



KEMENTERIAN PENDIDIKAN TINGGI,
SAINS, DAN TEKNOLOGI
UNIVERSITAS LAMPUNG

FAKULTAS KEGURUAN DAN ILMU PENDIDIKAN

Jalan Prof. Dr. Sumantri Brojonegoro No.1 Gedong Meneng - Bandar Lampung 35145

Telp./Fax: (0721) 704624 e-mail: fkip@unila.ac.id,

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Bachelor of Education in Physics

MODULE HANDBOOK

Module Name	Statistics
Module Level, if Applicable	Bachelor
Code	KFI620212
Sub-Heading, (*if Applicable)	-
Classes, (*if Applicable)	-
Description	The Statistics course aims to provide an in-depth understanding of basic statistics in research practice, namely descriptive and inferential statistics, inferential statistics. as well as their linkages to Social Science Issues (SSI), Technological Pedagogical Content Knowledge (TPACK), and Nature of Science (NOS). In this course, students will learn about the contents include: basic concepts of statistics, concepts of descriptive statistics, measures of central tendency (mean, median, mode), presentation of data (frequency distribution lists, graphs, diagrams); data measurement scales, and measures of variation (range, mean deviation, standard deviation and variance); the concept of inferential statistics, parametric and non-parametric, probability and its distribution, normal distribution standardised, parametric statistical requirement tests (normality of data, homogeneity of variance, and linearity of regression), table reading, t-test, Pearson correlation and determination; one-way simple ANOVA, Kruskal Wallis, Spearman rank correlation, sign test, Wilcoxon, Mann-Whitney, data processing through computers (excel, SPSS). In real cases, statistics in educational research will be very helpful when students will research the effect of a learning model on a particular ability, as well as research related to the development of teaching tools that use various tests. In addition, during the learning process, students use SPSS and Ms excel software to analyze statistical data. Through an understanding of NOS in the context of statistics includes understanding about the relationship



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	between statistics and the nature of science, including how data and statistical methods contribute to the development of scientific knowledge.
Semester	4th
Module Coordinator	Prof. Dr. Agus Suyatna, M.Si.
Lecturers	Team Teaching of Statistics
Language	Indonesian/English
Classification With in the Curriculum	Study Program Compulsory Course
Teaching Format/Class Hours Per Week During the Semester	Learning activity can be carried out in the form of lecture or students' response: a. Face to face: 50 minutes/SKS b. Structured activity: 60 minutes/SKS c. Independent activity: 60 minutes/SKS
Teaching methods	In class activity : Team Based Project Structured activity : Group Discussion using Worksheet Independent activity : Individual task
Workload	1 CU (SKS) for bachelor degree equal to 3 work hours per week or 170 minutes for lecture or students' response. 2x50 minutes face to face, 2x60 minutes structured tasks, 2x60 minutes independent learning. 1 CU (SKS) for bachelor degree equal to 1 work hours per week or 170 for laboratory activity. for 16 weeks (including mid and final exam), a total of 136 hours/semester. One CU equals to 1.51 ECTS
Credit Points	3 (2-1) CU (SKS) = 3 x 1.51 = 4.53 ECTS
Prerequisites Courses	-
Course Outcomes (CO)	1. PLO-1 : Understanding about knowledge and basic skills of statistics.



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	2. PLO-2 : Applying the basic skill of statistics to solve problems in physics education. 3. CO-1 : Students are able to examine the role of statistics, distinguish between samples and populations, can present data in the form of tables and figures, create frequency distribution tables, calculate the mean value and location size of a set of data independently. 4. CO-2 : Students are able to examine the concept of sampling and sampling distribution independently. 5. CO-3 : Students are able to examine the concept of parameter estimation independently. 6. CO-4 : Students are able to analyse data types, data presentation, population and samples, data concentration measures, data layout measures, data distribution measures, sampling techniques, and types of statistics used in certain cases. 7. CO-5 : Students are able to carry out statistical hypothesis testing related to the average difference test correctly and responsibly. 8. CO-6 : Students are able to carry out statistical hypothesis testing related to one-way and two-way ANOVA tests correctly and responsibly. 9. CO-7 : Students are able to do hypothesis testing with correlation and regression correctly and responsibly. 10. CO-8 : Students are able to test nonparametric statistical hypotheses correctly and responsibly.
Content	This course will study the basic concepts of statistics, descriptive statistical concepts, measures of central tendency (mean, median, mode), data presentation (frequency distribution lists, graphs, diagrams); the scale of measurement of the data, and the measures of variation (range, mean deviation, standard deviation and variance); the concept of inferential statistics, parametric and non-parametric,



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	probability and distribution, standard normal distribution, parametric statistical requirements test (data normality, homogeneity of variance, and linearity of regression), table reading, t-test, Pearson correlation and determination; One way simple ANOVA, Kruskal Wallis, Spearman rank correlation, sign test, Wilcoxon, Mann-Whitney, data processing via computer (excel, SPSS).
Study/Exam Achievements	Midterm Exam 20% Final Exam 20% Assignment 10% Project Assignment 50 % The initial cut - off points for grades A, B+, B, C+ ,C, and D should not be less than 85%, 80%, 75%, 70%, 65%, 60%, 55%, 50%, and 40%, respectively.
Examination Methods	1. Midterm Exam (UTS) ✓ UTS is held at the 8th meeting ✓ UTS is a written test in the form of objective and essay, and carried out in the classroom with an implementation time of 120 minutes according to the module schedule ✓ UTS is carried out to see the achievements of the PLO and CO which are in accordance with the characteristics of the Statistics module 2. Final Exam (UAS) ✓ UAS is held at the 16th meeting ✓ UAS is a written test in the form of objective and essay, and carried out in the classroom with an implementation time of 120 minutes which follows the UAS implementation schedule of the department



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	✓ UAS is carried out to see the achievements of the PLO and CO which are in accordance with the characteristics of the Statistics module. 3. Project Assignment ✓ Project assignment is given as group task ✓ Project assignment is carried out for one semester and presented at the end of semester ✓ Project assignment is carried out to see the achievements of the PLO and CO which are in accordance with the characteristics of the Statistics module. 4. Assignments ✓ Assignments are given as exercise in each meeting in the form of worksheet and independent task ✓ Assignments are about analyzing simple problems in physics and solving them with the concept of Statistics ✓ Assignments are given as individual tasks or group tasks and submitted in a limited time. ✓ The assignments are carried out to see the achievements of the PLO and CO which are in accordance with the characteristics of the Statistics module
Forms of Media	E-learning, e-book, video, computer, LCD
Literature	1. Dean, Susan, and Illowsky, Barbara. Introductory Statistics. Hong Kong, Samurai Media Limited, 2017. 2. Suyatna, Agus. 2017. Uji Statistik Berbantuan SPSS untuk Penelitian Pendidikan. Yogyakarta: Media Akademi 3. Nugraheni, I. L., Suyatna, A., & Setiawan, A. (2022). Flood disaster mitigation modeling through participation community



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	based on the land conversion and disaster resilience. Heliyon, e09889. 4. Fendi, R. D., Suyatna, A., & Abdurrahman, A. (2021). Augmented Reality-Based Student Worksheet to Stimulate Students' Critical Thinking Skills. <i>Indonesian Journal of Science and Mathematics Education</i>, 4(2), 118-133. 5. Suyatna, A., & Herlina, K. (2020). The Effect of LCDS-Based Interactive E-Schoolbook (ESB) against HOTS And Scientific Attitude Of Students. <i>Jurnal Pendidikan Matematika dan IPA Universitas Tanjung Pura</i>, 11(1).
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