



OUTCOMES-BASED EDUCATION (OBE) COURSE SYLLABUS

**Chem 158
Physical Chemistry 2**

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.

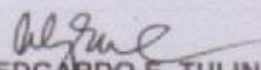
3. VSU Quality Policy Statement

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 Arts and Sciences

1. To produce quality manpower and graduates in biology, biotechnology, chemistry, English, liberal arts and behavioral sciences, mathematics, physics and statistics to serve the development needs of the region,
2. To uplift the economic well-being of the region through relevant R&D and extension programs, and
3. To enhance regional development of the Visayas for global competitiveness.

5. Quality Objectives of the Department of Pure and Applied Chemistry

1. Produce highly qualified and skilled Chemists and Chemical technicians for the industry and academia,
2. Generate relevant knowledge and technologies through basic and applied multi- and inter-disciplinary researches and
3. Achieve strong linkages and cooperation with domestic and international institutions and agencies involved in the pursuit of sustainable development.

II. PROGRAM INFORMATION

1. Name of the Program	Bachelor of Science in Chemistry
2. CHED CMO Reference	CMO No. 47 s. 2017
3. BOR Approval	BOR Resolution No. 63 s. 2018 (July 5, 2018)

4. Program Educational Objectives and Relationship to Institution Mission

Program Educational Objectives	Mission*		
	a	b	c
1. Occupy supervisory and /managerial position and in educational, research institution and industries both local and international.	✓	✓	✓
2. Participate in multidisciplinary or cross-disciplinary research team	✓	✓	✓
3. Establish own chemical - based business industries	✓	✓	✓
4. Pursue graduate studies and / specialized training program in chemistry and related field.	✓	✓	✓
5. Pursue other degree program	✓	✓	✓

*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	Chem 158
2. Course Title	Physical Chemistry 2
3. Pre-requisite	Chem 157 and chem 157.1
4. Co-requisite	Chem 158.1
5. Credit	3 units lecture
6. Semester Offered	First semester, Third year
7. Number of hours	3 hrs per week
8. Course Description	Principles and applications of thermodynamic laws in physical and chemical equilibrium systems; electrochemistry, transport properties, chemical kinetics and surface chemistry

9. Program Outcomes (POs) in relation to the Program Educational Objectives (POEs)

Program Outcomes (POs)		Program Educational Objectives				
		1	2	3	4	5
A	Demonstrate a broad and coherent knowledge and understanding in the core areas of chemistry: inorganic, organic, physical, biological and analytical chemistry; and in addition the necessary background in mathematics and physics	✓	✓	✓	✓	✓
B	Gather data using standard laboratory equipment, modern instrumentation and classical techniques	✓	✓	✓	✓	✓
C	Identify and solve problems involving chemistry, using current disciplinary and interdisciplinary principles	✓	✓	✓	✓	✓
D	Qualify for further study and/or for entry-level professional employment in the general workplace	✓	✓	✓	✓	✓
E	Work effectively and independently in multidisciplinary and multi-cultural teams	✓	✓	✓	✓	✓
F	Act in recognition of professional, social, and ethical responsibility	✓	✓	✓	✓	✓
G	Effectively communicate orally and in writing using both English and Filipino	✓	✓	✓	✓	✓
H	Articulate and discuss the latest developments in the specific field of practice (PQF level 6 descriptor)	✓	✓	✓	✓	✓
I	Interpret relevant scientific data and make judgments that include reflection on relevant scientific and ethical issues	✓	✓	✓	✓	✓
J	Preserve and promote "Filipino historical and cultural heritage" based on RA 7752	✓	✓	✓	✓	✓

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	H	I	J
CO1	Describe the behavior and properties of electrolytes and electrochemical systems, both in a qualitative and quantitative way, and calculate the properties of these systems	I/E	D	E	D	I	I	E	E	E	I
CO2	Explain and predict the kinetics of simple reaction systems of different orders and of complex reactions and carry out calculations based on the principles involved	I	E	E	D	D	I	E	I	E	I
CO3	Describe and explain surface phenomena in terms of equilibrium and dynamic properties	D	E	E	E	E	I	E	E	E	I

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>OBE Course Syllabus (including VSU Vision Mission, and Quality Policy Statement)</p> <p>Class Policies</p> <p>Requirements</p> <p>Grading System and Activities</p> <p>Learning Guide</p> <p>Submission of requirements</p> <p>Values Integration:</p> <p>Honesty</p> <p>Work ethics</p> <p>Self-help and mutual help</p>	<p>At the end of the week, the learners should be able to:</p> <ul style="list-style-type: none">• Articulate the Vision, Mission and Quality Policy Statement of the university in relation to their future career path	<p>Face to face:</p> <p>Class interaction</p> <p>Sharing of Ideas</p> <p>Feedbacks</p>	<p>Online Mode:</p> <ul style="list-style-type: none">• Power point presentation• Sharing of ideas <p>Offline Mode:</p> <p>Invited to online discussion meeting</p> <p>Reading and interpretation</p>	Worksheet 1
CO1: Describe the behavior and properties of electrolytes and electrochemical systems, both in a qualitative and quantitative way, and calculate the properties of these systems					
2	<p>Module No. 1 Electrical conduction</p> <p>Lesson No. 1.1 Electronic and electrolytic conduction</p>	<p>1. Compare and contrast metallic from electrolytic conduction</p> <p>2. Define the terms resistivity, conductivity and specific</p>	<p>Face to face:</p> <p>Class discussion/ interaction</p> <p>Computer-aided instruction</p>	<p>Online Mode: VSUEE/VC:</p> <p>Note-taking</p> <p>Downloading resource materials</p> <p>Worksheets</p>	<ul style="list-style-type: none">• Learning Tasks• Worksheets/Problem sheets

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		<p>conductance and molar conductance</p> <p>3. Explain the effect of dilution on the specific and molar conductance of electrolytes</p> <p>4. Apply Kohlrausch law to obtain molar conductance of weak electrolytes</p>	<p>Consultation</p> <p>Video clips</p> <p>Developing problem solving skills</p>	<p>Learning tasks</p> <p>Offline Mode:</p> <p>Worksheets</p> <p>Learning tasks</p>	Quiz 1
3	<p>Module No. 1 Electrical conduction</p> <p>Lesson No. 1.2 Conductance of electrolytes</p>	<p>1. apply Kohlrausch law to obtain molar conductance of weak electrolytes,</p> <p>2. calculate the degree of dissociation of weak electrolyte based on conductance studies,</p> <p>3. apply the mathematical formulations governing electrolyte dissociations</p>	<p>Face to face:</p> <p>Class discussion/ interaction</p> <p>Computer-aided instruction</p> <p>Consultation</p> <p>Video clips</p> <p>Developing problem solving skills</p>	<p>Online Mode: VSUEE/VC:</p> <ul style="list-style-type: none"> • Note-taking • Downloading resource materials • Worksheets • Learning tasks <p>Offline Mode:</p> <p>Worksheets</p> <p>Learning tasks</p>	<p>Learning Tasks</p> <p>Worksheets / Problem Sets</p> <p>Quiz 2</p>
4	<p>Module No. 1 Electrical conduction</p> <p>Lesson No. 1.3 Transport (transference) numbers</p>	<p>1. Solve problems relating to the determination of transport numbers</p> <p>2. Illustrate what happens during a Hittorf's method of determining transport numbers</p> <p>3. Explain the mechanism involved in relaxation and electrophoretic</p>	<p>Face to face:</p> <p>Class discussion/ interaction</p> <p>Computer-aided instruction</p> <p>Consultation</p> <p>Video clips</p> <p>Developing problem solving skills</p>	<p>Online Mode: VSUEE/VC:</p> <ul style="list-style-type: none"> • Note-taking • Downloading resource materials • Worksheets <p>Learning tasks</p>	<p>Learning Tasks</p> <p>Worksheets / Problem Sets</p> <p>Quiz 3</p>

		effects on ion mobilities		Offline Mode: Worksheets Learning tasks	
4-5	Module No. 1 Electrical conduction Lesson No. 1.4 Limiting ionic equivalent conductance and ionic mobility	1. evaluate the limiting equivalent ionic conductance of an electrolyte 2. relate the mobilities of ions to its transport number	Face to face: Class discussion/ interaction Computer-aided instruction Consultation Video clips Developing problem solving skills	Online Mode: VSUEE/VC: <ul style="list-style-type: none"> Note-taking Downloading resource materials Worksheets Learning tasks Offline Mode: Worksheets Learning tasks	<ul style="list-style-type: none"> Individual Journal Report Learning Tasks E-portfolio (for the entire course)
5	Module No. 1 Electrical conduction Lesson No. 1.5 Applications of conductance measurements	1. infer the shape of the graph when Λ of an electrolyte is plotted against the volume of titrant used (whether a strong or weak electrolyte, or a precipitant). 2. discuss the reason for the observed shape of the graph obtained in specific conductometric analyses. 3. cite environmental analyses that use	Face to face: Class discussion/ interaction Computer-aided instruction Consultation Video clips Developing problem solving skills	Online Mode: VSUEE/VC: <ul style="list-style-type: none"> Note-taking Downloading resource materials Worksheets Learning tasks Offline Mode: Worksheets	Learning Tasks Worksheets / Problem Sets Quiz 5 Summative Examination 1

		conductance measurement. 4. interpret graphical results of conductometric analysis		Learning tasks	
6	Module No. 2 Electrochemistry Lesson No. 2.1 Introduction to electrochemistry	1. identify oxidation-reduction reactions 2. compare and contrast galvanic/voltaic cell and electrolytic cell 3. balance redox reaction using either change in oxidation state method or ion-electron method.	Face to face: Class discussion/interaction Computer-aided instruction Consultation Video clips Developing problem solving skills Class demonstration	Online Mode: VSUEE/VC: • Note-taking • Downloading resource materials • Worksheets Learning tasks Offline Mode: Worksheets Learning tasks	Learning Tasks Worksheets / Problem Sets Quiz 6
6-7	Module No. 2 Electrochemistry Lesson No. 2.2 Standard reduction potential and spontaneity of reaction	1. write the cell notation given the electrochemical reaction 2. write the reaction based on a given cell notation 3. use the Table of Standard Reduction Potential to determine whether is spontaneous or not 4. Determine standard cell potentials for oxidation-reduction reactions 5. Use standard reduction potentials to	Face to face: Class discussion/interaction Computer-aided instruction Consultation Video clips Developing problem solving skills Class seat work	Online Mode: VSUEE/VC: • Note-taking • Downloading resource materials • Worksheets Learning tasks Offline Mode: Worksheets Learning tasks	Learning Tasks Worksheets / Problem Sets Quiz 7

		determine the better oxidizing or reducing agent from among several possible choices			
7	Module No. 2 Electrochemistry Lesson No. 2.3 Cell potential and thermodynamics	1. relate the electrode potential to the Gibb's free energy 2. compute the equilibrium constant from electrochemical data 3. analyze the dependence of the electrode potential on concentration of the ionic species and temperature 4. apply Nernst law in obtaining the emf at non-standard condition 5. apply the 2 Faraday's laws of electrolysis	Face to face: Class discussion/ interaction Computer-aided instruction Consultation Video clips Developing problem solving skills	Online Mode: VSUEE/VC: <ul style="list-style-type: none"> • Note-taking • Downloading resource materials • Worksheets Learning tasks Offline Mode: Worksheets Learning tasks	Learning Tasks Worksheets / Problem Sets Quiz

7-8	Module No. 2 Electrochemistry Lesson No. 2.4 Applications of electrochemistry	1. differentiate primary from secondary batteries 2. explain how battery, fuel cell and concentration cell work 3. cite applications of electrochemistry used in producing industrial chemicals	Face to face: Class discussion/ interaction Computer-aided instruction Consultation Video clips Developing problem solving skills Class demonstration	Online Mode: VSUEE/VC: • Note-taking • Downloading resource materials • Worksheets Learning tasks Offline Mode: Worksheets Learning tasks	Learning Tasks Worksheets / Problem Sets Quiz
9	Midterm assessment				Midterm Exam
CO2: Explain and predict the kinetics of simple reaction systems of different orders and of complex reactions and carry out calculations based on the principles involved					
10	Module No. 3 Chemical Kinetics Lesson No. 3.1 Introduction to Chemical Kinetics	1. List at least three reasons for studying chemical kinetics, and three ways to measure rates of reaction; 2. Identify variables used to monitor reaction rates (i.e., change of physical or chemical property per unit time, $d[\text{reaction species}]/dt$) 3. Differentiate average rate from instantaneous rate graphically and in words. 4. Relate the rate	Face to face: Class discussion/ interaction Computer-aided instruction Consultation Video clips Developing problem solving skills Class seatwork Journal critiquing (individual)	Online Mode: VSUEE/VC: • Note-taking • Downloading resource materials • Worksheets • Learning tasks Offline Mode: Worksheets Learning tasks	Learning Tasks Worksheets / Problem Sets Quiz Journal report

		of formation of a product to the rate of disappearance of a reactant, given experimental data and reaction stoichiometry.			
10-11	Module No. 3 Chemical Kinetics Lesson No. 3.2 Reaction Rate Theories	1. Explain the factors that affect the rate of chemical reactions with the use of reaction theories (Collision Theory and Transition State Theory) 2. Solve kinetic problems utilizing any of the two models (theories)	Face to face: Class discussion/ interaction Computer-aided instruction Consultation Video clips Developing problem solving skills	Online Mode: VSUEE/VC: <ul style="list-style-type: none"> • Note-taking • Downloading resource materials • Worksheets • Learning tasks Offline Mode: Worksheets Learning tasks	Learning Tasks Worksheets / Problem Sets Quiz
12	Module No. 3 Chemical Kinetics Lesson No. 3.3 Rate law, order and molecularity of reaction	1. Explain and use the terms: rate of a reaction, rate law of a reaction, order of a reaction, rate constant, half-life of a reaction, rate determining step; 2. Write the reaction rate expressions of chemical reactions; 3. Determine the order of reaction from experimental data;	Face to face: Class discussion/ interaction Computer-aided instruction Consultation Video clips Developing problem solving skills	Online Mode: VSUEE/VC: <ul style="list-style-type: none"> • Note-taking • Downloading resource materials • Worksheets • Learning tasks Offline Mode:	Learning Tasks Worksheets / Problem Sets Quiz

		4. Derive the integrated rate law and half-life equations from the differential rate law equation. 5. Solve problems that relate to reaction rates.		Worksheets Learning tasks	
13	Module No. 3 Chemical Kinetics Lesson No. 3.4 Factors affecting rate of reaction	1. Determine what possible factors may affect a specific reaction, and 2. Evaluate the effect of the following factors on the rates of chemical reactions: A) Temperature B) Pressure C) Concentration D) Catalyst E) Particle size	Online Mode: 1. Virtual discussion meetings 2. Viewing of videos Offline Mode: 1. Printed Learning Guide (independent study) 2. Invited to online discussion meeting	Online Mode: VSUEE/VC: <ul style="list-style-type: none"> • Note-taking • Downloading resource materials • Worksheets Learning tasks Offline Mode: Worksheets Learning tasks	Learning Tasks Worksheets / Problem Sets Quiz Summative Examination 3
14	Module No. 3 Chemical Kinetics Lesson No. 3.5 Reaction mechanism	1. Recognize whether the reaction species in the elementary reactions contain catalyst and/or intermediate. 2. Assess which among the plausible reaction mechanisms is consistent with the experimentally-derived rate law. 3. Evaluate the reaction kinetics based	Face to face: Class discussion/ interaction Computer-aided instruction Consultation Video clips Developing problem solving skills	Online Mode: VSUEE/VC: <ul style="list-style-type: none"> • Note-taking • Downloading resource materials • Worksheets Learning tasks Offline Mode:	Learning Tasks Worksheets / Problem Sets Journal report

		on the mechanism of reaction 4. Propose a mechanism of reaction based on its reaction kinetics		Worksheets Learning tasks	
CO3: Describe and explain surface phenomena in terms of equilibrium and dynamic properties					
15	Module No. 4 Surface Chemistry Lesson No. 4.1 Adsorption Phenomena	<ol style="list-style-type: none"> 1. differentiate absorption from adsorption process, 2. compare and contrast physisorption and chemisorption, 3. explain the process of adsorption, 4. discuss the effect of factors on the adsorption process, and 5. interpret the various types of adsorption isotherms (Langmuir, Freundlich and B.E.T.) 	Face to face: Class discussion/ interaction Computer-aided instruction Consultation Video clips Developing problem solving skills Group reporting	Online Mode: VSUEE/VC: <ul style="list-style-type: none"> • Note-taking • Downloading resource materials • Worksheets Learning tasks Offline Mode: Worksheets Learning tasks	Learning Tasks Worksheets/ Problem Sets Quiz Report
16	Module No. 4 Surface Chemistry Lesson No. 4.2 Selected surface phenomena of macromolecules	<ol style="list-style-type: none"> 1. discuss the difference in terms of intra-molecular interaction between surface and bulk molecules 2. differentiate adhesion from cohesion forces 3. discuss the forces involved in surface properties of liquids and their solutions 4. know the analytical procedures involved in determining surface properties 	Face to face: Class discussion/ interaction Computer-aided instruction Consultation Video clips Developing problem solving skills	Online Mode: VSUEE/VC: <ul style="list-style-type: none"> • Note-taking • Downloading resource materials • Worksheets Learning tasks Offline Mode: Worksheets	Learning Tasks Worksheets/ Problem Sets

				Learning tasks	
17	Students' integration week (Time given to students to integrate their learnings in preparation for the final assessment)				
18	Final Assessment				Final Exam

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

13. Contribution of Course to Meeting the Professional Component (%)	
General Education:	
Basic Education (Foundation):	
Professional Education (Major Field):	100%

14. References and Other Learning Resources	
A. Textbook(s)/ E-Books	
1.	ATKINS, P. and J. de Paula. 2002. Physical Chemistry (7 th ed.). W.H. Freeman and Co.
2.	ATKINS, P. 1998. Physical Chemistry, 6 th edition. W.H. Freeman and Co.
3.	BALL, D. W. 2003. Physical Chemistry. Brooks/Cole
4.	CASTELLAN, G. W. 1983. Physical Chemistry, 3 rd edition. The Benjamin/Cummings Publishing Company, Inc.
5.	JAIN, D. V. S. and S. P. JAUHAR. 1990. Physical Chemistry: Principles and Problems. Tata McGraw-Hill Publishing company Limited
6.	KLOTZ, I. and M. ROSENBERG. 2000. Chemical Thermodynamics: Basic theory and methods, 6 th edition. Wiley - Interscience.
7.	LAIDLER, K. J., J. H. MEISER and B. C. SANCTUARY. 2003. Physical Chemistry. Houghton Mifflin Company

15. Course Assessment and Evaluation				
The performance of students will be assessed and evaluated based on the following:				
Item No.	Assessment Tasks	Percentage Contribution (1)	No. of Times in the Semester (2)	Individual Task % Contribution (1/2)
1	Examination	60	4	15%
2	Worksheet	10	5	2%
3	Learning Tasks	10	5	2%
4	Journal report (Individual)	5	1	5%
5	Journal report (Group)	5	1	5%
6	Eportfolio	10	1	20%
		100%		
COs	Assessment Tasks	Weight in Percent	Minimum Average for Satisfactory Rating	Target and Standards
CO 1	Learning Tasks Worksheet/Problem set	40%	60 %	At least 70% of the students have at least 60% score
CO 2	Learning Tasks	40%		

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	Worksheet/Problem set			
CO3	Learning Tasks	20%		
	Worksheet/Problem set			
TOTAL		100%		

Grading System (% Passing: 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	60 - 64	3.00
80 – 84	2.00	< 60	5.00

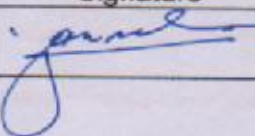
16. Course Materials and Facilities Available

Learning Guide
Journal publications (pdf file, provided)
VSUEE (Moodle Platform)

17. Revision History

Revision number	Date of Revision	Date of implementation	Highlights of Revision
00		Oct. 2020	OBE-based syllabus for in campus instruction
01	Sept 23, 2022	Sept 12, 2022	Inclusion of face-to-face mode of instruction and redistribution of percentage contribution of assessment tools.

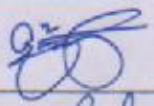
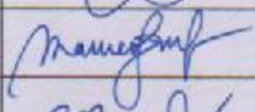
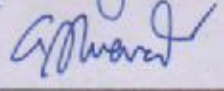
18. Preparation

	Name	Signature	Date Signed
Prepared by	Jacob Glenn F. Jansalin		Sept 26, 2022

III. INSTRUCTOR/PROFESSOR INFORMATION

1. Name of Instructor/Professor	JACOB GLENN F. JANSALIN
2. Office and Department	DOPAC
3. Telephone/Mobile Numbers	09614645485
4. Email Address	Jacob.jansalin@vsu.edu.ph
5. Consultation Time	Any time during weekdays; discussion meeting (as scheduled)

19. Department Instructional Materials Review Committee:

Committee	Name	Signature	Date Signed
Member:	ATOZ A. VASQUEZ		Sept. 20, 2021
Member:	MARIA ROBELYN A. INSIK		Sept 24, 2022
Chairperson	ELIZABETH S. QUEVEDO		October 4, 2022

	Name	Signature	Date Signed
Verified by:	MA. THERESA P. LORETO College Dean		
Validated by:	NANCY D. ABUNDA 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.

Distribution of copies: OIMD, Department, Faculty

REMINDER:

1. *The author should not be part of the DIMRC.*
2. **If the author is the Department Head, he/she will be replaced by another chairperson from among the senior faculty members.*
3. ***If the author is the College Dean, the Head of Instructional Materials Development will approve.*
4. *Follow the next higher supervisor, no same person*
5. *For the component campuses, if the author is the College Dean, the Director for Academic Affairs will approve.*
6. *If the author is the Department Head and at the same time the College Dean, the Director for Academic Affairs will be the Chairperson of the DIMRC, and the Chancellor will approve it.*

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



EVALUATION OF OUTCOMES-BASED EDUCATION (OBE) COURSE SYLLABUS

Course No.: Chem 158 and Course Title: Physical Chemistry 2

1st Semester and A.Y. 2022-2023

Name of faculty : Jacob Glenn F. Jansalin
Department/Institute : Department of Pure and Applied Chemistry
College : College of Arts and Sciences


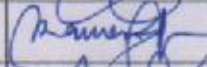
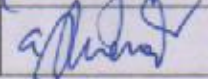
CRITERIA	Complied	Partially Complied	Not Complied	Remarks
FORMAT				
1) The OBE course syllabus follows the university-prescribed format	/			
2) The course syllabus covers the required number of weeks in one academic term	/			
3) Course policies and grading system are clearly defined	/			
4) The syllabus 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	/			
CONTENT				
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	/			

TEACHING-LEARNING				
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	/			
LEARNING ASSESSMENT				
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 (please see comments)

Department Instructional Materials Review Committee:

Committee	Name	Signature	Date Signed
Member:	ATOZ A. VAQUEZ		Sept. 20, 2022
Member:	MARIA ROBELYN A. INSIK		Sept 26, 2022
Chairperson	ELIZABETH S. QUEVEDO		October 4, 2022

	Name	Signature	Date Signed
Verified by ^{1/} :	MA. THERESA P. LORETO Dean, CAS		
Validated by ^{2/} :	NANCY D. ABUNDA Head, IMD		

^{1/} Means of Verification: Ratings on Individual evaluation sheets of the DIMRC members

^{2/} Means of Validation: Final action of the College Dean

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

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