



## **IMPLEMENTATION**

- I.1. The policies on management of learning are enforced.



**SURIGAO STATE COLLEGE OF TECHNOLOGY**  
Surigao City

**INDIVIDUAL PROGRAM COMMITMENT AND REVIEW (IPCR)**

I **VICENTE Z. DELANTE**, of the **SURIGAO STATE COLLEGE OF TECHNOLOGY**, College of Engineering & Information Technology commits to deliver and agree to be rated on the attainment of the following targets in accordance with the indicated measures for the period July to December 2021.

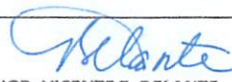
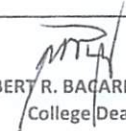

**ENGR. VICENTE Z. DELANTE**  
 Assistant Professor I/11

Date: January 3, 2022

Legend:		Reviewed by	Date	Approved by:	Date				
5 - Outstanding 4 - Very Satisfactory 3 - Satisfactory 2 - Unsatisfactory 1 - Poor		 <b>ENGR. ROBERT R. BACARRO, MECE, MBA</b> College Dean		 <b>DR RONITA E. TALINGTING</b> Campus Director					
No.	MFO/PAP	SUCCESS INDICATORS (TARGETS + MEASURES)	Actual Accomplishments	Rating				Remarks	
				Q <sup>1</sup>	E <sup>2</sup>	T <sup>3</sup>	A <sup>4</sup>		
<b>STRATEGIC FUNCTION: 45%</b>									
No.	<b>MFO1: HIGHER EDUCATION SERVICES (25%)</b>								
	<b>Admission Program</b>								
1	Involves and participates in: 1.1. Interviewing of students' application for admission. 1.2. Evaluating the grades of student application 1.3. Enrolment of students	At most 15 qualified students per day will be interviewed. A general average of 85% and no grade below 80 in all subjects is to be implemented. At least 50% of the applicants meet the minimum requirements for enrolment.	Faculty, Program Chair, Dean	10 or more students were interviewed during admission	4.5	5	5	4.733	
2	Instruction Program 2.1. Prepares/ enhances/ submits enhanced course syllabi 2.2. Implements activities stipulated in the course syllabi 2.3. Prepares and submits test questions with TOS 2.4. Prepares and submits reports of rating for review and approval of the College Dean.	Enhanced course syllabi of the subjects taught are submitted a week before classes start. 90% of the activities stipulated in the course syllabi are to be implemented. Test questions prepared are based on the three (3) domains of learning. Grades are to be submitted to the College, 3 weeks after the Final Examination.	Faculty, Program Chair, Dean	100% syllabi were submitted	4.5	4.7	5	4.600	
3	Curriculum Development Program 3.1. Participates in the conduct of departmental curricular review for revisions and approval.	100% attendance of faculty during the curriculum review.	Faculty, Program Chair, Dean	100% attendance in the curriculum review	5	5	5	5.000	
4	Program Performance in Licensure Examination. 4.1. Obtains percentile score in the national passing percentage.	At least 45% increase in the national passing rate.	80.95% is the latest passing rate of the EE Board exam	80.95%	4.8	4.8	5	4.800	

No.	MFO/PAP	SUCCESS INDICATORS (TARGETS + MEASURES)		Actual Accomplishments	Rating				Remarks
					Q <sup>1</sup>	E <sup>2</sup>	T <sup>3</sup>	A <sup>4</sup>	
5	Accreditation Program and Quality Assurance S.1. Participates in the preparation of documents for program accreditation and quality assurance. S.2. Participates in the actual program accreditation process.	85% of deliverables are produced.  90% of participation during the actual accreditation process.	Accreditation Committee, Academic Personnel	90% of the documents were produced and 100% participated on the actual accreditation process	4.5	4.5	5	4.500	
6	Linkages G.1. Participates in the activities for the establishment of international/ national/ regional/ local linkages.	85% of attendance in the involvement of activities relative to the establishment of linkages.	Faculty, Extension Personnel	100% involvement of activities related to linkages	4.5	4.5	5	4.533	
				sub-total				28.167	
			6	Equivalent				4.694	
<b>MFO2: RESEARCH SERVICES (10%)</b>									
1	Conduct research studies for completion output.	4 accomplishment of research output produced for the current year	Faculty, Research Personnel	completed & published	4	4	5	4.167	
2	Submit status report on research studies conducted	A status report duly noted by the College Dean is submitted to the Research Director.	Faculty, Research Personnel	on process	4	4	4	4.000	
3	Presents research studies in the local, regional, national and international fora.	1 research study is to be presented to the local, regional, national, and international fora for the current year.	Faculty, Research Personnel	completed & published	4.5	4.5	5	4.500	
				sub-total				12.667	
			3	Equivalent				4.222	
<b>MFO3: EXTENSION SERVICES (5%)</b>									
1	Participates in the conduct of survey in the community.	At least 3 identified needs, problems and concerns are determined during the community survey		Identify the town of Sison as the recipient of the extension program on skill training and installation of floodlights for GYM installation	5	4.8	5	4.867	
2	Presents proposals based on the needs / problems and issues.	At least 1 extension service proposal presented to respond the issues and concerns based on the community		On-going on the skills training	4.4	4.3	5	4.400	
3	Coordinates with partners and implementers in providing technical activities to beneficiaries.	Conduct assessment of advisory services of which 85% clients rated the advisory services.		Provided the technology and materials necessary for the training and floodlights installation	4.8	5	5	4.867	
4	Prepares MOA's and facilitate in signing to support the established linkages with NGO's, GO's and other stakeholders.	MOAs are prepared and signing is facilitated to support established linkages with the identified stakeholders.		MOA done; Sison town in Surigao del Norte	5	5	5	5.000	
				sub-total				19.133	
			4	Equivalent				4.783	

No.	MFO/PAP	SUCCESS INDICATORS (TARGETS + MEASURES)	Actual Accomplishments	Rating				Remarks	
				Q <sup>1</sup>	E <sup>2</sup>	T <sup>3</sup>	A <sup>4</sup>		
<b>MFO4: PRODUCTION (5%)</b>									
1	Develops learning manuals for instruction in a current school year	Produce at least 1 manual to be utilized for instructions a current school year	100% completion of the learning manuals to be utilized for delivery of instruction	4.5	5	5	4.667		
				<b>sub-total</b>			<b>4.667</b>		
				<b>Equivalent</b>			<b>4.667</b>		
<b>CORE FUNCTIONS (45%)</b>									
1	Reports to classes punctually	Report to class before the time schedule within the current year.	Faculty	Conduct classes regularly	5	4.5	5	4.667	
2	Conducts classes regularly	90% of classes handled are attended and conducted.	Faculty	100% class conducted	5	4.5	5	4.667	
3	Prepares major examinations with TOS and answer key	80% of the major examinations are provided with table of specifications and answer key.	Faculty	95% of the major exam with TOS, 5% using Rubric evaluation	5	4.5	4.5	4.670	
4	Checks, records, and returns test results of the students	80% of the test papers are checked and returned to students.	Faculty	100% checked and returned to the students	4.5	4.5	5	4.500	
5	Releases grades to students	3 weeks after midterm and final exam, grades are released to the students.	Faculty	Complied	4.5	4.5	5	4.500	
6	Provides students consultation	At least twice in a week consultation is to be conducted to the students.	Faculty	Complied	5	5	5	4.833	
				<b>sub-total</b>			<b>27.837</b>		
				<b>Equivalent</b>			<b>4.639</b>		
<b>SUPPORT FUNCTIONS (10%)</b>									
1	Submission of updated SALN and PDS.	100% submission of updated SALN (not later than April 15) and PDS (Last week of January)	Faculty, HRMO	Complied	5	4.5	5	4.667	
2	Attendance to College Meetings	100% attendance to College Meetings	CEIT Faculty, Dean	Complied	5	5	5	5.000	
3	Attendance to Institutional Meetings	100% attendance to Institutional Meetings	SSCT Personnel	Complied	5	5	5	5.000	
4	Attendance to College/External Activities	100% attendance to college/external related activities	Faculty	Complied	5	5	5	5.000	
5	Submission of DTR	100 % of the faculty submitted DTR one week after the end of the month	Faculty, HRMO, Dean	Complied	5	5	5	4.933	
6	Submission of clearance	Submission of year-end general clearance two weeks after the final exam.	Faculty, SSCT Key Personnel	Complied	5	5	5	5.000	

No.	MFO/PAP	SUCCESS INDICATORS (TARGETS + MEASURES)		Actual Accomplishments	Rating				Remarks
					Q <sup>1</sup>	E <sup>2</sup>	T <sup>3</sup>	A <sup>4</sup>	
7	Attendance to Flag Raising & Retreat	90% of attendance to flag raising & retreat.	SSCT Personnel	Complied	4	4	4	4.000	
8	Wearing of Prescribed Uniform with ID	Wearing of prescribed uniform with ID during school days.	Faculty	Complied	4.5	4.5	5	4.500	
9	Liquidates cash advances / travels during trainings / seminars / workshops	100% Liquidation of cash advances 3 days after the official travel.	Faculty, Accounting Office	Complied	5	5	5	5.000	
					sub-total			43.100	
					Equivalent			4.789	
					9				
<b>Strategic</b>	<b>45%</b>	<b>Distribution</b>	<b>Rating</b>	<b>Equivalent</b>	<b>Final Rating</b>				
	MFO 1	25%	4.694	1.174					
	MFO 2	10%	4.783	0.478					
	MFO 3	5%	4.783	0.239					
	MFO 4	5%	4.667	0.233	2.124	2.124			
<b>Core</b>	<b>45%</b>				4.639	2.088			
<b>Support</b>	<b>10%</b>				4.789	0.479			
<b>Total Rating</b>					4.691				
<b>Final Rating</b>					4.691				
<b>Adjectival rating</b>					VS				
<b>Comments and Recommendations for Development Purposes:</b>									
<b>Conforme:</b>  ENGR. VICENTE Z. DELANTE Assistant Professor I11		<b>Assessed by:</b>  ENGR. ROBERT R. BACARRO, MECE, MBA College Dean			<b>Approved by:</b>  DR RONITA E. TALINGTING Campus Director				
Date:		Date:			Date:				

Legend: 1 - Quantity 2- Efficiency 3- Timeliness 4-Average



**SURIGAO STATE COLLEGE OF TECHNOLOGY**  
Surigao City

**INDIVIDUAL PROGRAM COMMITMENT AND REVIEW (IPCR)**

I CONRADO B. DELOSA JR., of the SURIGAO STATE COLLEGE OF TECHNOLOGY, College of Engineering & Information Technology commits to deliver and agree to be rated on the attainment of the following targets in accordance with the indicated measures for the period July to December 2021.

**CONRADO B. DELOSA JR.**  
Instructor 2


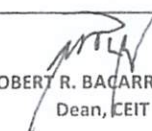

Date: \_\_\_\_\_

Legend:		Reviewed by	Date	Approved by:	Date			
5 - Outstanding 4 - Very Satisfactory 3 - Satisfactory 2 - Unsatisfactory 1 - Poor		 <b>ENGR. ROBERT R. BACARRO, MECE, MBA</b> DEAN CEIT		 <b>RONITA F. TALINGTING, PhD</b> Campus Director SSCT Main				
No.	MFO/PAP	SUCCESS INDICATORS (TARGETS + MEASURES)	Actual Accomplishments	Rating				Remarks
				Q <sup>1</sup>	E <sup>2</sup>	T <sup>3</sup>	A <sup>4</sup>	
<b>STRATEGIC FUNCTION: 45%</b>								
No.	<b>MFO1: HIGHER EDUCATION SERVICES (25%)</b>							
	<b>Admission Program</b>							
1	Involves and participates in: 1.1. Interviewing of students' application for admission. 1.2. Evaluating the grades of student application 1.3. Enrolment of students	At most 15 qualified students per day will be interviewed. A general average of 83% and no grade below 80 in all subjects is to be implemented. At least 50% of the applicants meet the minimum requirements for enrolment.	Faculty, Program Chair, Dean	60% of applicants were accepted during interview process and 14 students were interviewed per day	5	5	5	5.000
2	Instruction Program 2.1. Prepares/ enhances/ submits enhanced course syllabi 2.2. Implements activities stipulated in the course syllabi 2.3. Prepares and submits test questions with TOS 2.4. Prepares and submits reports of rating for review and approval of the College Dean.	Enhanced course syllabi of the subjects taught are submitted a week before classes start. 90% of the activities stipulated in the course syllabi are to be implemented. Test questions prepared are based on the three (3) domains of learning. Grades are to be submitted to the College, 3 weeks after the Final Examination.	Faculty, Program Chair, Dean	Grades were submitted on time and 91% of the topics in the syllabi were taught	4	4	4	4.000
3	Curriculum Development Program 3.1. Participates in the conduct of departmental curricular review for revisions and approval.	90% attendance of faculty during the curriculum review.	Faculty, Program Chair, Dean	No absent during the curriculum review	5	5	5	5.000
4	Program Performance in Licensure Examination. 4.1. Obtains percentile score in the national passing percentage.	At least 1% increase in the national passing rate.	None		0	0	0	0.000

No.	MFO/PAP	SUCCESS INDICATORS (TARGETS + MEASURES)	Actual Accomplishments	Rating				Remarks	
				Q <sup>1</sup>	E <sup>2</sup>	T <sup>3</sup>	A <sup>4</sup>		
5	Accreditation Program and Quality Assurance 5.1. Participates in the preparation of documents for program accreditation and quality assurance. 5.2. Participates in the actual program accreditation process.	85% of deliverables are produced. 90% of participation during the actual accreditation process.	Accreditation Committee, Academic Personnel	100% participation during accreditation and 90% of the prepared documents were prepared and presented	3	3	3	3.000	
6	Linkages 6.1. Participates in the activities for the establishment of international/ national/ regional/ local linkages.	85% of attendance in the involvement of activities relative to the establishment of linkages.	Faculty, Extension Personnel	80% involvement in relative to linkages activities	3	3	3	3.000	
				sub-total				20.000	
			6	Equivalent				3.333	
<b>MF02: RESEARCH SERVICES (10%)</b>									
1	Conduct research studies for completion output.	1 accomplishment of research output produced for the current year	Faculty, Research Personnel	1 completed research	3	3	3	3.000	
2	Submit status report on research studies conducted	A status report duly noted by the College Dean is submitted to the Research Director.	Faculty, Research Personnel	1 duly accomplished terminal reports	3	3	3	3.000	
3	Presents research studies in the local, regional, national and international fore.	1 research study is to be presented to the local, regional, national, and international fora for the current year.	Faculty, Research Personnel	1 research presented in international for a	4	4	4	4.000	
				sub-total				10.000	
			3	Equivalent				3.333	
<b>MF03: EXTENSION SERVICES (5%)</b>									
1	Participates in the conduct of survey in the community.	At least 3 identified needs, problems and concerns are determined during the community survey			0	0	0	0.000	
2	Presents proposals based on the needs / problems and issues.	At least 1 extension service proposal presented to respond the issues and concerns beset the community			3	3	3	3.000	
3	Coordinates with partners and implementers in providing technical activities to beneficiaries.	Conduct assessment of advisory services of which 85% clients rated the advisory services .			3	3	3	3.000	
4	Prepares MOA's and facilitate in signing to support the established linkages with NGO's, GO's and other stakeholders.	MOAs are prepared and signing is facilitated to support established linkages with the identified stakeholders.			2	2	2	2.000	
				sub-total				8.000	
			4	Equivalent				2.000	

No.	MFO/PAP	SUCCESS INDICATORS (TARGETS + MEASURES)	Actual Accomplishments	Rating				Remarks	
				Q <sup>1</sup>	E <sup>2</sup>	T <sup>3</sup>	A <sup>4</sup>		
<b>MFO4: PRODUCTION (5%)</b>									
1	Develops learning manuals for instruction in a current school year	Produce at least 1 manual to be utilized for instructions a a current school year		5	5	5	5.000		
			sub-total				5.000		
		1	Equivalent				5.000		
<b>CORE FUNCTIONS (45%)</b>									
1	Reports to classes punctually	Report to class before the time schedule within the current year.	Faculty	Deligently report on class as prescribe in the shedule	4	4	4	4.000	
2	Conducts classes regularly	90% of classes handled are attended and conducted.	Faculty	95% in attendance in handling classes	4	4	4	4.000	
3	Prepares major examinations with TOS and answer key	80% of the major examinations are provided with table of specifications and answer key.	Faculty	Table of Specification were 100% provided in all examinations	5	5	5	5.000	
4	Checks, records, and returns test results of the students	80% of the test papers are checked and returned to students.	Faculty	100% of the class passed the subjects	4	5	5	4.667	
5	Releases grades to students	3 weeks after midterm and final exam, grades are released to the students.	Faculty	Examination grades were released on time	5	5	5	5.000	
6	Provides students consultation	At least twice in a week consultation is to be conducted to the students.	Faculty	Students were welcomed anytime during consultation	5	5	5	5.000	
			sub-total				27.667		
		6	equivalent				4.611		
<b>SUPPORT FUNCTIONS (10%)</b>									
1	Submission of updated SALN and PDS.	100% submission of updated SALN (not later than April 15) and PDS (Last week of January)	Faculty, HRMO	On time submission of SAL N	5	5	5	5.000	
2	Attendance to College Meetings	100% attendance to College Meetings	CEIT Faculty, Dean	95% in attendance college meetings	5	5	5	5.000	
3	Attendance to Institutional Meetings	100% attendance to Institutional Meetings	SSCT Personnel	95% in attendance during Institutional meetings	5	5	5	5.000	
4	Attendance to College/External Activities	100% attendance to college/external related activities	Faculty	96% in attendance during external related activities	5	5	5	5.000	
5	Submission of DTR	100 % of the faculty submitted DTR one week after the end of the month	Faculty, HRMO, Dean	90% submitted of DTR on time	5	5	5	5.000	
6	Submission of clearance	Submission of year-end general clearance two weeks after the final exam.	Faculty, SSCT Key Personnel	Delayed on day on the clearance requirement	5	5	5	5.000	



No.	MFO/PAP	SUCCESS INDICATORS (TARGETS + MEASURES)		Actual Accomplishments	Rating				Remarks
					Q <sup>1</sup>	E <sup>2</sup>	T <sup>3</sup>	A <sup>4</sup>	
7	Attendance to Flag Raising & Retreat	90% of attendance to flag raising & retreat.	SSCT Personnel	85% in attendance during flag ceremony	2	2	2	2.000	
8	Wearing of Prescribed Uniform with ID	Wearing of prescribed uniform with ID during school days.	Faculty	90% in wearing uniform	4	4	4	4.000	
9	Liquidates cash advances / travels during trainings / seminars / workshops	100% Liquidation of cash advances 3 days after the official travel.	Faculty, Accounting Office	95% in requesting cash advance when there is official travel	5	5	5	5.000	
				sub-total				41.000	
				9 Equivalent				4.556	
<b>Strategic</b>	<b>45%</b>	<b>Distribution</b>	<b>Rating</b>	<b>Equivalent</b>	<b>Final Rating</b>				
	MFO 1	25%	3.333	0.833					
	MFO 2	10%	2.000	0.200					
	MFO 3	5%	2.000	0.100					
	MFO 4	5%	5.000	0.250	1.383	1.383			
<b>Core</b>	<b>45%</b>				4.611	2.075			
<b>Support</b>	<b>10%</b>				4.556	0.456			
<b>Total Rating</b>					3.914				
<b>Final Rating</b>					3.914				
<b>Adjectival rating</b>									
<b>Comments and Recommendations for Development Purposes:</b>									
<b>Conforme:</b>  <b>CONRADO B. DELOSA JR.</b> Instructor 2		<b>Assessed by:</b>  <b>ENGR. ROBERT R. BACARRO, MECE, MBA</b> Dean, CEIT			<b>Approved by:</b>  <b>DR. RONI A. E. TALIGTING</b> Campus Director SSCT Main				
<b>Date:</b>		<b>Date:</b>			<b>Date:</b>				

Legend: 1 - Quantity 2- Efficiency 3- Timeliness 4-Average



"For Nation's Greater Heights"

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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



"For Nation's Greater Heights"

**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>



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**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>	<b>1. INTEGRATION CONCEPT/FORMULAS</b>  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>	<b>2. INTEGRATION TECHNIQUES</b>  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>	
<b>MIDTERM EXAMINATION– 2.0 Hrs.</b>								
<i>Math112-ILO3: Evaluate definite integrals.</i>	<b>3. DEFINITE INTEGRALS</b>	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>Math 112-ILO4: Evaluate improper integrals.</i> (Math112-CO1)	<b>4. IMPROPER INTEGRALS</b>  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>Math 112-ILO5: Calculate various applications of definite integrals.</i> (Math112-CO1)	<b>5. APPLICATIONS OF DEFINITE INTEGRALS</b>  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>Math 112-ILO6: Analyze multiple integration and evaluate its various applications.</i> (Math112-CO1)	<b>6. MULTIPLE INTEGRATION AND ITS APPLICATION</b>  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>	
<b>FINAL EXAMINATION – 2.0 Hrs.</b>								



"For Nation's Greater Heights"

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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. 26<sup>th</sup> 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%
<b>TOTAL</b>	<b>100%</b>

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

<b>Grade Point</b>	<b>Description</b>
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 <sup>st</sup> 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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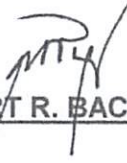
Prepared by:

  
**ENGR. MARK MARVIN D. PAGLINAWAN**  
Guest Lecturer

  
**ENGR. VERNON V. LIZA**  
Guest Lecturer

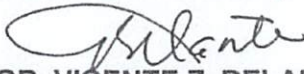
Date: 1-25-2022

Noted by:

  
**ENGR. ROBERT R. BACARRO, MECE, MBA**  
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

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