9/13/2022 DATE
☑ REQUIRED COURSE
☐ ELECTIVE COURSE

MSD DIVISION
☐ NEW COURSE
☑ REVISION

Lake Land College

Course Information Form

COURSE NUMBER:	CHM-111		TITLE: *(30 Characters Max)*		Concepts of Chemistry					ECH:	5
SEM CR HRS:	4	Lecture:	3	Lab:	2						
Course Level:	☑ Gen Ed / IAI ☐ Baccalaureate /Non-IAI	☐ Career/Technical ☐ Dev Ed/ Not in Degree Audit	Clinical Practicum:	0	SOE/ Internship:	0	SOE ECH:	0			
COURSE PCS #	11 - 10.0501		IAI Code		P1 903L				Contact Hours (Minutes Per Week)		
Repeatable (Y/N):	N	Pass/Fail (Y/N):	N	Variable Credit (Y/N):	N	Min:		Max:		16 Wks	250	8 wks	500
Prerequisites:	None										
Catalog Description: (40 Word Limit)	An introduction to the concepts of chemistry where information is presented to students with little background or no prior interest in chemistry and those students who are not interested in abstract or mathematical theories.										

List the Major Course Segments (Units)	Contact Lecture Hours	Contact Lab Hours	Clinical Practicum	Non-Clinical Internship/ SOE
Careers in Chemistry and Historical Review	2	2		
Matter, Measurements, and Metric System	4	5		
Atomic Theory, Fundamental Laws of Chemistry	4	3		
Chemical Bonding, Nomenclature and Formula	8	4		
Chemical Equations and Stoichiometry	5	4		
Gas Laws	3	3		
Acid and Base Chemistry	3	3		
Organic Chemicals	5	3		
Food, Digestion, and Metabolism	6	3		
Medicinal Chemistry	5	0		
TOTAL	45	30	0	0

EVALUATION							
QUIZZES	☑	EXAMS	☑	ORAL PRES	☐	PAPERS	☐
LAB WORK	☑	PROJECTS	☐	COMP FINAL	☑	OTHER	☐

COURSE MATERIALS	
TITLE:	Chemistry for Changing Times
AUTHOR:	John Hill, Terry McCreary, Doris Kolb
PUBLISHER:	Pearson
VOLUME/EDITION/URL:	13th
COPYRIGHT DATE:	2013

MAJOR COURSE SEGMENT	HOURS	LEARNING OUTCOMES
		The student will be able to:
Careers in Chemistry Historical Review	4	Understand the significance of chemistry in our lives. Understand the development of chemistry and its place in history.
Matter, Measurements, Metric System, and Math Principles	9	Have the ability to use the metric system, scientific notation, dimensional analysis and significant figures to solve problems. Making connection that many societies contribute to science and communicating results is very important.
Atomic Theory, Fundamental Laws of Chemistry	7	Understand basic atomic structure including electronic configurations and learn to use periodic table.
Chemical Bonding Nomenclature and Formula Writing	12	Explain and use the principles of covalent, ionic and metallic bonding. Learn to write the formulas of binary and other inorganic compounds including the use of radical ions and name these compounds.

Chemical Equations and Stoichiometry	9	Balance equations and the use to solve stoichiometric problems using the mole concept. Being able to predict product amount in a chemical reaction. Making connection that science allows human societies to improve the quality of daily life.
Gas Laws	6	Understand gas behavior through the use of kinetic molecular theory. Apply gas laws to solve problems.
Acid and Base Chemistry	6	Explain acid and base theory including neutralization and salt formation and solve problems including concentration units and solution preparation. Making connection that humans deal with acids, bases, salts on a daily basis.
Organic Chemicals	8	Identify the classes of organic compounds and name compounds in the classes. Learn the basic reactions of each class and how these apply in life and commerce.
Food, Digestion and Metabolism	9	Study how chemicals such as food impact our lives and health Learn what carbohydrates, fats and proteins are and how they are metabolized.
Medicinal Chemistry	5	Learn different kinds of medicines and drugs used in our lives, side effects, and impact on health and society.
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	75	

COURSE OUTCOMES*	At the successful completion of this course, students will be able to:
	• Use measurements, unit systems and dimensional analysis in calculations.
	• Apply scientific language to describe chemical and physical phenomena.
	• Given a name be able to write the correct formula for the compound.
	• Understand the difference between ionic and covalent compounds.
	• Explain the chemical uniqueness for the gas, liquid and solid states.
	• Discuss the characteristics and the reactions of acids and bases.
	• Know some of the uses of the common organic compounds with functional groups.
	• Know the properties and role of biochemical molecules in human body.
	• Know the usage of common medicines and drugs.
	• Safely collect data and analyze data obtained through experiments.

** Course Outcomes will be used in the Assessment Software for Outcomes Assessment. Limit to 3 - 5.*