Course Name	Biostatistics, Basic
Course Number	OATHA12
Credits	1.0 Credits
Adaptation years	1 Year
Class hold days	SprAB Wed3
Instructor	Masahiko Gosho, Kazushi Maruo, Ryota Ishii
Overview	This course aims to equip students with understanding basic statistical methods and with interpreting the analysis results, and with applying them for their medical studies. Students will learn statistical test, estimate, correlation, regression, analysis of variance, multivariate analysis, survival analysis.
Remarks	Lectures are conducted in English. Online(Asynchronous)
Course Type	lectures
Relation to Degree Program Competences	General purpose: Knowledge application Specialty: Core area 2 of public health sciences: an ability for application of biostatistics skills
Course Objectives (Learning Outcomes)	(1) Students can distinguish the types of medical studies. (2) Students can explain the basic of statistics and the principle of analysis methodologies. (3) Students can explain the meaning of probability and the distributions. (4) Students can choose appropriate statistical methods including the selection of the best data type of endpoints for study objective. (5) Students can discuss the results of analyses even it differs from their expectation.
Class Schedule	1. Introduction, classification of medical studies 2. Data presentation 3. Probability and probability distributions 4. Estimate and statistical test 5. Group comparison 6. Correlation and linear regression analyses 7. Categorical data analysis 8. Logistic regression analysis 9. Survival analysis 10. Review
Course Prerequisites	None
Grading Philosophy	Evaluated by the final report.
Course Hours Breakdown and Out-of-Class Learning	All classes are conducted in lectures (100%). Preparing for the range of classes and reviewing them after class.
Textbooks, References, and Supplementary Materials	Download the slides to be uploaded to manaba. The first of the following books is the textbook, and the second and third books are reference books. 1. Pagano M, Gauvreau K.,Principles of Biostatistics 3rd edition, CRC Press 2022. 2. Belle GV, Fisher LD, Heagerty PJ, Lumley T. ,Biostatistics: A Methodology for the Health Sciences 2nd edition, Wiley Series in Probability and Statistics 2004.

Textbooks, References, and Supplementary Materials	3. 佐藤泰憲，五所正彦，ゼロから学ぶ医薬統計学，メジカルビュー社，2014.
Office Hours and Contact Information	As needed (Confirm the schedule by e-mail and visit the office) Masahiko Gosho mgosho at md.tsukuba.ac.jp Kazushi Maruo maruo at md.tsukuba.ac.jp Ryota Ishii rishii at md.tsukuba.ac.jp
Other(Behavioral expectations and points to note for students during coursework)	None
Relation to Other Courses	
Teaching Fellow and/or Teaching Assistant	None
Course Keywords	Summary statistics, Statistical inference, Test, Estimate