

Module Code	19349047	Course Term
Course Subject Name	Bioresource and Bioenvironment Experiments and Practice 4	<h1 style="text-align: center; color: magenta;">Spring</h1> <h2 style="text-align: center;">The 6th Semester</h2>
Course Tutor	A.Nakano, Tabata, Mitsuoka	
Credit	1	
Schools	School of Agriculture	Taught Day
Taught Year	The 3rd year	<h1 style="text-align: center; color: red;">FRI-3,4</h1>
Campus	Ito campus	
Subject Area	Lecture	
Course Subject Classification	Fieldwork Practice Subjects	Tuesday and/or Friday, 3rd and 4th period (13:00-16:20) 13:00 – 15:30* (*occasionally the ending time for the class will be extended, and need to attend both Tuesdays and Fridays.)
Course Requirements		
Course Requirement (Pre-requisite)		
Course Outline		
key words		
Study Objectives (General)		
PURPOSE AND SCOPE This class is organized by experimental works based on three subjects, Physics of force and motion, Hydraulics, and Basic soil engineering. Students will be expected to learn the basic theory about Newtonian mechanics, hydraulics, and soil engineering through various experiments. Physics of force and motion experiment will offer some experimental techniques to understand physical phenomenon related to strain-stress and rigid-body motion and its theory we actually experience in our daily life. Hydraulics experiment will give the opportunities to conduct hydraulic model experiments related to the water environment in agricultural land. Students will be expected to understand the basic theory of hydraulic phenomenon and to learn the basic technique of hydraulic measurement. Basic soil engineering experiment will offer some experimental techniques to determine the basic soil properties indispensable to design and construction in geoengineering. All personnel are required to have a complete understanding of the procedures in this class. Also, all are required to have a cooperative activity through the group works in this class.		
Study Objectives (Specific) The course aims to achieve the following:		
Course Plan		
Contents 1. Physics of force and motion 1-1 STRESS AND STRAIN MEASURING (1) STRAIN GAUGE MOUNTING METHOD 1-2 STRESS AND STRAIN MEASURING (2) STRESS AND STRAIN MEASURING METHOD 1-3 ACCELERATION AND ANGULAR VELOCITY MEASURING 1-4 ATTITUDE ANGLE DETECTING OF MOVING OBJECT 2. Hydraulics 2-1 FLOW MEASUREMENT IN OPEN CHANNEL USING MEASURING WEIR 2-2 FLOW MEASUREMENT IN PIPE USING VENTURI METER 2-3 VELOCITY DISTRIBUTION IN THE OPEN CHANNEL 2-4 LAMINAR FLOW AND TURBULENCE FLOW 3. Basic soil engineering 3-1 DETERMINATION OF SPECIFIC GRAVITY OF SOIL 3-2 GRAIN SIZE DISTRIBUTION OF SOIL (1) BY SIEVE ANALYSIS 3-3 GRAIN SIZE DISTRIBUTION OF SOIL (2) BY HYDROMETER METHOD 3-4 ATTERBERG LIMITS (LIQUID LIMIT & PLASTIC LIMIT)		
Course Approaches		
Textbooks		
Reference Books		
Study consultation (office hour)	CLASS LOCATION • Physics of force and motion: West 5-Room 723, Dep. Agriculture • Hydraulics: West 5-Room 723, Dep. Agriculture • Basic soil engineering: West 5-Room 723, Dep. Agriculture CONTACT INSTRUCTORS • Assistant professor Akiko NAKANO, Lab. Environmental soil engineering, Bio production environmental sciences, E-mail: nakiko@agr.kyushu-u.ac.jp / TEL: 092-802-4621 (West 5-Room 777, Dep. Agriculture) • Assistant professor Toshinori TABATA, Lab. Water environmental engineering, Bio production environmental sciences, E-mail: ttabata@bpes.kyushu-u.ac.jp (West 5-Room 884, Dep. Agriculture) • Assistant professor Muneshi MITSUOKA, Lab. Agricultural Machinery and Production Systems Design, Agro-environmental Sciences, E-mail: mitsuoka@bpes.kyushu-u.ac.jp (West 5-Room 836b, Dep. Agriculture)	
Exams/Results Evaluation Method	SUBMIT REPORT Report submission will be assigned after every class. Each report has to be submitted to the following instructor by the end of the next class. • Physics of force and motion : Muneshi MITSUOKA • Hydraulic : Toshinori TABATA • Soil engineering : Akiko NAKANO	
Others		