[Title]			[Instructor]		
Advanced Risk Management			Hidehiro Kaneko/Yasunori Hada		
[Code]	[Credits]	[Program]	[Semester]	[Hours]	[Language of instruction]
PTT702	1	Departmental Common Courses		Intensive	

[Outline and purpose]

This lecture consists of two parts and both are to be done intensively.

The aim of the first part is to acquire practical knowledge concerning Risk Management. Fundamental approach methods from the definition of important technical terms to the method of risk management are to be explained. Required actions for actual crisis are also to be discussed. In order to help deep understanding, discussion by students and simulation interview will be included.

In the second part, basic evaluation methods for the environmental risk of chemical substances are to be explained. Methods of the hazard evaluation, the concentration estimation of target chemical in the environment and the judgement of the magnitude of risk are explained. The method of risk communication between enterprises who use chemical substances and citizens are also learned using AV program.

[Objectives]

To understand and to be able to explain followings are the objectives of this lecture.

1) Basic aspect of Business Continuity Plan (BCP)
2) Crisis communication
3) Outline of environmental risk of chemical substances
4) Basic method to evaluate environmental toxicity
5) Important matter for risk communication concerning chemical substances

[Requirements]

It is preferred to have basic knowledge concerning disaster management engineering, IT and risk management. But these are not mandatory.

[Evaluation]

Evaluation is to be done mainly by reports. Attendance and cooperation to lecture are also included.

[Textbooks]

[References]

[Schedule]

Part 1: Risk Management and Risk Communication (by Dr. Hada)

1) Risk Management (Crisis Management and Risk Management)
2) Business Continuity Plan (BCP)
3) Risk Communication
4) Exercise

Part 2: Environmental Risk Evaluation and Management of Chemical Substances (by Dr. Kaneko)

1) Flow of Environmental Risk Evaluation
2) Methods of environmental toxicity evaluation
3) Methods of Environmental Risk Evaluation
4) Risk Communication concerning Chemical Substances

[Title]			[Instructor]		
Statistical Reasoning			Takahide Sato		
[Code]	[Credits]	[Program]	[Semester]	[Hours]	[Language of instruction]
PTT703	1	Departmental Common Courses		Intensive	

[Outline and purpose]

In this lecture, students will learn the basic concepts of statistics and the theory of statistical inference. The purpose of this lecture is to help students understand the various applications of statistics and acquire the knowledge necessary to utilize them in their daily lives and research fields. In this lecture, students will study the following e-learning materials by themselves.

Carnegie Mellon University Open Learning Initiative (OLI)
"Statistical Reasoning" independent learners: Open & Free
https://oli.cmu.edu/courses/statistical-reasoning-copy/

Students will log in to the above teaching materials using the course key distributed by the instructor after registering for the course, and proceed with their own studies.
Students will be credited by completing all the units specified in the above program within the specified period (second semester).

[Objectives]

To understand and to be able to explain followings are the objectives of this lecture.
1. Prediction of data using least squares regression line
2. Probability including density function and continuous random variables
3. Sampling volatility and sampling distribution
4. Point estimation and interval estimation
5. Hypothesis test

[Requirements]

Designed for students with no prior knowledge in statistics, its only prerequisite is basic algebra.
Microsoft Excel, Minitab, R, etc. are required for the exercises.

[Evaluation]

Students will be credited by completing all the units specified in the above program within the specified period (second semester).

[Textbooks]

Online e-learning materials is used.

[References]

[Schedule]

1. Introduction
2. Examining Distributions
3. Examining Relationships
4. Sampling
5. Designing Studies
6. Introduction (Probability)
7. Random Variables
8. Sampling Distributions
9. Introduction (Inference)
10. Estimation
11. Hypothesis Testing
12. Inference for Relationships
13. Inference for Relationships Continued