



## OUTCOMES-BASED EDUCATION (OBE) COURSE SYLLABUS

### PhSc 108 Biochemistry

#### I. UNIVERSITY INFORMATION

##### 1. Vision of the University

A globally competitive university for science, technology, and environmental conservation

##### 2. Mission of the University

Development of a highly competitive human resource, cutting-edge scientific knowledge and innovative technologies for sustainable communities and environment.

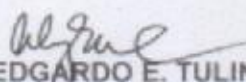
##### 3. VSU Quality Policy Statement

The Visayas State University (VSU), a globally competitive university of science and technology and environmental conservation, is created by law to develop highly competitive human resource, cutting-edge scientific knowledge and innovative technologies for sustainable communities and environment.

Towards this end, we, at the Visayas State University, commit to:

- Produce highly competent, quality and world-class manpower in science and technology, especially for agriculture, environmental management and industry who are proficient in communication skills, critical thinking and analytical abilities;
- Generate and disseminate relevant knowledge and technologies that lead to improved productivity, profitability and sustainability in agriculture, environment and industry; and
- Satisfy the needs and applicable requirements of the industry, the community and government sectors who are in need of quality graduates and technology ready for commercialization through the establishment, operation, maintenance and continual improvement of a Quality Management System (QMS) which is aligned with the requirements of ISO 9001:2015.

It shall be the policy of the university that the quality policies and procedures are communicated to and understood by all faculty, staff, students and other stakeholders and that the system be continually improved for its relevance and effectiveness.

  
**EDGARDO E. TULIN**  
President  
v0 07-16-2019



4. Quality Goals of the College of Education
  - a. Provide essential professional preparation for teachers in the basic and higher education.
  - b. Undertake relevant research that can be utilized to improve the teaching and learning process.
  - c. Extend relevant community services to uplift people's lives.
5. Quality Objectives of the Department of Teacher Education
  - a. Produce graduates equipped with pedagogical and 21st century skills.
  - b. Develop among prospective teacher's strong commitment for teaching and a real concern for the welfare and development of the learners.
  - c. Provide students the opportunity to conduct research on relevant areas in basic and higher education.
  - d. Provide students the opportunity to conduct extension and community involvement activities.

## II. PROGRAM INFORMATION

1. Name of the Program	Bachelor of Secondary Education Major in Science
2. CHED CMO Reference	CMO no. 75 s. 2017
3. BOR Approval	BOR Resolution No. 68 s. 2018

### 4. Program Educational Objectives and Relationship to Institution Mission

Program Educational Objectives	Mission*		
	a	b	c
1. Develop among prospective teacher's strong commitment for teaching and a real concern for the welfare and development of the learners.	√	√	√
2. Produce graduates equipped with professional, pedagogical and critical thinking skills.	√	√	√
3. Provide students the opportunity to formulate and conduct research on relevant areas and undertake community outreach projects.	√	√	√

\*a - development of a highly competitive human resource, b - cutting-edge scientific knowledge, c - innovative technologies for sustainable communities and environment

## III. COURSE INFORMATION

1. Course Code	PhSc 108
2. Course Title	Biochemistry
3. Pre-requisite	Organic Chemistry
4. Co-requisite	none
5. Credit	3 units
6. Semester Offered	2 <sup>nd</sup> semester of 2 <sup>nd</sup> year
7. Number of hours	3 hrs / week
8. Course Description	Biochemistry focuses on the four macromolecules that drive biological processes-carbohydrates, lipids, nucleic acids, and proteins. This also include their structures, monomeric units, major functions and how they are organized within the cell. This also includes some diseases which are related to biological processes.



9. Program Outcomes (POs) in relation to the Program Educational Objectives (POEs)				
Program Outcomes (POs)		Program Educational Objectives		
		1	2	3
a	Demonstrate high level of content and pedagogical knowledge.	√	√	√
b	Demonstrate appreciation for diversity.	√	√	√
c	Manifest collaborative skills.	√	√	√
d	Demonstrate innovative thinking.	√	√	√
e	Possesses critical and problem-solving skills.	√	√	√
f	Advocate for children's rights, equity, community, nationalism, and democratic ideas.	√	√	√
g	Pursue lifelong learning	√	√	√

10. Course Outcomes (COs) and Relationship to Program Outcomes (POs)							
After completing this course, the student must be able to perform the following COs:	Program Outcomes Code						
	a	b	c	d	e	f	g
CO1 Identify the different parts of the cell as well as understand their structures and functions that help in the organization of the biological processes.	D	D	D	D	D		D
CO2 Apply knowledge on organic chemistry on the structures and functions of biomolecules.	D	D	D	D	D		D
CO3 Discuss the four biomolecules and their major functions on the cell activities.	D	D	D	D	D		D
CO4 Classify biomolecules according to their structures.	D	D	D	D	D		D
CO5 Identify and draw structures of monomeric units of the four biomolecules.	D	D	D	D	D		D
CO6 Understand the special properties of water and how it affects the behaviour of biomolecules in aqueous environment.	D	D	D	D	D		D
CO7 Relate the pH and buffer systems in the body to the activity of enzymes in the different biological processes.	I	D	D	D	D		D
CO8 Identify and discuss certain diseases relating to the functions of biomolecules in the processes of the body.	E	D	D	D	D		D
CO9 Discuss the flow of energy from the sun to the living systems and further understand the fate of the biomolecules inside the living system	I	E	D	D	D		D

Legend: I – Introductory, E – Enabling, D – Demonstrative

Each letter indicates the expected level of competency that each CO should provide for each PO.

11. Course Content and Plan					
Week	Topics	Learning Outcomes	Teaching and Learning Activities		Assessment Tasks
			Teaching Activities	Learning Activities	
Class Orientation					



1	<p>VSU Vision Mission, and Quality Policy Statement</p> <p>Class Policies</p> <p>Requirements</p> <p>Grading System and Activities</p> <p>Submission of Requirements</p> <p>Learning Guide</p>	<p>Explain their role in the attainment of VSU's VMGO</p> <p>Learn where they can optimize their learning process and get good grades</p>	<p>Q &amp; A for clarification, setting of expectations, and getting-to-know-each other</p> <p>Class interaction</p> <p>Sharing of Ideas</p> <p>Feedbacks</p> <p>VSUEE/VC: Familiarization of the virtual classroom</p> <p>Printed Learning Guide (Independent study)</p>	<p>Discussion Class interaction Sharing of Ideas</p> <p>Feedbacks</p> <p>Familiarization with the virtual classroom</p> <p>Note-taking</p>	<p>Part of the Bonus in Long Exam 1</p> <p>Oral recitation</p>
<p>CO1 Identify the different parts of the cell as well as understand their structures and functions that help in the organization of the biological processes.</p> <p>CO2 Apply knowledge on organic chemistry on the structures and functions of biomolecules.</p>					
1-2	<p>Module 1</p> <p>Review of Organic Chemistry</p> <p>The Nature of Carbon</p> <p>The Covalent Bonding</p>	<p>Define organic chemistry.</p> <p>Discuss the very nature of carbon.</p> <p>Differentiate organic compounds from inorganic compounds.</p> <p>Differentiate ionic bonds from covalent bonds.</p> <p>Discuss the formation of covalent bonds in general.</p> <p>Explain the formation of double and triple bonds.</p>	<p>Lecture with Discussion through PowerPoint presentation</p> <p>Educational Video Presentation</p> <p>Facilitate group activities</p> <p>Give assignments/ problem sets/</p>	<p>Class interaction</p> <p>Note-taking</p> <p>Sharing of Ideas</p> <p>Peer discussion</p> <p>Group activity Seatwork and/or board work exercises</p> <p>Feedbacks</p> <p>VSUEE/VC: Downloading resource materials</p> <p>Answer</p>	<p>Quiz #1</p> <p>(Face-to-face and/or through VSU E-Learning Portal)</p> <p>Answer quiz during class schedule</p>

			worksheets	Learning Tasks/Quiz Learning Guide: Independent study	
2-3	Module 2  The Cell  The Molecular Movements in the Cell	Differentiate prokaryotic and eukaryotic cells and understand the different types and functions of organelles  Compare and contrast passive and active transport exocytosis and endocytosis	Lecture with Discussion through PowerPoint presentation  Educational Video Presentation  Facilitate group activities  Give assignments/ problem sets/ worksheets	Class interaction Note-taking  Sharing of Ideas  Peer discussion  Group activity Seatwork and/or board work exercises  Feedbacks  VSUEE/VC: Downloading resource materials  Answer Learning Tasks/Quiz Learning Guide: Independent study	Module Pretest & Post-test  Quiz #2  (Face-to-face and/or through VSU E-Learning Portal)  Answer quiz during class schedule
<b>CO6</b> Understand the special properties of water and how it affects the behaviour of biomolecules in aqueous environment. <b>CO7</b> Relate the pH and buffer systems in the body to the activity of enzymes in the different biological processes.					
3-4	Module 3  Water and Acid-Base Chemistry  pH and Buffer System	Identify the physical and chemical properties of water  Establish the ionization constant of water and its relationship to pH	Lecture with Discussion through PowerPoint Presentation  Educational Video Presentation	Class interaction Note-taking  Sharing of Ideas  Peer discussion  Group activity	Module Pretest & Post-test  Quiz #3  (Face-to-face and/or through VSU E-Learning



		<p>Differentiate acids and bases according to different definitions</p> <p>Calculate pH from the given concentration of hydrogen ion.</p> <p>Correlate the relationship of pH and acid-base ionization constant.</p> <p>Discuss the importance of buffer systems in the body.</p>	<p>Facilitate group activities</p> <p>Give assignments/ problem sets/ worksheets</p> <p>Supplemental videos and Access Moodle classroom</p>	<p>Seatwork and/or board work exercises</p> <p>Feedbacks</p> <p>VSUEE/VC: Downloading resource materials</p> <p>Answer Learning Tasks/Quiz Learning Guide: Independent study</p>	<p>Portal)</p> <p>Answer quiz during class schedule</p>
4					1 <sup>st</sup> Long Examination on Module No.: 1
<p><b>CO3</b> Discuss the four biomolecules and their major functions on the cell activities.</p> <p><b>CO4</b> Classify biomolecules according to their structures.</p> <p><b>CO5</b> Identify and draw structures of monomeric units of the four biomolecules.</p> <p><b>CO8</b> Identify and discuss certain diseases relating to the functions of biomolecules in the processes of the body.</p>					
5-6	<p>Module 4</p> <p>Biomolecules: Structures and Functions</p> <p>Carbohydrates</p>	<p>Classify the different types of carbohydrates</p> <p>Familiarize the structure of carbohydrates</p> <p>Identify the different structures, functions and properties of carbohydrates</p> <p>Enumerate some carbohydrate-related disorders</p>	<p>Lecture with Discussion through PowerPoint Presentation</p> <p>Group Reporting</p> <p>Educational Video Presentation</p> <p>Facilitate group activities</p> <p>Give assignments/ problem sets/ worksheets</p>	<p>Class interaction</p> <p>Note-taking</p> <p>Sharing of Ideas</p> <p>Peer discussion</p> <p>Group activity</p> <p>Seatwork and/or board work exercises</p> <p>Feedbacks</p> <p>VSUEE/VC: Downloading resource materials</p>	<p>Module Pretest &amp; Post-test</p> <p>Quiz #4</p> <p>(Face-to-face and/or through VSU E-Learning Portal)</p> <p>Answer quiz during class schedule</p>

			Supplemental videos and Access Moodle classroom	Answer Learning Tasks/Quiz Learning Guide: Independent study	
6-7	Module 5  Biomolecules: Structures and Functions  Lipids	Classify the different types of lipids  Familiarize the structure of lipids  Identify the different structures, functions and properties of lipids  Enumerate some lipid-related disorders	Lecture with Discussion through PowerPoint Presentation  Group Reporting  Educational Video Presentation  Facilitate group activities  Give assignments/ problem sets/ worksheets  Q & A for clarification  Class Interaction  Supplemental videos and Access Moodle classroom	Class interaction  Note-taking  Sharing of Ideas  Peer discussion  Group activity Seatwork and/or board work exercises  Feedbacks  VSUEE/VC: Downloading resource materials  Answer Learning Tasks/Quiz Learning Guide: Independent study	Module Pretest & Post-test  Quiz #5  (Face-to-face and/or through VSU E-Learning Portal)  Answer quiz during class schedule
7					3rd Long Examination on Module No.: 2 Carbohydrates and Lipids
8-9	Module 6  Biomolecules: Structures and Functions  Proteins	Classify the 20 amino acids; its properties and structures	Lecture with Discussion through PowerPoint presentation  Group Reporting	Class interaction  Note-taking  Sharing of	Module Pretest & Post-test  Quiz #6



		<p>Identify the levels of organization of proteins</p> <p>Familiarize the structure, properties and functions of proteins</p> <p>Identify the different classes and functions of enzymes</p>	<p>Educational Video Presentation</p> <p>Facilitate group activities</p> <p>Give assignments/ problem sets/ worksheets</p> <p>Q &amp; A for clarification</p> <p>Class interaction</p> <p>Supplemental videos and Access Moodle classroom</p>	<p>Ideas</p> <p>Peer discussion</p> <p>Group activity Seatwork and/or board work exercises</p> <p>Feedbacks</p> <p>VSUEE/VC: Downloading resource materials</p> <p>Answer Learning Tasks/Quiz Learning Guide: Independent study</p>	<p>(Face-to-face and/or through VSU E-Learning Portal)</p> <p>Answer quiz during class schedule</p>
9					4th Long Examination on Module No.: 2 Proteins
10-11	<p>Module No. 7</p> <p>Biomolecules: Structures and Functions</p> <p>Nucleic Acid</p>	<p>Classify the different types of nucleic acids</p> <p>Familiarize the structure of nucleic acids</p> <p>Identify the different structures, functions and properties of nucleic acids</p> <p>Differentiate RNA from DNA</p>	<p>Lecture with Discussion through PowerPoint presentation</p> <p>Group Reporting</p> <p>Educational Video Presentation</p> <p>Facilitate group activities</p> <p>Give assignments/ problem sets/ worksheets</p> <p>Class interaction</p>	<p>Class interaction</p> <p>Note-taking</p> <p>Sharing of Ideas</p> <p>Peer discussion</p> <p>Group activity Seatwork and/or board work exercises</p> <p>Feedbacks</p> <p>VSUEE/VC: Downloading</p>	<p>Module Pretest &amp; Post-test</p> <p>Quiz #7</p> <p>(Face-to-face and/or through VSU E-Learning Portal)</p> <p>Answer quiz during class schedule</p>



			Supplemental videos and Access Moodle classroom	resource materials Answer Learning Tasks/Quiz Learning Guide: Independent study	
11					Midterm Examination on Module No.: 3 Nucleic Acid
<b>CO9</b> Discuss the flow of energy from the sun to the living systems and further understand the fate of the biomolecules inside the living system					
12	Module No. 8 Metabolism  Bioenergetics	Identify the flow and conversion of solar energy into a usable form for living systems  Differentiate anabolism and catabolism	Lecture with Discussion through PowerPoint presentation  Educational Video Presentation  Facilitate group activities  Give assignments/ problem sets/ worksheets  Class interaction  Supplemental videos and Access Moodle classroom	Class interaction  Note-taking  Sharing of Ideas  Peer discussion  Group activity Seatwork and/or board work exercises  Feedbacks  VSUEE/VC: Downloading resource materials  Answer Learning Tasks/Quiz Learning Guide: Independent study	Module Pretest & Post-test  Quiz #2  (Face-to-face and/or through VSU E-Learning Portal)  Answer quiz during class schedule
13					5 <sup>th</sup> Examination on

					Module No.: 3 Bioenergetics
13	Module 9 Metabolism  Carbohydrate Metabolism and Regulation	Discuss the metabolic pathway of carbohydrates  Analyze the possible route of the metabolism of the carbohydrates  Highlight the significance of carbohydrate metabolism among living organisms	Lecture with Discussion through PowerPoint presentation  Educational Video Presentation  Facilitate group activities  Give assignments/ problem sets/ worksheets  Class interaction  Supplemental videos and Access Moodle classroom	Class interaction  Note-taking  Sharing of Ideas  Peer discussion  Group activity Seatwork and/or board work exercises  Feedbacks  VSUEE/VC: Downloading resource materials  Answer Learning Tasks/Quiz Learning Guide: Independent study	Module Pretest & Post-test  Quiz #9  (Face-to-face and/or through VSU E-Learning Portal)  Answer quiz during class schedule
14					6th Long Examination on Module No.: 3 Carbohydrate Metabolism and Regulation
14	Module 10 Metabolism  Protein Metabolism and Regulation	Discuss the metabolic pathway of protein and its regulation  Analyze the possible route of the metabolism of the proteins	Lecture with Discussion through PowerPoint presentation  Educational Video	Class interaction  Note-taking  Sharing of Ideas  Peer	Module Pretest & Post-test  Quiz #13  (Face-to-face



		Highlight the significance of protein metabolism among living organisms	<p>Presentation</p> <p>Facilitate group activities</p> <p>Give assignments/ problem sets/ worksheets</p> <p>Class interaction</p> <p>Supplemental videos and Access Moodle classroom</p>	<p>discussion</p> <p>Group activity Seatwork and/or board work exercises</p> <p>Feedbacks</p> <p>VSUEE/VC: Downloading resource materials</p> <p>Answer Learning Tasks/Quiz Learning Guide: Independent study</p>	<p>and/or through VSU E-Learning Portal)</p> <p>Answer quiz during class schedule</p>
15					7 <sup>th</sup> Long Examination on Module No.: 3 Protein Metabolism and Regulation
15	<p>Module 11 Metabolism</p> <p>Lipid Metabolism and Regulation</p>	<p>Discuss the metabolic pathway of lipids</p> <p>Analyze the possible route of the metabolism of the lipids</p> <p>Highlight the significance of lipid metabolism among living organisms</p>	<p>Lecture with Discussion through PowerPoint presentation</p> <p>Educational Video Presentation</p> <p>Facilitate group activities</p> <p>Give assignments/ problem sets/ worksheets</p> <p>Class interaction</p>	<p>Class interaction</p> <p>Note-taking</p> <p>Sharing of Ideas</p> <p>Peer discussion</p> <p>Group activity Seatwork and/or board work exercises</p> <p>Feedbacks</p> <p>VSUEE/VC:</p>	<p>Module Pretest &amp; Post-test</p> <p>Quiz #11</p> <p>(Face-to-face and/or through VSU E-Learning Portal)</p> <p>Answer quiz during class schedule</p>

			Supplemental videos and Access Moodle classroom	Downloading resource materials  Answer Learning Tasks/Quiz Learning Guide: Independent study	
16					8th Long Examination on Module No.: 3 Lipid Metabolism and Regulation
16	Module 12  Metabolism  Nucleotide Metabolism and Regulation	Discuss the metabolic pathway of nucleotides  Analyze the possible route of the metabolism of the nucleotides  Highlight the significance of nucleotide metabolism among living organisms	Lecture with Discussion through PowerPoint presentation  Educational Video Presentation  Facilitate group activities  Give assignments/ problem sets/ worksheets  Class interaction  Supplemental videos and Access Moodle classroom	Class interaction  Note-taking  Sharing of Ideas  Peer discussion  Group activity Seatwork and/or board work exercises  Feedbacks  VSUEEVC: Downloading resource materials  Answer Learning Tasks/Quiz Learning	Module Pretest & Post-test  Quiz #12  (Face-to-face and/or through VSU E-Learning Portal)  Answer quiz during class schedule



				Guide: Independent study	
17					Final Examination on Module No.: 3 Nucleotide Metabolism and Regulation

\* VSUEE/VC – VSU E-Learning Environment/ Virtual Classroom

## 12. Life-long Learning Opportunities

The students will learn the basics and fundamental concept of the biomolecules governing life. In addition, the students will also have a deeper understanding on the changes that they experience in their body. Moreover, the students will be more conscious and selective with their lifestyle. Lastly, this course will help the students to appreciate life more.

## 13. Contribution of Course to Meeting the Professional Component (%)

General Education: 0%

Basic Education (Foundation): 20%

Professional Education (Major Field): 80%

## 14. References and Other Learning Resources

### A. Textbook(s)/ E-Books

1. GARRET, R.H and C.M. GRISHAM, 2005<sup>th</sup>. Biochemistry. Thomson Learning Inc. 3<sup>rd</sup> edition. CA, USA
2. LEHNINGER, A.L., D.L. NELSON and M.M.GOV., 2008. Principles of Biochemistry 5<sup>th</sup> edition, Worth Publisher, USA
3. MURRAY, R.K., 2009. Harper's Illustrated Biochemistry, 28<sup>th</sup> edition
4. STOKER, H.S., 2017. Biochemistry 3<sup>rd</sup> edition
5. TIMBERLAKE, K.C., 2009. Chemistry: An Introduction to General Organic and Biological Chemistry, 10<sup>th</sup> edition

### B. Other Learning Resources (to be updated)

## 15. Course Assessment and Evaluation

The performance of students will be assessed and evaluated based on the following:

Quizzes (25%) + Worksheets (10%) + Examinations (60%) + Attendance (5%) = (Overall Total) 100%

Item No.	Assessment Tasks	Percentage Contribution (1)	No. of Times in the Semester (2)	Individual Task % Contribution (1/2)
1	Quizzes/Assessments	25 %	22	1.13 %
2	Learning Tasks/WS/Assignments	10%	18	0.55 %



3	Long & Term Examinations	60 %	12	5.00 %
5	Attendance	5%	28	0.18%
		100%		

COs	Assessment Tasks	Weight in Percent	Minimum Average for Satisfactory Rating	Target and Standards
CO #s 1,2, 6,7	Quizzes/Assessments (4)	4.76%	60 %	At least 60% of the students have at least 60% score
	Assignments/Learning Tasks (6)	6.00%		
	Long & Term Examinations (1)	5.00%		
CO #s 3, 4, 5, 8	Quizzes (9)	10.71%		
	Assignments/Learning Tasks (8)	8.00%		
	Long & Term Examinations (#2 to 4 & Midterm)	15.00%		
CO 9	Quizzes (8)	9.52%		
	Learning Tasks (6)	6.00%		
	Long & Term Examinations (#5 to 8 & Final Term)	20.00%		
	Attendance	5.00%		
<b>TOTAL</b>		<b>100%</b>		

Grading System (Passing Rate: 60%)				
Range	Grade	Range	Grade	
97-100	1.00	75-79	2.25	
93-96	1.25	70-74	2.50	
89-92	1.50	65-69	2.75	
85-88	1.75	<b>60-64</b>	<b>3.00</b>	
80-84	2.00	Below 60	5.00	

## 16. Course Policies

### A. Classroom Rules

#### a. Face-to-face (offline) Mode:

1. All students are required to always maintain the cleanliness of the classroom. Thus, all chairs, tables, and other items present in the classrooms must be returned to their proper places after every class.
2. Trashes are to be thrown in garbage bins near the classroom.
3. Students are to turn their cellular phones off or in silent mode for the class duration and are not allowed to use them except for emergency purposes.
4. Students are encouraged to take down notes using pen and paper. Upon the approval of the instructor, notes written on the board or presented may be photographed.
5. Working/reading/studying on subject matters not related to the topic of the class is not allowed.



#### **b. Online Mode:**

1. In blended learning, the official virtual classroom is VSU E-Learning Environment VSUEE) (<https://elearning.vsu.edu.ph>). Therefore, a class orientation concerning the use and navigation of the platform will be done.
2. Zoom or Google Meet will be used for web-conferencing and real-time class meetings. The username and password link will be posted in VSUEE/VC.
3. Students are to turn their cellular phones off or in silent mode for the class duration and are not allowed to use them except for emergency purposes.

#### **B. Attendance and Absences**

1. Students who commit six (6) consecutive absences without prior notice to the faculty are considered dropped.
2. Suppose a student is absent and wishes to be excused for the said absence. In that case, he/she must write an excuse letter or present a medical certificate from the university health services to the faculty. (Section 298 and 299, VISCA Code).
3. For online classes, attending virtual meetings is highly encouraged. However, if you cannot attend due to internet connection limitations, keep-up with the lessons and do all the necessary exercises.

#### **C. Quizzes, Problem Sets, and Examinations**

1. Quizzes should be done and completed within the allotted time. These are either announced or unannounced. Meanwhile, online quizzes must be submitted and completed through the VSUEE portal within the allotted time.
2. In answering the Learning Tasks/Problem sets, he/she can do the following:
  - a. Handwritten or encoded in MS Word file format
  - b. General format:
    - i. A4 size bond paper
    - ii. 1" margin on all sides
    - iii. Arial, 12 font size, double space (for encoded outputs)

This requirement should be submitted on or before the due date. Late submission will no longer be accepted.
3. All examinations will be done on-site based on the schedule agreed upon by the class or the registrar for term examinations. Special/make-up exams will not be given without a valid excuse. A reasonable proof to justify your absence must be presented if an exam is missed without advance notice due to illness or emergency. The validity of the reason will be up to the discretion of the instructor/professor.
4. Make sure your answers are original. Once caught cheating with your classmates or retrieving answers from any solving site on the internet will be considered wrong. Consequently, a failing grade of 5.00/DR will be given. Furthermore, University rules on cheating will be strictly implemented.

#### **D. Reference/Instructional Materials**

The Learning Guide and this PhSc 108 Biochemistry OBE-Syllabus posted in VSUEE are the official instructional materials in this subject. It will serve as your guide in blended learning for the whole semester.

#### **E. Consultation/Clarifications**



For any inquiries/clarifications, you may contact the course instructor/professor through e-mail or in person during the official class schedule: Monday to Friday from 8:00 am to 5:00 pm only.

#### F. Other Important Rules

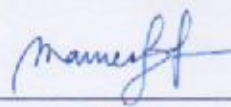

1. All students must adhere to the VSU Health and Safety Protocol while attending on-site meetings.
2. All students are reminded to observe all university policies, regulations, and rules. In addition, everyone is advised to read, understand, and practice the provisions of the VSU Student Manual. Non-compliance to the said policies shall have their respective consequences set by the instructor.
3. By the end of the first half of the semester, students who have not complied with any course requirements (less than 50% compliance) and have been absent without official leave (AWOL) are considered unqualified to pass the course, hence, a final remark of dropped will be given at the end of the semester.

This class policy shall serve as our written agreement for the whole semester. If there are any changes to enhance the class learning opportunity within the semester, it will be communicated accordingly.

#### 17. Course Materials and Facilities Available

Printed Learning Guide, Digital and Physical Reference Chemistry Books, Personal Laptop, Syllabus, Power Point Presentations, Video Lectures and Internet Resources.

18. Revision History				
Revision number	Date of Revision	Date of implementation	Highlights of Revision	Revised by
00	NA	January 13, 2020	OBE and ISO format compliant (c/o RAPVillaber)	Ronald Arlet P. Villaber
01	March 10, 2021	March 15, 2021	Revised and updated syllabus for the new normal adaptation.	
02	February 15, 2022	February 28, 2022	Revised and updated syllabus for the new normal adaptation.	
03	February 15, 2023	February 20, 2023	OBE-compliant CHED CMO No. 75 s 2017; ISO compliant format v.02 11-14-2022	Jailenn Jannaraine S. Puray Maria Robelyn Insik

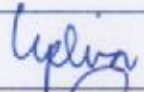

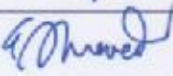
19. Preparation			
Prepared by	Name	Signature	Date Signed
	Maria Robelyn A. Insik		Feb 22, 2023
	Jailenn Jannaraine S. Puray		Feb 22, 2023



#### IV. INSTRUCTOR/PROFESSOR INFORMATION

1. Name of Instructor/Professor	Maria Robelyn A. Insik
2. Office and Department	Department of Pure and Applied Chemistry
3. Telephone/Mobile Numbers	+6317940037
4. Email Address	<a href="mailto:mariarobelyn.insik@vsu.edu.ph">mariarobelyn.insik@vsu.edu.ph</a>
5. Consultation Time	to be arranged
1. Name of Instructor/Professor	Jailenn Jannaraine S. Puray
2. Office and Department	Department of Pure and Applied Chemistry
3. Telephone/Mobile Numbers	(053)300-3009
4. Email Address	<a href="mailto:jailenn.puray@vsu.edu.ph">jailenn.puray@vsu.edu.ph</a>
5. Consultation Time	to be arranged

#### 20. Department Instructional Materials Review Committee:

Committee	Name	Signature	Date Signed
Member:	VIVIAN P. LINA		2/22/2023
Member:	FELIX M. SALAS		2/22/2023
Chairperson:	ELIZABETH S. QUEVEDO		2/23/2023

	Name	Signature	Date Signed
Verified by:	<b>MA. THERESA P. LORETO</b> Dean, CAS		
Validated by:	<b>NANCY D. ABUNDA</b> Head, IMD		

#### Note:

- 1) The number of POs will depend on each degree program offered
- 2) COs and Relationship to POs
  - a. (I) - **Introductory** – an Introductory Course to an outcome
  - b. (E) - **Enabling** – an Enabling Course or a course that strengthens the outcome
  - c. (D) - **Demonstrated** – a Demonstrative Course or a course demonstrating an outcome.

(3) Distribution of copies: OIMD, Department, Faculty





## EVALUATION OF OUTCOMES-BASED EDUCATION (OBE) COURSE SYLLABUS

PhSc 108 – Biochemistry  
2<sup>nd</sup> Semester and A.Y. 2022 - 2023

Name of faculty : Maria Robelyn A. Insik  
Department/Institute : Department of Pure and Applied Chemistry  
College : College of Arts and Sciences

CRITERIA	Complied	Partially Complied	Not Complied	Remarks
<b>FORMAT</b>				
1) The OBE course syllabus follows the university-prescribed format	/			
2) The course syllabus covers the required number of weeks in one academic term	/			
3) Course policies and grading system are clearly defined	/			
4) The syllabus is designed to align with the CMO-prescribed curriculum in relation to:				
a. Program Educational Objectives to VSU Vision, Mission, and Quality Policy Statement	/			
b. Program Outcomes to Program Educational Objectives	/			
c. Course Outcomes to Program Outcomes	/			
<b>CONTENT</b>				
1) Learning outcomes are clearly articulated ( <i>Specific, Measurable, Attainable, Realistic, Time-bounded (SMART) and anchored on Bloom's Taxonomy of Objectives</i> )	/			
2) Course coverage completely follows the course description	/			
3) Topics/lessons are arranged in a logical – sequence	/			
4) Gender-sensitivity and values education are integrated in the syllabus whenever applicable	/			
5) References are relevant, varied and updated. Contains at least five book titles copyrighted within the last 5 years as prescribed by CHED		/		
<b>TEACHING-LEARNING</b>				
1) Teaching-learning activities are:				

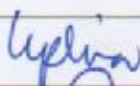
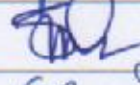
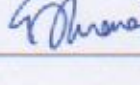


a. varied and relevant	✓			
b. outcomes-based	✓			
c. encourage active learning	✓			
d. develop the students' critical – thinking skills and reflective judgment	✓			
<b>LEARNING ASSESSMENT</b>				
1) Learning outcomes and methods of assessment are aligned	✓			
2) Assessment methods used are varied and relevant	✓			
3) Schedule and frequency of assessment, and expected outputs are clearly defined	✓			

**General Recommendation** (Pls. check):

✓	APPROVED for use
	Needs to be REVISED ( <i>please see comments</i> )

**Department Instructional Materials Review Committee:**

Committee	Name	Signature	Date Signed
Member:	VIVIAN P. LINA		2/22/2023
Member:	FELIX M. SALAS		2/22/2023
Chairperson	ELIZABETH S. QUEVEDO		2/22/2023

	Name	Signature	Date Signed
Verified by <sup>1/</sup> :	<b>MA. THERESA P. LORETO</b> Dean, CAS		
Validated by <sup>2/</sup> :	<b>NANCY D. ABUNDA</b> Head, IMD		

<sup>1/</sup> Means of Verification: Ratings on Individual evaluation sheets of the DIMRC members

<sup>2/</sup> Means of Validation: Final action of the College Dean

REMINDER: