

Toyama College		Year	2022		Course Title	Chemistry II B
Course Information						
Course Code	0052		Course Category	General / Elective		
Class Format	Lecture		Credits	School Credit: 1		
Department	Department of Electronics and Computer Engineering		Student Grade	2nd		
Term	Second Semester		Classes per Week	2		
Textbook and/or Teaching Materials	化学(数研出版), フォローアップドリル化学(数研出版), リードLight化学(数研出版), フォトサイエンス化学図録(数研出版)					
Instructor	Terasaki Yukiko					
Course Objectives						
1. 1. Understand the solubility and solubility of a solution, and be able to determine the concentration of the solution. 2. Understand the properties of solutions such as boiling point elevation, freezing point depression, and osmotic pressure. In addition, he has basic knowledge about colloids. 3. 3. Have basic knowledge of organic compounds and can write structural formulas and demonstrative formulas.						
Rubric						
	Ideal Level		Standard Level		Unacceptable Level	
solution	Understand solutions and solubilities, and be able to solve problems with solubilities in various cases. It is possible to solve applied problems regarding the concentration of solutions. Understand colloids and think about them in connection with things around you.		Understand solubility and solubility The concentration of the solution can be determined Understand basic knowledge about colloids		I do not understand the solubility and solubility. The concentration of the solution cannot be determined. I don't understand the basic knowledge about colloids.	
Solution properties	Understand boiling point elevation, freezing point depression, and osmotic pressure, and calculate the values. Understand colloids.		Understand boiling point elevation, freezing point depression, and osmotic pressure. I understand colloids.		I do not understand the solubility and solubility. The concentration of the solution cannot be determined. I don't understand the basic knowledge about colloids.	
Organic compounds	Understand the basic knowledge of organic compounds and be able to solve problems. Structural formulas and sexual characteristics can be written, from which the properties of the substance can be inferred.		Understand the basic knowledge of organic compounds. Can write structural formulas and demonstrative formulas.		I do not understand the basic knowledge of organic compounds. I can't write because I can't understand the structural formula and the rational formula.	
Assigned Department Objectives						
Teaching Method						
Outline	Look at the actual phenomena and reactions and understand their chemical viewpoints. In addition, learn about the quantitative relationship of reactions. After that, we will learn the structure, characteristics, properties, and reaction methods of various substances.					
Style	Lectures, exercises, experiments by teachers alone The lesson plan may change depending on the degree of understanding of the student. Must be reviewed after class					
Notice	Those who have an evaluation of less than 50 points can take a confirmation test upon request. As a result of the confirmation test, if the credits are confirmed, the evaluation will be 50 points. We will conduct quizzes as needed to establish the content. Also, give assignments so that you can review them. Incorporate experiments and audiovisual materials.					
Characteristics of Class / Division in Learning						
<input checked="" type="checkbox"/> Active Learning		<input checked="" type="checkbox"/> Aided by ICT		<input checked="" type="checkbox"/> Applicable to Remote Class		<input type="checkbox"/> Instructor Professionally Experienced
Required course						
Course Plan						
			Theme		Goals	
2nd Semester	3rd Quarter	1st	Solubility of solid		Understand the mechanism of recrystallization and use the solubility to determine the amount of dissolution and the amount of precipitation. In addition, the amount of hydrate to be dissolved can be determined.	
		2nd	Solubility of gas		It is possible to learn that the solubility of a gas depends on the pressure, and to determine the amount of dissolution.	
		3rd	Properties of dilute solution		You can learn about changes in boiling point and freezing point, and osmotic pressure in dilute solutions, and calculate them.	
		4th	Exercise		Calculate various values by conducting exercises on solubility, boiling point elevation, freezing point depression, and osmotic pressure.	
		5th	Colloid		Explain the difference between a colloidal solution and a normal solution. Learn that there is a colloidal solution around you.	

		6th	Characteristics and classification of organic compounds Analysis of organic compounds	Understand the definitions and characteristics of organic compounds in general. In addition, the molecular formula can be estimated by performing elemental analysis.
		7th	Saturated hydrocarbon	Understand the structure, properties, and reactions of alkanes. You will also learn about petroleum, which contains various alkanes.
		8th	Mid-term exam	Make sure that you have an understanding of aliphatic hydrocarbons, such as solutions, characteristics of organic compounds, and analysis.
	4th Quarter	9th	Mid-term exam answers Unsaturated hydrocarbon	By returning the answers to the mid-term exams and answering and explaining them, we will confirm that we have not been able to review and understand them. Understand the structure, properties, and reactions of alkenes.
		10th	Unsaturated hydrocarbon Alcohol / Ether	Understand the structure, properties, and reactions of alkynes. Understand the structure, properties, and reactions related to alcohol and ether.
		11th	Aldehyde /Ketone	Understand the structure, properties, and reactions of aldehydes and ketones.
		12th	Carboxylic acid Esters and fats and oils	Learn about the properties and reactions of carboxylic acids. Explain the characteristics of esters and fats and oils formed by the reaction of carboxylic acids.
		13th	Soap Aromatic hydrocarbons	Learn the characteristics of soap, which is an esterified substance of fats and oils. Learn about the general structure, properties, and reactions of aromatic hydrocarbons and explain the differences from aliphatic hydrocarbons.
		14th	Phenols Aromatic carboxylic acid	Understand the properties and reactions of phenols. The structure, properties, and reactions can be understood by taking some substances in aromatic carboxylic acids as examples.
		15th	Final exam	Confirm that the characteristics and reactions of aromatic compounds containing oxygen and nitrogen are understood.
		16th	Grade confirmation	Confirmation of final exam results Class evaluation questionnaire

Evaluation Method and Weight (%)

	Examination	Presentation	Mutual Evaluations between students	Behavior	Portfolio	Other	Total
Subtotal	80	0	0	0	0	20	100
Basic Proficiency	80	0	0	0	0	20	100
Specialized Proficiency	0	0	0	0	0	0	0
Cross Area Proficiency	0	0	0	0	0	0	0