開課班級: 四熱農一A **授課老師: 信威** **學分數:1**

課程大綱:

本課程的目的強調基本化學實驗、觀察方法、測量和基本計算。 概述如下： 1. 混合物的分離, 2. 密度的測量， 3. 固體的含水量， 4. 質量守恆定律， 5. 化學計量學， 6. 定比定律， 7. 氧化還原反應 , 8. 溶液稀釋, 9. 氧化還原滴定, 10. 氣體定律, 11. 通過密度值確定氣體的莫爾質量, 12. 熱反應, 13. 分子模型。

outline:

he purpose of this course emphasizes the skill of basic chemical experiment, methods of observations, measurement and basic calculation. Attempts to give the students identify the theory corresponding with observations and measurement. In order to build up foundations for the study of General Chemistry experiment（2） and the other related sciences. The outlines are offered as below: 1. The separation of mixtures, 2.Measurement of density, 3.Water content of solid, 4.Law of conservation of mass, 5.Stoichiometry, 6.Law of definite proportions, 7.Redox reaction, 8.Dilution of solutions, 9.Redox titration, 10.The gas laws, 11.Determinate the molar mass of a gas by its density value, 12.Measuring the enthalpy of reaction, 13.Molecular models.

教學型態:

實習(校內、校外)

成績考核方式:

平時成績:20%
期中考:%
期末考:20%
其它:60%

本科目教學目標:

1.培育熱帶農業基礎人才。 2.發展農、林、漁、牧相關技術。
3.建立永續農業經營與國際合作觀。

參考書目:

普通化學實驗

課程進度表：

週次	起訖月日	授課單元(內容)	備註
第1週	9.12~9.19	NOTIFICATION: Hello everyone! I'm Dr Kuo If you have any question or problem, please contact me as following: E-mail:;hwkuo@mail.npust.edu.tw Line ID: weislc	8日正式上課。8~12日課程加退選，轉學(系)生、復學生及延修生選課，雙主修、輔系申請，12日申辦抵免學分截止日
第2週	9.19~9.26	To understand the importance of the calibration of electronic (weighing) balance.	
第3週	9.26~10.03	To learn the methods and skills to separate the mixture of substances using their physical characteristics.	28日(日)孔子誕辰紀念日/教師節(放假),29日(一)補假
第4週	10.03~10.10	To learn the methods and skills to measure the density of substances/matters.	29日成績優異提前畢業者提出申請截止日
第5週	10.10~10.17	To learn the methods and skills to measure the water content (absorbed water and hydrated water) in solids using copper sulfate.	6日(一)中秋節(放假)，10日(五)國慶日(放假)
第6週	10.17~10.24	(1) To determine the numbers of moles of potassium, chlorine and oxygen in the sample of potassium chlorate (KClO3) by an analytical method. (2) To determine the chemical formula of potassium chlorate (KClO3) by its empirical formula.	14日學生宿舍安全輔導暨複合式防災疏散演練。18日多益測驗
第7週	10.24~10.31	To verify the Boyle’s Law using the relationship between gas volume and gas pressure when the amount of gas maintains constant at certain temperature.	24日(五)補假，25日(六)光復暨古寧頭大捷日(放假)。
第8週	10.31~11.07	(1) To familiar with the vapor density measurement. (2) To calculate the molecular mass of solvent using the vapor density and ideal gas equation (PV = nRT)	30日校課程委員會
第9週	11.07~11.14	MIDTERM EXAM	3~9日期中考試
第10週	11.14~11.21		13日教務會議,16日教師期中成績上網登錄截止日
第11週	11.21~11.28	(1) To familiar with the calculation for the concentration of solutions. (2) To practice the procedures of preparing standard solutions.	
第12週	11.28~12.05	To determine the total weights of matters before and after a reaction for the confirmation of the Law of Mass Conservation.	24~28體育運動週。24日校園路跑。27日運動大會夜間開幕，28日運動大會活動，29日101週年校慶活動日，照常上班
第13週	12.05~12.12	(1) To understand the concept of neutralization. (2) To practice the operation of	

		titration. (3) To calculate the concentration of unknown acidic or basic solution using titration.	
第14週	12.12~12.19	(1) To familiar with the redox reactions. (2) To understand the oxidation strength of Zn, Pb, and Cu (metal activity series).	12日申請停修課程截止日
第15週	12.19~12.26	(1) To familiar with the measurement of reaction heats for dissolution and neutralization. (2) To calculate the enthalpy of reaction.	
第16週	12.26~1.02	(1) To understand the definition of pH. (2) To familiar with the operation of a pH meter. (3) To measure the pH of a solution using indicators and a pH meter.	22日校務會議。25日行憲紀念日(放假)
第17週	1.02~1.09	FINAL EXAM	1日(四)開國紀念日(放假)
第18週	1.09~1.16		5~11日期末考試，10~11日學生退宿