*** To be adaptive is to adjust or conform to different situations and to be flexible to accepted and transformed standards. It also means appropriate functioning even in difficult and challenging situations. • ***Optimistic*** To be optimistic means to look at things and situations with positive mindset and in proper perspectives. It entails finding solutions to problems and achieving affirmative results in all endeavors.

ILO-V Alignment

Committed To be committed is to take into account the obligations to accomplish the responsibilities or tasks that are expected to perform. A committed institution engages itself to dedicated and unwavering works and services in the pursuit of its goals and objectives.	• ***Determined*** To be determined is to be purposive, firm and goal-driven in accomplishing a task. It entails eagerness to do what needs to be done. • ***Dedicated.*** To be dedicated is to be devoted and true in doing commitments and decisions while pursuing the goals being set. • ***Perseverant*** To be perseverant means to be steadfast and positively constant in the face of challenges and setbacks while doing the responsibilities.

ILO-V Alignment

Socially-Responsive To be socially responsive means to carry on the tasks of contributing to the community on services and concerns that would lead to the best interests of the society as a whole. A socially-responsive institution aims to contribute proactively to the welfare of the community that it serves.	• ***Accountable*** To be accountable means to be willing to take the responsibilities accorded to the given tasks while responding to the needs, situations and concerns of the community. • ***Sympathetic*** To be sympathetic is to show compassion, concern, and support to people whatever circumstances and situations they are in. • ***Empathetic*** To be emphatic is to be sensitive and keen to the situations of others, understanding what they think and feeling what they feel.

ILO-V Alignment

CORE VALUE	SUB-VALUE
Service-Oriented To be service-oriented is to aspire to recognize and meet other people's needs, even prior to articulating those necessities. A service-oriented institution actively seeks ways to provide fulfillment and satisfaction on the services rendered to members of the school community.	• ***Authentic*** To be authentic in service means to embrace such culture of seeking to provide for customers' needs, and finding ways to remedy their problems thereby showing empathy and concern for their well-being. • ***Diligent*** To be diligent means to stay focused on given tasks, devotedly taking the jobs to meet the goals, and aiming to serve with dedication and commitment. • ***Helpful*** To be helpful is to render sympathy and support to people who need assistance and help, acting on their immediate and eventual needs.

ILO-V Alignment

Core Values

Service-Oriented
Socially responsive
Committed
Transformational

Service Oriented	Socially responsible	Committed	Transformational
• Authentic • Diligent • Helpful	• Accountable • Sympathetic • Empathetic	• Determined • Dedicated • Perseverant	• Innovative • Adaptive • Optimistic

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ILO-R Alignment

INTENDED LEARNING OUTCOMES	TOPICS	TIME FRAME	TEACHING-LEARNING ACTIVITIES	ASSESSMENT TASKS	RESOURCES	VALUES INTEGRATION	REMARKS
SO1 *Explain* the application of the BOSH principles in the automotive industry (CO1) SO2 Identify the areas of concerns in automative safety (CO1)	BOSH Framework and Principles Areas of concerns in automative safety • Fire Safety • Electrical Safety • Machine Safety • Environmental Safety • Personal Safety		Video viewing on OSH principles and Q&A about it Synchronous Paired critiquing of the video on the violated OSH principles Asynchronous Case analysis of an automotive problem Asynchronous		Video clip on OSH guidelines https://www.youtube.com/watch?v=2ETeYoCWQW1 website on OSH laws https://bit.ly/3haREEv Multiple Choice test via Quizziz https://quizizz.com/admin/quiz/5e5dce005450b5001b8a0b4e/workplace-health-and-safety		

ILO-R Alignment

I. Printed Materials	II. Audio	III. Visual Aids		IV. Audio Visual
1. Textbooks 2. Supplemental materials a. Workbooks b. Duplicated Outlines c. Teacher-prepared study guides d. Reference Books e. Pamphlets f. Magazine Articles g. Newspapers	1. Radio 2. Recorders 3. iPod	1. Chalkboard 2. Still Pictures a. Non-projected 1,1 Photographs 1.2 Illustrations b. Projected 1.1 Slides 1.2 Filmstrips 1.3 Opaque projections 1.4 Overhead projections 1.5 LCD projections 1.6 PowerPoint slides 3. Graphic Materials a. Charts b. Graphs c. Maps and Globes d. Posters	4. Exhibits a. School-made displays b. Bulletin boards c. Museums 5. Flannel board and felt board 6. Objects a. Specimens b. Realias c. Models	1. Films 2. Television shows 3. Videos

ILO-R Alignment

Types of Resources

- Printed
- Visual
- Audio
- Audio-Visual

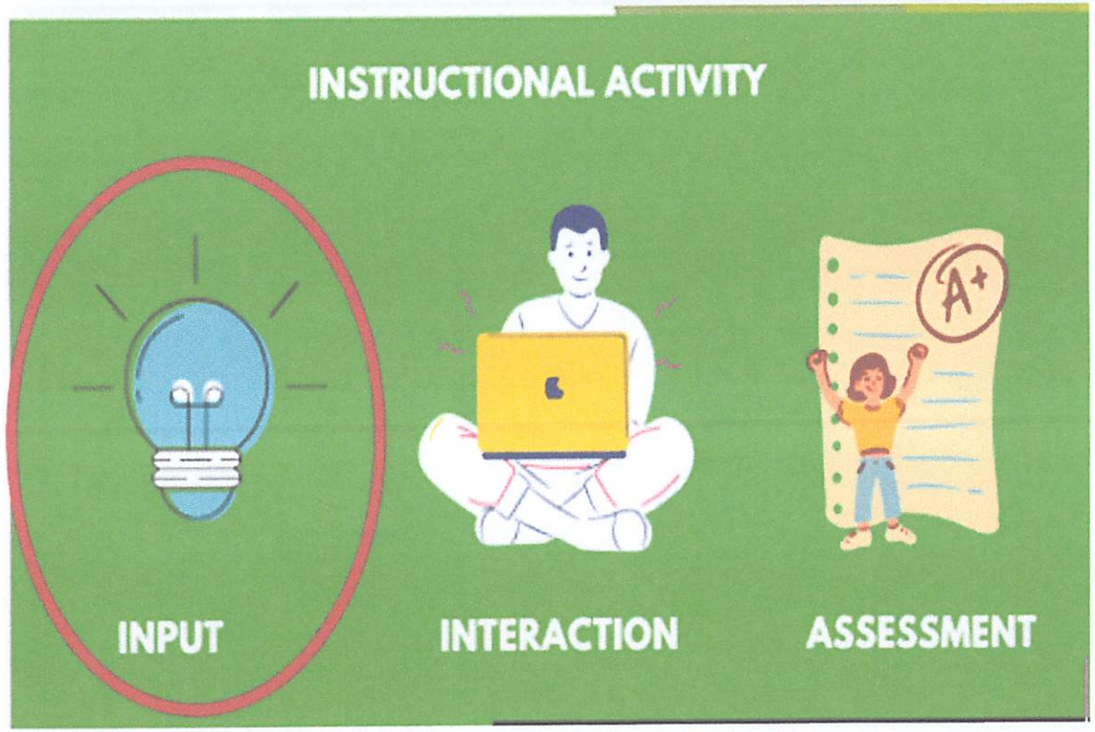
Related Terms

- Instructional Aids
- Resources
- Materials
- Tools – *equipment*
- Facilities
- Media
- Digital Technology

ILO-R Alignment

INPUT RESOURCES

1. Slide Presentations
2. Notes and Handouts
3. Videos
4. Websites
5. MOOC



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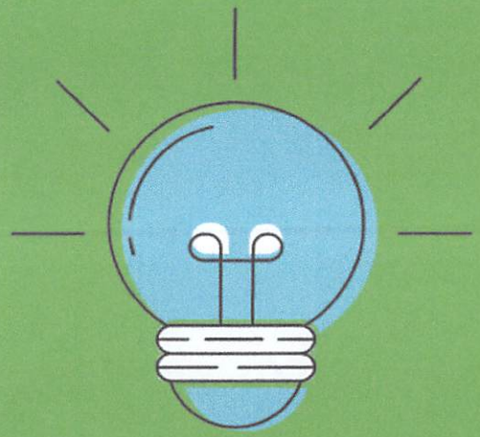
ILO-R Alignment

Use RESOURCES based on the type of ACTIVITY.



INPUT **INTERACTION** **ASSESSMENT**

ILO-TLA Alignment

INTENDED LEARNING OUTCOMES	TOPICS	TIME FRAME	TEACHING-LEARNING ACTIVITIES	ASSESSMENT TASKS	RESOURCES	VALUES INTEGRATION	REMARKS
SO1 *Explain* the application of the BOSH principles in the automotive industry *(CO1)* SO2 Identify the areas of concerns in automative safety *(CO1)*	*BOSH Framework and Principles* *Areas of concerns in automative safety* • Fire Safety • Electrical Safety • Machine Safety • Environmental Safety • Personal Safety		*Video viewing on OSH principles and Q&A about it* Synchronous *Paired critiquing of the video on the violated OSH principles* Asynchronous *Case analysis of an automotive problem* Asynchronous				

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ILO-TLA Alignment

D. Specify the activities by linking them to the topic

Learning VERB
EXPLAIN

Learning TASK
Team discussion ***on the safety guidelines***

Learning VERB
IDENTIFY

Learning TASK
Pointing out ***essential components of an effective marketing plan***

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ILO-TLA Alignment

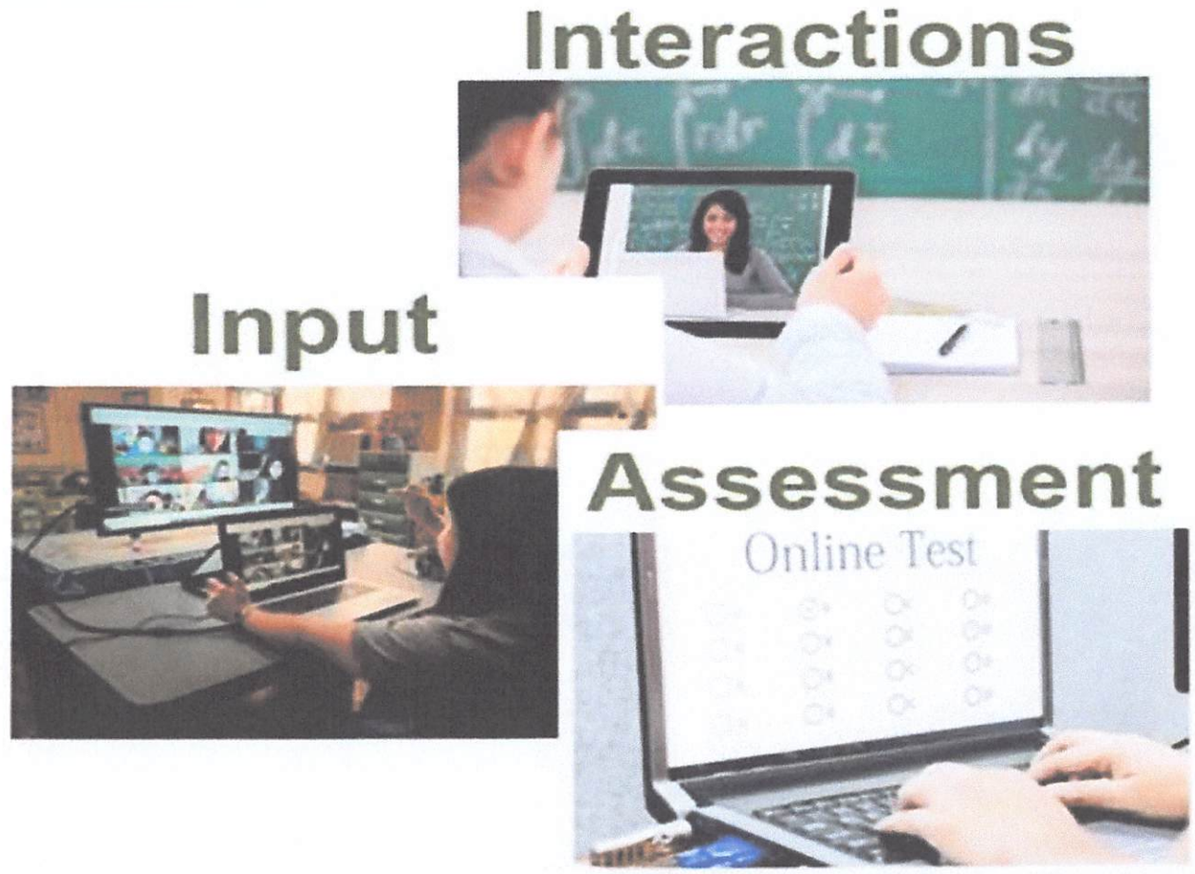
C. Always consider the alignment or congruence of the activities to the skills of the LOs.

Alignment of TLAs to the LOs

Learning VERB **EXPLAIN**	Learning TASK **Team discussion** *on the safety guidelines*
Learning VERB **IDENTIFY**	Learning TASK **Concept mapping** *the essential components of an effective marketing plan*
Learning VERB **PERFORM**	Learning TASK **Demonstration** *on techniques of table serving*

ILO-TLA Alignment

B. Always consider the alignment or congruence of the activities to the skills of the LOs.



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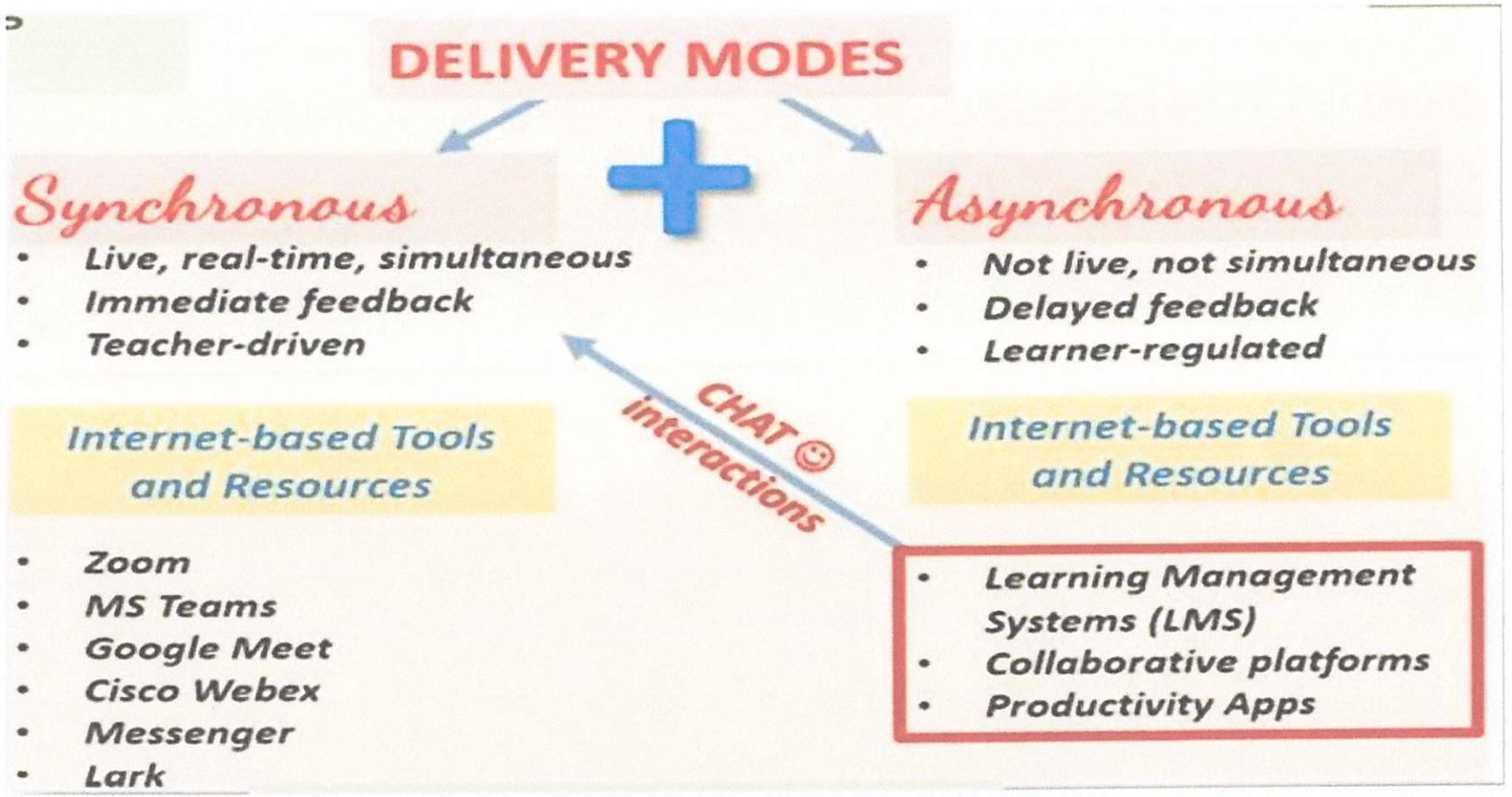
ILO-TLA Alignment

A. To manage blended learning, decide on the TL Activities purposively



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ILO-TLA Alignment

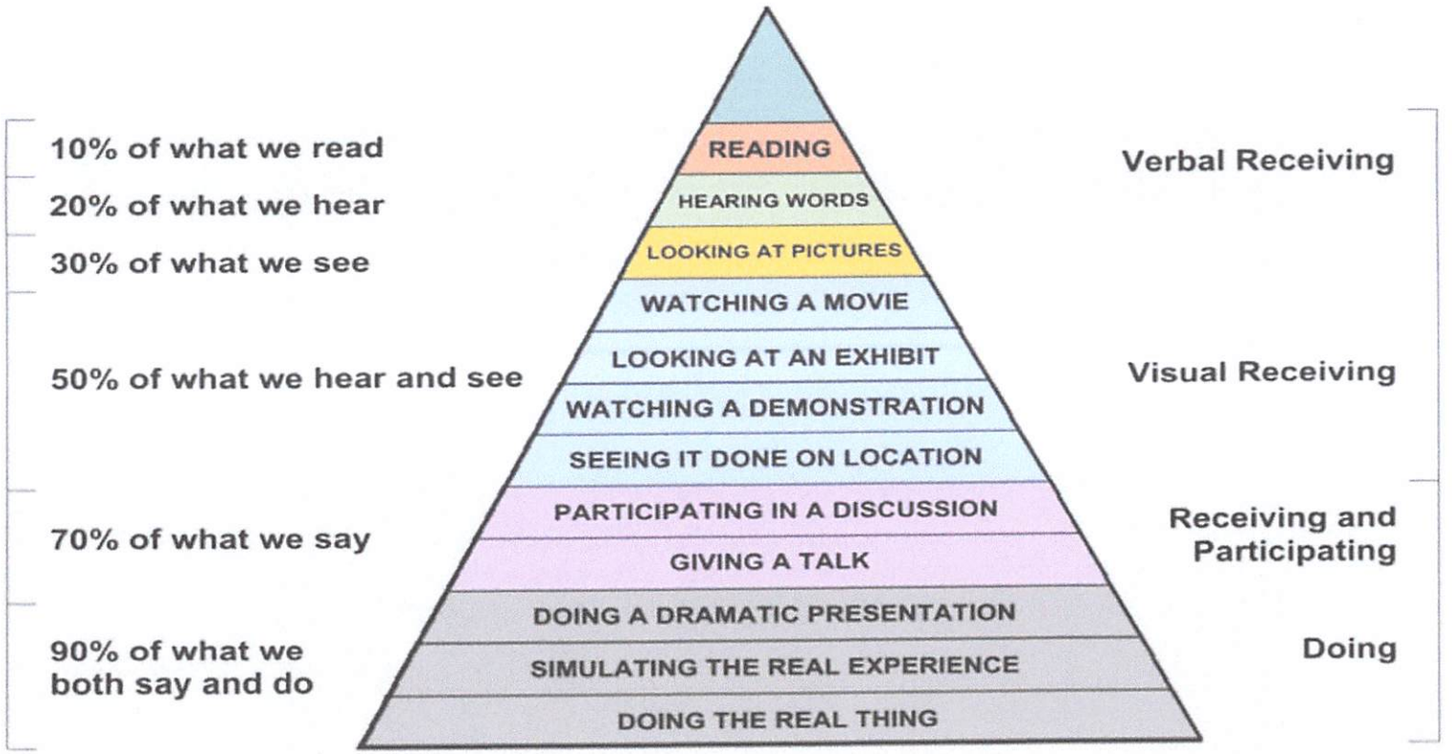
BLENDED APPROACH

Synchronous
Asynchronous

CONE OF LEARNING

WE TEND TO REMEMBER OUR LEVEL OF INVOLVEMENT

(developed and revised by Bruce Hyland from material by Edgar Dale)



Edgar Dale, *Audio-Visual Methods in Teaching* (3rd Edition). Holt, Rinehart, and Winston (1969).

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Session II

ILO-TLA-R-V Alignment

OBTL Syllabus Components

Intended Learning Outcome (ILO)	Course Content (CC)	Time Frame	Teaching Learning & Activity (TLA)	Assessment Task (AT)	Resources (R)	Values (V)	Remarks

Constructive Alignment

"For Nation's Greater Heights"

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:

ENGR. VERNON V. LIZA
Faculty
Date: Aug 4, 2019

Checked and Reviewed by:

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Program Chair, BSEE
Date: Aug 5, 2019

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Program Chair, BSECE
Date: Aug 5, 2019

ENGR. ANALYN S. MORITE, Ph.D. TM
Program Chair, BSCpE
Date: Aug 5, 2019

ENGR. VIRNE V. PORTUGUES
Program Chair, BSCE
Date: Aug 5, 2019

Noted by:

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

Date: Aug. 5, 2019

Recommended by:

CARLOS H. DONOSO, EdD
Campus Director

Date: Aug. 5, 2019

Approved by:

EMMYLOU A. BORJA, EdD
VP for Academic Affairs

Date: Aug. 5, 2019

COLLEGE OF ENGINEERING AND INFORMATION TECHNOLOGY

Second Semester, Academic Year 2021-2022

SYLLABUS in EE SPECIAL TOPICS, SEMINARS AND FIELD TRIPS

Institutional Vision, Mission, and Goals

Vision:

An innovative and 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 innovation and technological skills;
2. Exhibit critical thinking, collaboration, and communication;

3. Manifest leadership, adaptability, and responsibility

Program Goals

The Civil Engineering program aims to design the integrity and safety of an infrastructure project in order to produce competent engineers that exhibit positive work ethics and flexibility in work conditions for the development of Caraga.

Program Educational Objectives	Mission		
Upon the completion of the course, the students must be able to:			
PEO1. Use appropriate engineering techniques, resources and modern engineering tools necessary for analysis, modeling and prediction of complex civil engineering problems.	√	√	√
PEO2. Apply database information and coordinate with other technical experts in conducting investigations of civil engineering designs.	√	√	√
PEO3. Plan, lead and implement designated tasks either as a team leader or member and interact with a network of professionals in projects or activities.	√	√	√

Program Educational Objectives and Relationship to Institutional Mission

Program Outcomes	Program Educational Objectives		
	1	2	3
a) Apply knowledge of mathematics and science to solve complex civil engineering problems;	√	√	
b) Design and conduct experiment, as well as to analyze and interpret data;		√	
c) Design a system, component, or process to meet desired needs within realistic constraints, in accordance with standards;	√	√	
d) Function in multidisciplinary and multi-cultural teams;			√
e) Identify, formulate, and solve complex civil engineering problems;	√		
f) Understanding professional and ethical responsibility;			√

g) Communicate effectively civil engineering activities with the engineering community and with society at large;		√	√
h) Understand the impact of civil engineering solutions in a global, economic, environmental, and societal context;		√	
i) Recognize the need for, and engage in life-long learning;	√	√	
j) Know contemporary issues;		√	
k) Use techniques, skills, and modern engineering tools necessary for civil engineering practice;		√	
l) Know and understand engineering and management principles as a member and leader of a team, and to manage projects in a multidisciplinary environment;			√
m) Understand at least one specialized field of civil engineering practice.	√	√	√

Course Code CE 493

Course Descriptive Title CE Special Topics, Seminars and Fieldtrips

Course Credit 1 unit (3hours per Week)

Pre-requisites/Co-requisites 4th year standing

Course Description This course is designed to broaden the student's exposure to the related special topics and the latest trends in civil engineering discipline through online presentations and virtual seminars but are not covered in any of the other formal ce courses. It may include field trips to different construction companies.

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: Understand the related special topics					D									
CO2. Know the latest trends in civil engineering discipline					D									
CO3. Include educational trips for a meaningful construction industry exposure.					D									

Level: I – Introductory E – Enabling D - Demonstrative

Detailed Course Syllabus

Course Outcomes	Topics	Time Frame	Teaching and Learning Activities	Assessment Tasks	Resources	Values Integration	Target
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 Documentary Analysis of Syllabus and Grading System Concept Mapping on strategies to meet course requirements (Sunflower Map/Fishbone Map)		White Board Marker, Computer, Multimedia Projector, Online Resources, G Suite	Obedience, Punctuality, Diligence	
CO1:Discuss the related special topics in civil engineering discipline	**1. The related special topics in civil engineering discipline**	24 hrs	Reporting with class Interaction (One Topic per Student)	Reaction Report	Ppt presentation	Open-mindedness	At least 70% of the students in the class get

							a rating of 75%.
MIDTERM EXAMINATION							
CO2: Discuss the latest trends in civil engineering discipline	**2. The latest trends in civil engineering discipline**.	24 hrs	Virtual Technical Conferences	Reaction Report Certificate of Participation	Free Online Webinars	Open-mindedness	At least 70% of the students in the class get a rating of 75%.
CO3. Include educational trips for a meaningful construction exposure.	**2. Educational trips (Minimum of 2 Company Visits)**		Lecture Small group discussion	Group write up	Computer, Multimedia Projector,	Love of profession Appreciate new learning Willingness to learn Openness to new methods	At least 70% of the students in the class get a rating of 75%.
FINAL EXAMINATION							

References: Google, You tube, Wikipedia, e-books and other online sources

Course Evaluation:

- Reports
- Group Project
- Midterm & Final Examination

Grading System:

Criteria	Lecture Grade
➢ Quizzes and Online outputs/interaction	25%
➢ Performance Tasks (Report/project/assignment)	35%
➢ Major Exams (midterm and 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
NG	No Grade

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 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. 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 failing mark. Cheating is defined to include an attempt to defraud, deceive, or mislead the instructor in arriving at honest grade assessment.
5. 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.
6. Clearance is required when the student take the final examination based on No Clearance No Examination Policy.
7. 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.
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.

Prepared by:

ENGR. VICENTE Z. DELANTE

Faculty

Date: _____

Checked and Reviewed by:

ENGR. VICENTE Z. DELANTE

Program Chair, BSEE

Date: _____

Noted by:

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