グローバル特論Ⅰ

Global Special Seminar Ⅰ

【時間割コード(Code)96015】

【講義担当教員】(Teacher)	Naoko OHTSU
【単位数】(Credit)	0.5 Credit
【必修・選択】(Required/Elective)	Required course
【開講時期】(Term)	December 10, 2019 10:00～
【開講場所】(Place)	United graduate bldg. 4F meeting room 2, TUAT
【成績評価】(Evaluation standard)	Attitude toward class (60%) and a report (40 %).

【Lecture outline】

To achieve sustainable crop production, proper nutrient application based on their needs by plants is necessary. In this lecture, basic knowledge of plant nutrients will be offered in the aspect of their functions in plants and their absorption by plants.

【Expected Learning outcomes】

The goal is to understand the basic function of plant nutrients. Basic knowledge on nutrient management problems in agriculture should be obtained.

【Course Schedule】

1. Uptake and transport of mineral nutrients in Plants
2. Functions of macronutrients part 1.
3. Functions of macronutrients part 2
4. Functions of micronutrients

【テキスト・教科書】 Required Text(s) and Materials	Handouts will be provided at the lecture.
【参考書】 References	Mineral nutrition of higher plants (Academic press).
【教員からの一言】 Message from the professor	Let's learn how plants utilize nutrients in environments and think better application of nutrients in agriculture.
【講義担当教員連絡先】 Address and e-mail of the professor in charge	Naoko OHTSU 3-5-8, Saiwai-cho, Fuchu-shi, Tokyo, Japan, 1830054 Department of biological Production, Tokyo University of Agriculture and Technology e-mail: nohtsu@cc.tuat.ac.jp

グローバル特論Ⅱ

Global Special Seminar II

【時間割コード(Code) 96016】

【講義担当教員】(Teacher)	Gomi Takashi, Kato Tasuku
【単位数】(Credit)	0.5 Credit
【必修・選択】(Required/Elective)	Required course
【開講時期】(Term)	November 26,2019 10:00-
【開講場所】(Place)	United graduate bldg. 4F Seminar room, TUAT
【成績評価】(Evaluation standard)	Evaluated by report and discussion

【Lecture outline】

Introduction on soil and water management and environmental conservation through several engineering study. Watershed management related to forest hydrology, sediment dynamics, paddy field engineering, and irrigation planning will be introduced. Based on the lecture, group discussion would be expected.

【Expected Learning outcomes】

To understand basic idea for development and conservation on soil and water environment.
To conduct group discussion through understanding on engineering study.

【Course Schedule】

Forest hydrology and watershed management 3hr (Gomi)
Watershed management, paddy field engineering, and modeling 3hr (Kato)

【テキスト・教科書】 Required Text(s) and Materials	Hand out will be provided
【参考書】 References	Nothing
【教員からの一言】 Message from the professor	Soil and Water is fundamental for agriculture. For conservation on soil and water, analytical process is quite important. Currently, in most engineering study, methodologies for the analysis are complex and various ways. We would like to introduce those example of methodologies, and at same time, original idea where comes from theoretical analysis.
【講義担当教員連絡先】 Address and e-mail of the professor in charge	Gomi Takashi: gomit@cc.tuat.ac.jp Kato Tasuku: taskkato@cc.tuat.ac.jp 183-8609, 3-5-8, Saiwaicho, Fuchu shi, Tokyo, Tokyo University of Agriculture and Technology

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グローバル特論 Ⅲ

Global Special Seminar Ⅲ

【時間割コード(Code) 96017】

【講義担当教員】(Teacher)	Shinso Yokota (Utsunomiya University)
【単位数】(Credit)	0.5 Credit
【必修・選択】(Required/Elective)	Required course
【開講時期】(Term)	December 5, 2019 10:00 ~
【開講場所】(Place)	Minemachi bldg.3 3F meeting room, Utsunomiya University
【成績評価】(Evaluation standard)	Grade is evaluated by written report submitted after the lecture.

【Lecture outline】

"Researches on proteomics and metabolomics in trees"

"Proteomics" is a research field on comprehensive analyses of proteins that are synthesized by the genomic information in organisms. "Metabolomics" is a research field on comprehensive analyses of metabolites that are biosynthesized or degraded by proteins, mostly enzymes, synthesized in organisms. Researches on proteomics and metabolomics are actively being carried out through the world as post-genomics researches, and they are remarkably under development in medical and pharmaceutical fields. In contrast, these researches on plants are rather undeveloped, especially those on trees are much less developed. However, these researches on trees are steadily undergoing mostly in tree pathology.

This lecture deals with the following topics: basic concepts on proteomics and metabolomics, instrumental analyses for proteomics and metabolomics, researches on proteomics and metabolomics for plants, and researches on proteomics and metabolomics for trees.

【Expected Learning outcomes】

Understanding the research trends of proteomics and metabolomics in trees.

【Course Schedule】

Lecture 1: Genome sequencing and post-genomics in plants
Lecture 2: Outline of proteomics and metabolomics
Lecture 3: Mass spectrometry and nuclear magnetic resonance spectroscopy in proteomics and metabolomics
Lecture 4: Research examples of proteomics and metabolomics in plants

【テキスト・教科書】 Required Text(s) and Materials	Provided in class
【参考書】 References	
【教員からの一言】 Message from the professor	I hope that this lecture will awaken your interest in proteomics and metabolomics.
【講義担当教員連絡先】 Address and e-mail of the professor in charge	Shinso Yokota 350 Mine-machi, Utsunomiya, Tochigi 321-8505 Faculty of Agriculture, Utsunomiya University e-mail: yokotas@cc.utsunomiya-u.ac.jp