

Title of Module:

**Advanced Biostatistics**

Coordinator(s) / organiser(s):

Dr. Arief Wibowo dr., MS. (Module Leader)

Teaching Faculty

Title	Name	Qualifications*	Hours contributed
Dr.	Arief Wibowo	dr., M.S., Dr.	21.6
Dr.	Soenarnatalina Melaniani	Ir., M.Kes., Dr.	21.6
Dr.	Hari Basuki Notobroto	dr., M.Kes., Dr.	16.8
Dr.	Rachmah Indawati	S.KM., M.KM., Dr.	16.8
Dr.	Mahmudah	Ir., M.Kes., Dr.	14.4
Dr.	Diah Indriani	S.Si., M.Si., Dr.	14.4
Dr.	Windhu Purnomo	dr., M.S., Dr.	14.4

\* PhD, Master, 20 years service(in practice) etc. Only provide details for faculty responsible for 25% or more of course load.

Core /elective or optional:

Elective:

Parametrics Biostatistics (MAS208)

Semiquantitative Data Analysis (MAS322)

Categorical Data Analysis (MAS323)

Advanced Statistics Application (Integrating Experience see section 7)

Number of SKS credits allocated	Student's workload in hours	Contact work hours*	Self-study work hours
9 SKS	408	120	288

\* includes lectures, seminars, face-to-face, assessments

Learning competences / objectives

On successful completion of this module students will be able to:

1. Define the scope of parametric biostatistics
2. Summing up the results of two-way Anova test
3. Summing up the results of linear correlation, linear regression simple and double
4. Summing up the results of time series and trend analysis
5. Explain the concept of Biostatistics for semi-quantitative data
6. Analyze health data with Biostatistics semikuantitatif kinds of data
7. Explain the concept of Biostatistics for category data
8. Analyze health data with kinds of Biostatistics data category
9. Explain procedures, executions, presentations, interpretations of the data

Syllabus content. Brief overview of syllabus using bullet points.

- Parametric biostatic tests
- Principles and applications of 2-way Anova
- Simple and multiple linear correlation and regression concepts
- Principles and time series applications and trends
- Correlation test concept (Spearman Correlation, Kendall Tau Correlation, Kendall Concordans Correlation)
- Difference Test (Kolmogorov Smirnov, Sign Test, Wilcoxon Sign Rank, Wilcoxon Mann Whitney, Median Test, Kruskal Wallis, Friedman)
- Test data categories (Chi-squared, Exact Fisher, McNemar, Haenzel Cochran and Cochran)
- Associate Test (Crammer's Coefficient, Gamma Coefficient, Kappa Coefficient, Contingency Coefficient)
- Logistic Regression (Simple Logistic Regression, Double Logistic Regression, Logistic Regression Modelling)
- Linear Log Regression

Module level timetable - indicate the timing of the teaching sessions from the upcoming teaching year:

Parametrics Biostatistics: 6<sup>th</sup> semester

Semiquantitative Data Analysis: 6<sup>th</sup> semester

Categorical Data Analysis: 6<sup>th</sup> semester

Pedagogic/teaching methodology:

Scheduled learning includes lecture, discussion, interactivity, case study, and E-learning.

This lecturer is delivering the content to the students mainly in the classroom presenting it with technical assistance and using case simulation at each meeting. E-learning with forum discussion is used up to a maximum of 20%. The lecturer gives question and answer session to the students if there are problems. Question and answer method is also done at the time outside the lecture session.

At each meeting the lecturer demonstrates how to use a statistical method and students are required to apply this method in an incomplete example. The students are divided into small groups and discuss a case study which is given by lecturer.

Assessments used:

There are four types of assessment:

1. Middle examination (35%): Multiple choice questions 30% and essays 70%
2. Final examination (35%): Multiple choice questions 30% and essays 70%
3. Quiz (20%)
4. Assignment (10%)

Each examination takes 100 minutes including essays and case studies. The examination assesses the students' knowledge and understanding and all learning outcomes of the module. Structured assignment is given by lecturer in case studies method. The result of the case report is written in a paper.

	Number of weeks	Week number
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Weeks required and place in academic calendar:	16	17-32
Parametrics Biostatistics Weeks beginning 03/2020-06/2020	16	17-32
Semiquantitative Data Analysis Weeks beginning 03/2020-06/2020	16	17-32
Categorical Data Analysis Weeks beginning 03/2020-06/2020	16	17-32