



I.10.1. submission of approved and updated syllabus per subject/ course;



**SURIGAO STATE COLLEGE
OF TECHNOLOGY**

"For Nation's Greater Heights"

Document Code No.	FM-SSCT-ACAD-012
Revision No.	00
Effective Date	01 January 2019
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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.	
PAGLINAWAN, Mark Marvin	Environmental Science and Engineering	8/17/20	[Signature]	8/25/20	[Signature]	[Signature]	[Signature]	[Signature]	[Signature]	[Signature]	[Signature]	[Signature]	[Signature]	[Signature]	[Signature]	[Signature]	[Signature]	
	Fundamentals of Electronics Communications	8/17/20	[Signature]	8/25/20	[Signature]	[Signature]	[Signature]	[Signature]	[Signature]	[Signature]	[Signature]	[Signature]	[Signature]	[Signature]	[Signature]	[Signature]	[Signature]	
	Information and Communication Technology	8/17/20	[Signature]	8/25/20	[Signature]	[Signature]	[Signature]	[Signature]	[Signature]	[Signature]	[Signature]	[Signature]	[Signature]	[Signature]	[Signature]	[Signature]	[Signature]	
	Introduction to Electrical Engineering	8/17/20	[Signature]	8/25/20	[Signature]	[Signature]	[Signature]	[Signature]	[Signature]	[Signature]	[Signature]	[Signature]	[Signature]	[Signature]	[Signature]	[Signature]	[Signature]	
NAVARRO, Andy Bong F.	Mechanics of Fluid	8/17/20	[Signature]	8/25/20	[Signature]	[Signature]	[Signature]	[Signature]	[Signature]	[Signature]	[Signature]	[Signature]	[Signature]	[Signature]	[Signature]	[Signature]	[Signature]	
	Calculus 1	8/17/20	[Signature]	8/25/20	[Signature]	[Signature]	[Signature]	[Signature]	[Signature]	[Signature]	[Signature]	[Signature]	[Signature]	[Signature]	[Signature]	[Signature]	[Signature]	
	EE Elective 3	8/17/20	[Signature]	8/25/20	[Signature]	[Signature]	[Signature]	[Signature]	[Signature]	[Signature]	[Signature]	[Signature]	[Signature]	[Signature]	[Signature]	[Signature]	[Signature]	
ACIDO, Josephine V.	Engineering Economics	8/17/20	[Signature]	8/25/20	[Signature]	[Signature]	[Signature]	[Signature]	[Signature]	[Signature]	[Signature]	[Signature]	[Signature]	[Signature]	[Signature]	[Signature]	[Signature]	
	Engineering Materials	8/17/20	[Signature]	8/25/20	[Signature]	[Signature]	[Signature]	[Signature]	[Signature]	[Signature]	[Signature]	[Signature]	[Signature]	[Signature]	[Signature]	[Signature]	[Signature]	
	Engineering Management	8/17/20	[Signature]	8/25/20	[Signature]	[Signature]	[Signature]	[Signature]	[Signature]	[Signature]	[Signature]	[Signature]	[Signature]	[Signature]	[Signature]	[Signature]	[Signature]	

Prepared and Monitored by:

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Program Chair, BSEE

Noted by:

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

NAME OF FACULTY	SUBJECT(S) TAUGHT	Syllabus		Midterm Test Questionnaire		Midterm TOS		Final Test Questionnaire		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.
	EE Elective 3											1-11-19	ok						
FIDELES, JEMIELOU M.	Basic Electrical Engineering	8/14/19	8	8	8	8	8	8	8	8	8	1-10-19	ok						
	Intruduction to Electrical Engineering	8/14/19	8	8	8	8	8	8	8	8	8	1-10-19	ok						
	Instrumentation and Control	8/14/19	8	8	8	8	8	8	8	8	8	1-10-19	ok						
	Chemistry for Engineers <i>Basic Econ Tax</i>		8	8	8	8	8	8	8	8	8	1-10-19 1-10-19	ok ok						
GALILA, GALGEN B.	Engineering Economy																		
	Pre-Calculus		ok									1-15-19	ok						
NAVARRO, ANDY BONG F.	Chemistry for Engineers	8/15/19	Good											1-11-19	ok				
	Integral Calculus	8/15/19	Good	Good	Good	Good	Good	Good	Good	Good	Good	1-11-19	ok						
	College Physics 1 <i>DC Machinery</i>	8/15/19	Good										1-11-19 DC 1-11-19	ok 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	8/14/19	8	8/14/19	8	8/14/19	8	8/14/19	8	8/14/19	8	8/14/19	8	1-10-19	ok				



SURIGAO STATE COLLEGE OF TECHNOLOGY
Narciso St., Surigao City

MONITORING FORM FOR COURSE REQUIREMENTS
1st Semester, AY 2018 - 2019

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



"For Nation's Greater Heights"

Republic of the Philippines
SURIGAO STATE COLLEGE OF TECHNOLOGY
Narciso St., Surigao City, Philippines, 8400
<http://www.ssct.edu.ph>

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COLLEGE OF ENGINEERING AND INFORMATION TECHNOLOGY
City Campus
Second Semester, Academic Year 2021-2022

Outcomes Based-Education (OBE) Syllabus in Math 112
Calculus 2
Course Credit: 5.0 units(90hrs)

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.

SSCT Core Values

Service-Oriented Socially Responsive Committed Transformational

SSCT Quality Policy

Surigao State College of Technology provides quality instruction, research, extension programs and production services to satisfy its customers by responding to their needs and expectations and continually improving its quality management system.



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Institutional Graduate Attributes (IGA)

- :
- Visionary Leader
 - Effective Communicator
 - Competent Technologist
 - Self-Directed Lifelong Learner

Program 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 (PEO) and Relationship to Institutional Mission

Program Educational Objectives (PEO)	Mission		
	a	b	c
EE-PEO1. Demonstrate professionalism in electrical engineering and apply professional ethics thru communication and collaboration.	✓	✓	✓
EE-PEO2. Use appropriate techniques, resources, and modern tools necessary for analysis, design, and modelling of complex electrical systems	✓	✓	✓
EE-PEO3. Plan, lead, and implement designated tasks, interact with other engineering professionals, and take leadership roles in electrical engineering organization.	✓	✓	✓
EE-PEO4. Engage in lifelong learning able to discover new opportunities for continuing personal and professional development in electrical engineering	✓	✓	✓

Program Outcomes (PO) and Relationship to Program Educational Objectives (PEO)

Program Outcomes (PO)	Program Educational Objectives (PEO)			
	1	2	3	4
EE-POa. Apply knowledge of mathematics and sciences to solve complex engineering problems	✓	✓	✓	✓
EE-POb. Develop and conduct appropriate experimentation, analyze and interpret data				
EE-POc. Design a system, component, or process to meet desired needs within				



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realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability, in accordance with standards				
EE-POd.Function effectively on multi-disciplinary and multi-cultural teams that establish goals, plan tasks, and meet deadlines				
EE-POe.Identify, formulate, and solve complex problems in electrical engineering				
EE-POf.Recognize ethical and professional responsibilities in engineering practice				
EE-POg.Communicate effectively with a range of audiences				
EE-POh.Understand the impact of engineering solutions in a global, economic, environmental, and societal context				
EE-POi.Recognize the need for additional knowledge and engage in lifelong learning				
EE-POj.Articulate and discuss the latest developments in the field of electrical engineering				
EE-POk.Apply techniques, skills, and modern engineering tools necessary for electrical engineering practice				
EE-POl.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 Description

This course introduces the concept of integration and its application to physical problems such as evaluation of areas, volumes of revolution, force, and work; fundamental formulas and various techniques of integration applied to both single variable and multi-variable functions; tracing of functions of two variables.

DACUM Main Duties (DMD)

- EE-DMD1. Diagnose electrical problems using the electrical diagrams or blue print (as built electrical plans)
- EE-DMD2. Install, repair, and maintenance electrical power systems(building wiring, controls, electrical machines and transformers)
- EE-DMD3. Facilities Manager
- EE-DMD4. Power Plant Manager
- EE-DMD5. Electrical Researchers, Professor and Faculty



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Course Outcomes (CO) and Relationship to Program Outcomes (PO)

Program Outcome (PO) /Level	Course Outcomes (CO)	Assessment Task (CO-AT)	DACUM Links				
			1	2	3	4	5
EE-POa <i>Introductory</i> Apply knowledge of mathematics and sciences to solve complex engineering problems;	<i>Math112-CO1</i> : Apply the various integration concepts and techniques in both single and multiple integrals to solve complex engineering problems.	Students will solve a set of engineering problems using integration concepts and techniques for both single and multiple integrals. Criteria – 70% correct answers and solution Total Points: 100 points					✓

Course Outcomes (CO) and Relationship to Intended Learning Outcomes (ILO)

Course Outcomes (CO)	Intended Learning Outcomes (ILO)
<i>Math112-CO1</i> : Apply the various integration concepts and techniques in both single and multiple integrals to solve complex engineering problems.	<p><i>Math112-ILO1</i>: Evaluate integrals using the concepts and formulas of integration. (Math112-CO1)</p> <p><i>Math112-ILO2</i>: Evaluate integrals using the various techniques of integration. (Math112-CO1)</p> <p><i>Math112-ILO3</i>: Evaluate definite integrals. (Math112-CO1)</p> <p><i>Math112-ILO4</i>: Evaluate improper integrals. (Math112-CO1)</p> <p><i>Math112-ILO5</i>: Calculate various applications of definite integrals. (Math112-CO1)</p> <p><i>Math112-ILO6</i>: Analyze multiple integration and evaluate its various applications. (Math112-CO1)</p>



Detailed Course Content

Intended Learning Outcomes (ILO)	Topics	Time Frame	Teaching and Learning Activities (TLA)	Assessment Tasks (ILO-AT)	Target	Resources	Values Integration	Remarks
<i>Math112-ILO1: Evaluate integrals using the concepts and formulas of integration. (Math112-CO1)</i>	1. INTEGRATION CONCEPT/FORMULAS 1.1. <i>Basic Rules/Formulas of Indefinite Integration for Some Algebraic Functions</i> 1.2. <i>Indefinite Integration of Some Transcendental Functions</i>	21 hrs.	Learning Module 1 <i>Asynchronous</i>	Online quiz and problem set on integration concepts and formulas	70% of the students shall have a rating of at least 3.0	Videos online, modules, e-books, and worksheets	Core Value: <i>Committed</i> Sub-Value: <i>Determined application of integration formulas in evaluating integrals</i>	
<i>Math112-ILO2: Evaluate integrals using the various techniques of integration. (Math112-CO1)</i>	2. INTEGRATION TECHNIQUES 2.1. <i>Integration by Parts</i> 2.2. <i>Integration by Substitution</i> 2.3. <i>The Methods of Partial Fraction</i>	23 hrs.	Learning Module 2 <i>Asynchronous</i>	Online quiz and problem set on integration techniques	70% of the students shall have a rating of at least 3.0	Videos online, modules, e-books, and worksheets	Core Value: <i>Committed</i> Sub-Value: <i>Determined application of integration techniques in evaluating integrals</i>	
MIDTERM EXAMINATION– 2.0 Hrs.								
<i>Math112-ILO3: Evaluate definite integrals.</i>	3. DEFINITE INTEGRALS	5.0 hrs.	Learning Module 3 <i>Asynchronous</i>	Assignment and problem set on	70% of the students	Videos online, modules, e-	Core Value: <i>Transformational</i>	



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(Math112-CO1)	3.1. <i>Definite Integral</i> 3.2. <i>Fundamental Properties of Definite Integrals</i> 3.3. <i>Walli's Formula</i>			definite integrals	shall have a rating of at least 3.0	books, and worksheets	Sub-Value: <i>Adaptive evaluation of definite integrals</i>	
<i>Math112-ILO4: Evaluate improper integrals.</i> (Math112-CO1)	4. IMPROPER INTEGRALS 4.1. <i>Definition</i> 4.2. <i>Convergence of Improper Integrals</i>	5.0 hrs.	Learning Module 4 <i>Asynchronous</i>	Online quiz and problem set on improper integrals	70% of the students shall have a rating of at least 3.0	Videos online, modules, e-books, and worksheets	Core Value: <i>Committed</i> Sub-Value: <i>Determined evaluation of improper integrals</i>	
<i>Math112-ILO5: Calculate various applications of definite integrals.</i> (Math112-CO1)	5. APPLICATIONS OF DEFINITE INTEGRALS 5.1. <i>Plane Area</i> 5.2. <i>Areas between Curve</i> 5.3. <i>Other Applications</i>	20 hrs.	Learning Module 5 <i>Asynchronous</i>	Online quiz and problem set on the application of definite integrals	70% of the students shall have a rating of at least 3.0	Videos online, modules, e-books, and worksheets	Core Value: <i>Committed</i> Sub-Value: <i>Perseverant in solving applications of definite integrals</i>	
<i>Math112-ILO6: Analyze multiple integration and evaluate its various applications.</i> (Math112-CO1)	6. MULTIPLE INTEGRATION AND ITS APPLICATION 6.1. <i>Double Integrals</i> 6.2. <i>Triple Integrals</i> 6.3. <i>Surfaces Tracing</i>	13 hrs.	Learning Module 6 <i>Asynchronous</i>	Online quiz and problem set on multiple integration and its application	70% of the students shall have a rating of at least 3.0	Videos online, modules, e-books, and worksheets	Core Value: <i>Transformational</i> Sub-Value: <i>Optimistic evaluation of multiple integration and its application</i>	
FINAL EXAMINATION – 2.0 Hrs.								



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References:

Stewart, J., Clegg, D. K., & Watson, S. (2020). *Calculus: early transcendentals*. Cengage Learning
 Larson, R. & Edwards, B. (2019). *Calculus* (11th ed). BROOKS/COLE.
 Hughes-Hallett, D., Lock, P. F., Gleason, A. M., Flath, D. E., Gordon, S. P., Lomen, D. O., ... & Tucker, T. W. (2017). *Applied Calculus*. John Wiley & Sons.
 Berresford and Rockett (2016). *Applied Calculus* 7th ed. Cengage Learning
 Krishna's Text Book on Integral Calculus. 26th ed. Krishna Prakashan Media Pvt Ltd. (2020)

Course Requirements:

- Portfolio of solved problem sets in calculus 2(CO-AT1)
- Quizzes and Assignments
- Midterm and Final exams

Course Evaluation:

<u>Criteria</u>	<u>Lecture Grade</u>
➤ Quizzes and online outputs/interaction (ILO-AT)	25%
➤ Performance Tasks (CO-AT)	35%
➤ Major Exams (Midterm and Final)	40%
TOTAL	100%

Grade Computation: $\frac{\text{Midterm Grade} + \text{Final Grade}}{2} = \text{Average Grade}$

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



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Course Policies:

1. Attendance shall be checked in every class session in the Google Meet. This is to monitor the absences incurred by the students in terms of the allowable number of absences for a course as stipulated in the Student Handbook.
2. During online classes, video camera shall be turned on all the time and microphone shall be turned off. The microphone shall be unmuted only if the student's name is called to participate in class discussion.
3. Major examinations in multiple-choice type shall be done online. For problem solving type, detailed solutions shall be written legibly in separate sheets of paper and shall be converted to pdf form prior to submission.
4. Cheating in major examinations which include attempts to defraud, deceive, or mislead the instructor in arriving at an honest assessment shall entail zero score.
5. Plagiarism which is a form of cheating that involves presenting the ideas or work of another as one's own work shall entail zero score.
6. Projects shall be submitted on or before the deadline. Students who submit unsatisfactory projects shall be given the chance to improve their works on the condition that they resubmit the revised outputs on the date set by the instructor. Non-submission of a project on the deadline shall entail zero score.
7. An INC grade shall be given to students who fail to submit the course requirements of at least 95% of the projects and quizzes or failure to take the major examinations.

Revision History:

Revision No.	Revised by	Date of Revision	Date of Implementation	Highlight of Revision
1	Engr. Andy Bong F. Navarro	December 5, 2020	1 st Sem, AY 2020-2021	Followed OBTL Format as per CMO #101 S. 2017
2	Engr. Mark Marvin D. Paglinawan Engr. Vernon V. Liza	January 24, 2021	Feb 7, 2022	DACUM Workshop vis-à-vis CMO No. 101 S. 2017



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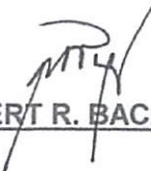
Prepared by:


ENGR. MARK MARVIN D. PAGLINAWAN
 Guest Lecturer


ENGR. VERNON V. LIZA
 Guest Lecturer

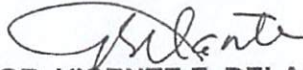
Date: 1-25-2022

Noted by:


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 Dean, CEIT

Date: 1-28-2022

Checked and reviewed by:


ENGR. VICENTE Z. DELANTE, MEng'g
 Program Chair, BSEE

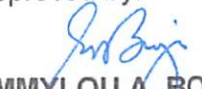
Date: 1-28-2022

Recommended by:


RONITA E. TALINGTING, PhD
 Campus Director

Date: 1-31-2022

Approved by:


EMMYLOU A. BORJA, EdD
 VP for Academic Affairs

Date: 1-31-2022