



**BACHELOR OF STATISTICS
FACULTY OF MATHEMATICS
AND NATURAL SCIENCE
MULAWARMAN UNIVERSITY**



MODULE HANDBOOK



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Jl. Barong Tongkok, Gn. Kelua, Kec.
Samarinda Ulu, Kota Samarinda,
Kalimantan Timur 75242



Module Handbook

Department of Statistics

Mulawarman University

Indonesian Language

Title	Bahasa/Indonesian Language
Code, if applicable	MU0000602W004
Semester(s) in which the module is taught	1 st semester
Person responsible for the module	Alfian Rokhhmansyah M.Hum
Language	Indonesian
Relation to curriculum	Compulsory
Teaching methods	1. Lecture 2. Watching video 3. Problem identification 4. Case Study 5. Classroom Discussion 6. Think-Pair- Write 7. Peer teaching
Workload	For this course, students are required to meet a minimum of 136 hours in one semester, which consists of: - 150 minutes for lecture, - 180 minutes for structured assignments - 180 minutes for individual study
Credit points	3 credit points (equivalent to 10 ECTS)
Required and recommended prerequisites for joining the module	–
Module objectives/intended learning outcomes	Intended Learning Outcomes: 1. Demonstrate religious attitudes, human values, nationalism, and respect for cultural diversity, society, nation, and state based on the principles of Pancasila (PLO1) 2. Able to apply statistics in solving real problems, presenting, and communicating in writing and orally in the fields of economics-business, computing, social, health and the environment based on Natural Resources (SDA) of the Tropical Rain Forest. Forest) (PLO8) 3. Able to compile scientific work in the field of statistics that is valid and prevent plagiarism (PLO11) Learning outcomes 1. Students are able to improve their writing skills 2. Students are able to write popular scientific articles



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Content	1. Language functions as a means of self-expression, communication, integration, self-adaptation and social control. 2. Effective sentences, spelling, punctuation and the ins and outs of language in writing. 3. Type of Writing Narrative 4. Types of Writing Exposition 5. Summary & Synthesis 6. Overview & Abstract 7. Citing & Writing References 8. Article Writing Scientific and Popular
Examination forms	• Individual assignment, Mid-term exam and final exam
Study and examination requirements	The grading components are distributed as follows: • 30% Lectures Midterm Exam (UTS) • 40% Lectures Final Exam (UAS) • 10% Affective Assessment • 20% Assignment The final course grades are assigned as follows: • A: $80 \leq \text{Score} \leq 100$ • B: $70 \leq \text{Score} < 80$ • C: $60 \leq \text{Score} < 70$ • D: $40 \leq \text{Score} < 60$ • E: $0 \leq \text{Score} < 40$
Media employed	Whiteboard, projector, textbooks, Mulawarman Integrated Learning (STAR)
Reading list	1. Kamus Besar Bahasa Indonesia (daring). 2. Pedoman Umum Bahasa Indonesia Yang Disempurnakan (daring). 3. Marahimin, Ismail. Menulis Secara Populer(cet III). Jakarta : Pustaka Jaya, 2001.



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Elementary Calculus

Title	Elementary Calculus
Code, if applicable	210700603W001
Semester(s) in which the module is taught	1 st semester
Person responsible for the module	Alfian Rokhhmansyah M.Hum
Language	Indonesian
Relation to curriculum	Compulsory
Teaching methods	1. Lecture 2. Question and answer 3. Assignment
Workload	For this course, students are required to meet a minimum of 136 hours in one semester, which consists of: - 150 minutes for lecture, - 180 minutes for structured assignments - 180 minutes for individual study
Credit points	3 credit points (equivalent to 10 ECTS)
Required and recommended prerequisites for joining the module	–



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Module objectives/intended learning outcomes	Intended Learning Outcomes: 1. Demonstrate an attitude of responsibility for work in his field of expertise, cooperation, and concern for the environment humid tropical forest (tropical rainforest) (PLO2) 2. Apply basic concepts and statistical methods in economics and business, computing and social, health and environmental fields based on natural resources. Natural Resources (SDA) Tropical Rain Forest Humid Tropical Rain Forest (PLO4) 3. Apply statistical computing appropriate for data analysis (PLO5) 4. Able to apply logical, critical, systematic and innovative thinking in the development and implementation of Science and Technology (IPTEK) in the field of statistics, make decisions appropriately in solving problems in the field of statistics by using scientific ethics and technology. using scientific ethics and humanities values (PLO9) Learning outcomes Students master the basic concepts of statistics in mathematics so that students have competencies (1) cognitive, namely understanding the real number system, coordinate system, functions, limits, continuity, derivatives, and derivative applications (2) psychomotor, namely choosing and carrying out research steps according to the topic or problem of the final project they choose, (3) affective, namely avoiding ways that are not commendable in research, for example plagiarism.
Content	1. Sets; elementary operations on sets; the real number system and properties of real numbers; relations, sequences, intervals, and inequality; absolute value. 2. Coordinate system cartesian and polar; relations and functions; functions surjective, injective, and bijective; algebraic operations on functions; inverse function, composition. 3. Limits; basic properties of limits; one-way limits; infinite limits and limits to infinity; limits of trigonometric functions; natural numbers (Euler); continuous functions continuous; properties of continuous functions. 4. Derivative; basic formula of derivative; properties of derivative; chain rule; inverse function derivative; trigonometric function derivative; exponential function derivative; implicit function derivative; derivative higher order. 5. Maximum and minimum of a function; Rolle's theorem, mean value, Cauchy, L'hospital; increasing function, decreasing function; first and second derivative test to determine extreme points of a function; convex and concave functions; inflection points; drawing graphs of functions using derivatives; applications of derivatives related to extreme problems. 6. Taylor series; Mc Laurin series.
Examination forms	• Individual assignment, Mid-term exam and final exam



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Study and examination requirements	The grading components are distributed as follows: • 30% Lectures Midterm Exam (UTS) • 40% Lectures Final Exam (UAS) • 10% Affective Assessment • 20% Practicum The final course grades are assigned as follows: • A: $80 \leq \text{Score} \leq 100$ • B: $70 \leq \text{Score} < 80$ • C: $60 \leq \text{Score} < 70$ • D: $40 \leq \text{Score} < 60$ • E: $0 \leq \text{Score} < 40$
Media employed	Whiteboard, projector, textbooks, Mulawarman Integrated Learning (STAR)
Reading list	1. Verbeg, Dale., Purcell, Edwin., dan Rigdon, Steve. 2010. Calculus (9th edition). Pearson. USA 2. Verbeg, Dale., Purcell, Edwin., dan Rigdon, Steve. 2010. Kalkulus Edisi Kesembilan Jilid I. Erlangga. Jakarta. 3. James Stewart, 2015, Calculus: Early Transcendentals Single Variable 8th Ed., Willey, USA



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Basic Physics

Title	Basic Physics
Code, if applicable	210700603W004
Semester(s) in which the module is taught	1 st semester
Person responsible for the module	Dr. Pratiwi Sri Wardani, M.Kes Kadek Subagiada, S.Si., M.Si
Language	Indonesian
Relation to curriculum	Compulsory
Teaching methods	1. Lecture 2. Discussion 3. Demonstration 4. Assignment
Workload	For this course, students are required to meet a minimum of 90,67 hours in one semester, which consists of: - 100 minutes for lecture, - 120 minutes for structured assignments - 120 minutes for individual study
Credit points	2 credit points
Required and recommended prerequisites for joining the module	-



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Module objectives/intended learning outcomes	Intended Learning Outcomes: 1. Demonstrate an attitude of responsibility for work in his field of expertise, cooperation, and concern for the environment humid tropical forest (tropical rainforest) (PLO2) 2. Able to apply logical, critical, systematic and innovative thinking in the development and implementation of Science and Technology (IPTEK) in the field of statistics, make decisions appropriately in solving problems in the field of statistics by using scientific ethics and technology. using scientific ethics and humanities values (PLO9) 3. Able to show independent, group performance and be responsible for the achievement of the results of his work and able to carry out supervise and evaluate work that is under responsibility (PLO10) Learning outcomes Students master the basic concepts of statistics in mathematics so that students have competencies (1) cognitive, namely understanding the real number system, coordinate system, functions, limits, continuity, derivatives, and derivative applications (2) psychomotor, namely choosing and carrying out research steps according to the topic or problem of the final project they choose, (3) affective, namely avoiding ways that are not commendable in research, for example plagiarism.
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Content	1. Generalized Coordinates in Limits, Generalized Coordinates of a System, Magnitude, Table of magnitudes, Units, Unit system, Conversion units. 2. Vectors, Addition of vectors, Subtraction of vectors, Multiplication of vectors, Drawing vectors in space. 3. Average velocity, Instantaneous velocity, Average acceleration, Instantaneous acceleration, Regular accelerated motion, Circular motion, Bullet motion. 4. Newton's Laws I, II, and III, Law of gravity and normal force, Friction force, Dynamics of circular motion. 5. Work by changing forces, Kinetic energy, Potential energy, Law of conservation of energy. 6. Momentum and Impulse, Conservation of momentum, Collision, Rotational kinematics, Rigid body equilibrium, Momentum angle of a rigid body. 7. Oscillator equation of motion, Damped oscillator, Resonance phenomenon. 8. Elasticity, Stress and Strain, Modulus of Elasticity. 9. Pressure and density, Variation of pressure in fluids, Pascal's and Archimedes' Principle, Surface tension. 10. Types of fluid flow, Continuity equation, Bernoulli equation, Viscosity, Numbers Reynolds. 11. Temperature, Temperature scale, Expansion of objects, Heat, Heat transfer. 12. Waves, Wave equation, Water waves, Sound waves, Waves electromagnetic. 13. Principle of superposition, Dispersion, Reflection and Refraction.
Examination forms	• Individual assignment, Mid-term exam and final exam
Study and examination requirements	The grading components are distributed as follows: • 30% Lectures Midterm Exam (UTS) • 40% Lectures Final Exam (UAS) • 10% Affective Assessment • 20% Practicum The final course grades are assigned as follows: • A: $80 \leq \text{Score} \leq 100$ • B: $70 \leq \text{Score} < 80$ • C: $60 \leq \text{Score} < 70$ • D: $40 \leq \text{Score} < 60$ • E: $0 \leq \text{Score} < 40$



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Media employed	Whiteboard, projector, textbooks, Mulawarman Integrated Learning (STAR)
Reading list	1. D. Halliday, R. Resnick, J. Walker. 2013. Fundamental of Physics, 10th Edition. Wiley. 2. D. C. Giancoli. 2010. Physics: Principles with Application, 6th Edition. Addison-Wesley. 3. Resnick, R & Halliday, D. 1966. Physics. John Wiley & Son. 4. Giancoli, D.C. 1884. General Physics. Prentice Hall.



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Biology

Title	Biology
Code, if applicable	210700603W002
Semester(s) in which the module is taught	1 st semester
Person responsible for the module	Dr. Lariman, M.Si Dr. Yanti Puspita Sari, M.Si
Language	Indonesian
Relation to curriculum	Compulsory
Teaching methods	1. Lecture 2. Discussion 3. Presentation 4. Practice
Workload	For this course, students are required to meet a minimum of 90,67 hours in one semester, which consists of: - 100 minutes for lecture, - 120 minutes for structured assignments - 120 minutes for individual study
Credit points	2 credit points
Required and recommended prerequisites for joining the module	-



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Module objectives/intended learning outcomes	Intended Learning Outcomes: 1. Demonstrate religious attitudes, human values, nationalism, and respect for cultural diversity, society, nation, and state based on the principles of Pancasila (PLO1) 2. Demonstrate an attitude of responsibility for work in his field of expertise, cooperation, and concern for the environment humid tropical forest (tropical rainforest) (PLO2) 3. Able to show independent, group performance and be responsible for the achievement of the results of his work and able to carry out supervise and evaluate work that is under responsibility (PLO10) 4. Able to maintain and develop work networks with colleagues within and outside the institution (PLO12) Learning outcomes Mastering the basic concepts of biology: biology as a science, the origin of life, cell structure and function, metabolism which includes transport, photosynthesis and respiration, genetics, diversity of living things and nomenclature, evolution, structure and function of plant and animal organ tissues, ecology, organism behavior, biotechnology and steps in the scientific method.
Content	1. Biology as a science: Scientific method Problem formulation, hypothesis, research variables, operational definition of research variables, research design, research. 2. Evolution Origin of life, Population Genetics 3. Cells: structure and function, Chemistry and the Substance of Life. 4. Cell membrane, Cell division: Mitosis and Meosis. 5. Metabolism: Cell Transport. 6. Metabolism: Photosynthesis. 7. Metabolism: Respiration. 8. Genes and chromosomes, Gene and chromosome structure in prokaryotes and eukaryotes, Genetic expression, Nucleic acids. 9. Synthesize protein. 10. Genetics Mendel. 11. Diversity and Nomenclature, Classification Systems, Variation of Living Things, Key to Dichotomy 12. Structure and function of Animal organ tissues, Structure and function of tissues and organs Plant. 13. Ecology 14. Biotechnology
Examination forms	• Individual assignment, Mid-term exam and final exam



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Study and examination requirements	The grading components are distributed as follows: • 30% Lectures Midterm Exam (UTS) • 40% Lectures Final Exam (UAS) • 10% Affective Assessment • 20% Practicum The final course grades are assigned as follows: • A: $80 \leq \text{Score} \leq 100$ • B: $70 \leq \text{Score} < 80$ • C: $60 \leq \text{Score} < 70$ • D: $40 \leq \text{Score} < 60$ • E: $0 \leq \text{Score} < 40$
Media employed	Whiteboard, projector, textbooks, Mulawarman Integrated Learning (STAR)
Reading list	1. Campbell, Neil A, Jane B.Reece dan Lawrence G.Mitchell. 2003. Biologi. California: Benjamin Cummings. 2. Kimball, J.W. 1989. Biologi Jilid I, II, III. Edisi Kelima. Cetakan Kedua. Jakarta: Penerbit Erlangga. 3. Villee, C.A., Walker, Jr W.F., Barnes, R.D. 1999. Zoologi Umum Edisi ke Enam. Cetakan Kedua, Ahli bahasa: Nawang Sari Soegiri. Jakarta: Penerbit Erlangga. 1. Luria. 1981. A View of Life. California: Benyamin Cumming.



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Algorithms and Programming I

Title	Algorithms and Programming I
Code, if applicable	210701603W002
Semester(s) in which the module is taught	1 st semester
Person responsible for the module	Rito Goejantoro, S.Si., M.Si. Surya Prangga, S.Si, M.Si
Language	Indonesian
Relation to curriculum	Compulsory
Teaching methods	1. Lecture 2. Discussion 3. Practice 4. Question and answer
Workload	For this course, students are required to meet a minimum of 136 hours in one semester, which consists of: - 150 minutes for lecture, - 180 minutes for structured assignments - 180 minutes for individual study
Credit points	3 credit points
Required and recommended prerequisites for joining the module	-



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Module objectives/intended learning outcomes	Intended Learning Outcomes: 1. Demonstrate an attitude of responsibility for work in his field of expertise, cooperation, and concern for the environment humid tropical forest (tropical rainforest) (PLO2) 2. Apply basic concepts and statistical methods in economics and business, computing and social, health and environmental fields based on natural resources. Natural Resources (SDA) Tropical Rain Forest (PLO4) 3. Apply statistical computing appropriate for data analysis (PLO5) 4. Able to analyze data using appropriate statistical methods and interpret the results in an informative form (PLO7) 5. Able to apply statistics in solving real problems, presenting, and communicating in writing and orally in the fields of economics-business, computing, social, health and the environment based on Natural Resources (SDA) Tropical Rain Forest (PLO 8) 6. Able to apply logical, critical, systematic and innovative thinking in the development and implementation of Science and Technology (IPTEK) in the field of statistics, make decisions appropriately in solving problems in the field of statistics by using scientific ethics and technology. using scientific ethics and humanities values (PLO9) 7. Able to compile scientific work in the field of statistics that is valid and prevent plagiarism (PLO11) Learning outcomes 1. Analyze a problems related to logic that are implemented into a programming language. 2. Finding a solution to the logic problem at hand that is poured into an algorithm and implemented into a programming language. 3. Understand the fundamentals of programming logic and its applications in the Computer Programming I course, enabling students to develop competence in applying programming logic fundamentals to create programs using a programming language.
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Content	1. Basic notions, Programming paradigm, Algorithmic notation (schema). 2. Algorithm text structure: title/header, dictionary/declaration, base type & composition. 3. Price, Assignment, Assignment of input device, Writing information name (output), Boolean expression, numeric expression (infix notation), character and string expression Sequence. 4. Function definition, Function invocation function. 5. Procedure definition, Global name, local, scope, Procedure invocation, Parameters (input, output, input/output). 6. repetition, Repetition structure, FOR statement, WHILE statement, REPEAT. 7. arrays, Declaration, contents, 1-D arrays, 2-D arrays (matrices), Case study: price search extremes. 8. Sequential search 9. Sorting
Examination forms	• Individual assignment, Mid-term exam and final exam
Study and examination requirements	The grading components are distributed as follows: • 30% Lectures Midterm Exam (UTS) • 40% Lectures Final Exam (UAS) • 10% Affective Assessment • 20% Practicum The final course grades are assigned as follows: • A: $80 \leq \text{Score} \leq 100$ • B: $70 \leq \text{Score} < 80$ • C: $60 \leq \text{Score} < 70$ • D: $40 \leq \text{Score} < 60$ • E: $0 \leq \text{Score} < 40$
Media employed	Whiteboard, projector, textbooks, Mulawarman Integrated Learning (STAR)
Reading list	1. Grover, P.S.(2001) Pascal programming Fundamentals. Sunil Sacdhev : New Delhi 2. Keller, A.M. (1982) A First Course in Computer Programming Using Pascal McGraw-Hill : New York 3. Munir, Rinaldi (2016) Algoritma dan Pemrograman dalam Bahasa Pascal, C dan C++ Informatika : Bandung



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Civic

Title	Civic
Code, if applicable	MU0000602W003
Semester(s) in which the module is taught	2 nd semester
Person responsible for the module	Dr. Azainil, M.Si
Language	Indonesian
Relation to curriculum	Compulsory
Teaching methods	8. Critical Incident (pengalaman penting) 9. Literature review 10. Problem solving <i>Current Issues</i> 11. Case Study 12. Classroom Discussion 13. <i>Cooperative Learning</i>
Workload	For this course, students are required to meet a minimum of 250 hours in one semester, which consists of: - 75 hours for lectures, - 40 hours for assignments and problem solving, - 35 hours for self-study
Credit points	3 credit points (equivalent to 10 ECTS)
Required and recommended prerequisites for joining the module	–



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Module objectives/intended learning outcomes	Intended Learning Outcomes: 4. Demonstrate religious attitudes, human values, nationalism, and respect for cultural diversity, society, nation, and state based on the principles of Pancasila (PLO1) 5. Demonstrate an attitude of responsibility for work in his field of expertise, cooperation, and concern for the environment humid tropical forest (tropical rainforest) (PLO2) 6. Demonstrate law-abiding attitudes, discipline and academic ethics as well as a spirit of independence, struggle, and entrepreneurship in social and state life (PLO3) 7. Able to apply logical, critical, systematic and innovative thinking in the development and implementation of Science and Technology (IPTEK) in the field of statistics, make decisions appropriately in solving problems in the field of statistics by using scientific ethics and technology. using scientific ethics and humanities values (PLO9) 8. Able to show independent, group performance and be responsible for the achievement of the results of his work and able to carry out supervise and evaluate work that is under responsibility (PLO10) 9. Able to maintain and develop work networks with colleagues within and outside the institution (PLO12) Learning outcomes Understand and apply the basic values of citizenship in professional and personality development.
Content	1. Pancasila Values as Civics Orientation in Higher Education 2. Definition of national identity 3. The birth history of Indonesian nationalism 4. National identity as national character 5. Islam and Nationalism 6. Globalization and the challenge of national identity 7. The nature of the constitution 8. The importance of the constitution for the life of the state 9. The 1945 Constitution of Indonesia 10. Constitutional behavior of citizens 11. Rights and obligations of citizens 12. The meaning and principles of democracy 13. Islam and democracy 14. The relationship between the state of law and human rights 15. Principles of the rule of law
Examination forms	• Individual assignment, Mid-term exam and final exam



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Study and examination requirements	The grading components are distributed as follows: • 30% Lectures Midterm Exam (UTS) • 40% Lectures Final Exam (UAS) • 10% Affective Assessment • 20% Assignment The final course grades are assigned as follows: • A: $80 \leq \text{Score} \leq 100$ • B: $70 \leq \text{Score} < 80$ • C: $60 \leq \text{Score} < 70$ • D: $40 \leq \text{Score} < 60$ • E: $0 \leq \text{Score} < 40$
Media employed	Whiteboard, projector, textbooks, Mulawarman Integrated Learning (STAR)
Reading list	1. Arif, DB. 2012. Pendidikan Kewarganegaraan. Yogyakarta: Kaukaba 2. Asshidiqie, Jimly. 2004. Pengantar Ilmu Hukum Tata Negara II. Jakarta: Sekretariat Jenderal Kepaniteraan Mahkamah Konstitusi RI 3. Budiardjo.1986, Dasar-dasar Ilmu Politik, Jakarta: PT. Gramedia, cet. X 4. Cholisin.2000. Ilmu Kewarganegaraan, Yogyakarta: FIS UNY 5. Mohtar Mas' oed.1999, Negara, Kapital dan Demokrasi, Yogyakarta: Pustaka Pelajar 6. Surbakti, Ramlan.1992, Memahami Ilmu Politik, Jakarta: PT. Gramedia 7. Samsuri, 2012. Pendidikan Karakter Warga Negara: Kritik Pembangunan Karakter Bangsa. Surakarta: Pustaka Hanif. 8. Sunarso, dkk. 2003. Pendidikan Kewarganegaraan untuk Mahasiswa. Yogyakarta: UNY Press. 9. Taniredja, Tukiran, 2009. Pendidikan Kewarganegaraan di Perguruan Tinggi Muhammadiyah. Bandung: AlfaBeta. 10. Winarno. 2009. Kewarganegaraan Indonesia: Dari Sosiologis Menuju Yuridis. Bandung: Alfabeta 11. Winataputra, Udin S, Dasim Budimansyah, Sapriya, dan Winarno, 2014. Pendidikan Kewarganegaraan di Perguruan Tinggi. Jakarta: Direktorat Pendidikan Tinggi. 12. Natsir, M. 1961. Capita selecta. Bandung: Sumur Bandung 13. Kamil, Sukron. 2002. Islam dan Demokrasi. Jakarta: Gaya Media Pratama 14. Fuad, Ahmad Nur, Cekli Setya Pratiwi, dan M. Saiful Aris. 2010. Hak Asasi Manusia Perspektif Islam. Malang: Lembaga Penegakan Supremasi Hukum dan HAM PW Muhammadiyah Jawa Timur dan MADANI



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Basic Social and Cultural Sciences

Module Name	Basic Social and Cultural Sciences
Code, if applicable	MU0000602W006
Semester (s) in which the module is taught	2 nd semester
Person responsible for the module	Muhammad Ridwan, S.Si, M. Si
Language	Indonesian
Relation to curriculum	Compulsory Course
Type of teaching	1. Non-Test 2. Question and answer
Workload (incl. Contact hours, self-study hours)	For this course, students are required to meet a minimum of 250 hours in one semester, which consists of: - 75 hours for lectures, - 40 hours for assignments and problem solving, - 35 hours for self-study
Credit Points	3 Credits
Required and recommended prerequisite for joining the module	-
Module objectives/intended learning outcomes	Intended Learning Outcomes: 1. Demonstrate religious attitudes, human values, nationalism, and respect for cultural diversity, society, nation, and state based on the principles of Pancasila (PLO1) 2. Demonstrate an attitude of responsibility for work in his field of expertise, cooperation, and concern for the environment humid tropical forest (tropical rainforest) (PLO2) 3. Demonstrate law-abiding attitudes, discipline and academic ethics as well as a spirit of independence, struggle, and entrepreneurship in social and state life (PLO3) 4. Able to maintain and develop work networks with colleagues within and outside the institution (PLO12) Learning outcomes Students are able to master educational materials and concepts developed to deal with increasing social symptoms so that their responsiveness and reasoning towards the social environment becomes greater.
Content	1. Framework Conceptual Framework and boundaries definition Basic foundation Social Science.



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	2. Indonesian society in conditions of globalization, social and social and political change, as well as pluralism and multiculturalism. 3. Social problems in Indonesia that arise in the fields of education, poverty, gender equality, environment and degradation Moral. 4. Socio-cultural phenomena and problems in life society in Indonesia. 5. Socio-cultural phenomena and problems in the life of Indonesian society.
Examination forms	Individual assignment, Mid-term exam and final exam
Study and Examination Requirements	The grading components are distributed as follows: • 30% Lectures Midterm Exam (UTS) • 40% Lectures Final Exam (UAS) • 10% Affective Assessment • 20% Assignment The final course grades are assigned as follows: • A: $80 \leq \text{Score} \leq 100$ • B: $70 \leq \text{Score} < 80$ • C: $60 \leq \text{Score} < 70$ • D: $40 \leq \text{Score} < 60$ • E: $0 \leq \text{Score} < 40$
Media Employed	Slide presentations, LCD projector, laptop/computer, whiteboard, e-learning
Reading list	1. Dadang Supardan. 2008, Pengantar Ilmu Sosial: Sebuah Kajian Pendekatan Struktural. Jakarta: Bumi Akasra 2. Achmad, Husein. 1983, Konsep-Konsep Ilmu Pengetahuan Sosial. Yogyakarta: FKIS-IKIP 3. Maliki, Zainuddin. 2010, Sosiologi Pendidikan. Yogyakarta: Gajah Mada University press. 4. Martono, Nanang. 2012, Sosiologi Perubahan Sosial (Perspektif Klasik, Modern, Posmodern, dan Poskolonial, Jakarta: Raja Grafindo Persada 5. Supardi. 2011, Dasar-Dasar Ilmu Sosial. Yogyakarta: Ombak 6. Philip, Ane. 2010, Gender dan Culture. USA: Polity Press 7. Herimanto dan Winarno. 2010. Gender dan Culture. USA: Polity Press 8. Jurnal dan Sumber-sumber lainnya yang relevan 9. Suharto Edi. 2009, Kemiskinan dan Perlindungan Sosial di Indonesia. Bandung Alfabeta



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Islamic Education

Title	Islamic Education
Code, if applicable	MU0000603W001
Semester(s) in which the module is taught	2 nd semester
Person responsible for the module	Irma Suryani, M.Ag
Language	Indonesian
Relation to curriculum	Compulsory
Teaching methods	1. Critical Incident (pengalaman penting) 2. Case Study 3. Classroom Discussion
Workload	For this course, students are required to meet a minimum of 250 hours in one semester, which consists of: - 75 hours for lectures, - 40 hours for assignments and problem solving, - 35 hours for self-study
Credit points	3 credit points (equivalent to 10 ECTS)
Required and recommended prerequisites for joining the module	–
Module objectives/intended learning outcomes	Intended Learning Outcomes: 1. Demonstrate religious attitudes, human values, nationalism, and respect for cultural diversity, society, nation, and state based on the principles of Pancasila (PLO1) 2. Demonstrate an attitude of responsibility for work in his field of expertise, cooperation, and concern for the environment humid tropical forest (tropical rainforest) (PLO2) 3. Demonstrate law-abiding attitudes, discipline and academic ethics as well as a spirit of independence, struggle, and entrepreneurship in social and state life (PLO3) 4. Able to maintain and develop work networks with colleagues within and outside the institution (PLO12) Learning outcomes Students are able to understand and apply Islamic teachings as a source of value in professional development and Islamic personality



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Content	1. The nature of Godly man, exploring characteristics and urgency spirituality, exploring sociological, philosophical, theological, and historical sources concept of divinity. 2. The urgency of religion in achieving happiness, exploring the concept and implementation tawhid in religion. 3. Exploring the concept of religious trilogy in Islam (iman, Islam, ihsan), constructing argument about characteristics of the human being kamil. 4. Exploring the basic concepts of the Quran and As-Sunnah and the methods understanding. 5. Tracing variations in religious understanding and practice, Building arguments about the urgency and methods of indigenizing the Quran. 6. Exploring Islamic concept about plurality, tolerance, and multiculturalism. 7. Present a mosaic of cases and solutions related to the concepts of science and technology, politics, social, economics, and education in an Islamic perspective, Develop arguments about the compatibility of Islam with the world. with the modern world modern world. 8. Tracing traces treasures of Islamic civilization. 9. Building arguments about the function and role of campus mosques as the center of culture.
Examination forms	• Individual assignment, Mid-term exam and final exam
Study and examination requirements	The grading components are distributed as follows: • 30% Lectures Midterm Exam (UTS) • 40% Lectures Final Exam (UAS) • 10% Affective Assessment • 20% Practicum The final course grades are assigned as follows: • A: $80 \leq \text{Score} \leq 100$ • B: $70 \leq \text{Score} < 80$ • C: $60 \leq \text{Score} < 70$ • D: $40 \leq \text{Score} < 60$ • E: $0 \leq \text{Score} < 40$
Media employed	Whiteboard, projector, textbooks, Mulawarman Integrated Learning (STAR)



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Reading list	1. Adian Husaini. 2015. 10 Kuliah Agama Islam: Panduan menjadi Cendekiawan Mulia dan Bahagia. Pro-U Media. 2. Ahmad Taufiq, dkk. 2016. Pendidikan Agama Islam: Pendidikan Karakter Berbasis Agama Islam. LPPMP UNS Surakarta. 3. Endang Saifuddin Anshari. 1992. Kuliah al-Islam. Rajawali. 4. Jamal Syarif Iberani. 2003. Mengenal Islam. el-Kahfi. 5. M. Quraish Shihab. 1996. Wawasan Al-Quran. Mizan. 6. Syahidin, dkk. 2014. Pendidikan Agama Islam untuk Perguruan Tinggi. Direktorat Pembelajaran dan Kemahasiswaan Direktorat Jenderal Perguruan Tinggi Kementerian Pendidikan dan Kebudayaan.
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Basic Chemistry

Title	Basic Chemistry
Code, if applicable	210700603W003
Semester(s) in which the module is taught	2 nd semester
Person responsible for the module	Nanang Tri Widodo, M.Si Drs. Alimuddin, M.Si
Language	Indonesian
Relation to curriculum	Compulsory
Teaching methods	1. Lecture 2. Case Study 3. Classroom Discussion 4. Question and answer
Workload	For this course, students are required to meet a minimum of 250 hours in one semester, which consists of: - 75 hours for lectures, - 40 hours for assignments and problem solving, - 35 hours for self-study
Credit points	2 credit points
Required and recommended prerequisites for joining the module	–



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Module objectives/intended learning outcomes	Intended Learning Outcomes: 1. Demonstrate an attitude of responsibility for work in his field of expertise, cooperation, and concern for the environment humid tropical forest (tropical rainforest) (PLO2) 2. Able to apply logical, critical, systematic and innovative thinking in the development and implementation of Science and Technology (IPTEK) in the field of statistics, make decisions appropriately in solving problems in the field of statistics by using scientific ethics and technology. using scientific ethics and humanities values (PLO9) 3. Able to show independent, group performance and be responsible for the achievement of the results of his work and able to carry out supervise and evaluate work that is under responsibility (PLO10) Learning outcomes Students are able to understand the basic principles and theoretical concepts of chemistry so that students have competencies (1) cognitive, namely understanding the principles of Basic Chemistry, (2) psychomotor, namely being able to analyze and answer questions and conduct discussions about the material presented in class, (3) affective, namely avoiding ways that are not commendable in class.
Content	1. Atoms 2. Ions 3. Molecules 4. Chemical bonding 5. Stoichiometry 6. Chemical reaction equilibrium 7. Redox reactions 8. Chemical thermodynamics 9. Electrochemistry and electrolysis.
Examination forms	• Individual assignment, Mid-term exam and final exam
Study and examination requirements	The grading components are distributed as follows: • 30% Lectures Midterm Exam (UTS) • 40% Lectures Final Exam (UAS) • 10% Affective Assessment • 20% Practicum The final course grades are assigned as follows: • A: $80 \leq \text{Score} \leq 100$ • B: $70 \leq \text{Score} < 80$ • C: $60 \leq \text{Score} < 70$ • D: $40 \leq \text{Score} < 60$ • E: $0 \leq \text{Score} < 40$
Media employed	Whiteboard, projector, textbooks, Mulawarman Integrated Learning (STAR)



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Reading list	1. Keenan, C.W., Kleinfelter, D.C. and Wood, J.H, 1980, Kimia Untuk Universitas diterjemakan oleh Pudjaatmaka, A.H., Penerbit Erlangga, Jakarta 2. Syukri, S., 1999, Kimia Dasar I, ITB Press, Bandung. 3. Whitten, Davis, Peck, dan Stanley, General Chemistry, 7th Edition, Brooks Cole, New York.
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Linear Algebra

Title	Linear Algebra
Code, if applicable	210701603W003
Semester(s) in which the module is taught	2 nd semester
Person responsible for the module	Surya Prangga, S.Si, M.Si
Language	Indonesian
Relation to curriculum	Compulsory
Teaching methods	1. Lecture 2. Case Study 3. Classroom Discussion 4. Question and answer
Workload	For this course, students are required to meet a minimum of 250 hours in one semester, which consists of: - 75 hours for lectures, - 40 hours for assignments and problem solving, - 35 hours for self-study
Credit points	3 credit points
Required and recommended prerequisites for joining the module	–



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Module objectives/intended learning outcomes	Intended Learning Outcomes: 1. Demonstrate an attitude of responsibility for work in his field of expertise, cooperation, and concern for the environment humid tropical forest (tropical rainforest) (PLO2) 2. Apply basic concepts and statistical methods in economics and business, computing and social, health and environmental fields based on natural resources. Natural Resources (SDA) Tropical Rain Forest Humid Tropical Rain Forest (PLO4) 3. Apply statistical computing appropriate for data analysis (PLO5) 4. Able to apply logical, critical, systematic and innovative thinking in the development and implementation of Science and Technology (IPTEK) in the field of statistics, make decisions appropriately in solving problems in the field of statistics by using scientific ethics and technology. using scientific ethics and humanities values (PLO9) Learning outcomes Students are able to understand the basic concepts of mathematics so that students have competencies (1) cognitive, namely understanding the principles of Basic Chemistry, (2) psychomotor, namely being able to analyze and answer questions and conduct discussions about the material presented in class, (3) affective, namely avoiding ways that are not commendable in class.
Content	1. Indefinite integral 2. Riemann sum, definite integral 3. Transcendent function 4. Integration technique 5. Use of integrals
Examination forms	• Individual assignment, Mid-term exam and final exam
Study and examination requirements	The grading components are distributed as follows: • 30% Lectures Midterm Exam (UTS) • 40% Lectures Final Exam (UAS) • 10% Affective Assessment • 20% Practicum The final course grades are assigned as follows: • A: $80 \leq \text{Score} \leq 100$ • B: $70 \leq \text{Score} < 80$ • C: $60 \leq \text{Score} < 70$ • D: $40 \leq \text{Score} < 60$ • E: $0 \leq \text{Score} < 40$
Media employed	Whiteboard, projector, textbooks, Mulawarman Integrated Learning (STAR)



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Reading list	1. Verberg, Dale., Purcell, Edwin., dan Rigdon, Steve. 2006, Calculus (9th Edition). Pearson Publisher. USA 2. James Stewart. (2015). Calculus, 8th edition. Cengage Learning.
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Calculus II

Title	Calculus II
Code, if applicable	210701603W004
Semester(s) in which the module is taught	2 nd semester
Person responsible for the module	Yuki Novia Nasution, M.Sc Wasono, S.Si., M.Si
Language	Indonesian
Relation to curriculum	Compulsory
Teaching methods	5. Lecture 6. Case Study 7. Classroom Discussion 8. Question and answer
Workload	For this course, students are required to meet a minimum of 250 hours in one semester, which consists of: - 75 hours for lectures, - 40 hours for assignments and problem solving, - 35 hours for self-study
Credit points	3 credit points
Required and recommended prerequisites for joining the module	–



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Module objectives/intended learning outcomes	Intended Learning Outcomes: 5. Demonstrate an attitude of responsibility for work in his field of expertise, cooperation, and concern for the environment humid tropical forest (tropical rainforest) (PLO2) 6. Apply basic concepts and statistical methods in economics and business, computing and social, health and environmental fields based on natural resources. Natural Resources (SDA) Tropical Rain Forest Humid Tropical Rain Forest (PLO4) 7. Able to apply logical, critical, systematic and innovative thinking in the development and implementation of Science and Technology (IPTEK) in the field of statistics, make decisions appropriately in solving problems in the field of statistics by using scientific ethics and technology. using scientific ethics and humanities values (PLO9) Learning outcomes Students are able to master concepts and work on problems related to systems of linear equations, matrices, matrix determinants, vectors in R^2 and R^3, Euclidean vector spaces and general vector spaces, inner product spaces, eigenvalues and eigenvectors, and linear transformations.
Content	6. Systems of linear equations 7. Matrices 8. Determinants 9. Vectors in R^2 and R^3 10. Vector spaces 11. Inner product spaces 12. Eigen values and eigenvectors 13. Linear transformations
Examination forms	• Individual assignment, Mid-term exam and final exam
Study and examination requirements	The grading components are distributed as follows: • 30% Lectures Midterm Exam (UTS) • 40% Lectures Final Exam (UAS) • 10% Affective Assessment • 20% Practicum The final course grades are assigned as follows: • A: $80 \leq \text{Score} \leq 100$ • B: $70 \leq \text{Score} < 80$ • C: $60 \leq \text{Score} < 70$ • D: $40 \leq \text{Score} < 60$ • E: $0 \leq \text{Score} < 40$
Media employed	Whiteboard, projector, textbooks, Mulawarman Integrated Learning (STAR)



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Reading list	1. Anton, H, Chris Rorres. 2000. Aljabar Linier Elementer Versi Aplikasi Edisi Ke-delapan Jilid I, diterjemahkan oleh Refina Indriasari dan Irzam Harmein. Jakarta: Penerbit Erlangga. 2. Anton H, Chris Rorres. 2005. Elementary Linear Algebra, Applications Version, ninth edition. John Wiley & Sons, Inc.
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Entrepreneurship

Title	Entrepreneurship
Code, if applicable	210701602W005
Semester(s) in which the module is taught	2 nd semester
Person responsible for the module	Dr. Saida Zainurossalamia ZA, M.Si Dr. Ariesta Heksarini, MM
Language	Indonesian
Relation to curriculum	Compulsory
Teaching methods	1. Lecture 2. Assignment 3. Classroom Discussion 4. Question and answer 5. Assessment product
Workload	For this course, students are required to meet a minimum of 250 hours in one semester, which consists of: - 75 hours for lectures, - 40 hours for assignments and problem solving, - 35 hours for self-study
Credit points	2 credit points
Required and recommended prerequisites for joining the module	–



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Module objectives/intended learning outcomes	Intended Learning Outcomes: 1. Demonstrate an attitude of responsibility for work in his field of expertise, cooperation, and concern for the environment humid tropical forest (tropical rainforest) (PLO2) 2. Demonstrate law-abiding attitudes, discipline and academic ethics as well as a spirit of independence, struggle, and entrepreneurship in social and state life (PLO3) 3. Able to show independent, group performance and be responsible for the achievement of the results of his work and able to carry out supervise and evaluate work that is under responsibility (PLO10) 4. Able to maintain and develop work networks with colleagues within and outside the institution (PLO12) Learning outcomes Mastering and Able to explain the meaning and function of management in the Business World / Industrial World (DU / DI), able to describe the meaning, principles and classification of entrepreneurs and implement them for entrepreneurship and work effectively both individually and in multidisciplinary or multicultural teams in formulating alternative solutions to solve complex engineering problems in the field of management.
Content	1. Scope of discussion Entrepreneurship, management and management functions. 2. Background and importance of entrepreneurship, Role of entrepreneurship in nation building, Advantages and disadvantages of entrepreneurship. 3. Principles or traits that an entrepreneur must have. 4. Classification of entrepreneurs and must-have traits. 5. Steps to start a business or establish a new business. 6. Financial management and business marketing. 7. Creating a Business Plan. 8. Field Visit of Entrepreneurs/UKM.
Examination forms	• Individual assignment, Mid-term exam and final exam



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Study and examination requirements	The grading components are distributed as follows: • 30% Lectures Midterm Exam (UTS) • 40% Lectures Final Exam (UAS) • 10% Affective Assessment • 20% Assignment The final course grades are assigned as follows: • A: $80 \leq \text{Score} \leq 100$ • B: $70 \leq \text{Score} < 80$ • C: $60 \leq \text{Score} < 70$ • D: $40 \leq \text{Score} < 60$ • E: $0 \leq \text{Score} < 40$
Media employed	Whiteboard, projector, textbooks, Mulawarman Integrated Learning (STAR)
Reading list	1. Amirullah Haris Budiyo. 2004. Pengantar Manajemen. Yogyakarta: Graha Ilmu 2. Buchari Alma. 2000. Kewirausahaan. Bandung: CV Alfabeta 3. Reynald Kasali, Rumah Perubahan, Jakarta 4. Geoffrey G. Meredith. Kewirausahaan, Teori danPraktek. Jakarta: PT. Pustaka Binaman Pressindo



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Algorithms and Programming II

Title	Algorithms and Programming II
Code, if applicable	210701603P006
Semester(s) in which the module is taught	2 nd semester
Person responsible for the module	Rito Goejantoro, S.Si, M.Si Surya Prangga, M.Si
Language	Indonesian
Relation to curriculum	Compulsory
Teaching methods	1. Lecture 2. Assignment 3. Question and answer
Workload	For this course, students are required to meet a minimum of 250 hours in one semester, which consists of: - 75 hours for lectures, - 40 hours for assignments and problem solving, - 35 hours for self-study
Credit points	3 credit points
Required and recommended prerequisites for joining the module	–



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Module objectives/intended learning outcomes	Intended Learning Outcomes: - Demonstrate an attitude of responsibility for work in his field of expertise, cooperation, and concern for the environment humid tropical forest (tropical rainforest) (PLO2) - Apply basic concepts and statistical methods in economics and business, computing and social, health and environmental fields based on natural resources. Natural Resources (SDA) Tropical Rain Forest (PLO4) - Apply statistical computing appropriate for data analysis (PLO5) - Able to analyze data using appropriate statistical methods and interpret the results in an informative form (PLO7) - Able to apply statistics in solving real problems, presenting, and communicating in writing and orally in the fields of economics-business, computing, social, health and the environment based on Natural Resources (SDA) Tropical Rain Forest (PLO 8) - Able to apply logical, critical, systematic and innovative thinking in the development and implementation of Science and Technology (IPTEK) in the field of statistics, make decisions appropriately in solving problems in the field of statistics by using scientific ethics and technology. using scientific ethics and humanities values (PLO9) - Able to compile scientific work in the field of statistics that is valid and prevent plagiarism (PLO11) Learning outcomes - Analyze a problems related to logic that are implemented into a programming language. - Finding a solution to the logic problem at hand that is poured into an algorithm and implemented into a programming language. - Understand the fundamentals of programming logic and its applications in the Computer Programming I course, enabling students to develop competence in applying programming logic fundamentals to create programs using a programming language.
Content	- Introduction to data structures. - Software modularity, Abstract Data Type (ADT). - Linear and continuous linked lists. - Double linked list, circular list. - Multilink list. - Stack, Queue, Tree, Graph.
Examination forms	Individual assignment, Mid-term exam and final exam



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Study and examination requirements	The grading components are distributed as follows: • 30% Lectures Midterm Exam (UTS) • 40% Lectures Final Exam (UAS) • 10% Affective Assessment • 20% Assignment The final course grades are assigned as follows: • A: $80 \leq \text{Score} \leq 100$ • B: $70 \leq \text{Score} < 80$ • C: $60 \leq \text{Score} < 70$ • D: $40 \leq \text{Score} < 60$ • E: $0 \leq \text{Score} < 40$
Media employed	Whiteboard, projector, textbooks, Mulawarman Integrated Learning (STAR)
Reading list	1. Diktat Kuliah IF2181 Struktur Data, Inggriani Liem, ITB, 2003 2. Standish, Thomas A. Data Structures, Algorithms, & Software Principles in C. Addison wesley Publishing Company 1995 3. AHO, Alfred V., John E. Hopcroft, Jeffrey D. Ullman. Data Structures and Algorithm. Addison Wesley Publishing Company. 1987. 4. Horowitz, E. & Sahni, S. Fundamentals of Data Structures in Pascal", Pitman Publishing Limited, 1984



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BASIC Statistics

Title	Basic Statistics
Code, if applicable	190700603W005
Semester(s) in which the module is taught	2 nd semester
Person responsible for the module	Dr. Sifriyani, S.Pd., M.Si. Ika Purnamasari, S.Si., M.Si
Language	Indonesian
Relation to curriculum	Compulsory
Teaching methods	1. Lecture 2. Assignment 3. Question and answer 4. Practice
Workload	For this course, students are required to meet a minimum of 250 hours in one semester, which consists of: - 75 hours for lectures, - 40 hours for assignments and problem solving, - 35 hours for self-study
Credit points	3 credit points
Required and recommended prerequisites for joining the module	–



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Module objectives/intended learning outcomes	Intended Learning Outcomes: 1. Demonstrate an attitude of responsibility for work in his field of expertise, cooperation, and concern for the environment humid tropical forest (tropical rainforest) (PLO2) 2. Apply basic concepts and statistical methods in economics and business, computing and social, health and environmental fields based on natural resources. Natural Resources (SDA) Tropical Rain Forest (PLO4) 3. Apply statistical computing appropriate for data analysis (PLO5) 4. Able to apply appropriate and efficient data collection and management design (PLO6) 5. Able to analyze data using appropriate statistical methods and interpret the results in an informative form (PLO7) 6. Able to apply statistics in solving real problems, presenting, and communicating in writing and orally in the fields of economics-business, computing, social, health and the environment based on Natural Resources (SDA) Tropical Rain Forest (PLO 8) 7. Able to apply logical, critical, systematic and innovative thinking in the development and implementation of Science and Technology (IPTEK) in the field of statistics, make decisions appropriately in solving problems in the field of statistics by using scientific ethics and technology. using scientific ethics and humanities values (PLO9) 8. Able to compile scientific work in the field of statistics that is valid and prevent plagiarism (PLO11) Learning outcomes Students are able to use theoretical and procedural concepts in the field of statistics so that students have competencies (1) cognitive, namely understanding the basis of statistical methods (2) psychomotor, namely being able to carry out analysis to explain problems around according to the scientific field (3) affective, namely being honest in conducting tests to draw a conclusion in research.
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Content	1. Definition of statistics, Data, Measurement Process and Scale, Symbols, Sets, Notations and Operations on data. 2. Frequency Distribution, Mean, Deviation. 3. Sample space and events, Probability of an event, Conditional Distribution. 4. Random variables and probability distributions, Expected value, variance and their properties. 5. Bernoulli Trial Distribution, Binomial Distribution, Hypergeometric Distribution and Poisson distribution. 6. Normal distribution, normal approximation to binomial, random sample and statistical sampling distribution. 7. Basic concepts of statistical inference: Estimation, hypothesis testing. 8. Statistical inference for one arbitrary population (large sample), Statistical inference for one normal population (small and large sample). 9. Statistical inference for two arbitrary populations (large sample), Statistical inference for two normal populations (small and large sample).
Examination forms	• Individual assignment, Mid-term exam and final exam
Study and examination requirements	The grading components are distributed as follows: • 30% Lectures Midterm Exam (UTS) • 40% Lectures Final Exam (UAS) • 10% Affective Assessment • 20% Practicum The final course grades are assigned as follows: • A: $80 \leq \text{Score} \leq 100$ • B: $70 \leq \text{Score} < 80$ • C: $60 \leq \text{Score} < 70$ • D: $40 \leq \text{Score} < 60$ • E: $0 \leq \text{Score} < 40$
Media employed	Whiteboard, projector, textbooks, Mulawarman Integrated Learning (STAR)
Reading list	1. Sudjana. (2005). Metode Statistik. Tarsito : Bandung. 2. Walpole, Ronald E. (2006). Pengantar Statistika. Edisi ke-3. PT. Gramedia Pustaka Utama : Jakarta. 3. Supranto, J (2000). Statistika : Teori dan Aplikasi Jilid 1. Edisi ke 6. Erlangga : Jakarta



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Introduction to Economics

Title	Introduction to Economics
Code, if applicable	210116603W002
Semester(s) in which the module is taught	2 nd semester
Person responsible for the module	Dr. H. Adi Wijaya., SE., M.Si
Language	Indonesian
Relation to curriculum	Compulsory
Teaching methods	1. Lecture 2. Assignment 3. Question and answer 4. Observation 5. Test
Workload	For this course, students are required to meet a minimum of 250 hours in one semester, which consists of: - 75 hours for lectures, - 40 hours for assignments and problem solving, - 35 hours for self-study
Credit points	3 credit points
Required and recommended prerequisites for joining the module	–
Module objectives/intended learning outcomes	Intended Learning Outcomes: 1. Demonstrate an attitude of responsibility for work in his field of expertise, cooperation, and concern for the environment humid tropical forest (tropical rainforest) (PLO2) 2. Demonstrate law-abiding attitudes, discipline and academic ethics as well as a spirit of independence, struggle, and entrepreneurship in social and state life (PLO3) 3. Able to show independent, group performance and be responsible for the achievement of the results of his work and able to carry out supervise and evaluate work that is under responsibility (PLO10) Learning outcomes After studying this course, students are expected to have the ability to understand the scope of macroeconomic theory with microeconomic theory; Master the basic concepts of Microeconomics; Master the concept of Microeconomic Applications; Master the concept of Macroeconomics; and master the concept of Macroeconomic Applications.



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Content	1. Macroeconomic theory with microeconomic theory; 2. Master the basic concepts of Microeconomics; 3. Master the concept of Microeconomic Applications; 4. Master the concept of Macroeconomics; and 5. Master the concept of Macroeconomic Applications.
Examination forms	• Individual assignment, Mid-term exam and final exam
Study and examination requirements	The grading components are distributed as follows: • 30% Lectures Midterm Exam (UTS) • 40% Lectures Final Exam (UAS) • 10% Affective Assessment • 20% Assignment The final course grades are assigned as follows: • A: $80 \leq \text{Score} \leq 100$ • B: $70 \leq \text{Score} < 80$ • C: $60 \leq \text{Score} < 70$ • D: $40 \leq \text{Score} < 60$ • E: $0 \leq \text{Score} < 40$
Media employed	Whiteboard, projector, textbooks, Mulawarman Integrated Learning (STAR)
Reading list	1. N. Gregory Mankiw, Ekonomi Makro. Penerbit Erlangga 2. Winardi, DR (2014), Pengantar Ilmu Ekonomi 3. Tedy Herlambang, dll. (2001), Ekonomi Makro (Teori, Analisis dan Kebijakan), PT Gramedia Pustaka Utama, Jakarta. 4. Sadono Sukirno, pengantar Ekonomi Makro dan Mikro 5. Suherman Rosyidi., (2009), Pengantar Ekonomi



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Introduction to Mathematical Statistics I

Title	Introduction to Mathematical Statistics 1
Code, if applicable	210701603W008
Semester(s) in which the module is taught	3 rd semester
Person responsible for the module	Andrea Tri Rian Dani, S.Stat, M.Stat Dr. Suyitno, S.Pd., M.Sc
Language	Indonesian
Relation to curriculum	Compulsory
Teaching methods	14. Lecture 15. Case Study 16. Classroom Discussion 17. <i>Cooperative Learning</i>
Workload	For this course, students are required to meet a minimum of 250 hours in one semester, which consists of: - 75 hours for lectures, - 40 hours for assignments and problem solving, - 35 hours for self-study
Credit points	3 credit points (equivalent to 10 ECTS)
Required and recommended prerequisites for joining the module	–



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Module objectives/intended learning outcomes	Intended Learning Outcomes: 9. Demonstrate an attitude of responsibility for work in his field of expertise, cooperation, and concern for the environment humid tropical forest (tropical rainforest) (PLO2) 10. Apply basic concepts and statistical methods in economics and business, computing and social, health and environmental fields based on natural resources. Natural Resources (SDA) Tropical Rain Forest (PLO4) 11. Able to apply appropriate and efficient data collection and management design (PLO6) 12. Able to analyze data using appropriate statistical methods and interpret the results in an informative form (PLO7) 13. Able to apply statistics in solving real problems, presenting, and communicating in writing and orally in the fields of economics-business, computing, social, health and the environment based on Natural Resources (SDA) Tropical Rain Forest (PLO 8) 14. Able to apply logical, critical, systematic and innovative thinking in the development and implementation of Science and Technology (IPTEK) in the field of statistics, make decisions appropriately in solving problems in the field of statistics by using scientific ethics and technology. using scientific ethics and humanities values (PLO9) 15. Able to compile scientific work in the field of statistics that is valid and prevent plagiarism (PLO11) Learning outcomes Students are able to understand about random variables; probability density function; cumulative distribution function (CDF); special distributions (bernouli, binomial, Poisson, normal, gamma, exponential, chi-squared, t distribution); expectation, variance, covariance and correlation; distribution of functions of one random variable by CDF, transformation and moment generating function (FPM) methods; distribution of random variables of more than one random variable by transformation and FPM methods; sampling distributions linear combination of normal population; sampling distribution of Gamma and Chi-squared population; distribution of sample mean and variance; central limit theorem.
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Content	16. Basics of set theory; random experiments; random variables; chance and probability measures; event (occurrence); probability of an event; conditional event conditional. 17. Probability Density Function (FKP), Cumulative Distribution Function (CDF). 18. Distribution function of one random variable with CDF and transformation method. 19. Probability density function and cumulative distribution function of special distributions, Expectation, variance of random variables, Moment generating function (FPM) or moment generating function (MGF). 20. Properties of moment generating function, Distribution of functions of more than one random variable based on transformation. 21. Distribution function of more than one random variable based on FPM. 22. Sampling distribution, mean and variance distribution of normally distributed samples. 23. t and F distribution.
Examination forms	• Individual assignment, Mid-term exam and final exam
Study and examination requirements	The grading components are distributed as follows: • 30% Lectures Midterm Exam (UTS) • 40% Lectures Final Exam (UAS) • 10% Affective Assessment • 20% Assignment The final course grades are assigned as follows: • A: $80 \leq \text{Score} \leq 100$ • B: $70 \leq \text{Score} < 80$ • C: $60 \leq \text{Score} < 70$ • D: $40 \leq \text{Score} < 60$ • E: $0 \leq \text{Score} < 40$
Media employed	Whiteboard, projector, textbooks, Mulawarman Integrated Learning (STAR)
Reading list	1. Dudewiez, E.J. and Mishra, S.N., 1988. Modern Mathematical Statistics, John Wiley and Sons, New York. 2. Hogg, R.V. and Craig, A.T., 1978. Introduction to the Mathematical Statistics, Mac Millan Publishing Co. Ins, New York. 3. Hogg, R.V. and Tanis, E.A, 1977. Probability and Statistical Inference, Mac Millan Publishing Co. Ins, New York.



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Statistical Method

Module Name	Statistical Methods
Code, if applicable	210701603W009
Semester (s) in which the module is taught	3 rd semester
Person responsible for the module	Dr. Sifriyani, S.Pd., M.Si Meiliyani Siringoringo, S.Si, M.Si
Language	Indonesian
Relation to curriculum	Compulsory Course
Type of teaching	3. Written test 4. Question and answer 5. Case study 6. Analysis 7. Assignment
Workload (incl. Contact hours, self-study hours)	For this course, students are required to meet a minimum of 250 hours in one semester, which consists of: - 75 hours for lectures, - 40 hours for assignments and problem solving, - 35 hours for self-study
Credit Points	3 Credits
Required and recommended prerequisite for joining the module	-
Module objectives/intended learning outcomes	Intended Learning Outcomes: 15. Demonstrate an attitude of responsibility for work in his field of expertise, cooperation, and concern for the environment humid tropical forest (tropical rainforest) (PLO2) 16. Apply basic concepts and statistical methods in economics and business, computing and social, health and environmental fields based on natural resources. Natural Resources (SDA) Tropical Rain Forest (PLO4) 17. Apply statistical computing appropriate for data analysis (PLO5) 18. Able to apply appropriate and efficient data collection and management design (PLO6) 19. Able to analyze data using appropriate statistical methods and interpret the results in an informative form (PLO7) 20. Able to apply statistics in solving real problems, presenting, and communicating in writing and orally in the fields of economics-business, computing, social, health and the environment based on Natural Resources (SDA) Tropical Rain Forest (PLO 8)



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	21. Able to apply logical, critical, systematic and innovative thinking in the development and implementation of Science and Technology (IPTEK) in the field of statistics, make decisions appropriately in solving problems in the field of statistics by using scientific ethics and technology. using scientific ethics and humanities values (PLO9) 22. Able to compile scientific work in the field of statistics that is valid and prevent plagiarism (PLO11) Learning outcomes Students are able to use the theoretical and procedural concepts of the analyses discussed in the Statistics Methods course so that students have competencies (1) cognitive, namely understanding and distinguishing various methods of statistical analysis (2) psychomotor, namely choosing and carrying out statistical analysis methods that are in accordance with existing data or problems, (3) affective, namely being able to complete data analysis related to existing problems properly and responsibly.
Content	6. Categorical and discrete data, Cross tabulation of 2 variables, Test of independence of 2 variables. 7. Correlation coefficient, correlation hypothesis testing. 8. Simple regression model, Estimation of parameters of a simple regression model, Interpretation of regression coefficients, Testing the significance of parameters, simple linear regression. 9. Multiple linear regression models, Estimation of parameters of multiple linear regression models, Interpretation of multiple linear regression coefficients, Significance testing of multiple linear regression parameters. 10. Model equations in one-way analysis of variance, Hypothesis testing in one-way analysis of variance. 11. Multiple comparison test, Interpretation of multiple comparison test results. 12. Model equation in two-way variance analysis without interaction, Hypothesis testing in two-way variance analysis without interaction. 13. Model equation in two-way variance analysis with interaction, Hypothesis testing in two-way variance analysis with interaction.
Examination forms	Individual assignment, Mid-term exam and final exam



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Study and Examination Requirements	The grading components are distributed as follows: • 30% Lectures Midterm Exam (UTS) • 40% Lectures Final Exam (UAS) • 10% Affective Assessment • 20% Practicum The final course grades are assigned as follows: • A: $80 \leq \text{Score} \leq 100$ • B: $70 \leq \text{Score} < 80$ • C: $60 \leq \text{Score} < 70$ • D: $40 \leq \text{Score} < 60$ • E: $0 \leq \text{Score} < 40$
Media Employed	Slide presentations, LCD projector, laptop/computer, whiteboard, e-learning
Reading list	10. Sudjana. (2005). Metode Statitik. Tarsito : Bandung. 11. Walpole, Ronald E. (2006). Pengantar Statistika. Edisi ke-3. PT. Gramedia Pustaka Utama : Jakarta. 12. Supranto, J (2000). Statistika : Teori dan Aplikasi Jilid 2. Edisi ke 6. Erlangga : Jakarta



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Computational Statistics

Title	Computational Statistics
Code, if applicable	210701603W010
Semester(s) in which the module is taught	3 rd semester
Person responsible for the module	Rito Goejantoro, M.Si. Meiliyani Siringoringo, S.Si, M.Si
Language	Indonesian
Relation to curriculum	Compulsory
Teaching methods	4. Lecture 5. Case Study 6. Classroom Discussion 7. Question and answer 8. Practice
Workload	For this course, students are required to meet a minimum of 250 hours in one semester, which consists of: - 75 hours for lectures, - 40 hours for assignments and problem solving, - 35 hours for self-study
Credit points	3 credit points (equivalent to 10 ECTS)
Required and recommended prerequisites for joining the module	–



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Module objectives/intended learning outcomes	Intended Learning Outcomes: 1. Demonstrate an attitude of responsibility for work in his field of expertise, cooperation, and concern for the environment humid tropical forest (tropical rainforest) (PLO2) 2. Apply basic concepts and statistical methods in economics and business, computing and social, health and environmental fields based on natural resources. Natural Resources (SDA) Tropical Rain Forest (PLO4) 3. Apply statistical computing appropriate for data analysis (PLO5) 4. Able to apply appropriate and efficient data collection and management design (PLO6) 5. Able to analyze data using appropriate statistical methods and interpret the results in an informative form (PLO7) 6. Able to apply statistics in solving real problems, presenting, and communicating in writing and orally in the fields of economics-business, computing, social, health and the environment based on Natural Resources (SDA) Tropical Rain Forest (PLO 8) 7. Able to apply logical, critical, systematic and innovative thinking in the development and implementation of Science and Technology (IPTEK) in the field of statistics, make decisions appropriately in solving problems in the field of statistics by using scientific ethics and technology. using scientific ethics and humanities values (PLO9) 8. Able to compile scientific work in the field of statistics that is valid and prevent plagiarism (PLO11) Learning outcomes Students are able to manage data correctly for statistical analysis, make general statistical analysis and graphs, perform correlation and regression analysis and analysis of experimental design correctly.
Content	10. Computational Statistics with R. 11. Fundamentals of R. 12. File and Data management in R. 13. Continuous Probability Distribution. 14. Discrete Probability Distribution. 15. Univariate distribution fit test. 16. Multivariate distribution fit test. 17. Linear Regression Model. 18. Violation of Classical Assumptions of Linear Regression. 19. Computational Statistical Methods.
Examination forms	• Individual assignment, Mid-term exam and final exam



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Study and examination requirements	The grading components are distributed as follows: • 30% Lectures Midterm Exam (UTS) • 40% Lectures Final Exam (UAS) • 10% Affective Assessment • 20% Practicum The final course grades are assigned as follows: • A: $80 \leq \text{Score} \leq 100$ • B: $70 \leq \text{Score} < 80$ • C: $60 \leq \text{Score} < 70$ • D: $40 \leq \text{Score} < 60$ • E: $0 \leq \text{Score} < 40$
Media employed	Whiteboard, projector, textbooks, Mulawarman Integrated Learning (STAR)
Reading list	7. Crawley, M.J.(2015) Statistics : an Introduction using R. London : John Wiley & Sons 8. Gentle, J.E., (2002) , Elements of Computational Statistics, New York : Springer. 9. Rosadi, Dedi (2017) Analisis Statistik dengan R. Yogyakarta : Penerbit UGM



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Survey Analysis and Design I

Title	Survey Analysis and Design I
Code, if applicable	210701603W011
Semester(s) in which the module is taught	2 nd semester
Person responsible for the module	Nanang Tri Widodo, M.Si Drs. Alimuddin, M.Si
Language	Indonesian
Relation to curriculum	Compulsory
Teaching methods	5. Lecture 6. Case Study 7. Classroom Discussion 8. Question and answer
Workload	For this course, students are required to meet a minimum of 136 hours in one semester, which consists of: - 150 minutes for lecture, - 180 minutes for structured assignments - 180 minutes for individual study
Credit points	3 credit points
Required and recommended prerequisites for joining the module	–



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Module objectives/intended learning outcomes	Intended Learning Outcomes: 1. Demonstrate an attitude of responsibility for work in his field of expertise, cooperation, and concern for the environment humid tropical forest (tropical rainforest) (PLO2) 2. Apply basic concepts and statistical methods in economics and business, computing and social, health and environmental fields based on natural resources. Natural Resources (SDA) Tropical Rain Forest (PLO4) 3. Apply statistical computing appropriate for data analysis (PLO5) 4. Able to apply appropriate and efficient data collection and management design (PLO6) 5. Able to analyze data using appropriate statistical methods and interpret the results in an informative form (PLO7) 6. Able to apply statistics in solving real problems, presenting, and communicating in writing and orally in the fields of economics-business, computing, social, health and the environment based on Natural Resources (SDA) Tropical Rain Forest (PLO 8) 7. Able to apply logical, critical, systematic and innovative thinking in the development and implementation of Science and Technology (IPTEK) in the field of statistics, make decisions appropriately in solving problems in the field of statistics by using scientific ethics and technology. using scientific ethics and humanities values (PLO9) 8. Able to show independent, group performance and be responsible for the achievement of the results of his work and able to carry out supervise and evaluate work that is under responsibility (PLO10) 9. Able to compile scientific work in the field of statistics that is valid and prevent plagiarism (PLO11) Learning outcomes Students are able to use theoretical and procedural concepts in the field of survey analysis and design so that students have competencies (1) cognitive, namely understanding surveys, (2) psychomotor, namely designing surveys that are in accordance with the nature of the object of research, (3) affective, namely avoiding (rejecting) ways that are not commendable in conducting surveys.
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Content	1. Process in research, classification in research, definition of survey research, types of survey research. 2. Definition of research problems, types of problem formulations, definition of research variables and their types. 3. Definition of Population and sample, definition of Census and survey, Definition of nonprobability sampling and its division, Definition of probability sampling and its division, how to determine sample size. 4. Levels of measurement and their division (nominal, ordinal, interval, ratio), indices and scales, types of scales. 5. Types of research instruments, how to create a research questionnaire, importance of pretest for research questionnaire. 6. Definition of validity, types of validity, ways to determine / test the validity of the instrument, understanding reliability, factors that affect reliability, ways to determine / test reliability. 7. Concept and role of interviewing, factors influencing interviewing, types of interviewing, rules, guidelines and procedures for interviewing, advantages and disadvantages of interviewing. 8. How to code data, create frequency tables and cross tabulations, how to edit data, Data analysis techniques reporting and dissemination of survey results.
Examination forms	• Individual assignment, Mid-term exam and final exam
Study and examination requirements	The grading components are distributed as follows: • 30% Lectures Midterm Exam (UTS) • 40% Lectures Final Exam (UAS) • 10% Affective Assessment • 20% Practicum The final course grades are assigned as follows: • A: $80 \leq \text{Score} \leq 100$ • B: $70 \leq \text{Score} < 80$ • C: $60 \leq \text{Score} < 70$ • D: $40 \leq \text{Score} < 60$ • E: $0 \leq \text{Score} < 40$
Media employed	Whiteboard, projector, textbooks, Mulawarman Integrated Learning (STAR)



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Reading list	1. Cochran, W.G. (1991). Teknik Pengambilan Sampel. (Edisi ke 3). UI Press: Jakarta. 2. Singarimbun, M. dan Effendi, S. (2011). Metode Penelitian Survei. LP3ES: Jakarta. Sudjana. (1992). Metode Statistika. Tarsito: Bandung. 3. Supranto, J. (2000). Teknik Sampling Untuk Survei dan Eksperimen. Rineka Cipta: Jakarta. 4. Walpole, R. E. dan Myers, R. H. (1995). Ilmu peluang dan statistika untuk insinyur dan ilmuwan. (Edisi ke-4). ITB PRESS: Bandung. 5. Yusuf, M. (2014). Metode Penelitian Kuantitatif, Kualitatif dan Penelitian Gabungan. Prenadamedia Group: Jakarta.
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Introduction to Data Science

Title	Introduction to Data Science
Code, if applicable	210701603W012
Semester(s) in which the module is taught	3 rd semester
Person responsible for the module	Siti Mahmudah, S.Si, M.Si
Language	Indonesian
Relation to curriculum	Compulsory
Teaching methods	9. Lecture 10. Case Study 11. Classroom Discussion 12. Question and answer
Workload	For this course, students are required to meet a minimum of 136 hours in one semester, which consists of: - 150 minutes for lecture, - 180 minutes for structured assignments - 180 minutes for individual study
Credit points	3 credit points
Required and recommended prerequisites for joining the module	–



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Module objectives/intended learning outcomes	Intended Learning Outcomes: 1. Demonstrate an attitude of responsibility for work in his field of expertise, cooperation, and concern for the environment humid tropical forest (tropical rainforest) (PLO2) 2. Apply basic concepts and statistical methods in economics and business, computing and social, health and environmental fields based on natural resources. Natural Resources (SDA) Tropical Rain Forest (PLO4) 3. Apply statistical computing appropriate for data analysis (PLO5) 4. Able to apply appropriate and efficient data collection and management design (PLO6) 5. Able to analyze data using appropriate statistical methods and interpret the results in an informative form (PLO7) 6. Able to apply statistics in solving real problems, presenting, and communicating in writing and orally in the fields of economics-business, computing, social, health and the environment based on Natural Resources (SDA) Tropical Rain Forest (PLO 8) 7. Able to apply logical, critical, systematic and innovative thinking in the development and implementation of Science and Technology (IPTEK) in the field of statistics, make decisions appropriately in solving problems in the field of statistics by using scientific ethics and technology. using scientific ethics and humanities values (PLO9) 8. Able to compile scientific work in the field of statistics that is valid and prevent plagiarism (PLO11) Learning outcomes Students are able to use theoretical and procedural concepts on science data so that students have competencies (1) cognitive, namely understanding the introduction of science data in the field of research, (2) psychomotor, namely skills in using software in processing science data, (3) affective, namely knowing the ethics of using science data.
Content	1. Background of science data, Development of science data, Disadvantages and advantages of science data. 2. Science data for research, Science data for business Science data for government/official statistics. 3. Big data, Web scrapping and text crawling social media, Preprocessing for text analysis. 4. Regression, Linear regression, introduction to regression tree, Classification: logistic regression, introduction to classification tree. 5. Clustering: K-means, Association Rule: apriori. 6. Tables, graphs, dashboards. 7. Presentation technique. 8. Science data ethics.
Examination forms	• Individual assignment, Mid-term exam and final exam



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Study and examination requirements	The grading components are distributed as follows: • 30% Lectures Midterm Exam (UTS) • 40% Lectures Final Exam (UAS) • 10% Affective Assessment • 20% Practicum The final course grades are assigned as follows: • A: $80 \leq \text{Score} \leq 100$ • B: $70 \leq \text{Score} < 80$ • C: $60 \leq \text{Score} < 70$ • D: $40 \leq \text{Score} < 60$ • E: $0 \leq \text{Score} < 40$
Media employed	Whiteboard, projector, textbooks, Mulawarman Integrated Learning (STAR)
Reading list	1. John W. Foreman. Data Smart, Using Data Science to Transform Information into Insight. Wiley. 2014. 2. Murtaza Haider. Getting Started with Data Science, Making Sense of Data with Analytics. IBM Press. 2015. 3. Program Data Science. Pengantar Data Science dan Aplikasinya bagi Pemula. Unpar Press. 2020..



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Numerical Method

Title	Numerical Method
Code, if applicable	210701603P013
Semester(s) in which the module is taught	3 rd semester
Person responsible for the module	Dr. M. Fathurahman, M.Si
Language	Indonesian
Relation to curriculum	Compulsory
Teaching methods	1. Lecture 2. Classroom Discussion 3. Question and answer 4. Assignment
Workload	For this course, students are required to meet a minimum of 136 hours in one semester, which consists of: - 150 minutes for lecture, - 180 minutes for structured assignments - 180 minutes for individual study
Credit points	3 credit points
Required and recommended prerequisites for joining the module	–



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Module objectives/intended learning outcomes	Intended Learning Outcomes: 1. Demonstrate an attitude of responsibility for work in his field of expertise, cooperation, and concern for the environment humid tropical forest (tropical rainforest) (PLO2) 2. Apply basic concepts and statistical methods in economics and business, computing and social, health and environmental fields based on natural resources. Natural Resources (SDA) Tropical Rain Forest (PLO4) 3. Apply statistical computing appropriate for data analysis (PLO5) 4. Able to analyze data using appropriate statistical methods and interpret the results in an informative form (PLO7) 5. Able to apply logical, critical, systematic and innovative thinking in the development and implementation of Science and Technology (IPTEK) in the field of statistics, make decisions appropriately in solving problems in the field of statistics by using scientific ethics and technology. using scientific ethics and humanities values (PLO9) 6. Able to compile scientific work in the field of statistics that is valid and prevent plagiarism (PLO11) Learning outcomes Students master the basic concepts of numerical methods so that students have competencies (1) cognitive, namely understanding numerical methods, roots of non-linear equations, systems of linear equations, interpolation, function approximation, curve fitting, numerical integration, differential equations (2) psychomotor, namely choosing and carrying out research steps according to the topic or problem of the final project they choose (3) affective, namely avoiding ways that are not commendable in research, for example plagiarism.
Content	1. Bisection method; false position method; seccant method; newton raphson. 2. Method eliminasi; method eliminasi gauss naif; method gauss Jordan; iterasi jacobi; iterasi gauss seidel. 3. Lagrange interpolation. 4. Taylor approximation; Newton's divided polynomial. 5. Least squares curve fitting; linearized curve fitting. 6. Trapezium method; simpson method; simpson 3/8 method; recursive trapezium method; recursion simpson method; Boole's rule. 7. Method euler; method heun; method taylo; method runge kutta.
Examination forms	• Individual assignment, Mid-term exam and final exam



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Study and examination requirements	The grading components are distributed as follows: • 30% Lectures Midterm Exam (UTS) • 40% Lectures Final Exam (UAS) • 10% Affective Assessment • 20% Practicum The final course grades are assigned as follows: • A: $80 \leq \text{Score} \leq 100$ • B: $70 \leq \text{Score} < 80$ • C: $60 \leq \text{Score} < 70$ • D: $40 \leq \text{Score} < 60$ • E: $0 \leq \text{Score} < 40$
Media employed	Whiteboard, projector, textbooks, Mulawarman Integrated Learning (STAR)
Reading list	1. Mathews, John H., and Fink, Kurtis D. 1999. Numerical Methods Using Matlab Third Edition. Prentice Hall. New Jersey. 2. Chapra, Stepen C., and Canale, Raymond P. 2010. Numerical Methods For Engineers (sixth edition). McGraw-Hill. New York. 3. Munir, Rinaldi. 2013. Metode Numerik Revisi Ketiga. Penerbit Informatika. Bandung.



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Financial Math

Title	Financial Math
Code, if applicable	210701602P014
Semester(s) in which the module is taught	3 rd semester
Person responsible for the module	Dr. Suyitno, M.Sc Dr. M. Fathurahman, M.Si
Language	Indonesian
Relation to curriculum	Compulsory
Teaching methods	6. Lecture 7. Assignment 8. Classroom Discussion 9. Question and answer 10. Case study
Workload	For this course, students are required to meet a minimum of 90,67 hours in one semester, which consists of: - 100 minutes for lecture, - 120 minutes for structured assignments - 120 minutes for individual study
Credit points	2 credit points
Required and recommended prerequisites for joining the module	–



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Module objectives/intended learning outcomes	Intended Learning Outcomes: 5. Demonstrate an attitude of responsibility for work in his field of expertise, cooperation, and concern for the environment humid tropical forest (tropical rainforest) (PLO2). 6. Apply basic concepts and statistical methods in economics and business, computing and social, health and environmental fields based on natural resources. Natural Resources (SDA) Tropical Rain Forest (PLO4) 7. Able to analyze data using appropriate statistical methods and interpret the results in an informative form (PLO7) 8. Able to apply logical, critical, systematic and innovative thinking in the development and implementation of Science and Technology (IPTEK) in the field of statistics, make decisions appropriately in solving problems in the field of statistics by using scientific ethics and technology. using scientific ethics and humanities values (PLO9) Learning outcomes Students are able to use theoretical and procedural concepts of regression analysis so that students have competencies (1) cognitive, namely understanding financial mathematics concepts (2) psychomotor, namely choosing and applying financial mathematics concepts according to existing data or problems, (3) affective, namely being able to apply the concept of financial mathematical analysis related to existing problems properly and responsibly.
Content	9. Investment, Capital Market, Indonesia Capital Market, Stocks. 10. Bonds, Return & Risk. 11. Beta, Market Beta, Accounting Beta, Fundamental Beta, Quantitative relationship of variance, covariance, and beta, Use of beta in financial decision making. 12. Definition of Expected Cash Flow, Definition of certainty equivalent, relationship between expected cash flow and certainty equivalent.
Examination forms	• Individual assignment, Mid-term exam and final exam
Study and examination requirements	The grading components are distributed as follows: • 40% Lectures Midterm Exam (UTS) • 50% Lectures Final Exam (UAS) • 10% Affective Assessment The final course grades are assigned as follows: • A: $80 \leq \text{Score} \leq 100$ • B: $70 \leq \text{Score} < 80$ • C: $60 \leq \text{Score} < 70$ • D: $40 \leq \text{Score} < 60$ • E: $0 \leq \text{Score} < 40$



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Media employed	Whiteboard, projector, textbooks, Mulawarman Integrated Learning (STAR)
Reading list	1. Sheldon M Ross. 1999. An Introduction to Mathematical Finance. Cambridge University Press.



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Introduction to Population and Demography

Title	Introduction to Population and Demography
Code, if applicable	210701603P015
Semester(s) in which the module is taught	3 rd semester
Person responsible for the module	Dr. M. Fathurahman, M.Si Meiliyani Siringoringo, M.Si.
Language	Indonesian
Relation to curriculum	Compulsory
Teaching methods	4. Lecture 5. Assignment 6. Question and answer
Workload	For this course, students are required to meet a minimum of 136 hours in one semester, which consists of: - 150 minutes for lecture, - 180 minutes for structured assignments - 180 minutes for individual study
Credit points	3 credit points
Required and recommended prerequisites for joining the module	–



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Module objectives/intended learning outcomes	Intended Learning Outcomes: 1. Demonstrate religious attitudes, human values, nationalism, and respect for cultural diversity, society, nation, and state based on the principles of Pancasila (PLO1) 2. Demonstrate an attitude of responsibility for work in his field of expertise, cooperation, and concern for the environment humid tropical forest (tropical rainforest) (PLO2) 3. Apply basic concepts and statistical methods in economics and business, computing and social, health and environmental fields based on natural resources. Natural Resources (SDA) Tropical Rain Forest (PLO4) 4. Able to apply appropriate and efficient data collection and management design (PLO6) 5. Able to apply statistics in solving real problems, presenting, and communicating in writing and orally in the fields of economics-business, computing, social, health and the environment based on Natural Resources (SDA) Tropical Rain Forest (PLO 8) Learning outcomes Students master the concepts of population and demography so that students have cognitive competence, namely understanding demography, components of population change, concepts and definitions of demographic aspects; composition or composition of the population based on gender and age; sources of demographic data; fertility; mortality; migration; marriage and divorce; life tables and making life tables; education; health; employment; and population projections.
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Content	7. Definition of Demography, Components of population change, Concepts and definitions of sex, age, birth, fertility and development, mortality, and life expectancy, migration, marital status, Household. 8. Population composition by sex and age. 9. Population Census, sample survey, administrative system. 10. Fertility in cross-sectional approach, Fertility in longitudinal approach. 11. Migration ratio and rate such as crude migration rate, migration ratio, Direct estimation method, Indirect estimation method. 12. Marriage rate, Divorce rate, Marital status. 13. Life table creation assumptions, Data requirements, Life table creation includes: Age-specific mortality rates, probability of death, number of deaths and survivors, years lived and life expectancy, characteristics of population life tables. 14. Basic concepts, Some basic measures of education (enrollment rate, retention rate, illiteracy rate, grade attainment rate). 15. Concepts and definitions of health, basic data such as fertility behavior, family planning, maternal and child health, maternal mortality, AIDS knowledge, and STDs. 16. Concept and definition of employment, Working age population, Labor force, Basic measures of employment. 17. Concept of population projection, Basic data, Techniques for making population projections component method, Indonesia population projection. 18.
Examination forms	Individual assignment, Mid-term exam and final exam
Study and examination requirements	The grading components are distributed as follows: 40% Lectures Midterm Exam (UTS) 50% Lectures Final Exam (UAS) 10% Affective Assessment The final course grades are assigned as follows: A: $80 \leq \text{Score} \leq 100$ B: $70 \leq \text{Score} < 80$ C: $60 \leq \text{Score} < 70$ D: $40 \leq \text{Score} < 60$ E: $0 \leq \text{Score} < 40$
Media employed	Whiteboard, projector, textbooks, Mulawarman Integrated Learning (STAR)



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Reading list	5. Mantra,IB., 2000. Demografi Umum, Pustaka Pelajar,Yogyakarta. 6. Prayoga, AD., 1981. Dasar-Dasar Demografi. Lembaga Demografi FEUI. Lembaga Penerbit FEUI, Jakarta 7. Sembiring, RK., 2006. Demografi. Universitas Terbuka, Jakarta. 8. Yusuf, F.,Martins,JM., Swanson, DA., 2014. Methods of Demographic Analysis. Springer Netherlands. Netherlands
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Management Basics and Professional Ethics

Title	Management Basics and Professional Ethics
Code, if applicable	210701602P016
Semester(s) in which the module is taught	3 rd semester
Person responsible for the module	Dr. Dirga Lestari A, SE, MM Asnawati, S. SE, MM
Language	Indonesian
Relation to curriculum	Compulsory
Teaching methods	5. Lecture 6. Assignment 7. Question and answer 8. Class discussion
Workload	For this course, students are required to meet a minimum of 90,67 hours in one semester, which consists of: - 100 minutes for lecture, - 120 minutes for structured assignments - 120 minutes for individual study
Credit points	2 credit points
Required and recommended prerequisites for joining the module	–



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Module objectives/intended learning outcomes	Intended Learning Outcomes: 1. Demonstrate religious attitudes, human values, nationalism, and respect for cultural diversity, society, nation, and state based on the principles of Pancasila (PLO1) 2. Demonstrate an attitude of responsibility for work in his field of expertise, cooperation, and concern for the environment humid tropical forest (tropical rainforest) (PLO2) 3. Demonstrate law-abiding attitudes, discipline and academic ethics as well as a spirit of independence, struggle, and entrepreneurship in social and state life (PLO3) 4. Able to maintain and develop work networks with colleagues within and outside the institution (PLO12). Learning outcomes 1. Students are able to understand the concepts and principles of management. 2. Students are able to explain about decision making in business management. 3. Students are able to describe the steps in the business management process. 4. Students are able to explain and present management problems and solutions in business organizations.
Content	10. Definition of management and organization. 11. Evolution of management science. 12. Limitations and challenges of organizational culture and organizational environment. 13. Global environmental management. 14. Workplace diversity. 15. Managing a socially responsible and ethical business. 16. Change management and innovation. 17. Managers as decision makers, Foundation of planning. 18. Strategic management as a planning application. 19. Basic organizational plan, Organizational adjustment plan. 20. Human resource management, Work group management. 21. Understand individual behavior, managers and communication. 22. Motivating employees, Managers as leaders 23. Introduction to supervision, Business operations management
Examination forms	• Individual assignment, Mid-term exam and final exam



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Study and examination requirements	The grading components are distributed as follows: • 30% Lectures Midterm Exam (UTS) • 40% Lectures Final Exam (UAS) • 10% Affective Assessment • 20% Assignment The final course grades are assigned as follows: • A: $80 \leq \text{Score} \leq 100$ • B: $70 \leq \text{Score} < 80$ • C: $60 \leq \text{Score} < 70$ • D: $40 \leq \text{Score} < 60$ • E: $0 \leq \text{Score} < 40$
Media employed	Whiteboard, projector, textbooks, Mulawarman Integrated Learning (STAR)
Reading list	4. Stephen P. Robbins and Mary Coulter. 2012. Management. Eleventh Edition. Prentice Hall, New Jearsey. USA.



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Official Statistics

Title	Official Statistics
Code, if applicable	210701603P017
Semester(s) in which the module is taught	3 rd semester
Person responsible for the module	Dr. H. Adi Wijaya., SE., M.Si
Language	Indonesian
Relation to curriculum	Compulsory
Teaching methods	6. Lecture 7. Assignment 8. Question and answer 9. Class discussion
Workload	For this course, students are required to meet a minimum of 136 hours in one semester, which consists of: - 150 minutes for lecture, - 180 minutes for structured assignments - 180 minutes for individual study
Credit points	3 credit points
Required and recommended prerequisites for joining the module	–



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Module objectives/intended learning outcomes	Intended Learning Outcomes: 1. Demonstrate an attitude of responsibility for work in his field of expertise, cooperation, and concern for the environment humid tropical forest (tropical rainforest) (PLO2) 2. Apply basic concepts and statistical methods in economics and business, computing and social, health and environmental fields based on natural resources. Natural Resources (SDA) Tropical Rain Forest (PLO4) 3. Apply statistical computing appropriate for data analysis (PLO5) 4. Able to analyze data using appropriate statistical methods and interpret the results in an informative form (PLO7) 5. Able to apply statistics in solving real problems, presenting, and communicating in writing and orally in the fields of economics-business, computing, social, health and the environment based on Natural Resources (SDA) Tropical Rain Forest (PLO 8) 6. Able to apply logical, critical, systematic and innovative thinking in the development and implementation of Science and Technology (IPTEK) in the field of statistics, make decisions appropriately in solving problems in the field of statistics by using scientific ethics and technology. using scientific ethics and humanities values (PLO9) 7. Able to compile scientific work in the field of statistics that is valid and prevent plagiarism (PLO11) Learning outcomes Students are able to use theoretical and procedural concepts in the field of statistics so that students have competencies (1) cognitive, namely understanding and distinguishing parametric and non-parametric statistical methods (2) psychomotor, namely being able to choose and conduct tests with appropriate non-parametric methods to solve problems around (3) affective, namely being honest in conducting tests to draw a conclusion in research.
Content	1. Definiton Official Statistics and Official Statistics Data. 2. Data and Data Collection, Village and sub-district potential. 3. Definition of population, Region in Figures, Demography. 4. Definition of Inflation, GRDP, How to calculate inflation, CPI, GRDP. 5. Definition of Poverty, How to calculate Poverty, BPS data analysis (SBH). 6. Definition of Population Quality (IPM), IPMIndicators, IPM data analysis 7. Definition of labor force, Calculating labor force participation rate, Definition of minimum wage 8. Presentation/Development of Official Statistics Methods
Examination forms	• Individual assignment, Mid-term exam and final exam



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Study and examination requirements	The grading components are distributed as follows: • 30% Lectures Midterm Exam (UTS) • 40% Lectures Final Exam (UAS) • 10% Affective Assessment • 20% Practicum The final course grades are assigned as follows: • A: $80 \leq \text{Score} \leq 100$ • B: $70 \leq \text{Score} < 80$ • C: $60 \leq \text{Score} < 70$ • D: $40 \leq \text{Score} < 60$ • E: $0 \leq \text{Score} < 40$
Media employed	Whiteboard, projector, textbooks, Mulawarman Integrated Learning (STAR)
Reading list	6. Buku Potensi Desa, Monografi Desa Dan Kecamatan, Daerah Dalam Angka. 7. Ida Bagus Mantra. 1986. Pengantar Studi Demografi. Nur Cahaya. 8. Laporan Sensus, SUPAS, (BPS), Laporan Susenas, Data Kemiskinan Versi BPS, Data Kemiskinan Versi BKKBN, Laporan Hasil Survei SBH 9. Laporan Hasil Perhitungan IHK Dan Inflasi (BPS), dan Laporan Inflasi (BI), Laporan Data IPM Indonesia Dan Kalimantan Timur (BPS) 10. Publikasi Hasil Perhitungan PDRB Dan Pertumbuhan Ekonomi.



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Calculus III

Title	Calculus III
Code, if applicable	210701603P018
Semester(s) in which the module is taught	3 rd semester
Person responsible for the module	Yuki Novia Nasution, S.Si., M,Sc Wasono, S.Si., M, Si
Language	Indonesian
Relation to curriculum	Compulsory
Teaching methods	1. Lecture 2. Assignment 3. Question and answer 4. Class discussion
Workload	For this course, students are required to meet a minimum of 136 hours in one semester, which consists of: - 150 minutes for lecture, - 180 minutes for structured assignments - 180 minutes for individual study
Credit points	3 credit points
Required and recommended prerequisites for joining the module	–



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Module objectives/intended learning outcomes	Intended Learning Outcomes: 1. Demonstrate an attitude of responsibility for work in his field of expertise, cooperation, and concern for the environment humid tropical forest (tropical rainforest) (PLO2) 2. Apply basic concepts and statistical methods in economics and business, computing and social, health and environmental fields based on natural resources. Natural Resources (SDA) Tropical Rain Forest (PLO4) 3. Apply statistical computing appropriate for data analysis (PLO5) Able to apply logical, critical, systematic and innovative thinking in the development and implementation of Science and Technology (IPTEK) in the field of statistics, make decisions appropriately in solving problems in the field of statistics by using scientific ethics and technology. using scientific ethics and humanities values (PLO9) Learning outcomes Students are able to master and work on problems related to the concepts of convergence of infinite series, derivatives and integrals in n dimensions, applications of derivatives and integrals in n dimensions, polar coordinate systems and differential equations. Furthermore, students are able to apply these concepts in various problems in everyday phenomena.
Content	1. Infinite Rows and Series, Test for convergence of positive series. 2. Convergence test, Sign Series, Power Series. 3. Taylor series, Maclaurin series. 4. Functions of two or more variables, Partial Derivative, Limit and Continuity of functions of several variables. 5. Differentiability, Directed derivative, Chain rule. 6. Tangent plane, Maximum and minimum, Lagrange method. 7. Integral doubling over rectangular regions, Integral doubling over non-rectangular regions. 8. Twofold Integral in polar coordinates. 9. Triple Integral. 10. Introduction to Differential equations, First-order linear equations. 11. Second-order homogeneous equation 12. Inhomogeneous Equation 13. Application of differential equations.
Examination forms	• Individual assignment, Mid-term exam and final exam



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Study and examination requirements	The grading components are distributed as follows: • 30% Lectures Midterm Exam (UTS) • 40% Lectures Final Exam (UAS) • 10% Affective Assessment • 20% Practicum The final course grades are assigned as follows: • A: $80 \leq \text{Score} \leq 100$ • B: $70 \leq \text{Score} < 80$ • C: $60 \leq \text{Score} < 70$ • D: $40 \leq \text{Score} < 60$ • E: $0 \leq \text{Score} < 40$
Media employed	Whiteboard, projector, textbooks, Mulawarman Integrated Learning (STAR)
Reading list	1. Purcell, E, Varberg, D.1991. Kalkulus dan Geometri Analisis Jilid 2, Edisi Kelima. Erlangga. 2. Purcell, E, Varberg, D, Rigdon, Steven E. 2006. Calculus, ninth edition. Pearson. 3. Purcell, E, Varberg, D, Rigdon, Steven E. 2006. Calculus with Differential Equation, ninth edition. Pearson. 4. Guichard, David. 2017. Single and Multivariable Calculus. Creative Commons: California.



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Nonparametric Statistics

Title	Nonparametric Statistics
Code, if applicable	210701603P019
Semester(s) in which the module is taught	3 rd semester
Person responsible for the module	Ika Purnamasari, S.Si., M.Si. Dr. Darnah A. Nohe, S.Si., M.Si
Language	Indonesian
Relation to curriculum	Compulsory
Teaching methods	1. Lecture 2. Assignment 3. Question and answer 4. Class discussion
Workload	For this course, students are required to meet a minimum of 136 hours in one semester, which consists of: - 150 minutes for lecture, - 180 minutes for structured assignments - 180 minutes for individual study
Credit points	3 credit points
Required and recommended prerequisites for joining the module	–



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Module objectives/intended learning outcomes	Intended Learning Outcomes: 1. Demonstrate an attitude of responsibility for work in his field of expertise, cooperation, and concern for the environment humid tropical forest (tropical rainforest) (PLO2) 2. Apply basic concepts and statistical methods in economics and business, computing and social, health and environmental fields based on natural resources. Natural Resources (SDA) Tropical Rain Forest (PLO4) 3. Apply statistical computing appropriate for data analysis (PLO5) 4. Able to apply appropriate and efficient data collection and management design (PLO6) 5. Able to analyze data using appropriate statistical methods and interpret the results in an informative form (PLO7) 6. Able to apply statistics in solving real problems, presenting, and communicating in writing and orally in the fields of economics-business, computing, social, health and the environment based on Natural Resources (SDA) Tropical Rain Forest (PLO 8) 7. Able to apply logical, critical, systematic and innovative thinking in the development and implementation of Science and Technology (IPTEK) in the field of statistics, make decisions appropriately in solving problems in the field of statistics by using scientific ethics and technology. using scientific ethics and humanities values (PLO9) 8. Able to compile scientific work in the field of statistics that is valid and prevent plagiarism (PLO11) Learning outcomes Students are able to use theoretical and procedural concepts in the field of statistics so that students have competencies (1) cognitive, namely understanding and distinguishing parametric and non-parametric statistical methods (2) psychomotor, namely being able to choose and conduct tests with appropriate non-parametric methods to solve problems around (3) affective, namely being honest in conducting tests to draw a conclusion in research.
Content	1. The role of statistics in research, Techniques used in statistical testing. 2. Binomial test, Chi-Square test, one-sample Kolmogorov Smirnov test, Run test. 3. McNemar test, Sign test, Wilcoxon test. 4. Fisher's exact likelihood test, Chi-Square test for 2 independent samples, Median test, Mann Whitney test, Two-sample Kolmogorov Smirnov test. 5. Chi Square k Free Sample Test, Kruskal Wallis Test. 6. Contingency Coefficient C, Cramer Coefficient C, Spearman Correlation.
Examination forms	• Individual assignment, Mid-term exam and final exam



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Study and examination requirements	The grading components are distributed as follows: • 30% Lectures Midterm Exam (UTS) • 40% Lectures Final Exam (UAS) • 10% Affective Assessment • 20% Practicum The final course grades are assigned as follows: • A: $80 \leq \text{Score} \leq 100$ • B: $70 \leq \text{Score} < 80$ • C: $60 \leq \text{Score} < 70$ • D: $40 \leq \text{Score} < 60$ • E: $0 \leq \text{Score} < 40$
Media employed	Whiteboard, projector, textbooks, Mulawarman Integrated Learning (STAR)
Reading list	1. Siegel, Sidney. 1986. Statistik Nonparametrik Untuk Ilmu-Ilmu Sosial. Jakarta. Gramedia. 2. Ghazali, Imam. 2002. Statistik Non-Parametrik Teori dan Aplikasi dengan Program SPSS. Semarang. Universitas Diponegoro. 3. Conover, W.J. 1999. Practical NonParametric statistics Third Edition. John Wiley & Sons, Inc.



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Mathematical Statistics II

Title	Mathematical Statistics II
Code, if applicable	210701603W020
Semester(s) in which the module is taught	4 th semester
Person responsible for the module	Dr. Suyitno, S. Pd., M.Sc Dr. Sri Wahyuningsih, M.Si
Language	Indonesian
Relation to curriculum	Compulsory
Teaching methods	1. Lecture 2. Assignment 3. Question and answer
Workload	For this course, students are required to meet a minimum of 136 hours in one semester, which consists of: - 150 minutes for lecture, - 180 minutes for structured assignments - 180 minutes for individual study
Credit points	3 credit points
Required and recommended prerequisites for joining the module	–



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Module objectives/intended learning outcomes	Intended Learning Outcomes: 1. Demonstrate an attitude of responsibility for work in his field of expertise, cooperation, and concern for the environment humid tropical forest (tropical rainforest) (PLO2) 2. Apply basic concepts and statistical methods in economics and business, computing and social, health and environmental fields based on natural resources. Natural Resources (SDA) Tropical Rain Forest (PLO4) 3. Able to apply appropriate and efficient data collection and management design (PLO6) 4. Able to analyze data using appropriate statistical methods and interpret the results in an informative form (PLO7) 5. Able to apply statistics in solving real problems, presenting, and communicating in writing and orally in the fields of economics-business, computing, social, health and the environment based on Natural Resources (SDA) Tropical Rain Forest (PLO 8) 6. Able to apply logical, critical, systematic and innovative thinking in the development and implementation of Science and Technology (IPTEK) in the field of statistics, make decisions appropriately in solving problems in the field of statistics by using scientific ethics and technology. using scientific ethics and humanities values (PLO9) 7. Able to compile scientific work in the field of statistics that is valid and prevent plagiarism (PLO11) Learning outcomes Students master the basic concepts of statistics in mathematics so that students have competencies (1) cognitive, namely understanding some elementary inference statistics: order statistics, distribution tolerance limits, confidence intervals, Chi Square test, Monte Carlo method, accept reject generation algorithm, bootstrap procedure; Maximum likelihood method: maximum likelihood estimation, minimum variance unbiased estimator (MVUE), Rao-Cramer lower bound and efficiency, maximum likelihood test, EM algorithm; Sufficiency: estimator quality measures, sufficient statistics for parameters, properties of sufficient statistics, completeness and uniqueness; Hypothesis testing: Powerful test, Powerful uniform test, Likelihood ratio test, Minimax and classification procedures (2) psychomotor, namely choosing and carrying out research steps in accordance with the topic or problem of the final project they choose, (3) affective, namely avoiding ways that are not commendable in research, for example plagiarism.
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Content	1. Sampling, statistics, quantiles, confidence intervals of quantiles, tolerance limits for distributions. 2. Tolerance limits for distributions and confidence intervals. 3. Introduction to hypothesis testing, Chi squared test, Monte Carlo Method, accept reject generation algorithm, bootstrap percentile confidence interval, bootstrap testing procedure. 4. Maximum likelihood estimation, Rao Cramer lower bound and efficiency, EM algorithm. 5. Sufficiency, definition of sufficient statistics, measurement of estimator quality, definition of MVUE, properties of sufficient statistics, completeness, uniqueness, exponential class distribution. 6. Functions of parameters for the case of multiple parameters, minimal sufficiency, adequacy, completeness and freedom. 7. Most powerful test, uniform most powerful test, likelihood ratio test, sequential test probability ratio. 8. Minimax and classification procedures.
Examination forms	• Individual assignment, Mid-term exam and final exam
Study and examination requirements	The grading components are distributed as follows: • 30% Lectures Midterm Exam (UTS) • 40% Lectures Final Exam (UAS) • 10% Affective Assessment • 20% Practicum The final course grades are assigned as follows: • A: $80 \leq \text{Score} \leq 100$ • B: $70 \leq \text{Score} < 80$ • C: $60 \leq \text{Score} < 70$ • D: $40 \leq \text{Score} < 60$ • E: $0 \leq \text{Score} < 40$
Media employed	Whiteboard, projector, textbooks, Mulawarman Integrated Learning (STAR)
Reading list	1. Dudewiez, E.J. and Mishra, S.N., 1988. Modern Mathematical Statistics, John Wiley and Sons, New York. 2. Hogg, R.V. and Craig, A.T., 2005. Introduction to the Mathematical Statistics 6th Ed, Mac Millan Publishing Co. Ins, New York. 3. Hogg, R.V. and Tanis, E.A, 1977. Probability and Statistical Inference, Mac Millan Publishing Co. Ins, New York.



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Mathematical Statistics II

Title	Mathematical Statistics II
Code, if applicable	210701603W020
Semester(s) in which the module is taught	4 th semester
Person responsible for the module	Dr. Suyitno, S. Pd., M.Sc Dr. Sri Wahyuningsih, M.Si
Language	Indonesian
Relation to curriculum	Compulsory
Teaching methods	4. Lecture 5. Assignment 6. Question and answer
Workload	For this course, students are required to meet a minimum of 136 hours in one semester, which consists of: - 150 minutes for lecture, - 180 minutes for structured assignments - 180 minutes for individual study
Credit points	3 credit points
Required and recommended prerequisites for joining the module	–



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Module objectives/intended learning outcomes	Intended Learning Outcomes: 8. Demonstrate an attitude of responsibility for work in his field of expertise, cooperation, and concern for the environment humid tropical forest (tropical rainforest) (PLO2) 9. Apply basic concepts and statistical methods in economics and business, computing and social, health and environmental fields based on natural resources. Natural Resources (SDA) Tropical Rain Forest (PLO4) 10. Able to apply appropriate and efficient data collection and management design (PLO6) 11. Able to analyze data using appropriate statistical methods and interpret the results in an informative form (PLO7) 12. Able to apply statistics in solving real problems, presenting, and communicating in writing and orally in the fields of economics-business, computing, social, health and the environment based on Natural Resources (SDA) Tropical Rain Forest (PLO 8) 13. Able to apply logical, critical, systematic and innovative thinking in the development and implementation of Science and Technology (IPTEK) in the field of statistics, make decisions appropriately in solving problems in the field of statistics by using scientific ethics and technology. using scientific ethics and humanities values (PLO9) 14. Able to compile scientific work in the field of statistics that is valid and prevent plagiarism (PLO11) Learning outcomes Students master the basic concepts of statistics in mathematics so that students have competencies (1) cognitive, namely understanding some elementary inference statistics: order statistics, distribution tolerance limits, confidence intervals, Chi Square test, Monte Carlo method, accept reject generation algorithm, bootstrap procedure; Maximum likelihood method: maximum likelihood estimation, minimum variance unbiased estimator (MVUE), Rao-Cramer lower bound and efficiency, maximum likelihood test, EM algorithm; Sufficiency: estimator quality measures, sufficient statistics for parameters, properties of sufficient statistics, completeness and uniqueness; Hypothesis testing: Powerful test, Powerful uniform test, Likelihood ratio test, Minimax and classification procedures (2) psychomotor, namely choosing and carrying out research steps in accordance with the topic or problem of the final project they choose, (3) affective, namely avoiding ways that are not commendable in research, for example plagiarism.
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Content	9. Sampling, statistics, quantiles, confidence intervals of quantiles, tolerance limits for distributions. 10. Tolerance limits for distributions and confidence intervals. 11. Introduction to hypothesis testing, Chi squared test, Monte Carlo Method, accept reject generation algorithm, bootstrap percentile confidence interval, bootstrap testing procedure. 12. Maximum likelihood estimation, Rao Cramer lower bound and efficiency, EM algorithm. 13. Sufficiency, definition of sufficient statistics, measurement of estimator quality, definition of MVUE, properties of sufficient statistics, completeness, uniqueness, exponential class distribution. 14. Functions of parameters for the case of multiple parameters, minimal sufficiency, adequacy, completeness and freedom. 15. Most powerful test, uniform most powerful test, likelihood ratio test, sequential test probability ratio. 16. Minimax and classification procedures.
Examination forms	• Individual assignment, Mid-term exam and final exam
Study and examination requirements	The grading components are distributed as follows: • 30% Lectures Midterm Exam (UTS) • 40% Lectures Final Exam (UAS) • 10% Affective Assessment • 20% Practicum The final course grades are assigned as follows: • A: $80 \leq \text{Score} \leq 100$ • B: $70 \leq \text{Score} < 80$ • C: $60 \leq \text{Score} < 70$ • D: $40 \leq \text{Score} < 60$ • E: $0 \leq \text{Score} < 40$
Media employed	Whiteboard, projector, textbooks, Mulawarman Integrated Learning (STAR)
Reading list	4. Dudewiez, E.J. and Mishra, S.N., 1988. Modern Mathematical Statistics, John Wiley and Sons, New York. 5. Hogg, R.V. and Craig, A.T., 2005. Introduction to the Mathematical Statistics 6th Ed, Mac Millan Publishing Co. Ins, New York. 6. Hogg, R.V. and Tanis, E.A, 1977. Probability and Statistical Inference, Mac Millan Publishing Co. Ins, New York.



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Introduction to Linear Models

Title	Introduction to Linear Models
Code, if applicable	210701603W021
Semester(s) in which the module is taught	4 th semester
Person responsible for the module	Dr. Sifriyani, S.Pd., M.Si. Meiliyani Siringoringo, M.Si.
Language	Indonesian
Relation to curriculum	Compulsory
Teaching methods	18. Lecture 19. Assignment 20. Question and answer
Workload	For this course, students are required to meet a minimum of 136 hours in one semester, which consists of: - 150 minutes for lecture, - 180 minutes for structured assignments - 180 minutes for individual study
Credit points	3 credit points (equivalent to 10 ECTS)
Required and recommended prerequisites for joining the module	–



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Module objectives/intended learning outcomes	Intended Learning Outcomes: 16. Demonstrate an attitude of responsibility for work in his field of expertise, cooperation, and concern for the environment humid tropical forest (tropical rainforest) (PLO2) 17. Apply basic concepts and statistical methods in economics and business, computing and social, health and environmental fields based on natural resources. Natural Resources (SDA) Tropical Rain Forest (PLO4) 18. Apply appropriate computational statistics for data analysis (PLO5). 19. Able to analyze data using appropriate statistical methods and interpret the results in an informative form (PLO7) 20. Able to apply statistics in solving real problems, presenting, and communicating in writing and orally in the fields of economics-business, computing, social, health and the environment based on Natural Resources (SDA) Tropical Rain Forest (PLO 8) 21. Able to compile scientific work in the field of statistics that is valid and prevent plagiarism (PLO11) Learning outcomes Students are able to use the theoretical concepts of introductory linear models so that students have cognitive competence, namely understanding and applying the theory of introductory linear models in modeling problems in life and affective, namely avoiding ways that are not commendable in applying the theory of introductory linear models.
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Content	24. Basic concepts of linear models, Matrix and vectors. 25. Random vectors and matrices. 26. Expected value and variance of normally distributed random variables. 27. Introduction to quadratic distributions, Multivariate quadratic distributions, Central and non-central distributions, Examples of multivariate, central and non-central distributions. 28. Formulation of simple linear regression and multiple linear regression models, Methods of estimating parameters of simple linear regression and multiple linear regression models, BLUE properties of parameter estimators. 29. Estimation of parameter intervals in simple linear regression and multiple linear regression models, Examples of estimating parameter intervals in simple linear regression and multiple linear regression models. 30. Testing the significance of a simple linear regression model (simultaneous test), Partial testing of simple linear regression model parameters, Examples of model significance testing (simultaneous test), partial testing for one or more model parameters. 31. Testing the significance of multiple linear regression models (simultaneous test), Partial testing for one or more parameters of multiple linear regression models, Examples of testing the significance of the model (simultaneous test), partial testing for one or more parameters of multiple linear regression models. 32. ANOVA model formulation, Estimation of ANOVA model parameters, Reparameterization of ANOVA model, Examples of parameter estimation and reparameterization of ANOVA model. 33. Testable hypothesis (estimable function), Example of testable hypothesis (estimable function) in ANOVA model. 34. Reparameterization of one-way ANOVA model, Treatment contrast in one-way ANOVA model. 35. Hypothesis testing of two-way ANOVA models without interaction, Examples of hypothesis testing of two-way ANOVA models without and with interaction using appropriate cases. 36. Hypothesis testing of two-way ANOVA models without interaction, Hypothesis testing of two-way ANOVA models with interaction, Examples of hypothesis testing of two-way ANOVA models without and with interaction using appropriate cases.
Examination forms	• Individual assignment, Mid-term exam and final exam



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Study and examination requirements	The grading components are distributed as follows: • 45% Lectures Midterm Exam (UTS) • 45% Lectures Final Exam (UAS) • 10% Affective Assessment The final course grades are assigned as follows: • A: $80 \leq \text{Score} \leq 100$ • B: $70 \leq \text{Score} < 80$ • C: $60 \leq \text{Score} < 70$ • D: $40 \leq \text{Score} < 60$ • E: $0 \leq \text{Score} < 40$
Media employed	Whiteboard, projector, textbooks, Mulawarman Integrated Learning (STAR)
Reading list	4. Dudewiez, E.J. and Mishra, S.N., 1988. Modern Mathematical Statistics, John Wiley and Sons, New York. 5. Hogg, R.V. and Craig, A.T., 1978. Introduction to the Mathematical Statistics, Mac Millan Publishing Co. Ins, New York. 6. Hogg, R.V. and Tanis, E.A, 1977. Probability and Statistical Inference, Mac Millan Publishing Co. Ins, New York.



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Database System

Module Name	Database System
Code, if applicable	210701603W022
Semester (s) in which the module is taught	4 th semester
Person responsible for the module	Surya Prangga, M.Si
Language	Indonesian
Relation to curriculum	Compulsory Course
Type of teaching	8. Question and answer 9. Lecture 10. Assignment 11. Case study
Workload (incl. Contact hours, self-study hours)	For this course, students are required to meet a minimum of 136 hours in one semester, which consists of: - 150 minutes for lecture, - 180 minutes for structured assignments - 180 minutes for individual study
Credit Points	3 Credits
Required and recommended prerequisite for joining the module	-
Module objectives/intended learning outcomes	Intended Learning Outcomes: 23. Demonstrate an attitude of responsibility for work in his field of expertise, cooperation, and concern for the environment humid tropical forest (tropical rainforest) (PLO2) 24. Apply basic concepts and statistical methods in economics and business, computing and social, health and environmental fields based on natural resources. Natural Resources (SDA) Tropical Rain Forest (PLO4) 25. Apply statistical computing appropriate for data analysis (PLO5) 26. Able to analyze data using appropriate statistical methods and interpret the results in an informative form (PLO7) 27. Able to apply statistics in solving real problems, presenting, and communicating in writing and orally in the fields of economics-business, computing, social, health and the environment based on Natural Resources (SDA) Tropical Rain Forest (PLO 8) 28. Able to apply logical, critical, systematic and innovative thinking in the development and implementation of Science and Technology (IPTEK) in the field of statistics, make decisions appropriately in solving problems in the field of statistics by using scientific ethics and



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	technology. using scientific ethics and humanities values (PLO9) 29. Able to compile scientific work in the field of statistics that is valid and prevent plagiarism (PLO11) Learning outcomes Students are able to build a database system and have the following competencies: 1. cognitive, namely understanding and understanding the database system 2. psychomotor, i.e. able to create a database system program 3. affective, which is able to avoid ways that are not commendable in learning database systems.
Content	14. Definition of database system. 15. Entity, Attribute, Relation, Set of relations. 16. Entity relational diagram. 17. Algebra relational 18. Structured query language 19. Dataset management 20. Introduction to Lazarus software, Dbgrid, Dbedit, Dbnavigator, Data manipulation, lazreport. 21. Database system project
Examination forms	Individual assignment, Mid-term exam and final exam
Study and Examination Requirements	The grading components are distributed as follows: • 30% Lectures Midterm Exam (UTS) • 40% Lectures Final Exam (UAS) • 10% Affective Assessment • 20% Practicum The final course grades are assigned as follows: • A: $80 \leq \text{Score} \leq 100$ • B: $70 \leq \text{Score} < 80$ • C: $60 \leq \text{Score} < 70$ • D: $40 \leq \text{Score} < 60$ • E: $0 \leq \text{Score} < 40$
Media Employed	Slide presentations, LCD projector, laptop/computer, whiteboard, e-learning
Reading list	13. Borrie, H. (2004). The Firebird Book: A Reference for Database Developers. New York: Apress. 14. Fathansyah. (2012). Basis Data, Edisi Revisi. Bandung: Informatika. 15. Filippov, D., Karpeykin, A., Kovyazin, A., Kuzmenko, D., Simonov, D., Vinkenoog, P., Yemanov, D. (2016).



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	Firebird 2.5 Language Reference. http://www.rebirdtest.com/ 16. Rocko, L. (2017). The Language of SQL, Second Edition. New York: AddisonWesley.
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Experimental Design

Title	Experimental Design
Code, if applicable	210701603W023
Semester(s) in which the module is taught	4 th semester
Person responsible for the module	Dr. M. Fathurahman, M.Si. Memi Nor Hayati, S.Si., M.Si.
Language	Indonesian
Relation to curriculum	Compulsory
Teaching methods	9. Lecture 10. Classroom Discussion 11. Question and answer 12. Practice
Workload	For this course, students are required to meet a minimum of 136 hours in one semester, which consists of: - 150 minutes for lecture, - 180 minutes for structured assignments - 180 minutes for individual study
Credit points	3 credit points (equivalent to 10 ECTS)
Required and recommended prerequisites for joining the module	–



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Module objectives/intended learning outcomes	Intended Learning Outcomes: 9. Demonstrate an attitude of responsibility for work in his field of expertise, cooperation, and concern for the environment humid tropical forest (tropical rainforest) (PLO2) 10. Apply basic concepts and statistical methods in economics and business, computing and social, health and environmental fields based on natural resources. Natural Resources (SDA) Tropical Rain Forest (PLO4) 11. Apply statistical computing appropriate for data analysis (PLO5) 12. Able to apply appropriate and efficient data collection and management design (PLO6) 13. Able to analyze data using appropriate statistical methods and interpret the results in an informative form (PLO7) 14. Able to apply statistics in solving real problems, presenting, and communicating in writing and orally in the fields of economics-business, computing, social, health and the environment based on Natural Resources (SDA) Tropical Rain Forest (PLO 8) 15. Able to apply logical, critical, systematic and innovative thinking in the development and implementation of Science and Technology (IPTEK) in the field of statistics, make decisions appropriately in solving problems in the field of statistics by using scientific ethics and technology. using scientific ethics and humanities values (PLO9) 16. Able to show independent, group performance and be responsible for the achievement of the results of his work and able to supervise and evaluate the work under his responsibility (PLO10). 17. Able to compile scientific work in the field of statistics that is valid and prevent plagiarism (PLO11) Learning outcomes Students are able to use theoretical and procedural concepts of experimental design so that students have competencies (1) cognitive, namely understanding the importance of experimental design (2) psychomotor, namely choosing and applying experimental design according to existing data or problems, (3) affective, namely being able to complete data analysis related to existing problems properly and responsibly.
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Content	20. Definition of design, experiment, Purpose of experimental design, Basic principles of experimental design, Steps to design an experiment. 21. Bartlett's test 22. One-way Analysis of Variance (Completely Randomized Design): Fixed Model, Model parameter estimation, Unbalanced state, Multiple Comparison. 23. Analysis of variance, Multiple comparison test, Parameter estimation, Assumption checking, Estimating missing data. 24. Analysis of variance, Analysis of variance, Missing data estimator, Replication in Latin square design. 25. Analysis of Variance using the RBSGL model. 26. Analysis of Variance, Other partition forms, Least squares estimator, Multiple comparison test (for fixed models). 27. Introduction, Two-Factor Factorial Design, Test of interaction for one observation in each cell, Three-Factor Factorial Design.
Examination forms	Individual assignment, Mid-term exam and final exam
Study and examination requirements	The grading components are distributed as follows: 30% Lectures Midterm Exam (UTS) 40% Lectures Final Exam (UAS) 10% Affective Assessment 20% Practicum The final course grades are assigned as follows: A: $80 \leq \text{Score} \leq 100$ B: $70 \leq \text{Score} < 80$ C: $60 \leq \text{Score} < 70$ D: $40 \leq \text{Score} < 60$ E: $0 \leq \text{Score} < 40$
Media employed	Whiteboard, projector, textbooks, Mulawarman Integrated Learning (STAR)
Reading list	10. Gaspersz, V. (1991). Metode Perancangan Percobaan. Armico, Bandung. 11. Lawson, J. (2015). "Design and Analysis of Experiments with R". CRC Press, Boca Raton.



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Simulation Techniques

Title	Simulation Techniques
Code, if applicable	210701603P025
Semester(s) in which the module is taught	4 th semester
Person responsible for the module	Surya Prangga, M.Si Dr. M. Fathurahman, S.Si., M.Si.
Language	Indonesian
Relation to curriculum	Compulsory
Teaching methods	9. Lecture 10. Case Study 11. Classroom Discussion 12. Question and answer 13. Practice
Workload	For this course, students are required to meet a minimum of 136 hours in one semester, which consists of: - 150 minutes for lecture, - 180 minutes for structured assignments - 180 minutes for individual study
Credit points	3 credit points
Required and recommended prerequisites for joining the module	–



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Module objectives/intended learning outcomes	Intended Learning Outcomes: 10. Demonstrate an attitude of responsibility for work in his field of expertise, cooperation, and concern for the environment humid tropical forest (tropical rainforest) (PLO2) 11. Apply basic concepts and statistical methods in economics and business, computing and social, health and environmental fields based on natural resources. Natural Resources (SDA) Tropical Rain Forest (PLO4) 12. Apply statistical computing appropriate for data analysis (PLO5) 13. Able to apply appropriate and efficient data collection and management design (PLO6) 14. Able to analyze data using appropriate statistical methods and interpret the results in an informative form (PLO7) 15. Able to apply statistics in solving real problems, presenting, and communicating in writing and orally in the fields of economics-business, computing, social, health and the environment based on Natural Resources (SDA) Tropical Rain Forest (PLO 8) 16. Able to apply logical, critical, systematic and innovative thinking in the development and implementation of Science and Technology (IPTEK) in the field of statistics, make decisions appropriately in solving problems in the field of statistics by using scientific ethics and technology. using scientific ethics and humanities values (PLO9) 17. Able to compile scientific work in the field of statistics that is valid and prevent plagiarism (PLO11) Learning outcomes Students are able to use theoretical and procedural concepts in the field of simulation techniques so that students have competencies (1) cognitive, namely understanding various simulation techniques in the field of research, (2) psychomotor, namely skills in using software in performing simulation techniques, (3) affective, namely avoiding ways that are not commendable in simulation techniques.
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Content	1. Background of simulation, Development of simulation, Disadvantages and advantages of simulation. 2. Elements of simulation analysis, Steps of simulation. 3. Definition of random numbers, Uniformly distributed random number generation method, Simulation program development with R software. 4. Non-Uniform distributed random number generation method, Preparation of simulation program with R software. 5. Random variables and distributions, Box-Muller Transformation, Normal distributed random number generation, Simulation program development with R software. 6. Generation of Gamma distributed random numbers, Generation of Exponential distributed random numbers, Preparation of simulation programs with R software. 7. Simulation application: Discrete events, Stochastic systems. 8. Single queue system, Inventory model. 9. Simulation modeling: Timing mechanism. 10. Event changes in discrete and continuous systems. 11. Deterministic or probabilistic nature of system change. 12. Output analysis: Interpretation of simulation output, Basis of output analysis, Analysis of dynamic simulation system.
Examination forms	• Individual assignment, Mid-term exam and final exam
Study and examination requirements	The grading components are distributed as follows: • 35% Lectures Midterm Exam (UTS) • 40% Lectures Final Exam (UAS) • 10% Affective Assessment • 10% Practicum • 5% Assignment The final course grades are assigned as follows: • A: $80 \leq \text{Score} \leq 100$ • B: $70 \leq \text{Score} < 80$ • C: $60 \leq \text{Score} < 70$ • D: $40 \leq \text{Score} < 60$ • E: $0 \leq \text{Score} < 40$
Media employed	Whiteboard, projector, textbooks, Mulawarman Integrated Learning (STAR)
Reading list	1. Averil M. Law & W. David Kelton (1991). Simulation Modeling and Analysis. Mc. Graw-Hill 2. B. D. Ripley. Stochastic Simulation. John Wiley & Sons, Ltd, 1987. 3. C. P. Robert and G. Casella. Monte Carlo Statistical Methods. Springer Texts in Statistics. Springer, second edition, 2004.



Module Handbook

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Operation Research

Title	Operation Research
Code, if applicable	210701603P026
Semester(s) in which the module is taught	4 th semester
Person responsible for the module	Ika Purnamasari, S.Si, M.Si Meiliyani Siringoringo, M. Si
Language	Indonesian
Relation to curriculum	Compulsory
Teaching methods	13. Lecture 14. Case Study 15. Classroom Discussion 16. Question and answer 17. Practice
Workload	For this course, students are required to meet a minimum of 136 hours in one semester, which consists of: - 150 minutes for lecture, - 180 minutes for structured assignments - 180 minutes for individual study
Credit points	3 credit points
Required and recommended prerequisites for joining the module	–



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Module objectives/intended learning outcomes	Intended Learning Outcomes: 9. Demonstrate an attitude of responsibility for work in his field of expertise, cooperation, and concern for the environment humid tropical forest (tropical rainforest) (PLO2) 10. Apply basic concepts and statistical methods in economics and business, computing and social, health and environmental fields based on natural resources. Natural Resources (SDA) Tropical Rain Forest (PLO4) 11. Apply statistical computing appropriate for data analysis (PLO5) 12. Able to apply appropriate and efficient data collection and management design (PLO6) 13. Able to analyze data using appropriate statistical methods and interpret the results in an informative form (PLO7) 14. Able to apply statistics in solving real problems, presenting, and communicating in writing and orally in the fields of economics-business, computing, social, health and the environment based on Natural Resources (SDA) Tropical Rain Forest (PLO 8) 15. Able to apply logical, critical, systematic and innovative thinking in the development and implementation of Science and Technology (IPTEK) in the field of statistics, make decisions appropriately in solving problems in the field of statistics by using scientific ethics and technology. using scientific ethics and humanities values (PLO9) 16. Able to compile scientific work in the field of statistics that is valid and prevent plagiarism (PLO11) Learning outcomes After studying this course, students are expected to have skills in linear programming, simplex method, transportation model, assignment method, queuing theory and network analysis and be able to use them to solve problems in everyday life. The presentation strategy of this course includes presentations, discussions, exercises, and assignments. The final assessment of student learning success in this course uses a benchmark reference approach (PAP) with assessment elements including attendance activities, structured assignments, quizzes, midterm exams, and final semester exams.
Content	1. Operations Research, Models in operations research. 2. Studying programming using the graph method (minimization and maximization cases) and solving them using the graph method. 3. Linear programming modeling using simplex method (minimization and maximization cases). 4. Transportation method using initial solution, Transportation method using optimal solution. 5. Minimization problem assignment method, Maximization problem assignment method, Unbalanced assignment method. 6. Decision theory method under uncertainty Decision theory method under risk.



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Examination forms	Individual assignment, Mid-term exam and final exam
Study and examination requirements	The grading components are distributed as follows: 30% Lectures Midterm Exam (UTS) 40% Lectures Final Exam (UAS) 10% Affective Assessment 20% Practicum The final course grades are assigned as follows: A: $80 \leq \text{Score} \leq 100$ B: $70 \leq \text{Score} < 80$ C: $60 \leq \text{Score} < 70$ D: $40 \leq \text{Score} < 60$ E: $0 \leq \text{Score} < 40$
Media employed	Whiteboard, projector, textbooks, Mulawarman Integrated Learning (STAR)
Reading list	- John W. Foreman. Data Smart, Using Data Science to Transform Information into Insight. Wiley. 2014. - Murtaza Haider. Getting Started with Data Science, Making Sense of Data with Analytics. IBM Press. 2015. - Program Data Science. Pengantar Data Science dan Aplikasinya bagi Pemula. Unpar Press. 2020..



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Biostatistics

Title	Biostatistics
Code, if applicable	210701603P027
Semester(s) in which the module is taught	4 th semester
Person responsible for the module	Dr. Darnah, S.Si., M.Si. Memi Nor Hayati, S.Si., M.Si
Language	Indonesian
Relation to curriculum	Compulsory
Teaching methods	5. Lecture 6. Classroom Discussion 7. Question and answer 8. Assignment
Workload	For this course, students are required to meet a minimum of 136 hours in one semester, which consists of: - 150 minutes for lecture, - 180 minutes for structured assignments - 180 minutes for individual study
Credit points	3 credit points
Required and recommended prerequisites for joining the module	–



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Module objectives/intended learning outcomes	Intended Learning Outcomes: 1. Demonstrate an attitude of responsibility for work in his field of expertise, cooperation, and concern for the environment humid tropical forest (tropical rainforest) (PLO2) 2. Apply basic concepts and statistical methods in economics and business, computing and social, health and environmental fields based on natural resources. Natural Resources (SDA) Tropical Rain Forest (PLO4) 3. Apply statistical computing appropriate for data analysis (PLO5) 4. Able to apply appropriate and efficient data collection and management design (PLO6) 5. Able to analyze data using appropriate statistical methods and interpret the results in an informative form (PLO7) 6. Able to apply statistics in solving real problems, presenting, and communicating in writing and orally in the fields of economics-business, computing, social, health and the environment based on Natural Resources (SDA) Tropical Rain Forest (PLO 8) 7. Able to apply logical, critical, systematic and innovative thinking in the development and implementation of Science and Technology (IPTEK) in the field of statistics, make decisions appropriately in solving problems in the field of statistics by using scientific ethics and technology. using scientific ethics and humanities values (PLO9) 8. Able to compile scientific work in the field of statistics that is valid and prevent plagiarism (PLO11) Learning outcomes Students are able to use theoretical and procedural concepts in the field of research methodology so that students have competencies (1) cognitive, namely understanding and distinguishing various research methods in the field of biostatistics, (2) psychomotor, namely using software to solve problems in the field of biostatistics, (3) affective, namely avoiding ways that are not commendable in research, for example plagiarism.
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Content	8. Introduction to biostatistics, Data and descriptive studies. 9. Sample space and events, Basic concepts of probability, Proportion. 10. Discrete probability distribution methodology is binomial and Poisson distribution probability, continuous probability distribution is normal distribution probability. 11. One sample mean difference test objective, One sample mean difference test hypothesis testing, Two dependent samples mean difference test objective, Two dependent samples mean difference test hypothesis testing, Two independent samples mean difference test objective, Two independent samples mean difference test hypothesis testing. 12. One-way analysis of variance, Two-way analysis of variance. 13. Pearson product moment correlation hypothesis testing. 14. Simple linear regression analysis and its assumptions, Multiple linear regression analysis and its assumptions, Multiple linear regression analysis with dummy variables. 15. Chi-square test hypothesis testing, Sign test hypothesis testing, Wilcoxon rank-sign test hypothesis testing, Mann-Whitney test hypothesis testing, Kruskal-Wallis rank-based one-way analysis of variance hypothesis testing, Friedman rank-based two-way analysis of variance hypothesis testing. 16. Spearman rank correlation hypothesis testing.
Examination forms	Individual assignment, Mid-term exam and final exam
Study and examination requirements	The grading components are distributed as follows: 30% Lectures Midterm Exam (UTS) 40% Lectures Final Exam (UAS) 10% Affective Assessment 20% Practicum The final course grades are assigned as follows: A: $80 \leq \text{Score} \leq 100$ B: $70 \leq \text{Score} < 80$ C: $60 \leq \text{Score} < 70$ D: $40 \leq \text{Score} < 60$ E: $0 \leq \text{Score} < 40$
Media employed	Whiteboard, projector, textbooks, Mulawarman Integrated Learning (STAR)



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Reading list	1. Daniel, Wayne W. (1989). Statistik Nonparametrik Terapan. PT. Gramedia Pustaka Utama : Jakarta. 2. Kim, Jay S., and Dailey, Ronald J. (2008). Biostatistics for Oral Healthcare. Blackwell Munksgaard 3. Nohe, Darnah Andi. (2013). Biostatistika 1. Halaman Moeka : Jakarta Barat. 4. Sudjana. (2005). Metode Statitik. Tarsito : Bandung. 5. Walpole, Ronald E. (2006). Pengantar Statistika. Edisi ke-3. PT. Gramedia Pustaka Utama : Jakarta
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Quality Control Statistics

Title	Quality Control Statistics
Code, if applicable	210701603P028
Semester(s) in which the module is taught	4 th semester
Person responsible for the module	Dr. Sri Wahyuningsih, M.Si. Meiliyani Siringoringo, M.Si.
Language	Indonesian
Relation to curriculum	Compulsory
Teaching methods	11. Lecture 12. Assignment 13. Classroom Discussion 14. Question and answer 15. Case study
Workload	For this course, students are required to meet a minimum of 90,67 hours in one semester, which consists of: - 100 minutes for lecture, - 120 minutes for structured assignments - 120 minutes for individual study
Credit points	2 credit points
Required and recommended prerequisites for joining the module	–



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Module objectives/intended learning outcomes	Intended Learning Outcomes: 1. Demonstrate an attitude of responsibility for work in his field of expertise, cooperation, and concern for the environment humid tropical forest (tropical rainforest) (PLO2) 2. Apply basic concepts and statistical methods in economics and business, computing and social, health and environmental fields based on natural resources. Natural Resources (SDA) Tropical Rain Forest (PLO4) 3. Apply statistical computing appropriate for data analysis (PLO5) 4. Able to analyze data using appropriate statistical methods and interpret the results in an informative form (PLO7) 5. Able to apply statistics in solving real problems, presenting, and communicating in writing and orally in the fields of economics-business, computing, social, health and the environment based on Natural Resources (SDA) Tropical Rain Forest (PLO 8) 6. Able to apply logical, critical, systematic and innovative thinking in the development and implementation of Science and Technology (IPTEK) in the field of statistics, make decisions appropriately in solving problems in the field of statistics by using scientific ethics and technology. using scientific ethics and humanities values (PLO9) 7. Able to compile scientific work in the field of statistics that is valid and prevent plagiarism (PLO11) Learning outcomes Students master the basic concepts of statistical quality control so that students have competencies (1) cognitive, namely understanding quality assurance, process quality modeling, inference about process quality, sampling statistics and distribution, parameter estimation and hypothesis testing, statistical basis of control charts, analysis of control charts and their application, attribute control charts, nonconformity control charts, variable control charts, $\bar{x}$ and R controller charts, $\bar{x}$ and S controller charts, guidelines for implementing controller charts, Cusum controller charts, MA controller charts, EWMA controller charts, multivariate processes, EWMA multivariate controller charts (2) psychomotor, namely choosing and carrying out research steps according to the topic or problem of the final project they choose, (3) affective, namely avoiding ways that are not commendable in research, for example plagiarism.
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Content	13. Definition of quality assurance from both cost and methods, Describing the variation of some discrete and continuous distributions and approximation distributions. 14. Statistics and sampling distribution, parameter estimation, hypothesis testing. 15. Quality variability, statistical basis of control charts, analysis of control charts, application of control charts. 16. Attribute (nonconforming) control charts p and np, nonconforming control charts c and u, Variable control charts x and R, x and S, selection of control charts, properties of variable control charts, Guideline for implementing control charts. 17. CUSUM control chart and its application. 18. MA controller chart, application of MA controller chart, determination of controlled or uncontrolled. 19. EWMA controller charts and parameter selection, Application of EWMA controller charts. 20. Hotteling concept, EWMA multivariate control chart.
Examination forms	Individual assignment, Mid-term exam and final exam
Study and examination requirements	The grading components are distributed as follows: 45% Lectures Midterm Exam (UTS) 45% Lectures Final Exam (UAS) 10% Affective Assessment The final course grades are assigned as follows: A: $80 \leq \text{Score} \leq 100$ B: $70 \leq \text{Score} < 80$ C: $60 \leq \text{Score} < 70$ D: $40 \leq \text{Score} < 60$ E: $0 \leq \text{Score} < 40$
Media employed	Whiteboard, projector, textbooks, Mulawarman Integrated Learning (STAR)
Reading list	- Grant, E.L. 1998. Statistical Quality Control. Prentice Hal, New York. - Gupta, R.C. 1981. Statistical Quality Control. Romesh Chander Khana Pub. - Montgomery, D.C. 2009. Introduction to Statistical Quality Control Sixth Edition. John Wiley and Sons Inc. New York.



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Real Analysis

Title	Real Analysis
Code, if applicable	210701603P029
Semester(s) in which the module is taught	4 th semester
Person responsible for the module	Dr. Darnah Andi Nohe, S.Si, M.Si Rito Goejantoro, S. Si, M. Si
Language	Indonesian
Relation to curriculum	Compulsory
Teaching methods	7. Lecture 8. Assignment 9. Question and answer
Workload	For this course, students are required to meet a minimum of 136 hours in one semester, which consists of: - 150 minutes for lecture, - 180 minutes for structured assignments - 180 minutes for individual study
Credit points	3 credit points
Required and recommended prerequisites for joining the module	–



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Module objectives/intended learning outcomes	Intended Learning Outcomes: 1. Demonstrate an attitude of responsibility for work in his field of expertise, cooperation, and concern for the environment humid tropical forest (tropical rainforest) (PLO2) 2. Apply basic concepts and statistical methods in economics and business, computing and social, health and environmental fields based on natural resources. Natural Resources (SDA) Tropical Rain Forest (PLO4) 3. Apply statistical computing appropriate for data analysis (PLO5) 4. Able to analyze data using appropriate statistical methods and interpret the results in an informative form (PLO7) 5. Able to apply logical, critical, systematic and innovative thinking in the development and implementation of Science and Technology (IPTEK) in the field of statistics, make decisions appropriately in solving problems in the field of statistics by using scientific ethics and technology. using scientific ethics and humanities values (PLO9) 6. Able to compile scientific work in the field of statistics that is valid and prevent plagiarism (PLO11) Learning outcomes Students are able to use the theoretical concepts of real analysis so that students have competencies (1) cognitive, namely understanding the concept of real analysis (2) psychomotor, namely being able to explain concepts in real analysis, (3) affective, namely being able to solve problems using the concept of real analysis properly and responsibly.
Content	19. Axiom of field of Real numbers, Axiom of order of Real numbers, Absolute Price, Axiom of completeness of Real numbers, Use of completeness property of Real numbers, Interval. 20. Definition of Line, Line Limit, Line Limit Theorem, Monotone line, Part line and Bolzano-Weierstrass theorem, Cauchy's Criterion. 21. Continuous functions, Combination of continuous functions, Continuous functions on interval, Uniform continuity, Monotone functions. 22. Definition of derivative, Algebraic derivative of functions, First derivative test for extremes, L'Hospital's Rule. 23. Partitioning, Definition of Riemann Integral, Integral as limit sum, Integration and differentiation.
Examination forms	• Individual assignment, Mid-term exam and final exam



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Study and examination requirements	The grading components are distributed as follows: • 40% Lectures Midterm Exam (UTS) • 50% Lectures Final Exam (UAS) • 10% Affective Assessment The final course grades are assigned as follows: • A: $80 \leq \text{Score} \leq 100$ • B: $70 \leq \text{Score} < 80$ • C: $60 \leq \text{Score} < 70$ • D: $40 \leq \text{Score} < 60$ • E: $0 \leq \text{Score} < 40$
Media employed	Whiteboard, projector, textbooks, Mulawarman Integrated Learning (STAR)
Reading list	9. Apostol, T.M., 1957, Mathematical Analysis, Addison-Wesley Publishing Company, Inc., London. 10. Bartle, R.G., and Sherbert, D.R., 1927, Introduction to Real Analysis, John Wiley and Sons Inc., New York 11. Jain, P.K., and Gupta, V. P., 1986, Lebesgue Measure and Integration, Wiley Eastern Limited, New Delhi. 12. Malik, S.C., and Arora, Savita, 1992, Mathematical Analysis, John Wiley and Sons Inc., New York. 13. Parzynski, W.R., and Zipse, P.W., 1982, Introduction to Mathematical Analysis, McGraw-Hill Book Company, New York.



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Enviromental Statistics of Humid Tropical Forests

Title	Environmental Statistics of Humid Tropical Forests
Semester(s) in which the module is taught	4 th semester
Person responsible for the module	Memi Nor Hayati, S.Si., M.Si Meirinda Fauziyah, S.Si, M.Stat
Language	Indonesian
Relation to curriculum	Compulsory
Teaching methods	9. Lecture 10. Assignment 11. Question and answer 12. Class discussion
Workload	For this course, students are required to meet a minimum of 90,67 hours in one semester, which consists of: - 100 minutes for lecture, - 120 minutes for structured assignments - 120 minutes for individual study
Credit points	2 credit points
Required and recommended prerequisites for joining the module	–



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Module objectives/intended learning outcomes	Intended Learning Outcomes: 1. Demonstrate an attitude of responsibility for work in his field of expertise, cooperation, and concern for the environment humid tropical forest (tropical rainforest) (PLO2) 2. Apply basic concepts and statistical methods in economics and business, computing and social, health and environmental fields based on natural resources. Natural Resources (SDA) Tropical Rain Forest (PLO4) 3. Apply statistical computing appropriate for data analysis (PLO5) 4. Able to apply appropriate and efficient data collection and management design (PLO6) 5. Able to analyze data using appropriate statistical methods and interpret the results in an informative form (PLO7) 6. Able to apply statistics in solving real problems, presenting, and communicating in writing and orally in the fields of economics-business, computing, social, health and the environment based on Natural Resources (SDA) Tropical Rain Forest (PLO 8) 7. Able to apply logical, critical, systematic and innovative thinking in the development and implementation of Science and Technology (IPTEK) in the field of statistics, make decisions appropriately in solving problems in the field of statistics by using scientific ethics and technology. using scientific ethics and humanities values (PLO9) 8. Able to compile scientific work in the field of statistics that is valid and prevent plagiarism (PLO11) Learning outcomes Students are able to understand, process, and analyze data related to the Environmental field. Applying statistical methods, able to apply the use of statistics in the environmental field and master the concepts needed to analyze environmental problems and environmental management systems.
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Content	24. Basic concepts of environmental statistics including definition, purpose, and role. 25. Presentation of data in the form of diagrams, tables, graphs, histograms, bar charts, and leaves. 26. One-sample hypothesis test steps, Data analysis using one-sample hypothesis test. 27. Two-sample hypothesis test steps, Data analysis using two-sample hypothesis test. 28. Model equation in one-way analysis of variance, Hypothesis testing in one-way analysis of variance. 29. Model equation in two-way analysis of variance without interaction, Hypothesis testing in two-way analysis without interaction. 30. Correlation coefficient calculation, correlation testing. 31. Simple linear regression model, Interpretation of regression coefficients, Simple linear regression model equation, Testing the significance of simple linear regression parameters. 32. Multiple linear regression models, Interpretation of regression coefficients, Multiple linear regression model equations, Multiple linear regression parameter significance testing. 33. Definition, application, and types of spatial data, Spatial patterns, Moran's I, LISA. 34. One-sample non-parametric statistics (run test, sign test). 35. Two-sample nonparametric statistics (Mann whitney, wilcoxon).
Examination forms	Individual assignment, Mid-term exam and final exam
Study and examination requirements	The grading components are distributed as follows: 30% Lectures Midterm Exam (UTS) 40% Lectures Final Exam (UAS) 10% Affective Assessment 20% Practicum The final course grades are assigned as follows: A: $80 \leq \text{Score} \leq 100$ B: $70 \leq \text{Score} < 80$ C: $60 \leq \text{Score} < 70$ D: $40 \leq \text{Score} < 60$ E: $0 \leq \text{Score} < 40$
Media employed	Whiteboard, projector, textbooks, Mulawarman Integrated Learning (STAR)



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Reading list	5. Subagiyo, L., Herliani, Sudarman, dan Haryanto, Z. 2019. Literasi Hutan Tropis Lembab dan Lingkungannya Cetakan Pertama. Mulawarman University Press. Samarinda 6. Asra, Abuzar dan Sutomo, Slamet. 2014. Pengantar Statistika II Panduan Bagi Pengajar dan Mahasiswa Cetakan ke-1. Rajawali Press. Jakarta
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Introduction to Bayesian Methods

Title	Introduction to Bayesian Methods
Code, if applicable	210701603P017
Semester(s) in which the module is taught	4 th semester
Person responsible for the module	Rito Goejantoro, S.Si., M.Si. Andrea Tri Rian Dani, S.Stat, M.Stat
Language	Indonesian
Relation to curriculum	Compulsory
Teaching methods	10. Lecture 11. Assignment 12. Question and answer 13. Class discussion
Workload	For this course, students are required to meet a minimum of 136 hours in one semester, which consists of: - 150 minutes for lecture, - 180 minutes for structured assignments - 180 minutes for individual study
Credit points	3 credit points
Required and recommended prerequisites for joining the module	–



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Module objectives/intended learning outcomes	Intended Learning Outcomes: 8. Demonstrate an attitude of responsibility for work in his field of expertise, cooperation, and concern for the environment humid tropical forest (tropical rainforest) (PLO2) 9. Apply basic concepts and statistical methods in economics and business, computing and social, health and environmental fields based on natural resources. Natural Resources (SDA) Tropical Rain Forest (PLO4) 10. Apply statistical computing appropriate for data analysis (PLO5) 11. Able to analyze data using appropriate statistical methods and interpret the results in an informative form (PLO7) 12. Able to apply statistics in solving real problems, presenting, and communicating in writing and orally in the fields of economics-business, computing, social, health and the environment based on Natural Resources (SDA) Tropical Rain Forest (PLO 8) 13. Able to apply logical, critical, systematic and innovative thinking in the development and implementation of Science and Technology (IPTEK) in the field of statistics, make decisions appropriately in solving problems in the field of statistics by using scientific ethics and technology. using scientific ethics and humanities values (PLO9) 14. Able to compile scientific work in the field of statistics that is valid and prevent plagiarism (PLO11) Learning outcomes Students are able to master the basic concepts of the Bayesian method so that students have competencies: 1. cognitive, i.e. students are able to analyze with the Bayesian approach, able to perform data analysis, able to solve problems with mathematical and numerical approaches, able to explain and apply the concepts of mathematical statistics. 2. psychomotor, namely being able to apply scientific methods and carry out research steps in accordance with the topic or problem of the final project they choose, 3. affective, i.e. students have a logical way of thinking based on the rules of the scientific method and avoid ways that are not commendable in research, for example plagiarism.
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Content	1. Fundamentals of set theory Random experiments, Random variables, Chances and probability measures, Events (events) Chances of free and or conditional events and the concept of the Bayesian Theorem. 2. Discrete variables, Discrete probabilities, Continuous variables, Continuous probabilities. 3. Prior, Posterior, and Likelihood, Bayesian Inference for discrete variables, Bayesian Inference for continuous variables. 4. Prior, Posterior, and Likelihood continued, Distribution of the data. 5. Single parameter Bayes model. 6. Multiparameter Bayes Model. 7. Bayes regression analysis. 8. Gibbs Sampler in Bayes analysis.
Examination forms	• Individual assignment, Mid-term exam and final exam
Study and examination requirements	The grading components are distributed as follows: • 30% Lectures Midterm Exam (UTS) • 40% Lectures Final Exam (UAS) • 10% Affective Assessment • 20% Affective The final course grades are assigned as follows: • A: $80 \leq \text{Score} \leq 100$ • B: $70 \leq \text{Score} < 80$ • C: $60 \leq \text{Score} < 70$ • D: $40 \leq \text{Score} < 60$ • E: $0 \leq \text{Score} < 40$
Media employed	Whiteboard, projector, textbooks, Mulawarman Integrated Learning (STAR)
Reading list	11. Bolstad, W. M. (2017). Introduction to Bayesian Statistics. USA: John Wiley & Sons, Inc. 12. Winkler, R. I. (1972). An Introduction to Bayesian Inference and Decision. USA: Holt Rineheart and Winstin, Inc 13. Gelman, A., Carlin, J. B., Stern, H. S., Dunson, D. B., Vehtari, A., and Rubin, D. B. (2014). Bayesian Data Analysis. USA: A Chapman & Hall Book 14. Larsen, R. J., Marx. M. L. (2012). An Introduction to Mathematical Statistics and Its Applications. USA: Prentice Hall



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Multivariate Analysis

Title	Multivariate Analysis
Code, if applicable	210701603W031
Semester(s) in which the module is taught	5 st semester
Person responsible for the module	Rito Goejantoro, S.Si, M.Si & Memi Nor Hayati, S.Si, M.Si
Language	Indonesian
Relation to curriculum	Compulsory
Teaching methods	4. Lecture 5. Problem identification 6. Case Study
Workload	For this course, students are required to meet a minimum of 136 hours in one semester, which consists of: - 150 minutes for lectures, - 180 minutes for structured assignments - 180 minutes for individual study
Credit points	3 credit points (4,8 ECTS)
Required and recommended prerequisites for joining the module	–



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Module objectives/intended learning outcomes	Intended Learning Outcomes: 1. Demonstrate an attitude of responsibility for work in his field of expertise, cooperation, and concern for the environment humid tropical forest (tropical rainforest) (PLO2) 2. Applying basic concepts and statistical methods in the fields of economics and business, computing, and social, health and environmental fields that are based on Natural Resources (SDA) 3. Tropical Rain Forest (PLO4) 4. Applying appropriate statistical computations for data analysis (PLO5) 5. Able to analyze data using appropriate statistical methods with software and interpret the results in an informative form (PLO7) 6. Able to apply statistics in solving real problems, presenting and communicating in writing and orally in the fields of economics-business, computing, social, health and environment that are based on Natural Resources (SDA) of Tropical Rain Forest (PLO8) 7. Able to apply logical, critical, systematic and innovative thinking in the development and implementation of Science and Technology (IPTEK) in the field of statistics, making decisions appropriately in solving problems in the field of statistics by using scientific ethics and humanities values (PLO9) 8. Able to compile scientific work in the field of statistics that is valid and prevents plagiarism (PLO11) 9. Able to compile scientific work in the field of statistics that is valid and prevents plagiarism (PLO11) Learning outcomes Students master the basic concepts of multivariate analysis so that students have (1) cognitive competencies, namely understanding aspects of multivariate analysis: matrix algebra and random vectors, sampling geometry and random sides, multivariate normal distribution; inference about multivariate means and linear models: inference about mean vectors, comparison of several multivariate means, multiple linear regression models; covariance analysis structure: principal components, factor analysis; classification and grouping techniques: discrimination and classification, clustering, multidimensional scaling (2) psychomotor, namely choosing and implementing research steps according to the topic or problem of the final assignment they choose, (3) affective, namely avoiding dishonorable methods in research, such as plagiarism
Content	1. Matrix Algebra and Random Vectors for Data Processing 2. Sample Geometry and Random Sampling 3. Parameter Estimation, Measures of Central Tendency and Spread of Multivariate Normal Distribution 4. Multivariate Mean Inference 5. Multivariate Linear Regression Model 6. Principal Component Analysis 7. Factor Analysis 8. Classification and Clustering Techniques
Examination forms	• Individual assignment, Mid-term exam and Final Exam



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Study and examination requirements	The grading components are distributed as follows: • 30% Lectures Midterm Exam (UTS) • 40% Lectures Final Exam (UAS) • 20% Practical Work • 10% Affective Assessment The final course grades are assigned as follows: • A: $80 \leq \text{Score} \leq 100$ • B: $70 \leq \text{Score} < 80$ • C: $60 \leq \text{Score} < 70$ • D: $40 \leq \text{Score} < 60$ • E: $0 \leq \text{Score} < 40$
Media employed	Whiteboard, projector, textbooks, Mulawarman Integrated Learning (STAR)
Reading list	1. Johnson and Wichern, 1982. Applied Multivariate Statistical Analysis. Prentice Hall. 2. Sharma, Subash, 1996. Applied Multivariate Technique. John Wiley and Sons Inc. New York 3. Chatfield and Collins, 1980. Introduction to Multivariate Analysis. Chapman and Hall 4. Lebart, Morinev and Warwick. 1984. Multivariate Descriptive Statistical Analysis, Correspondence Analysis and Related Techniques for Large Matrices. Wiley.



Module Handbook

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Module Description

Title	Categorical Data Analysis
Code, if applicable	210701603W032
Semester(s) in which the module is taught	5 st semester
Person responsible for the module	Dr. Darnah, S.Si., M. Si. & Dr. M. Fathurahman, S.Si., M.Si
Language	Indonesian
Relation to curriculum	Compulsory
Teaching methods	1. Lecture 2. Problem identification 3. Case Study
Workload	For this course, students are required to meet a minimum of 136 hours in one semester, which consists of: - 150 minutes for lectures, - 180 minutes for structured assignments - 180 minutes for individual study
Credit points	3 credit points (4,8 ECTS)
Required and recommended prerequisites for joining the module	-



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Module objectives/intended learning outcomes	Intended Learning Outcomes: 1. Demonstrate an attitude of responsibility for work in his field of expertise, cooperation, and concern for the environment humid tropical forest (tropical rainforest) (PLO2) 2. Applying basic concepts and statistical methods in the fields of economics and business, computing, and social, health and environmental fields that are based on Natural Resources (SDA) 3. Tropical Rain Forest (PLO4) 4. Applying appropriate statistical computations for data analysis (PLO5) 5. Able to analyze data using appropriate statistical methods with software and interpret the results in an informative form (PLO7) 6. Able to apply statistics in solving real problems, presenting and communicating in writing and orally in the fields of economics-business, computing, social, health and environment that are based on Natural Resources (SDA) of Tropical Rain Forest (PLO8) 7. Able to compile scientific work in the field of statistics that is valid and prevents plagiarism (PLO11) Learning outcomes Students master the basic concepts of multivariate analysis so that students have (1) cognitive competencies, namely understanding aspects of multivariate analysis: matrix algebra and random vectors, sampling geometry and random sides, multivariate normal distribution; inference about multivariate means and linear models: inference about mean vectors, comparison of several multivariate means, multiple linear regression models; covariance analysis structure: principal components, factor analysis; classification and grouping techniques: discrimination and classification, clustering, multidimensional scaling (2) psychomotor, namely choosing and implementing research steps according to the topic or problem of the final assignment they choose, (3) affective, namely avoiding dishonorable methods in research, such as plagiarism
Content	1. Discrete Distribution and Data Categories 2. 2x2 Contingency Table, Odds Ratio and Relative Risk for 2x2 Contingency Table 3. Fisher's Exact and Yates' Test 4. b x k Contingency Table and Independence Test 5. Cross Sectional Research Design, Retrospective and Prospective Research 6. Two Dimensional Log Linear Model, Goodness of Fit Test and Selection of Two Dimensional Log Linear Model 7. Three Dimensional Log Linear Model, Goodness of Fit Test and Selection of Three Dimensional Log Linear Model 8. Multinomial Logistic and Ordinal Logistic Regression Analysis
Examination forms	• Individual Assignment, Mid-term exam and Final Exam



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Study and examination requirements	The grading components are distributed as follows: • 30% Lectures Midterm Exam (UTS) • 40% Lectures Final Exam (UAS) • 20% Practical Work • 10% Affective Assessment The final course grades are assigned as follows: • A: $80 \leq \text{Score} \leq 100$ • B: $70 \leq \text{Score} < 80$ • C: $60 \leq \text{Score} < 70$ • D: $40 \leq \text{Score} < 60$ • E: $0 \leq \text{Score} < 40$
Media employed	Whiteboard, projector, textbooks, Mulawarman Integrated Learning (STAR)
Reading list	1. Agresti, Alan. 2002. Categorical Data Analysis. USA: John Wiley & Sons, Inc. 2. Christensen, Ronald. 1997. Log-Linier Models and Logistic Regression. New York: Springer 3. Hosmer, David W., and Lemeshow, Stanley. 2000. Applied Logistic Regression. USA: John Wiley & Sons, Inc. 4. Le, Chap T. 1998. Applied Categorical Data Analysis. USA: John Wiley & Sons, Inc.



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Research Method

Title	Research Method
Code, if applicable	210701602W033
Semester(s) in which the module is taught	5 st semester
Person responsible for the module	Dr. Suyitno, S.Pd, M.Sc & Dr. Sifriyani, S.Pd, M.Si
Language	Indonesian
Relation to curriculum	Compulsory
Teaching methods	1. Lecture 2. Problem identification 3. Case Study
Workload	For this course, students are required to meet a minimum of 90,67 hours in one semester, which consists of: - 100 minutes for lectures, - 120 minutes for structured assignments - 120 minutes for individual study
Credit points	2 credits (3,2 ECTS)
Required and recommended prerequisites for joining the module	–



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Module objectives/intended learning outcomes	Intended Learning Outcomes: 1. Demonstrate an attitude of responsibility for work in his field of expertise, cooperation, and concern for the environment humid tropical forest (tropical rainforest) (PLO2) 2. Demonstrate an attitude of law-abiding, disciplined and academic ethics as well as a spirit of independence, struggle, and entrepreneurship in community and national life (PLO3) 3. Able to implement appropriate and efficient data collection and management designs (PLO6) 4. Able to apply logical, critical, systematic and innovative thinking in the development and implementation of Science and Technology (IPTEK) in the field of statistics, making decisions appropriately in solving problems in the field of statistics by using scientific ethics and humanities values (PLO9) 5. Able to demonstrate independent and group performance and be responsible for the achievement of work results and be able to supervise and evaluate work that is under his/her responsibility (PLO10) 6. Able to compile scientific work in the field of statistics that is valid and prevents plagiarism (PLO11) Learning outcomes Students are able to use theoretical and procedural concepts of research methodology so that students have the following competencies: (1) cognitive, namely understanding and being able to differentiate between various research methods in the field of statistics, (2) psychomotor, namely being able to apply scientific methods and carry out research steps in accordance with the topic or problem of the final assignment they choose, (3) affective, namely having a logical way of thinking based on the rules of the scientific method and avoiding inappropriate methods in research, such as plagiarism.
Content	1. Basic Concepts of Research 2. Types of Research 3. Formulating Research Problems, Literature Review and Relevant Research Results 4. Research Variables and Their Measurement 5. Research Design 6. Research Population and Sample 7. Developing Research Instruments 8. Analyzing Research Data Using Appropriate Techniques 9. Drafting Proposals According to the Choice of Research Type
Examination forms	• Individual Assignment, Mid-term exam and Final Exam



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Study and examination requirements	The grading components are distributed as follows: • 15% Lectures Midterm Exam (UTS) • 25% Lectures Final Exam (UAS) • 10% Reviewing Appropriate Thesis • 40% Preparing (Pre) Research Proposal • 10% Presenting (Pre) Research Proposal The final course grades are assigned as follows: • A: $80 \leq \text{Score} \leq 100$ • B: $70 \leq \text{Score} < 80$ • C: $60 \leq \text{Score} < 70$ • D: $40 \leq \text{Score} < 60$ • E: $0 \leq \text{Score} < 40$
Media employed	Whiteboard, projector, textbooks, Mulawarman Integrated Learning (STAR)
Reading list	1. Muri Yusuf, A. (2014). Research Methods. Jakarta: Prenadamedia Group.r. 2. Sugiyono. (2009). Statistics for Research. Bandung: Alfabeta. 3. Sugiyono. (2009). Quantitative, Qualitative and R&D Research. Bandung: Alfabeta. 4. Creswell, J. W. (2013). Qualitative inquiry & research design: Choosing among five approaches. Los Angeles: SAGE Publications 5. Creswell, J. W. (2003). Research design: Qualitative, quantitative, and mixed method approaches. Thousand Oaks, Calif: Sage Publications.



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Time Series Analysis I

Title	Time Series Analysis I
Code, if applicable	210701603W034
Semester(s) in which the module is taught	5 st semester
Person responsible for the module	Dr. Sri Wahyuningsih, M.Si. & Meiliyan Siringoringo, S.Si, M.Si.
Language	Indonesian
Relation to curriculum	Compulsory
Teaching methods	1. Lecture 2. Problem identification 3. Case Study
Workload	For this course, students are required to meet a minimum of 136 hours in one semester, which consists of: - 150 minutes for lectures, - 180 minutes for structured assignments - 180 minutes for individual study
Credit points	3 credit points (4,8 ECTS)
Required and recommended prerequisites for joining the module	–



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Module objectives/intended learning outcomes	Intended Learning Outcomes: 1. Demonstrate an attitude of responsibility for work in his field of expertise, cooperation, and concern for the environment humid tropical forest (tropical rainforest) (PLO2) 2. Applying basic concepts and statistical methods in the fields of economics and business, computing, and social, health and environmental fields that are based on Natural Resources (SDA) 3. Tropical Rain Forest (PLO4) 4. Applying appropriate statistical computations for data analysis (PLO5) 5. Able to analyze data using appropriate statistical methods with software and interpret the results in an informative form (PLO7) 6. Able to apply statistics in solving real problems, presenting and communicating in writing and orally in the fields of economics-business, computing, social, health and environment that are based on Natural Resources (SDA) of Tropical Rain Forest (PLO8) 7. Able to apply logical, critical, systematic and innovative thinking in the development and implementation of Science and Technology (IPTEK) in the field of statistics, making decisions appropriately in solving problems in the field of statistics by using scientific ethics and humanities values (PLO9) 8. Able to compile scientific work in the field of statistics that is valid and prevents plagiarism (PLO11) Learning outcomes Students master the basic concepts of time series analysis so that students have (1) cognitive competencies, namely understanding time series data, basic concepts of stochastic processes, deterministic models, moving average smoothing methods, exponential smoothing, decomposition, stationary stochastic models ARMA (p, q), non-stationary stochastic models ARIMA (p, d, q), model parameter estimation, model testing, forecasting, and seasonal stochastic models SARIMA (p, d, q) (P, D, Q) S (2) psychomotor, namely choosing and implementing research steps according to the topic or problem of the final assignment they choose, (3) affective, namely avoiding inappropriate methods in research, such as plagiarism
Content	1. Time Series Data, Basic Concept of Stochastic Process, Autocovariance Function, Autocorrelation, Strong Stationary, Weak Stationary 2. Deterministic Model, Stationary and Non-Stationary Stochastic Model 3. Stochastic Model Parameter Estimation 4. Stochastic Model Testing and Forecasting 5. Seasonal Stochastic Model
Examination forms	• Individual Assignment, Mid-term exam and Final Exam



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Study and examination requirements	The grading components are distributed as follows: • 30% Lectures Midterm Exam (UTS) • 40% Lectures Final Exam (UAS) • 20% Practicum • 10% Affective Assessment The final course grades are assigned as follows: • A: $80 \leq \text{Score} \leq 100$ • B: $70 \leq \text{Score} < 80$ • C: $60 \leq \text{Score} < 70$ • D: $40 \leq \text{Score} < 60$ • E: $0 \leq \text{Score} < 40$
Media employed	Whiteboard, projector, textbooks, Mulawarman Integrated Learning (STAR)
Reading list	1. Box, G.E.P. and Jenkins, G.M, 1976. Time Series Analysis Forecasting and Control, Holden Day, San Francisco. 2. Cryer, J.D and SikChan, K, 2008. Time Series Analysis with Application in R, Springer, Iowa. 3. Makridakis, Wheelwright and Hydiman, 2008. Forecasting Methods and Application. John wiley and Sons. 4. Wei, W.S. 2006. Time Series Analysis Univariate and Multivariate Method second Edition. Pearson Addison. New York



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Spatial Statistics

Title	Spatial statistics
Code, if applicable	210701603P035
Semester(s) in which the module is taught	5 st semester
Person responsible for the module	Dr. Sifriyani, S.Pd., M.Si & Dr. Suyitno, S. Pd, M. Sc
Language	Indonesian
Relation to curriculum	Elective
Teaching methods	1. Lecture 2. Case Study
Workload	For this course, students are required to meet a minimum of 136 hours in one semester, which consists of: - 150 minutes for lectures, - 180 minutes for structured assignments - 180 minutes for individual study
Credit points	3 credit points (4,8 ECTS)
Required and recommended prerequisites for joining the module	–



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Module objectives/intended learning outcomes	Intended Learning Outcomes: 1. Demonstrate an attitude of responsibility for work in his field of expertise, cooperation, and concern for the environment humid tropical forest (tropical rainforest) (PLO2) 2. Applying basic concepts and statistical methods in the fields of economics and business, computing, and social, health and environmental fields that are based on Natural Resources (SDA) 3. Tropical Rain Forest (PLO4) 4. Applying appropriate statistical computations for data analysis (PLO5) 5. Able to analyze data using appropriate statistical methods with software and interpret the results in an informative form (PLO7) 6. Able to apply statistics in solving real problems, presenting and communicating in writing and orally in the fields of economics-business, computing, social, health and environment that are based on Natural Resources (SDA) of Tropical Rain Forest (PLO8) 7. Able to apply logical, critical, systematic and innovative thinking in the development and implementation of Science and Technology (IPTEK) in the field of statistics, making decisions appropriately in solving problems in the field of statistics by using scientific ethics and humanities values (PLO9) 8. Able to compile scientific work in the field of statistics that is valid and prevents plagiarism (PLO11) Learning outcomes Students are able to use theoretical and procedural concepts of spatial statistics so that students have the following competencies: (1) cognitive, namely understanding and differentiating various spatial statistical analysis methods; (2) psychomotor, namely selecting and implementing spatial statistical analysis methods that are appropriate to the data or problems at hand; (3) affective, namely being able to complete data analysis related to existing problems properly and responsibly
Content	1. Basic Concepts of Spatial Statistics, Spatial Data Structures and Spatial Data Collection Processes, Spatial Patterns 2. Spatial Autocorrelation Analysis with Moran's I and Geary's 3. Local Autocorrelation Analysis with Local Indicator Spatial Autocorrelation (LISA) 4. Interpolating Data and Testing Spatial Dependency 5. Modeling Spatial Data with Cross, SAR, SEM Methods 6. Modeling Point-Based Spatial Data with GWR, GWPR, MGWR Models
Examination forms	• Individual Assignment, Mid-term exam and Final Exam



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Study and examination requirements	The grading components are distributed as follows: • 30% Lectures Midterm Exam (UTS) • 40% Lectures Final Exam (UAS) • 20% Practicum • 10% Affective Assessment The final course grades are assigned as follows: • A: $80 \leq \text{Score} \leq 100$ • B: $70 \leq \text{Score} < 80$ • C: $60 \leq \text{Score} < 70$ • D: $40 \leq \text{Score} < 60$ • E: $0 \leq \text{Score} < 40$
Media employed	Whiteboard, projector, textbooks, Mulawarman Integrated Learning (STAR)
Reading list	1. Anselin, L. (1995). Local Indicator of Spatial Association-LISA, Geographical Analysis. Ohio State University Press 2. Fotheringham, A.S., Brundson, C., dan Charlton, M. 2002. Geographically Weighted Regression: the analysis of spatially varying relationships. John Wiley & Sons Ltd, England. 3. Isaaks EH, Srivastava RH. 1989. Applied Geostatistics. Oxford University Press. 4. Lee, J. and Wong, D.W.S. (2001). Statistical Analysis with ArcviewGIS. United States of America: John Wiley & Sons, Inc.



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Introduction to Stochastic Process

Title	Introduction to Stochastic Process
Code, if applicable	210701602P036
Semester(s) in which the module is taught	5 st semester
Person responsible for the module	Dr. Suyitno, S. Pd, M. Sc & Dr. Sri Wahyuningsih, M.Si
Language	Indonesian
Relation to curriculum	Elective
Teaching methods	1. Lecture 2. Case Study
Workload	For this course, students are required to meet a minimum of 90,67 hours in one semester, which consists of: - 100 minutes for lectures, - 120 minutes for structured assignments - 120 minutes for individual study
Credit points	2 credits (3,2 ECTS)
Required and recommended prerequisites for joining the module	–



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Module objectives/intended learning outcomes	Intended Learning Outcomes: 1. Demonstrate an attitude of responsibility for work in his field of expertise, cooperation, and concern for the environment humid tropical forest (tropical rainforest) (PLO2) 2. Applying basic concepts and statistical methods in the fields of economics and business, computing, and social, health and environmental fields that are based on Natural Resources (SDA) 3. Tropical Rain Forest (PLO4) 4. Able to implement appropriate and efficient data collection and management designs (PLO6) 5. Able to analyze data using appropriate statistical methods with software and interpret the results in an informative form (PLO7) 6. Able to apply statistics in solving real problems, presenting and communicating in writing and orally in the fields of economics-business, computing, social, health and environment that are based on Natural Resources (SDA) of Tropical Rain Forest (PLO8) 7. Able to apply logical, critical, systematic and innovative thinking in the development and implementation of Science and Technology (IPTEK) in the field of statistics, making decisions appropriately in solving problems in the field of statistics by using scientific ethics and humanities values (PLO9) 8. Able to demonstrate independent and group performance and be responsible for the achievement of work results and be able to supervise and evaluate work that is under his/her responsibility (PLO10) 1. Able to compile scientific work in the field of statistics that is valid and prevents plagiarism (PLO11) Learning outcomes Students are able to use the theoretical concept of stochastic processes so that students have cognitive competence, namely understanding and applying the concept of stochastic processes in improving the ability to solve problems in life and affective, namely avoiding inappropriate ways in applying the concept of stochastic processes.
Content	1. Probability Theory, Special Discrete and Continuous Probability Distributions 2. Calculating Moments and Expectations 3. Introduction to Stochastic and Poisson Processes 4. Discrete and Continuous Markov Chains 5. Renewal Processes and Brownian Motion
Examination forms	• Individual Assignment, Mid-term exam and Final Exam



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Study and examination requirements	The grading components are distributed as follows: • 45% Lectures Midterm Exam (UTS) • 45% Lectures Final Exam (UAS) • 10% Affective Assessment The final course grades are assigned as follows: • A: $80 \leq \text{Score} \leq 100$ • B: $70 \leq \text{Score} < 80$ • C: $60 \leq \text{Score} < 70$ • D: $40 \leq \text{Score} < 60$ • E: $0 \leq \text{Score} < 40$
Media employed	Whiteboard, projector, textbooks, Mulawarman Integrated Learning (STAR)
Reading list	1. Ross, Sheldon. 1996. Stochastic Processes, 2nd ed. USA: John Wiley & Sons. 2. Taylor and Karlin. 1998. An Introduction to Stochastic Modelling, 3rd ed. Academic Press.



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Visual Programming

Title	Visual Programming
Code, if applicable	210701603P037
Semester(s) in which the module is taught	5 st semester
Person responsible for the module	Surya Prangga, M.Si
Language	Indonesian
Relation to curriculum	Elective
Teaching methods	1. Lecture 2. Case Study
Workload	For this course, students are required to meet a minimum of 136 hours in one semester, which consists of: - 150 minutes for lectures, - 180 minutes for structured assignments - 180 minutes for individual study
Credit points	3 credit points (4,8 ECTS)
Required and recommended prerequisites for joining the module	–



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Module objectives/intended learning outcomes	Intended Learning Outcomes: 1. Demonstrate an attitude of responsibility for work in his field of expertise, cooperation, and concern for the environment humid tropical forest (tropical rainforest) (PLO2) 2. Applying basic concepts and statistical methods in the fields of economics and business, computing, and social, health and environmental fields that are based on Natural Resources (SDA) 3. Tropical Rain Forest (PLO4) 4. Applying appropriate statistical computations for data analysis (PLO5) 5. Able to implement appropriate and efficient data collection and management designs (PLO6) 6. Able to analyze data using appropriate statistical methods with software and interpret the results in an informative form (PLO7) 7. Able to apply statistics in solving real problems, presenting and communicating in writing and orally in the fields of economics-business, computing, social, health and environment that are based on Natural Resources (SDA) of Tropical Rain Forest (PLO8) 8. Able to apply logical, critical, systematic and innovative thinking in the development and implementation of Science and Technology (IPTEK) in the field of statistics, making decisions appropriately in solving problems in the field of statistics by using scientific ethics and humanities values (PLO9) 9. Able to compile scientific work in the field of statistics that is valid and prevents plagiarism (PLO11) Learning outcomes Students are able to use theoretical and procedural concepts in the field of Visual Programming so that students have (1) cognitive competencies, namely understanding various Visual Programming in the field of research, (2) psychomotor, namely the skills of using software in carrying out Visual Programming, (3) affective, namely avoiding inappropriate methods in Visual Programming.
Content	1. Introduction to Basic and Structured Programming 2. Graphical User Interface (Gui) Process 3. Application Creation, Database Applications and Structured Query Language (Sql) 4. Data Search, Filter, Data Range and Data Manipulation 5. Sales Transaction Form Application 6. Quick Report
Examination forms	• Individual Assignment, Mid-term exam and Final Exam



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Study and examination requirements	The grading components are distributed as follows: • 35% Lectures Midterm Exam (UTS) • 40% Lectures Final Exam (UAS) • 10% Practicum • 5% Task • 10% Affective Assessment The final course grades are assigned as follows: • A: $80 \leq \text{Score} \leq 100$ • B: $70 \leq \text{Score} < 80$ • C: $60 \leq \text{Score} < 70$ • D: $40 \leq \text{Score} < 60$ • E: $0 \leq \text{Score} < 40$
Media employed	Whiteboard, projector, textbooks, Mulawarman Integrated Learning (STAR)
Reading list	1. http://wiki.lazarus.freepascal.org 2. Motaz Abdel Azeem. 2013. Start Programming Using Object Pascal



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Introduction to Nonparametric Regression

Title	Introduction to Nonparametric Regression
Code, if applicable	210701603P038
Semester(s) in which the module is taught	5 st semester
Person responsible for the module	Andrea Tri Rian Dani, S.Stat, M.Stat & Dr. Sifriyani, S.Pd, M.Si
Language	Indonesian
Relation to curriculum	Elective
Teaching methods	1. Lecture 2. Case Study 3. Classroom Discussion
Workload	For this course, students are required to meet a minimum of 136 hours in one semester, which consists of: - 150 minutes for lectures, - 180 minutes for structured assignments - 180 minutes for individual study
Credit points	3 credit points (4,8 ECTS)
Required and recommended prerequisites for joining the module	–



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Module objectives/intended learning outcomes	Intended Learning Outcomes: 1. Demonstrate an attitude of responsibility for work in his field of expertise, cooperation, and concern for the environment humid tropical forest (tropical rainforest) (PLO2) 2. Applying basic concepts and statistical methods in the fields of economics and business, computing, and social, health and environmental fields that are based on Natural Resources (SDA) 3. Tropical Rain Forest (PLO4) 4. Applying appropriate statistical computations for data analysis (PLO5) 5. Able to analyze data using appropriate statistical methods with software and interpret the results in an informative form (PLO7) 6. Able to apply statistics in solving real problems, presenting and communicating in writing and orally in the fields of economics-business, computing, social, health and environment that are based on Natural Resources (SDA) of Tropical Rain Forest (PLO8) 7. Able to apply logical, critical, systematic and innovative thinking in the development and implementation of Science and Technology (IPTEK) in the field of statistics, making decisions appropriately in solving problems in the field of statistics by using scientific ethics and humanities values (PLO9) 8. Able to compile scientific work in the field of statistics that is valid and prevents plagiarism (PLO11) Learning outcomes Students are able to master the basic concepts of nonparametric regression so that students have the following competencies: (1) cognitive, namely students are able to understand the basic concepts of nonparametric regression. Students are able to distinguish between the concepts of parametric and nonparametric regression, and also semiparametric. Students are able to estimate regression curves with truncated spline estimators and know the properties of truncated spline estimators. Students are able to estimate regression curves with truncated polynomial spline estimators. Students are able to estimate regression curves with Fourier series estimators and know the properties of Fourier series estimators. Students are able to understand the basic concepts of smoothing parameters (knot points, oscillations, bandwidth) in nonparametric regression. Students are able to model various data pattern relationships using a nonparametric regression approach. (2) psychomotor, namely being able to apply scientific methods and carry out research steps in accordance with the topic or problem of the final assignment that they choose, (3) affective, namely students have a logical way of thinking based on the rules of scientific methods and avoid inappropriate methods in research, for example plagiarism
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Content	1. Basic Concepts of Parametric, Nonparametric and Semiparametric Regression 2. Simple Linear Regression Analysis (RLS), Multiple Linear Regression (RLB), Polynomial Regression in Univariable and Multivariable Cases 3. Nonparametric Regression with Truncated Spline Estimator in Univariable and Multivariable Cases 4. Properties of Truncated Spline Estimator 5. Nonparametric Regression Model Family of Polynomial Truncated Spline Models 6. Nonparametric Regression with Fourier Series Estimator in Univariable and Multivariable Cases 7. Optimal and Appropriate Process of Selecting Smoothing Parameters (Knot Points, Number of Oscillations, Bandwidth) in Nonparametric Regression with Various Existing Methods 8. Nonparametric Regression Model with Truncated Spline Estimator for Longitudinal Data
Examination forms	• Individual Assignment, Mid-term exam and Final Exam
Study and examination requirements	The grading components are distributed as follows: • 30% Lectures Midterm Exam (UTS) • 40% Lectures Final Exam (UAS) • 10% Task • 10% Affective Assessment The final course grades are assigned as follows: • A: $80 \leq \text{Score} \leq 100$ • B: $70 \leq \text{Score} < 80$ • C: $60 \leq \text{Score} < 70$ • D: $40 \leq \text{Score} < 60$ • E: $0 \leq \text{Score} < 40$
Media employed	Whiteboard, projector, textbooks, Mulawarman Integrated Learning (STAR)



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Reading list	1. Montgomery, D. C., Peck, E. A., & Vining, G. G. (2012). Introduction to Linear Regression Analysis: Fifth Edition. USA: John Wiley & Sons. Inc. 2. Budiantara, I. N. (2019). Regresi Nonparametrik Spline Truncated. Surabaya: ITS Press. 3. Draper, N. R., & Smith, H. (1992). Applied Regression Analysis: Third Edition. USA: John Wiley & Sons. Inc. 4. Eubank, R. L. (1999). Nonparametric Regression and Spline Smoothing. New York: Marcel Dekker. 5. Wahba, G. (1990). Spline Models for Observational Data. Pennsylvania: SIAM. 6. Takezawa, K. (2006). Introduction to Nonparametric Regression. USA: John Wiley & Sons. Inc. 7. Hardle, W. (1994). Applied Nonparametric Regression. Berlin: Humboldt-Universitat zu Berlin. 8. Wu, H. & Zhang, J. (2006). Nonparametric Regression Methods for Longitudinal Data Analysis. USA: John Wiley & Sons. Inc.
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Econometrics I

Title	Econometrics I
Code, if applicable	190701603P041
Semester(s) in which the module is taught	5 st semester
Person responsible for the module	Dr. Sifriyani, S.Pd., M.Si & Dr. Darnah Andi Nohe, M.Si
Language	Indonesian
Relation to curriculum	Elective
Teaching methods	1. Lecture 2. Classroom Discussion
Workload	For this course, students are required to meet a minimum of 136 hours in one semester, which consists of: - 150 minutes for lectures, - 180 minutes for structured assignments - 180 minutes for individual study
Credit points	3 credit points (4,8 ECTS)
Required and recommended prerequisites for joining the module	–



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Module objectives/intended learning outcomes	Intended Learning Outcomes: 1. Demonstrate an attitude of responsibility for work in his field of expertise, cooperation, and concern for the environment humid tropical forest (tropical rainforest) (PLO2) 2. Applying basic concepts and statistical methods in the fields of economics and business, computing, and social, health and environmental fields that are based on Natural Resources (SDA) 3. Tropical Rain Forest (PLO4) 4. Applying appropriate statistical computations for data analysis (PLO5) 5. Able to analyze data using appropriate statistical methods with software and interpret the results in an informative form (PLO7) 6. Able to apply statistics in solving real problems, presenting and communicating in writing and orally in the fields of economics-business, computing, social, health and environment that are based on Natural Resources (SDA) of Tropical Rain Forest (PLO8) 7. Able to apply logical, critical, systematic and innovative thinking in the development and implementation of Science and Technology (IPTEK) in the field of statistics, making decisions appropriately in solving problems in the field of statistics by using scientific ethics and humanities values (PLO9) 8. Able to compile scientific work in the field of statistics that is valid and prevents plagiarism (PLO11) Learning outcomes Students are able to use theoretical and procedural concepts of regression analysis so that students have the following competencies: (1) cognitive, namely understanding and differentiating various analysis methods discussed in econometrics (2) psychomotor, namely selecting and implementing analysis methods discussed in econometrics that are appropriate to the data or problems at hand, (3) affective, namely being able to complete data analysis related to existing problems properly and responsibly
Content	1. Definition and Scope of Econometrics 2. Simple Linear Regression Analysis in Economics 3. Multiple Linear Regression with Quantitative and Qualitative Independent Variables in Economics 4. Identifying and Overcoming Multicollinearity, Heteroscedasticity and Autocorrelation Problems in Multiple Linear Regression 5. Criteria for a Good Model, Specification Error Test, Nested and Non-Nested Models, and Selection of the Best Model in Econometrics 6. Regression Model with Qualitative Response 7. Lag Model, Panel Data Regression Model, Simple Regression Analysis
Examination forms	• Individual Assignment, Mid-term exam and Final Exam



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Study and examination requirements	The grading components are distributed as follows: • 30% Lectures Midterm Exam (UTS) • 40% Lectures Final Exam (UAS) • 20% Practicum • 10% Affective Assessment The final course grades are assigned as follows: • A: $80 \leq \text{Score} \leq 100$ • B: $70 \leq \text{Score} < 80$ • C: $60 \leq \text{Score} < 70$ • D: $40 \leq \text{Score} < 60$ • E: $0 \leq \text{Score} < 40$
Media employed	Whiteboard, projector, textbooks, Mulawarman Integrated Learning (STAR)
Reading list	1. Setiawan, dan Kusri D. E. 2010. Ekonometrika. Yogyakarta : ANDI OFFSET 2. Gujarati, D. N. 2004. Basic Econometrics. Edisi ke-4. New York : Mc.Graw-Hill Companies 3. Koutsoyiannis, A. 1978. Theory of Econometrics. Edisi ke-2. New York : Harper & Row Publisher Inc.



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Bayesian Inference

Title	Bayesian Inference
Code, if applicable	210701603P030
Semester(s) in which the module is taught	5 st semester
Person responsible for the module	Rito Goejantoro, S.Si., M.Si. & Meiliyani Siringoringo, S.Si., M.Si
Language	Indonesian
Relation to curriculum	Elective
Teaching methods	1. Lecture 2. Classroom Discussion
Workload	For this course, students are required to meet a minimum of 136 hours in one semester, which consists of: - 150 minutes for lectures, - 180 minutes for structured assignments - 180 minutes for individual study
Credit points	3 credit points (4,8 ECTS)
Required and recommended prerequisites for joining the module	–



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Module objectives/intended learning outcomes	Intended Learning Outcomes: 1. Demonstrate an attitude of responsibility for work in his field of expertise, cooperation, and concern for the environment humid tropical forest (tropical rainforest) (PLO2) 2. Applying basic concepts and statistical methods in the fields of economics and business, computing, and social, health and environmental fields that are based on Natural Resources (SDA) 3. Tropical Rain Forest (PLO4) 4. Applying appropriate statistical computations for data analysis (PLO5) 5. Able to analyze data using appropriate statistical methods with software and interpret the results in an informative form (PLO7) 6. Able to apply statistics in solving real problems, presenting and communicating in writing and orally in the fields of economics-business, computing, social, health and environment that are based on Natural Resources (SDA) of Tropical Rain Forest (PLO8) 7. Able to apply logical, critical, systematic and innovative thinking in the development and implementation of Science and Technology (IPTEK) in the field of statistics, making decisions appropriately in solving problems in the field of statistics by using scientific ethics and humanities values (PLO9) 8. Able to compile scientific work in the field of statistics that is valid and prevents plagiarism (PLO11) Learning outcomes Students are able to master the basic concepts of the Bayesian method so that students have the following competencies: (1) cognitive, namely students are able to analyze using the Bayesian approach, are able to conduct data analysis, are able to solve problems using a mathematical and numerical approach, are able to explain and apply mathematical statistics concepts. (2) psychomotor, namely being able to apply scientific methods and carry out research steps according to the topic or problem of the final assignment they choose, (3) affective, namely students have a logical way of thinking based on the rules of the scientific method and avoid methods that are not commendable in research, for example plagiarism
Content	1. Basics of Set Theory; Random Experiment; Random Variable; Probability and Probability Measure; Events (Occurrences); Probability of an Event; Probability of Conditional Events or Occurrences 2. Bayesian Theorem Concept 3. Discrete and Continuous Variables and Probability 4. Prior and Posterior, Likelihood 5. Bayesian Inference of Discrete and Continuous Variables 6. Single Parameter Bayes Model 7. Bayesian Regression Analysis 8. Gibbs Sampler
Examination forms	• Individual Assignment, Mid-term exam and Final Exam



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Study and examination requirements	The grading components are distributed as follows: • 10% Lectures Midterm Exam (UTS) • 25% Lectures Final Exam (UAS) • 10% Case Method • 25% Task • 10% Affective Assessment The final course grades are assigned as follows: • A: $80 \leq \text{Score} \leq 100$ • B: $70 \leq \text{Score} < 80$ • C: $60 \leq \text{Score} < 70$ • D: $40 \leq \text{Score} < 60$ • E: $0 \leq \text{Score} < 40$
Media employed	Whiteboard, projector, textbooks, Mulawarman Integrated Learning (STAR)
Reading list	1. Gelman, A., Carlin, J. B., Stern, H. S., Dunson, D. B., Vehtari, A., and Rubin, D. B. (2014). Bayesian Data Analysis. : A Chapman & Hall Book 2. Subanar. (2019). Inferensi Bayesian dengan R. Yogyakarta : Gadjah Mada University Press



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Marketing Research

Title	Marketing Research
Code, if applicable	210701602P041
Semester(s) in which the module is taught	5 st semester
Person responsible for the module	-
Language	Indonesian
Relation to curriculum	Elective
Teaching methods	1. Lecture 2. Classroom Discussion
Workload	For this course, students are required to meet a minimum of 90,67 hours in one semester, which consists of: - 100 minutes for lectures, - 120 minutes for structured assignments - 120 minutes for individual study
Credit points	2 credits (3,2 ECTS)
Required and recommended prerequisites for joining the module	-



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Module objectives/intended learning outcomes	Intended Learning Outcomes: 1. Demonstrate an attitude of responsibility for work in his field of expertise, cooperation, and concern for the environment humid tropical forest (tropical rainforest) (PLO2) 2. Applying basic concepts and statistical methods in the fields of economics and business, computing, and social, health and environmental fields that are based on Natural Resources (SDA) 3. Tropical Rain Forest (PLO4) 4. Able to implement appropriate and efficient data collection and management designs (PLO6) 5. Able to analyze data using appropriate statistical methods with software and interpret the results in an informative form (PLO7) 6. Able to apply statistics in solving real problems, presenting and communicating in writing and orally in the fields of economics-business, computing, social, health and environment that are based on Natural Resources (SDA) of Tropical Rain Forest (PLO8) 7. Able to apply logical, critical, systematic and innovative thinking in the development and implementation of Science and Technology (IPTEK) in the field of statistics, making decisions appropriately in solving problems in the field of statistics by using scientific ethics and humanities values (PLO9) 8. Able to demonstrate independent and group performance and be responsible for the achievement of work results and be able to supervise and evaluate work that is under his/her responsibility (PLO10) 9. Able to compile scientific work in the field of statistics that is valid and prevents plagiarism (PLO11) Learning outcomes Students are able to use theoretical concepts of introductory economics so that students have cognitive competence, namely understanding and applying marketing research theory and affective competence, namely avoiding inappropriate methods in applying marketing research theory
Content	1. Marketing Concept, Marketing Research and Its Stages 2. Designing Marketing Research 3. Formulating Problems in Marketing and Business 4. Designing Questionnaires for Marketing Research 5. Data Collection Through Surveys and Digital Sources 6. Applying Statistical Methods to Marketing and Business Problems
Examination forms	• Individual Assignment, Mid-term exam and Final Exam



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Study and examination requirements	The grading components are distributed as follows: • 45% Lectures Midterm Exam (UTS) • 45% Lectures Final Exam (UAS) • 10% Affective Assessment The final course grades are assigned as follows: • A: $80 \leq \text{Score} \leq 100$ • B: $70 \leq \text{Score} < 80$ • C: $60 \leq \text{Score} < 70$ • D: $40 \leq \text{Score} < 60$ • E: $0 \leq \text{Score} < 40$
Media employed	Whiteboard, projector, textbooks, Mulawarman Integrated Learning (STAR)
Reading list	1. Iacobucci, Dawn., Churchill, Jr., and Gilbert, A., 2015. Marketing Research: Methodological Foundations. 11th edition. CreateSpace Independent Publishing Platform. 2. Kotler, Philip and Armstrong, Gary., 2015. Principles of Marketing. 16th edition. Pearson. 3. Kotler, Philip and Kertajaya, Hermawan. 2016. Marketing 4.0: Moving from Traditional to Digital. Wiley. 4. Malhotra, Naresh. 2009. Marketing Research: an Applied Orientation. 6th edition. Pearson Prentice Hall.



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Analysis and Planning of Survey I

Title	Analysis and Planning of Survey I
Code, if applicable	210701603P042
Semester(s) in which the module is taught	5 st semester
Person responsible for the module	Memi Nor Hayati, M. Si. & Dr. Darnah, M. Si.
Language	Indonesian
Relation to curriculum	Elective
Teaching methods	1. Lecture 2. Classroom Discussion
Workload	For this course, students are required to meet a minimum of 136 hours in one semester, which consists of: - 150 minutes for lectures, - 180 minutes for structured assignments - 180 minutes for individual study
Credit points	3 credit points (4,8 ECTS)
Required and recommended prerequisites for joining the module	–



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Module objectives/intended learning outcomes	Intended Learning Outcomes: 1. Demonstrate an attitude of responsibility for work in his field of expertise, cooperation, and concern for the environment humid tropical forest (tropical rainforest) (PLO2) 2. Applying basic concepts and statistical methods in the fields of economics and business, computing, and social, health and environmental fields that are based on Natural Resources (SDA) 3. Tropical Rain Forest (PLO4) 4. Applying appropriate statistical computations for data analysis (PLO5) 5. Able to implement appropriate and efficient data collection and management designs (PLO6) 6. Able to analyze data using appropriate statistical methods with software and interpret the results in an informative form (PLO7) 7. Able to apply statistics in solving real problems, presenting and communicating in writing and orally in the fields of economics-business, computing, social, health and environment that are based on Natural Resources (SDA) of Tropical Rain Forest (PLO8) 8. Able to apply logical, critical, systematic and innovative thinking in the development and implementation of Science and Technology (IPTEK) in the field of statistics, making decisions appropriately in solving problems in the field of statistics by using scientific ethics and humanities values (PLO9) 9. Able to demonstrate independent and group performance and be responsible for the achievement of work results and be able to supervise and evaluate work that is under his/her responsibility (PLO10) 10. Able to compile scientific work in the field of statistics that is valid and prevents plagiarism (PLO11) Learning outcomes Students are able to use theoretical and procedural concepts in the field of survey design related to sampling techniques so that students have the following competencies: (1) cognitive, namely understanding and applying various sampling techniques, (2) psychomotor, namely selecting and recommending sampling techniques that are appropriate to the nature of the research object, (3) affective, namely avoiding (rejecting) inappropriate methods in sample surveys.
Content	1. Basic Concepts of Sampling Methods 2. Probability Sampling and Nonprobability Sampling 3. Sampling, Parameter Estimation (Mean, Total, Proportion), Sample Size in Simple Random Sampling 4. Sampling, Parameter Estimation (Mean, Total, Proportion), Sample Size in Stratified Random Sampling 5. Ratio 6. Sampling, Parameter Estimation (Mean, Total, Proportion), Sample Size in Cluster Sampling 7. Sampling, Parameter Estimation (Mean, Total, Proportion), Sample Size in Systematic Sampling



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Examination forms	• Individual Assignment, Mid-term exam and Final Exam
Study and examination requirements	The grading components are distributed as follows: • 30% Lectures Midterm Exam (UTS) • 40% Lectures Final Exam (UAS) • 20% Practicum • 10% Affective Assessment The final course grades are assigned as follows: • A: $80 \leq \text{Score} \leq 100$ • B: $70 \leq \text{Score} < 80$ • C: $60 \leq \text{Score} < 70$ • D: $40 \leq \text{Score} < 60$ • E: $0 \leq \text{Score} < 40$
Media employed	Whiteboard, projector, textbooks, Mulawarman Integrated Learning (STAR)
Reading list	1. Cochran, W.G. (1977). Sampling Techniques. (third edition). John Wiley and Sons: New York. 2. Cochran, W.G. (1991). Teknik Pengambilan Sampel. (Edisi ke 3). UI Press: Jakarta. 3. Levy, P.S. & Lemeshow, S. (1999). Sampling of Population: Methods and Application. (3rd). John Wiley & Sons: New York. 4. Sudjana. (1992). Metode Statistika. Tarsito: Bandung. 5. Supranto, J. (2000). Teknik Sampling Untuk Survei dan Eksperimen. Rineka Cipta: Jakarta.



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Statistics Consultant

Title	Statistics Consultant
Code, if applicable	210701603P043
Semester(s) in which the module is taught	5 st semester
Person responsible for the module	Andrea Tri Rian Dani, S.Stat, M.Stat & Meirinda Fauziyah, M.Stat
Language	Indonesian
Relation to curriculum	Elective
Teaching methods	1. Lecture 2. Classroom Discussion
Workload	For this course, students are required to meet a minimum of 136 hours in one semester, which consists of: - 150 minutes for lectures, - 180 minutes for structured assignments - 180 minutes for individual study
Credit points	3 credit points (4,8 ECTS)
Required and recommended prerequisites for joining the module	–



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Module objectives/intended learning outcomes	Intended Learning Outcomes: 1. Demonstrate an attitude of responsibility for work in his field of expertise, cooperation, and concern for the environment humid tropical forest (tropical rainforest) (PLO2) 2. Demonstrate an attitude of law-abidingness, academic discipline and ethics as well as a spirit of independence, struggle and entrepreneurship in community and national life (PLO3) 3. Applying basic concepts and statistical methods in the fields of economics and business, computing, and social, health and environmental fields that are based on Natural Resources (SDA) 4. Tropical Rain Forest (PLO4) 5. Applying appropriate statistical computations for data analysis (PLO5) 6. Able to implement appropriate and efficient data collection and management designs (PLO6) 7. Able to analyze data using appropriate statistical methods with software and interpret the results in an informative form (PLO7) 8. Able to apply statistics in solving real problems, presenting and communicating in writing and orally in the fields of economics-business, computing, social, health and environment that are based on Natural Resources (SDA) of Tropical Rain Forest (PLO8) 9. Able to apply logical, critical, systematic and innovative thinking in the development and implementation of Science and Technology (IPTEK) in the field of statistics, making decisions appropriately in solving problems in the field of statistics by using scientific ethics and humanities values (PLO9) 10. Able to demonstrate independent and group performance and be responsible for the achievement of work results and be able to supervise and evaluate work that is under his/her responsibility (PLO10) 11. Able to maintain and develop work networks with colleagues both inside and outside the institution (PLO12) Learning outcomes Students are able to master the basic concepts of statistical consultants so that students have the following competencies: (1) cognitive, namely students are able to: • understand communication skills (public speaking) • understand the ideal statistical consultant • apply statistical concepts and methods to solve complex statistical problems in various fields • communicate and work together with clients to understand their needs and provide appropriate statistical solutions • develop professional skills as statistical consultants. (2) psychomotor, namely being able to apply scientific methods and carry out research steps according to the topic or problem of the final assignment they choose, (3) affective, namely students have a logical way of thinking based on the rules of the scientific method and avoid methods that are not commendable in research, for example plagiarism
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Content	1. Communication Skills (Public Speaking) 2. The Ideal Statistical Consultant 3. Applying Statistical Concepts and Methods to Solve Complex Statistical Problems in Various Fields 4. Communicating and Collaborating with Clients to Understand Their Needs and Provide Appropriate Statistical Solutions 5. Professionalism as a Statistical Consultant
Examination forms	• Individual Assignment, Mid-term exam and Final Exam
Study and examination requirements	The grading components are distributed as follows: • 15% Lectures Midterm Exam (UTS) • 25% Lectures Final Exam (UAS) • 25% Project Based Learning (PjBL) • 25% Case Method • 10% Affective Assessment The final course grades are assigned as follows: • A: $80 \leq \text{Score} \leq 100$ • B: $70 \leq \text{Score} < 80$ • C: $60 \leq \text{Score} < 70$ • D: $40 \leq \text{Score} < 60$ • E: $0 \leq \text{Score} < 40$
Media employed	Whiteboard, projector, textbooks, Mulawarman Integrated Learning (STAR)
Reading list	1. Cabrera, J., dan Andrew M. 2002. Statistical Consulting. New York: Springer. 2. Rustagi, J.S., dan Wolfe, D.A. 1982. Teaching of Statistics and Statistical Consulting. New York: Academic Press.Inc. 3. Solimun, Armanu , dan A.A.R Fernandes. 2018. Metode Penelitian Kuantitatif Perspektif Sistem. Malang: UB Press 4. Heeringa, S.G., West, B.T., dan Berglund, P.A. 2010. Statistics In The Social and Behavioral Science Series: Applied 5. Survey Data Analysis. New York: CRC Press Taylor & Francis Group. 6. Newton, R.R., dan Rudestam, K.E. 2013. Your Statistical Consultant, Answer to your data analysis questions. United 7. Kingdom: SAGE Publications. Retrived by: https://books.google.co.id/books?hl=id&lr=&id=Ms45DQAAQBAJ&oi=fnd&pg=PP1&dq=consultant+statistics&ots=EyeY16SH48&sig=QJhQ06fgNlfkSyjtj6C0BXWiiSw&redir_esc=y#v=onepage&q&f=false



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Modern Prediction and Machine Learning

Title	Modern Prediction and Machine Learning
Code, if applicable	210701603P045
Semester(s) in which the module is taught	6 st semester
Person responsible for the module	Rito Goejantoro, M.Si, Surya Prangga, M.Si, Siti Mahmuda, S.Si., M.Si, Andrea Tri Rian Dani, S.Stat., M.Stat
Language	Indonesian
Relation to curriculum	Compulsory
Teaching methods	1. Lecture 2. Problem identification
Workload	For this course, students are required to meet a minimum of 136 hours in one semester, which consists of: - 150 minutes for lectures, - 180 minutes for structured assignments - 180 minutes for individual study
Credit points	3 credit points (4,8 ECTS)
Required and recommended prerequisites for joining the module	–



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Module objectives/intended learning outcomes	Intended Learning Outcomes: 1. Demonstrate an attitude of responsibility for work in his field of expertise, cooperation, and concern for the environment humid tropical forest (tropical rainforest) (PLO2) 2. Applying basic concepts and statistical methods in the fields of economics and business, computing, and social, health and environmental fields that are based on Natural Resources (SDA) Tropical Rain Forest (PLO4) 3. Applying appropriate statistical computations for data analysis (PLO5) 4. Able to implement appropriate and efficient data collection and management designs (PLO6) 5. Able to analyze data using appropriate statistical methods with software and interpret the results in an informative form (PLO7) 6. Able to apply statistics in solving real problems, presenting and communicating in writing and orally in the fields of economics-business, computing, social, health and environment that are based on Natural Resources (SDA) of Tropical Rain Forest (PLO8) 7. Able to apply logical, critical, systematic and innovative thinking in the development and implementation of Science and Technology (IPTEK) in the field of statistics, making decisions appropriately in solving problems in the field of statistics by using scientific ethics and humanities values (PLO9) 8. Able to compile scientific work in the field of statistics that is valid and prevents plagiarism (PLO11) Learning outcomes Students are able to use theoretical and procedural concepts on science data so that students have (1) cognitive competencies, namely understanding the introduction to science data in the field of research, (2) psychomotor, namely the skills to use software in processing science data, (3) affective, namely knowing the ethics of using science data
Content	1. Explaining the background of machine learning and the division of machine learning methods 2. Differences between regression and classification problems 3. Classification Problems 4. Use of Resampling Methods 5. Tree-Based Methods 6. Differences between Bagging, Random Forest, and Boosting Techniques 7. Support Vector Machine Methods 8. Unsupervised Learning Methods
Examination forms	• Individual assignment, Mid-term exam and final exam



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Study and examination requirements	The grading components are distributed as follows: • 45% Lectures Midterm Exam (UTS) • 45% Lectures Final Exam (UAS) • 10% Affective Assessment The final course grades are assigned as follows: • A: $80 \leq \text{Score} \leq 100$ • B: $70 \leq \text{Score} < 80$ • C: $60 \leq \text{Score} < 70$ • D: $40 \leq \text{Score} < 60$ • E: $0 \leq \text{Score} < 40$
Media employed	Whiteboard, projector, textbooks, Mulawarman Integrated Learning (STAR)
Reading list	1. Hastie, T., Tibshirani, R., & Friedman, J. (2017). The Element of Statistical Learning: Data Mining, Inference, and Prediction. California: Springer 2. James, G., Witten, D., Hastie, T., & Tibshirani, R. (2014). An Introduction to Statistical Learning with Application in R. New York: Springer. 3. Maini, V., & Sabri, S. (2017). Machine Learning for Humans. 4. Prangga, S., Goejantoro, R., Hayati, M. N., Mahmuda, S., & Mubiin, D. M. (2023). Laporan Hasil Penelitian Pendanaan PNBP Klasifikasi Status Korban Kecelakaan lalu Lintas di Kota Samarinda Menggunakan Algoritma QUEST (Quick, Unbiased, Efficient, Statistical Tree). Samarinda: FAKULTAS MATEMATIKA DAN ILMU PENGETAHUAN ALAM UNMUL. 5. Prangga, S., Goejantoro, R., Hayati, M. N., Mahmuda, S., & Mubiin, D. H. (2024). PERBANDINGAN AKURASI KLASIFIKASI MENGGUNAKAN ALGORITMA QUEST PADA PADA SKENARIO DATA KODIFIKASI DAN NON-KODIFIKASI. Lebesgue: Jurnal Ilmiah Pendidikan Matematika, Matematika dan Statistika, 390-400.



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Queueing Theory

Title	Queueing theory
Code, if applicable	190701603P039
Semester(s) in which the module is taught	6 st semester
Person responsible for the module	Dr. Sri Wahyuningsih, M.Si & Dr. M. Fathurahman, M.Si
Language	Indonesian
Relation to curriculum	Elective
Teaching methods	1. Lecture 2. Problem identification 3. Case Study
Workload	For this course, students are required to meet a minimum of 136 hours in one semester, which consists of: - 150 minutes for lectures, - 180 minutes for structured assignments - 180 minutes for individual study
Credit points	3 credit points (4,8 ECTS)
Required and recommended prerequisites for joining the module	–



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Module objectives/intended learning outcomes	Intended Learning Outcomes: 1. Demonstrate an attitude of responsibility for work in his field of expertise, cooperation, and concern for the environment humid tropical forest (tropical rainforest) (PLO2) 2. Applying basic concepts and statistical methods in the fields of economics and business, computing, and social, health and environmental fields that are based on Natural Resources (SDA) Tropical Rain Forest (PLO4) 3. Able to implement appropriate and efficient data collection and management designs (PLO6) 4. Able to analyze data using appropriate statistical methods with software and interpret the results in an informative form (PLO7) 5. Able to apply statistics in solving real problems, presenting and communicating in writing and orally in the fields of economics-business, computing, social, health and environment that are based on Natural Resources (SDA) of Tropical Rain Forest (PLO8) 6. Able to apply logical, critical, systematic and innovative thinking in the development and implementation of Science and Technology (IPTEK) in the field of statistics, making decisions appropriately in solving problems in the field of statistics by using scientific ethics and humanities values (PLO9) 7. Able to compile scientific work in the field of statistics that is valid and prevents plagiarism (PLO11) Learning outcomes Students are able to use the theoretical concepts of queuing theory so that students have cognitive competence, namely understanding and applying the concepts of queuing theory in modeling problems in life and affective, namely avoiding ways that are not commendable in applying queuing theory
Content	1. Queuing Process and Notation 2. Exponential Distribution Characteristics 3. Single and Multiple Services with Unlimited Population 4. Compound Service with Limited Population 5. Single Individual Service and Pollazck Formula-Khintchine 6. Service Model on Industrial Machines 7. Queuing System with Service Priority 8. Series Queuing System Model 9. Evaluation of Travel Time in Queuing System 10. Birth and Death in Queuing System 11. Queuing System Usage Analysis
Examination forms	• Individual assignment, Mid-Term Exam and Final Exam



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Study and examination requirements	The grading components are distributed as follows: • 10% Lectures Midterm Exam (UTS) • 25% Lectures Final Exam (UAS) • 30% Case Method • 25% Task • 10% Affective Assessment The final course grades are assigned as follows: • A: $80 \leq \text{Score} \leq 100$ • B: $70 \leq \text{Score} < 80$ • C: $60 \leq \text{Score} < 70$ • D: $40 \leq \text{Score} < 60$ • E: $0 \leq \text{Score} < 40$
Media employed	Whiteboard, projector, textbooks, Mulawarman Integrated Learning (STAR)
Reading list	1. Kakiay, Thomas J. 2004. Dasar Teori Antrian untuk Kehidupan Nyata. Jogjakarta: Penerbit Andi. 2. Taha, Hamdy A. 1996. Riset Operasi, Edisi Kelima, Jilid 2. Jakarta: Bina Rupa Aksara.



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Life Test Data Analysis

Title	Life Test Data Analysis
Code, if applicable	210701603P046
Semester(s) in which the module is taught	6 st semester
Person responsible for the module	Dr. Suyitno, S.Pd, M.Sc & Nariza Wanti Wulan Sari, S.Si, M.Si
Language	Indonesian
Relation to curriculum	Elective
Teaching methods	1. Lecture 2. Problem identification 3. Case Study
Workload	For this course, students are required to meet a minimum of 136 hours in one semester, which consists of: - 150 minutes for lectures, - 180 minutes for structured assignments - 180 minutes for individual study
Credit points	3 credit points (4,8 ECTS)
Required and recommended prerequisites for joining the module	–



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Module objectives/intended learning outcomes	Intended Learning Outcomes: 1. Demonstrate an attitude of responsibility for work in his field of expertise, cooperation, and concern for the environment humid tropical forest (tropical rainforest) (PLO2) 2. Applying basic concepts and statistical methods in the fields of economics and business, computing, and social, health and environmental fields that are based on Natural Resources (SDA) Tropical Rain Forest (PLO4) 3. Applying appropriate statistical computations for data analysis (PLO5) 4. Able to analyze data using appropriate statistical methods with software and interpret the results in an informative form (PLO7) 5. Able to apply statistics in solving real problems, presenting and communicating in writing and orally in the fields of economics-business, computing, social, health and environment that are based on Natural Resources (SDA) of Tropical Rain Forest (PLO8) 6. Able to apply logical, critical, systematic and innovative thinking in the development and implementation of Science and Technology (IPTEK) in the field of statistics, making decisions appropriately in solving problems in the field of statistics by using scientific ethics and humanities values (PLO9) 7. Able to compile scientific work in the field of statistics that is valid and prevents plagiarism (PLO11) Learning outcomes Students are able to use theoretical and procedural concepts in the field of research methodology so that students have (1) cognitive competencies, namely understanding and being able to choose and apply appropriate research methods in the field of life test data analysis, (2) psychomotor, namely being able to use software to solve problems in the field of life test data analysis, (3) affective, namely avoiding inappropriate methods in research, for example plagiarism
Content	1. Introduction to Life Test Data Analysis 2. Elementary Functions and Quantities 3. Distributions of Random Variables of Time (Survival Time) 4. Estimation of Parameters of Distributions of Time Data Using Parametric MLE Method 5. Estimation of Survival Functions and Cumulative Hazard Functions Using Nonparametric Methods: Kapla Meier and Nelson-Aalen 6. Log-Rank Test for Testing the Equality of 2 Survival Functions 7. Parametric Regression Models on Time Data: Weibull Regression, Exponential Regression 8. Accelerated Failure Time (AFT) Model on Time Data 9. Cox PH Regression Model 10. Stratified Cox Regression Model
Examination forms	• Individual assignment, Mid-term exam and final exam



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Study and examination requirements	The grading components are distributed as follows: • 30% Lectures Midterm Exam (UTS) • 45% Lectures Final Exam (UAS) • 20% Practicum • 5% Task • 10% Affective Assessment The final course grades are assigned as follows: • A: $80 \leq \text{Score} \leq 100$ • B: $70 \leq \text{Score} < 80$ • C: $60 \leq \text{Score} < 70$ • D: $40 \leq \text{Score} < 60$ • E: $0 \leq \text{Score} < 40$
Media employed	Whiteboard, projector, textbooks, Mulawarman Integrated Learning (STAR)
Reading list	1. Collett, D. (2003). Modelling Survival Data in Medical Research (2nd ed.). London: Chapman and Hall. 2. Hosmer, D. W., Lemeshow, S., & May, S. (2008). Applied Survival Analysis: Regression Modelling of Time to Event Data (2nd ed.). New York: John Wiley and Sons. Inc. 3. Kleinbaum, D. G., & Klein, M. (2012). Survival Analysis A Self-Learning Text (Third ed.). London: Springer. 4. Lawless, J., (2003). Statistical Models and methods for life time data. Chichester: Willey 5. Maller, Ross A., & Zhou, Xian. (1996). Survival Analysis with Long-Term Survivors. Chichester: Willey.



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Econometrics II

Title	Econometrics II
Code, if applicable	210701603P047
Semester(s) in which the module is taught	6 st semester
Person responsible for the module	Dr. Sifriyani, M.Si & Dr. Darnah A. Nohe, M.Si
Language	Indonesian
Relation to curriculum	Elective
Teaching methods	1. Lecture 2. Practicum 3. Case Study
Workload	For this course, students are required to meet a minimum of 136 hours in one semester, which consists of: - 150 minutes for lectures, - 180 minutes for structured assignments - 180 minutes for individual study
Credit points	3 credit points (4,8 ECTS)
Required and recommended prerequisites for joining the module	–



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Module objectives/intended learning outcomes	Intended Learning Outcomes: 1. Demonstrate an attitude of responsibility for work in his field of expertise, cooperation, and concern for the environment humid tropical forest (tropical rainforest) (PLO2) 2. Applying basic concepts and statistical methods in the fields of economics and business, computing, and social, health and environmental fields that are based on Natural Resources (SDA) Tropical Rain Forest (PLO4) 3. Applying appropriate statistical computations for data analysis (PLO5) 4. Able to analyze data using appropriate statistical methods with software and interpret the results in an informative form (PLO7) 5. Able to apply statistics in solving real problems, presenting and communicating in writing and orally in the fields of economics-business, computing, social, health and environment that are based on Natural Resources (SDA) of Tropical Rain Forest (PLO8) 6. Able to apply logical, critical, systematic and innovative thinking in the development and implementation of Science and Technology (IPTEK) in the field of statistics, making decisions appropriately in solving problems in the field of statistics by using scientific ethics and humanities values (PLO9) 7. Able to compile scientific work in the field of statistics that is valid and prevents plagiarism (PLO11) Learning outcomes Students are able to analyze time series data using appropriate methods according to the theory of time series analysis II so that students have cognitive competence, namely understanding and applying econometric theory II and affective competence, namely avoiding inappropriate methods in applying econometric theory II
Content	1. Multivariate VAR Models 2. ARCH and GARCH Models 3. Spatial Econometric Modeling 4. Nonlinear Regression Models
Examination forms	• Individual assignment, Mid-term exam and final exam



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Study and examination requirements	The grading components are distributed as follows: • 10% Lectures Midterm Exam (UTS) • 25% Lectures Final Exam (UAS) • 30% Case Method • 25% Task • 10% Affective Assessment The final course grades are assigned as follows: • A: $80 \leq \text{Score} \leq 100$ • B: $70 \leq \text{Score} < 80$ • C: $60 \leq \text{Score} < 70$ • D: $40 \leq \text{Score} < 60$ • E: $0 \leq \text{Score} < 40$
Media employed	Whiteboard, projector, textbooks, Mulawarman Integrated Learning (STAR)
Reading list	1. Gujarati, D. N. 2004. Basic Econometrics, 4th edition. New York: The Mc-Graw Hill Company. 2. Greene, W.H. 2003. Econometrics Analysis, 5th edition. New Jersey: Prentice Hall. 3. Hansen, B. E. 2019. Econometrics. University of Winconsin.



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Insurance Mathematics

Title	Insurance Mathematics
Code, if applicable	210701603P048
Semester(s) in which the module is taught	6 st semester
Person responsible for the module	Dr. Suyitno, S.Pd., M.Sc & Dr. Sri Wahyuningsih, M. Si
Language	Indonesian
Relation to curriculum	Elective
Teaching methods	1. Lecture 2. Case Study 3. Classroom Discussion
Workload	For this course, students are required to meet a minimum of 136 hours in one semester, which consists of: - 150 minutes for lectures, - 180 minutes for structured assignments - 180 minutes for individual study
Credit points	3 credit points (4,8 ECTS)
Required and recommended prerequisites for joining the module	–



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Module objectives/intended learning outcomes	Intended Learning Outcomes: 1. Demonstrate an attitude of responsibility for work in his field of expertise, cooperation, and concern for the environment humid tropical forest (tropical rainforest) (PLO2) 2. Applying basic concepts and statistical methods in the fields of economics and business, computing, and social, health and environmental fields that are based on Natural Resources (SDA) Tropical Rain Forest (PLO4) 3. Able to apply logical, critical, systematic and innovative thinking in the development and implementation of Science and Technology (IPTEK) in the field of statistics, making decisions appropriately in solving problems in the field of statistics by using scientific ethics and humanities values (PLO9) 4. Able to compile scientific work in the field of statistics that is valid and prevents plagiarism (PLO11) Learning outcomes Students are able to use theoretical and procedural concepts in the insurance field so that students have the following competencies: (1) cognitive, namely understanding mortality tables, annuities and types of annuities and insurance; (2) psychomotor, namely being able to create mortality tables, calculate the cash value of an annuity and its application, calculate the net single premium and annual premium of an insurance and calculate premium reserves; (3) affective, being able to foster an entrepreneurial spirit in the insurance field
Content	1. Mortality Table, Mortality Table Components 2. Annuity, Types of Annuities, Final Value and Cash Value of Annuities, and How to Calculate Them 3. Definition and How to Calculate Cash Value of Pure Endowment, Temporary Annuity and Deferred Annuity 4. Definition of Life Insurance, Types of Life Insurance and How to Calculate the Net Single Premium 5. Insurance Premium Payment and How to Calculate Annuity & Insurance Premiums Paid Several Times a Year 6. Definition, Purpose and How to Calculate Insurance Premium Reserves 7. Definition of Adjusted Premium Reserves and How to Calculate Them
Examination forms	• Individual assignment, Mid-term exam and final exam



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Study and examination requirements	The grading components are distributed as follows: • 30% Lectures Midterm Exam (UTS) • 35% Lectures Final Exam (UAS) • 25% Task • 10% Activity The final course grades are assigned as follows: • A: $80 \leq \text{Score} \leq 100$ • B: $70 \leq \text{Score} < 80$ • C: $60 \leq \text{Score} < 70$ • D: $40 \leq \text{Score} < 60$ • E: $0 \leq \text{Score} < 40$
Media employed	Whiteboard, projector, textbooks, Mulawarman Integrated Learning (STAR)
Reading list	1. Sembiring, R. K. (1986). Asuransi. Jakarta : Karunika Universitas Terbuka. 2. Bowers, J.R., dkk (1997). Actuarial Mathematics, 2nd edition. Schaumburg, Illinois: The Society of Actuaries.



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Time Series Analysis II

Title	Time Series Analysis II
Code, if applicable	21072021603P049
Semester(s) in which the module is taught	6 st semester
Person responsible for the module	-
Language	Indonesian
Relation to curriculum	Elective
Teaching methods	1. Lecture 2. Case Study 3. Practicum 4. Classroom Discussion
Workload	For this course, students are required to meet a minimum of 136 hours in one semester, which consists of: - 150 minutes for lectures, - 180 minutes for structured assignments - 180 minutes for individual study
Credit points	3 credit points (4,8 ECTS)
Required and recommended prerequisites for joining the module	-



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Module objectives/intended learning outcomes	Intended Learning Outcomes: 1. Demonstrate an attitude of responsibility for work in his field of expertise, cooperation, and concern for the environment humid tropical forest (tropical rainforest) (PLO2) 2. Applying basic concepts and statistical methods in the fields of economics and business, computing, and social, health and environmental fields that are based on Natural Resources (SDA) Tropical Rain Forest (PLO4) 3. Applying appropriate statistical computations for data analysis (PLO5) 4. Able to analyze data using appropriate statistical methods with software and interpret the results in an informative form (PLO7) 5. Able to apply statistics in solving real problems, presenting and communicating in writing and orally in the fields of economics-business, computing, social, health and environment that are based on Natural Resources (SDA) of Tropical Rain Forest (PLO8) 6. Able to apply logical, critical, systematic and innovative thinking in the development and implementation of Science and Technology (IPTEK) in the field of statistics, making decisions appropriately in solving problems in the field of statistics by using scientific ethics and humanities values (PLO9) 7. Able to compile scientific work in the field of statistics that is valid and prevents plagiarism (PLO11) Learning outcomes Students are able to analyze time series data using appropriate methods according to the theory of time series analysis II so that students have cognitive competence, namely understanding and applying the theory of time series analysis II and affective competence, namely avoiding inappropriate methods in applying the introductory theory of linear models
Content	1. Time series data and forecasting 2. Stationary and Nonstationary Univariate Models 3. Outlier Detection and Modeling Time Series Data with Outliers 4. Intervention Model 5. Calendar Variation Model 6. Single Input Transfer Function 7. Multivariate Time Series Model 8. Nonlinear Process
Examination forms	• Individual assignment, Mid-term Exam and Final Exam



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Study and examination requirements	The grading components are distributed as follows: • 30% Lectures Midterm Exam (UTS) • 40% Lectures Final Exam (UAS) • 20% Practicum • 10% Activity The final course grades are assigned as follows: • A: $80 \leq \text{Score} \leq 100$ • B: $70 \leq \text{Score} < 80$ • C: $60 \leq \text{Score} < 70$ • D: $40 \leq \text{Score} < 60$ • E: $0 \leq \text{Score} < 40$
Media employed	Whiteboard, projector, textbooks, Mulawarman Integrated Learning (STAR)
Reading list	1. Bowerman, B.L, O'Connell, R.T. and Koehler, A.B. 2005. Forecasting, Time Series and Regression: An Applied Approach, 4th edition. USA: Duxbury Press. 2. Box, G.E.P., Jenkins, G.M., and Reinsel, D., 1994. Time Series Analysis: Forecasting and Control. 2nd edition. San Fransisco: Holden Day. 3. Cryer, J.D. and Chan, K-S., 2008. Time Series Analysis: with Application in R. Boston: PWS-KENT Publishing Company.



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Introduction to Meta Analysis

Title	Introduction to Meta Analysis
Code, if applicable	210701603P051
Semester(s) in which the module is taught	6 st semester
Person responsible for the module	Memi Nor Hayati, M. Si & Siti Mahmuda, S.Si., M.Si.
Language	Indonesian
Relation to curriculum	Elective
Teaching methods	1. Lecture 2. Case Study 3. Classroom Discussion
Workload	For this course, students are required to meet a minimum of 136 hours in one semester, which consists of: - 150 minutes for lectures, - 180 minutes for structured assignments - 180 minutes for individual study
Credit points	3 credit points (4,8 ECTS)
Required and recommended prerequisites for joining the module	–



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Module objectives/intended learning outcomes	Intended Learning Outcomes: 1. Demonstrate an attitude of responsibility for work in his field of expertise, cooperation, and concern for the environment humid tropical forest (tropical rainforest) (PLO2) 2. Applying basic concepts and statistical methods in the fields of economics and business, computing, and social, health and environmental fields that are based on Natural Resources (SDA) Tropical Rain Forest (PLO4) 3. Applying appropriate statistical computations for data analysis (PLO5) 4. Able to analyze data using appropriate statistical methods with software and interpret the results in an informative form (PLO7) 5. Able to apply statistics in solving real problems, presenting and communicating in writing and orally in the fields of economics-business, computing, social, health and environment that are based on Natural Resources (SDA) of Tropical Rain Forest (PLO8) 6. Able to apply logical, critical, systematic and innovative thinking in the development and implementation of Science and Technology (IPTEK) in the field of statistics, making decisions appropriately in solving problems in the field of statistics by using scientific ethics and humanities values (PLO9) 7. Able to compile scientific work in the field of statistics that is valid and prevents plagiarism (PLO11) Learning outcomes This course presents the basic concepts of meta-analysis and its application, including the urgency and history of meta-analysis, steps, data sources, effect size, random and fixed models, meta-analysis on measures of central tendency (proportion, logit proportion, mean), pre-post test, Group Contrasts, correlation, and publication bias
Content	1. History, Urgency of Meta Analysis, Meta Analysis Steps, Meta Analysis Data Sources 2. Random Model, Fixed Model and Forest Plot 3. Meta Analysis of Central Tendency Measures (Proportion, Logit Proportion, Mean) 4. Meta Analysis on Pre-Post Test Data 5. Application of Meta Analysis Group Contrasts 6. Application of Meta Analysis of Correlation Data 7. Detecting Publication Bias in Meta-Analysis and Creating Funnel Plots
Examination forms	• Individual assignment, Mid-term Exam and Final Exam



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Study and examination requirements	The grading components are distributed as follows: • 15% Lectures Midterm Exam (UTS) • 25% Lectures Final Exam (UAS) • 15% Case Method • 15% Task • 20% Practicum • 10% Activity The final course grades are assigned as follows: • A: $80 \leq \text{Score} \leq 100$ • B: $70 \leq \text{Score} < 80$ • C: $60 \leq \text{Score} < 70$ • D: $40 \leq \text{Score} < 60$ • E: $0 \leq \text{Score} < 40$
Media employed	Whiteboard, projector, textbooks, Mulawarman Integrated Learning (STAR)
Reading list	1. Borenstein, M., Hedges, L. V., Higgins, J. P. T., & Rothstein, H. R. (2009). Introduction to Meta-Analysis. UK: John Wiley & Sons, Ltd. 2. Retnawati, H., Apino, E., Kartianom, Djidu, H., & Anazifa, R. D. (2018). Pengantar Analisis Meta. Yogyakarta: Parama Publishing.



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Structural Equation Model (SEM)

Title	Structure Equation Model (SEM)
Code, if applicable	210701603P050
Semester(s) in which the module is taught	6 st semester
Person responsible for the module	Dr. M. Fathurahman, M.Si.
Language	Indonesian
Relation to curriculum	Elective
Teaching methods	1. Lecture 2. Case Study 3. Classroom Discussion
Workload	For this course, students are required to meet a minimum of 136 hours in one semester, which consists of: - 150 minutes for lectures, - 180 minutes for structured assignments - 180 minutes for individual study
Credit points	3 credit points (4,8 ECTS)
Required and recommended prerequisites for joining the module	–



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Module objectives/intended learning outcomes	Intended Learning Outcomes: 1. Demonstrate an attitude of responsibility for work in his field of expertise, cooperation, and concern for the environment humid tropical forest (tropical rainforest) (PLO2) 2. Applying basic concepts and statistical methods in the fields of economics and business, computing, and social, health and environmental fields that are based on Natural Resources (SDA) Tropical Rain Forest (PLO4) 3. Applying appropriate statistical computations for data analysis (PLO5) 4. Able to analyze data using appropriate statistical methods with software and interpret the results in an informative form (PLO7) 5. Able to apply statistics in solving real problems, presenting and communicating in writing and orally in the fields of economics-business, computing, social, health and environment that are based on Natural Resources (SDA) of Tropical Rain Forest (PLO8) 6. Able to apply logical, critical, systematic and innovative thinking in the development and implementation of Science and Technology (IPTEK) in the field of statistics, making decisions appropriately in solving problems in the field of statistics by using scientific ethics and humanities values (PLO9) 7. Able to compile scientific work in the field of statistics that is valid and prevents plagiarism (PLO11) Learning outcomes Students are able to use theoretical and procedural concepts of structural equation modeling so that students have competencies (1) cognitive, namely understanding and distinguishing various methods in structural equation modeling (2) psychomotor, namely choosing and implementing methods in structural equation modeling that are in accordance with existing data or problems, (3) affective, namely being able to complete data analysis related to existing problems properly and responsibly
Content	1. Regression Analysis 2. Factor Analysis 3. Path Analysis 4. Confirmatory Factor Analysis 5. Structural Equation Modeling
Examination forms	• Individual assignment, Mid-term Exam and Final Exam



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Study and examination requirements	The grading components are distributed as follows: • 15% Lectures Midterm Exam (UTS) • 25% Lectures Final Exam (UAS) • 15% Case Method • 15% Task • 20% Practicum • 10% Affective Assessment The final course grades are assigned as follows: • A: $80 \leq \text{Score} \leq 100$ • B: $70 \leq \text{Score} < 80$ • C: $60 \leq \text{Score} < 70$ • D: $40 \leq \text{Score} < 60$ • E: $0 \leq \text{Score} < 40$
Media employed	Whiteboard, projector, textbooks, Mulawarman Integrated Learning (STAR)
Reading list	1. Fox, J. (2016). Applied Regression Analysis and Generalized Linear Models (3rd ed.). California: SAGE. 2. Everitt, B., & Hothorn, T. (2011). An Introduction to Applied Multivariate Analysis with R. New York: Springer. 3. Thakkar, J. J. (2020). Structural Equation Modelling: Application for research and practice (with AMOS and R). Singapore: Springer. 4. Gana, K., & Broc, G. (2019). Structural Equation Modeling with Lavaan. London: ISTE. 5. Hair, J. F., Hult, G. T., Ringle, C. M., & Sarstedt, M. (2017). A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM). California: SAGE.



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Risk Analysis

Title	Risk Analysis
Code, if applicable	21072021602P052
Semester(s) in which the module is taught	6 st semester
Person responsible for the module	Meiliyani Siringoringo, M.Si
Language	Indonesian
Relation to curriculum	Elective
Teaching methods	1. Lecture 2. Case Study 3. Classroom Discussion
Workload	For this course, students are required to meet a minimum of 90,67 hours in one semester, which consists of: - 100 minutes for lectures, - 120 minutes for structured assignments - 120 minutes for individual study
Credit points	2 credits (3,2 ECTS)
Required and recommended prerequisites for joining the module	–



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Module objectives/intended learning outcomes	Intended Learning Outcomes: 1. Demonstrate an attitude of responsibility for work in his field of expertise, cooperation, and concern for the environment humid tropical forest (tropical rainforest) (PLO2) 2. Applying basic concepts and statistical methods in the fields of economics and business, computing, and social, health and environmental fields that are based on Natural Resources (SDA) Tropical Rain Forest (PLO4) 3. Applying appropriate statistical computations for data analysis (PLO5) 4. Able to analyze data using appropriate statistical methods with software and interpret the results in an informative form (PLO7) 5. Able to apply statistics in solving real problems, presenting and communicating in writing and orally in the fields of economics-business, computing, social, health and environment that are based on Natural Resources (SDA) of Tropical Rain Forest (PLO8) 6. Able to apply logical, critical, systematic and innovative thinking in the development and implementation of Science and Technology (IPTEK) in the field of statistics, making decisions appropriately in solving problems in the field of statistics by using scientific ethics and humanities values (PLO9) 7. Able to compile scientific work in the field of statistics that is valid and prevents plagiarism (PLO11) Learning outcomes Students are able to use the theoretical concepts of analysis so that students have cognitive competence, namely understanding and applying risk analysis and affective, namely avoiding ways that are not commendable in applying risk analysis theory
Content	1. Steps in Identification, Measurement (Likelihood and Severity) and Risk Management 2. Risk Measurement Using Statistical Approach Descriptive 3. Market Risk, Value at Risk (VaR) 4. Level of Risk and Return, Portfolio Diversification 5. Risk Measurement Methods with Nonparametric Approach 6. Risk Calculation Involving Exogenous Variables 7. Recent Development of Risk Modeling
Examination forms	• Individual assignment, Mid-term Exam and Final Exam



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Study and examination requirements	The grading components are distributed as follows: • 10% Lectures Midterm Exam (UTS) • 25% Lectures Final Exam (UAS) • 30% Case Method • 25% Task • 10% Affective Assessment The final course grades are assigned as follows: • A: $80 \leq \text{Score} \leq 100$ • B: $70 \leq \text{Score} < 80$ • C: $60 \leq \text{Score} < 70$ • D: $40 \leq \text{Score} < 60$ • E: $0 \leq \text{Score} < 40$
Media employed	Whiteboard, projector, textbooks, Mulawarman Integrated Learning (STAR)
Reading list	1. Basel II Accord documentation. http://www.bis.org/publ/bebs107.htm 2. Borak, S., Härdle, W., and Hafner, C., 2011. Statistics of Financial Market: An Introduction. 3rd edition. Springer. 3. Hardle, W., Hautsch, N., and Overbeck L., 2008. Applied Quantitative Finance. 2nd edition. Springer. 4. Hautsch, N., 2012. Econometrics of Financial High-Frequency Data. New York, Berlin, Heidelberg: Springer Verlag. 5. Jorion, P., 2007. Value at Risk: The New Benchmark for Managing Financial Risk. 3rd edition. McGraw-Hill. 6. Kaas, R., Goovaerts, M., Dhaene, J. and Denuit, M., 2008. Modern Actuarial Risk Theory. Springer. 7. Klugman, S.A., Panjer, H.H., and Willmotm G.E., 2008. Loss Model : From Data to Decision. McGraw-Hill. 8. Tsay, R. S., 2013. An Introduction to Analysis of Financial Data with R. 1st edition. Hoboken, New Jersey: John Wiley dan Sons, Inc. 9. Wei, W. W., 2006. Time Series Analysis Univariate and Multivariate Methods. 2nd edition. Canada: Addison Wesley Publishing Company.



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Student Service Community

Title	Student Service Community
Code, if applicable	-
Semester(s) in which the module is taught	7 st semester
Person responsible for the module	-
Language	Indonesian
Relation to curriculum	Compulsory
Teaching methods	Project Based Learning
Workload	For this course, students are required to meet a minimum of 136 hours in one semester, which consists of: - 150 minutes for lectures, - 180 minutes for structured assignments - 180 minutes for individual study
Credit points	3 credit points (4,8 ECTS)
Required and recommended prerequisites for joining the module	-



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Module objectives/intended learning outcomes	Intended Learning Outcomes: 1. Demonstrate religious attitudes, human values, nationalism, and respect for cultural diversity, society, nation, and state based on the principles of Pancasila (PLO1) 2. Demonstrate an attitude of responsibility for work in his field of expertise, cooperation, and concern for the environment humid tropical forest (tropical rainforest) (PLO2) 3. Demonstrate law-abiding attitudes, discipline and academic ethics as well as a spirit of independence, struggle, and entrepreneurship in social and state life (PLO3) 4. Able to apply logical, critical, systematic and innovative thinking in the development and implementation of Science and Technology (IPTEK) in the field of statistics, making decisions appropriately in solving problems in the field of statistics by using scientific ethics and humanities values (PLO9) 5. Able to show independent, group performance and be responsible for the achievement of the results of his work and able to supervise and evaluate the work under his responsibility (PLO10) 6. Able to maintain and develop work networks with colleagues within and outside the institution Learning outcomes (PLO12) Students have the ability to implement (arrange) problem-solving programs in the village or place of carrying out community service appropriately, are able to prepare KKN activities, apply science and technology skills through teamwork, are able to present, and create outputs in the form of video profiles, scientific articles, and poster
Content	1. Preparing for Community Service Program (KKN) activities 2. Preparing the Final Report of the Community Service Program (KKN) 3. Collecting Work Program Outputs as Final Assignment and Final Report of the Community Service Program (KKN)
Examination forms	Assignment of KKN report completion and KKN outcomes
Study and examination requirements	The grading components are distributed as follows: • 50% Participatory Activity • 50% Project Outcome Assessment The final course grades are assigned as follows: • A: $80 \leq \text{Score} \leq 100$ • B: $70 \leq \text{Score} < 80$ • C: $60 \leq \text{Score} < 70$ • D: $40 \leq \text{Score} < 60$ • E: $0 \leq \text{Score} < 40$
Media employed	-
Reading list	-



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Field Work

Title	Field Work
Code, if applicable	210706603W062
Semester(s) in which the module is taught	7 st semester
Person responsible for the module	-
Language	Indonesian
Relation to curriculum	Compulsory
Teaching methods	Self Directed Learning
Workload	For this course, students are required to meet a minimum of 136 hours in one semester, which consists of: - 150 minutes for lectures, - 180 minutes for structured assignments - 180 minutes for individual study
Credit points	3 credit points (4,8 ECTS)
Required and recommended prerequisites for joining the module	-



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Module objectives/intended learning outcomes	Intended Learning Outcomes: 1. Demonstrate religious attitudes, human values, nationalism, and respect for cultural diversity, society, nation, and state based on the principles of Pancasila (PLO1) 2. Demonstrate an attitude of responsibility for work in his field of expertise, cooperation, and concern for the environment humid tropical forest (tropical rainforest) (PLO2) 3. Demonstrate law-abiding attitudes, discipline and academic ethics as well as a spirit of independence, struggle, and entrepreneurship in social and state life (PLO3) 4. Applying basic concepts and statistical methods in the fields of economics and business, computing, and social, health and environmental fields that are based on Natural Resources (SDA) Tropical Rain Forest (PLO4) 5. Able to apply statistics in solving real problems, presenting and communicating in writing and orally in the fields of economics-business, computing, social, health and environment that are based on Natural Resources (SDA) of Tropical Rain Forest (PLO8) 6. Able to apply logical, critical, systematic and innovative thinking in the development and implementation of Science and Technology (IPTEK) in the field of statistics, making decisions appropriately in solving problems in the field of statistics by using scientific ethics and humanities values (PLO9) 7. Able to show independent, group performance and be responsible for the achievement of the results of his work and able to supervise and evaluate the work under his responsibility (PLO10) 8. Able to maintain and develop work networks with colleagues within and outside the institution Learning outcomes (PLO12) Learning outcomes Able to actively explore information on the development of mathematics (applied mathematics) and accuracy (P3) and organize (A2) the planning and implementation of PKL professionally and responsibly
Content	1. Implementing Field Work Practice (PKL) Submission Procedures 2. Searching for Scientific Literature as the Foundation for PKL Theory 3. Making a Field Work Practice Proposal (PKL) 4. Implementation of Field Work Practice (PKL) at Partner Agencies or Companies 5. Interpretation and Analysis of Observation Results and Special Tasks at Partner Agencies / PKL Companies 6. Presentation of PKL Report in Scientific Writing 7. Oral Presentation of PKL Results
Examination forms	Presentation



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Study and examination requirements	The grading components are distributed as follows: • 35% Attendance during PKL • 35% Scientific writing • 30% Presentation of scientific writing The final course grades are assigned as follows: • A: $80 \leq \text{Score} \leq 100$ • B: $70 \leq \text{Score} < 80$ • C: $60 \leq \text{Score} < 70$ • D: $40 \leq \text{Score} < 60$ • E: $0 \leq \text{Score} < 40$
Media employed	-
Reading list	1. Prodi Matematika FMIPA UNMUL. 2022. Buku Panduan PKL 2. Fakultas MIPA Unmul. 2023. Panduan Praktek Kerja Lapangan (PKL).



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Capita Selecta of Business Economics Statistics

Title	Capita Selecta of Business Economics Statistics
Code, if applicable	190701603P044
Semester(s) in which the module is taught	7 st semester
Person responsible for the module	Dr. Darnah A. Nohe, M.Si, Dr. M. Fathurahman, M.Si & Meiliyani Siringoringo, S.Si.,M.Si
Language	Indonesian
Relation to curriculum	Elective
Teaching methods	1. Lecture 2. Case Study 3. Classroom Discussion
Workload	For this course, students are required to meet a minimum of 136 hours in one semester, which consists of: - 150 minutes for lectures, - 180 minutes for structured assignments - 180 minutes for individual study
Credit points	3 credit points (4,8 ECTS)
Required and recommended prerequisites for joining the module	–



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Module objectives/intended learning outcomes	Intended Learning Outcomes: 1. Demonstrate an attitude of responsibility for work in his field of expertise, cooperation, and concern for the environment humid tropical forest (tropical rainforest) (PLO2) 2. Applying basic concepts and statistical methods in the fields of economics and business, computing, and social, health and environmental fields that are based on Natural Resources (SDA) Tropical Rain Forest (PLO4) 3. Applying appropriate statistical computations for data analysis (PLO5) 4. Able to analyze data using appropriate statistical methods with software and interpret the results in an informative form (PLO7) 5. Able to apply statistics in solving real problems, presenting and communicating in writing and orally in the fields of economics-business, computing, social, health and environment that are based on Natural Resources (SDA) of Tropical Rain Forest (PLO8) 6. Able to apply logical, critical, systematic and innovative thinking in the development and implementation of Science and Technology (IPTEK) in the field of statistics, making decisions appropriately in solving problems in the field of statistics by using scientific ethics and humanities values (PLO9) 7. Able to compile scientific work in the field of statistics that is valid and prevents plagiarism (PLO11) Learning outcomes Students are able to use concepts, procedures & applications in the Capita Selecta of Economic and Business Statistics so that students have competencies: 1. Cognitive, namely understanding and understanding the application of statistics in the economic and business fields that are developing in the latest period 2. Psychomotor, namely being able to select and carry out steps in solving problems in economic and business statistics. 3. Affective, namely being able to avoid ways that are not commendable in the steps of analyzing statistics in the fields of economics and business
Content	1. Understanding the Essence of Economic and Business Statistics Capacities 2. Able to Explain the First - Sixth Topics 3. Explain the Material of the Whole Topic (Review)
Examination forms	Question Description, Assignment Test



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Study and examination requirements	The grading components are distributed as follows: • 10% Lectures Midterm Exam (UTS) • 25% Lectures Final Exam (UAS) • 30% Case Method • 25% Task • 10% Affective Assessment The final course grades are assigned as follows: • A: $80 \leq \text{Score} \leq 100$ • B: $70 \leq \text{Score} < 80$ • C: $60 \leq \text{Score} < 70$ • D: $40 \leq \text{Score} < 60$ • E: $0 \leq \text{Score} < 40$
Media employed	Whiteboard, projector, textbooks, Mulawarman Integrated Learning (STAR)
Reading list	1. Jurnal-jurnal Statistika ekonomi dan bisnis terbaru baik jurnal lokal, nasional maupun internasional 2. Buku-buku Statistika bidang ekonomi dan bisnis yang mendukung dari topik jurnal



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Capita Selecta of Social, Health, and Environmental Statistics

Title	Capita Selecta of Social, Health and Environmental Statistics
Code, if applicable	190701603P044
Semester(s) in which the module is taught	7 st semester
Person responsible for the module	Dr. Darnah A. Nohe, M.Si. dan Dr. M. Fathurahman, M.Si Dr. Sifriyani, M.Si Meirinda dan Fauziyah, M.Stat
Language	Indonesian
Relation to curriculum	Elective
Teaching methods	1. Lecture 2. Classroom Discussion
Workload	For this course, students are required to meet a minimum of 136 hours in one semester, which consists of: - 150 minutes for lectures, - 180 minutes for structured assignments - 180 minutes for individual study
Credit points	3 credit points (4,8 ECTS)
Required and recommended prerequisites for joining the module	–



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Department of Statistics

Mulawarman University

Module objectives/intended learning outcomes	Intended Learning Outcomes: 1. Demonstrate an attitude of responsibility for work in his field of expertise, cooperation, and concern for the environment humid tropical forest (tropical rainforest) (PLO2) 2. Applying basic concepts and statistical methods in the fields of economics and business, computing, and social, health and environmental fields that are based on Natural Resources (SDA) Tropical Rain Forest (PLO4) 3. Applying appropriate statistical computations for data analysis (PLO5) 4. Able to analyze data using appropriate statistical methods with software and interpret the results in an informative form (PLO7) 5. Able to apply statistics in solving real problems, presenting and communicating in writing and orally in the fields of economics-business, computing, social, health and environment that are based on Natural Resources (SDA) of Tropical Rain Forest (PLO8) 6. Able to apply logical, critical, systematic and innovative thinking in the development and implementation of Science and Technology (IPTEK) in the field of statistics, making decisions appropriately in solving problems in the field of statistics by using scientific ethics and humanities values (PLO9) 7. Able to compile scientific work in the field of statistics that is valid and prevents plagiarism (PLO11) Learning outcomes Students are able to use concepts, procedures & applications in the Capita Selecta of Social, Health and Environmental Statistics so that students have competencies: Cognitive, namely understanding and understanding the application of statistics in the fields of Social, Health, and Environment that are developing in the latest period Psychomotor, namely being able to select and carry out steps in solving problems in Social, Health, and Environmental Statistics. Affective, namely being able to avoid ways that are not commendable in the steps of analyzing Statistics in the fields of Social, Health and Environment
Content	1. Essence of Capita Selecta of Social, Health, and Environmental Statistics 2. Students are able to explain the first - sixth topics 3. Students are able to explain the material of the whole topic (review)
Examination forms	Question Description, Assignment Test



Module Handbook

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Study and examination requirements	The grading components are distributed as follows: • 10% Lectures Midterm Exam (UTS) • 25% Lectures Final Exam (UAS) • 30% Case Method • 25% Task • 10% Affective Assessment The final course grades are assigned as follows: • A: $80 \leq \text{Score} \leq 100$ • B: $70 \leq \text{Score} < 80$ • C: $60 \leq \text{Score} < 70$ • D: $40 \leq \text{Score} < 60$ • E: $0 \leq \text{Score} < 40$
Media employed	Whiteboard, projector, textbooks, Mulawarman Integrated Learning (STAR)
Reading list	1. Jurnal-jurnal Statistika ekonomi dan bisnis terbaru baik jurnal lokal, nasional maupun internasional 2. Buku-buku Statistika bidang ekonomi dan bisnis yang mendukung dari topik jurnal



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Capita Selecta of Computational Statistics

Title	Capita Selecta of Computational Statistics
Code, if applicable	190701603P044
Semester(s) in which the module is taught	7 st semester
Person responsible for the module	Dr. Darnah A. Nohe, M.Si; Dr. M. Fathurahman, M.Si & Surya Prangga, M.Si
Language	Indonesian
Relation to curriculum	Elective
Teaching methods	1. Lecture 2. Classroom Discussion
Workload	For this course, students are required to meet a minimum of 136 hours in one semester, which consists of: - 150 minutes for lectures, - 180 minutes for structured assignments - 180 minutes for individual study
Credit points	3 credit points (4,8 ECTS)
Required and recommended prerequisites for joining the module	–



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Content	1. Essence of the capita selecta of Computational Statistics 2. Students are able to explain the first - sixth topics 3. Students are able to explain the material of the whole topic (review)
Examination forms	Question Description, Assignment Test



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Media employed	Whiteboard, projector, textbooks, Mulawarman Integrated Learning (STAR)
Reading list	1. Jurnal-jurnal Statistika ekonomi dan bisnis terbaru baik jurnal lokal, nasional maupun internasional 2. Buku-buku Statistika bidang ekonomi dan bisnis yang mendukung dari topik jurnal