

Big Data Analytics

(Code: 3057 1st year 1 unit)

Attendance hours	12
No attendance hours	3
Total hours	15

1. Instructor(s)

TANAKA Toshihiro, Professor, Department of Human Genetics and Disease Diversity

IKEDA Sadakatsu, Associate Professor, Precision Cancer Medicine

URAYAMA Kebin

TANAKA Noriko, Adjunct Lecturer

TSUCHIYA Junichi, Associate Professor, Department of Artificial Intelligence (AI) Radiology

TATEISHI Ukihide, Professor, Department of Diagnostic Radiology and Nuclear Medicine

ANZAI Tatsuhiko, Junior Associate Professor, Department of Biostatistics

MORITA Keiichi, Associate Professor, Department of Maxillofacial Surgery

2. Course Purpose and Outline

Course Purpose

The purpose of this course is to obtain cutting-edge information on Big Data analytics that are utilized in the fields of basic, clinical researches or clinical settings.

Outline

Big Data is a large and complicated complex of data that is extremely difficult to analyze by the use of conventional data analysis programs. In other words, Big Data contains information that cannot be judged useful at the time of their collection. Therefore, owing to its intrinsically unarranged nature, newly developed or developing analytics to handle Big Data (data mining) including deep learning or machine learning using AI will become popular. In this course, lecturers in the very front lines of their fields (genomics, clinical researches, epidemiology, or clinical settings) will review each of their progress in them.

3. Course Objective(s)

The objective is to make full use of comprehensive knowledge on Big Data being utilized in various research fields to think of future direction of each of the students,

4. Lecture Style

Lectures

5. Grading System

The report should be submitted by e-mail to Toshihiro Tanaka (ttana.brc@tmd.ac.jp) by June 30. The subject will be shown at the first class.

Evaluation is based on both submission of report (36%) and attendance of the classes (64%).

6. Prerequisite Reading

It is desirable to read below-mentioned material to fully understand the lectures.

7. Reference Materials

An Introduction to Bayesian Analysis: Theory and Methods. Springer ISBN 1441923039

Bioinformatics for Beginners. Supratim Choudhuri, Academic Press, ISBN 9780124104716

Human Genetic Diversity: Functional Consequences for Health and Disease. Julian C. Knight, Oxford University Press, ISBN 0199227705

8. Language used in class

Partial classes are taught in English

Lectures by Dr. Urayama will be in English.

9. Instructor's Contact Information

TANAKA TOSHIHIRO: every Tuesday from 11:00 until 13:00 at room S852 in M&D tower

10. Note(s) to students

This course is indispensable for students of Preemptive Medicine Program. Those who do not take Preemptive Medicine Program can still take this course.

11. Lecture plan

No	Day	Time	Theme	Staff
1	May 1	8:50-10:20		TANAKA Toshihiro
2	May 1	16:20-17:50		MORITA Keiichi
3	May 15	8:50-10:20		URAYAMA Kevin
4	May 15	10:30-12:00		
5	May 16	14:40-16:10		TSUCHIYA Junichi, TATEISHI Ukihide
6	May 18	14:40-16:10		ANZAI Tatsuhiko
7	May 26	10:30-12:00		IKEDA Sadakatsu
8	May 26	16:20-17:50		TANAKA Noriko