TEACHING PLAN

BACHELOR OF EDUCATION IN BUILDING ENGINEERING (BE-BE) STUDY PROGRAM

DEPARTMENT OF CIVIL ENGINEERING, FACULTY OF ENGINEERING, UNIVERSITAS NEGERI PADANG

COURSE	CODE	GROUP OF COURSE	SCU		SEM	VERSION
			Teory	Pract		
Statistical Analysis	**SIP317**	**Study Program Compulsory Courses**	**1**	**1**	**4**	**1**
Responsible Lecturer			**the signature of the responsible lecturer** Dr. Nurhasan Syah, M.Pd. NIP. 19601105 198602 1 001			
Information	**Dean of the Faculty of Engineering**	**Head of the Civil Engineering Department**	**Study Program Coordinator**			
	Dr. Fahmi Rizal, M.Pd., M.T NIP. 195912041985031004	Faisal Ashar, Ph.D. NIP. 19750103 200312 1001	Drs. Revian Body, MSA. NIP. 19600103 198503 1003			

Graduate Learning Outcomes	Learning Achievement of Graduate Study Programs
	By considering input from all stake holders and the minimum requirements set by ASIIN, the PLO's that must be possessed by graduates from the Bachelor of Education in Building Engineering Study Program are determined as follows: 1. Master *basic knowledge of science* (mathematics, natural sciences) and other scientific disciplines that form the basis of building engineering vocational education field for carrying out professional work *(Knowledge and Understanding).* 1.1. Able to implement basic concepts of mathematics and physics to master subjects matter in the field of building

	engineering vocational education. 1.2. Mastering Statics, Mechanics, Statistics, Technology Materials, and Engineering Drawings as the basic knowledge in the field of building engineering vocational education. 2. Able to identify, formulate, solve, and evaluate various technical problems of buildings as the basic ability for teaching in the field of building engineering vocational education *(Engineering analysis, investigation and assessment)* . 2.1. Able to identify, formulate, solve, and evaluate technical problems in the field of geotechnical and transportation as the basic ability for teaching in the field of building engineering vocational education. 2.2. Able to identify, formulate, solve, and evaluate technical problems in the field of structure and construction management as the basic ability for teaching in the field of building engineering vocational education. 2.3. Able to identify, formulate, solve, and evaluate technical problems in the field of hydrology as the basic ability for teaching in the field of building engineering vocational education. 3. Possess the ability to design building by taking into account environmental, social, health and work safety issues as the basis for teaching in the field of building engineering vocational education *(Engineering design).* 3.1. Able to make design programming by taking into account environmental, social, health and work safety issues, in cooperation with various party related. 3.2. Able to analyze the design by taking into account environmental, social, health and work safety aspects. 3.3. Able to produce design by taking into account environmental, social, health and work safety aspects. 4. Possess social, managerial, team work, and effective communication competencies, entrepreneurial character, environmental insight and life-long learning habits. *(Transferable and soft skills).* 4.1. Possess religious character implemented in personal and professional activities. 4.2. Possess the spirit of nationalism, social sensitivity and environmental insight 4.3. Able to communicate effectively and work in a team. 4.4. Able to transfer science and technology to the community to improve the quality of life

4.5. Possess entrepreneurial character

5. Possess the ability to innovate and adapt to the development of science and technology, and implement it into the learning process of building engineering vocational education field by taking into account non-technical risks that may occur (ethical, ecological, commercial, and industrial impact) *(Engineering practice)*.
   5.1. Able to innovate and use information technology (software) in the field of building engineering vocational education by taking into account the ethical, ecological, commercial and industrial impact.
   5.2. Able to use information technology-based equipment (hardware) in field of building engineering vocational education.
6. Possess a good ability to design, implement and evaluate the learning process in the field of building engineering vocational education *(Educational design)*.
   6.1. Able to design curriculum and learning process of building engineering vocational education.
   6.2. Able to implement, control, evaluate and improve the quality of learning process through research in the field of building engineering vocational education.
   6.3. Able to develop an effective, efficient, and attractive learning media in the field of building engineering vocational education.

Course Learning Outcomes

Learning Achievment of Course (CPMK)

CPMK	CPL
1. Able to understand the basics, meaning, function and use of statistics	2.2, 2.3, 4.1, 4.2, 4.3
2. Able to understand statistical data and measurement scale	2.2, 2.3, 4.1, 4.2, 4.3
3. Can process central tendency statistical data with the SPSS application	2.2, 2.3, 4.1, 4.2, 4.3
4. Can perform statistical data dissemination	2.2, 2.3, 4.1, 4.2, 4.3
5. Able to perform average test for one sample	2.2, 2.3, 4.1, 4.2, 4.3
6. Able to perform average difference test	2.2, 2.3, 4.1, 4.2, 4.3

	7. Able to perform ANOVA (Analysis of Variance) test	2.2, 2.3, 4.1, 4.2, 4.3
	8. Can perform correlational analysis	2.2, 2.3, 4.1, 4.2, 4.3
	9. Can perform simple regression analysis	2.2, 2.3, 4.1, 4.2, 4.3
	10. Able to perform multiple correlation analysis	2.2, 2.3, 4.1, 4.2, 4.3
	11. Able to perform multiple regression analysis	2.2, 2.3, 4.1, 4.2, 4.3
	12. Can do a validity test	2.2, 2.3, 4.1, 4.2, 4.3
	13.Dapat melakukan uji reliabilitas	2.2, 2.3, 4.1, 4.2, 4.3

Short descriptions of course	This course weighs 2 credits (1 credit for theory and 1 credit for practice), which provides students with understanding and skills regarding objectives, methods of work, data preparation and processing techniques, and the application of statistical analysis with computer applications..	
References	**Main Reference:**	
	1. Sutrisno Hadi, 1963. Statistik III, Yogyakarta : Yasbit Gadjah Mada	
	Suporting Reference	
	1. Sutrisno Hadi, 1963. Analisis Regresi, Yogyakarta : Yasbit Gadjah Mada. 2. Sutrisno Hadi, 1963. Analisis Varians, Yogyakarta : Yasbit Gadjah Mada 3. Burhan Nurgiyantoro dkk., 2004. Statistik Terapan. Yogyakarta : Gadjah Mada University Press	
Learning Media	**Software:**	**Hardware:**
	SPSS, M. Excell, M. Word	Komputer, LCD Projector dan Papan tulis dan perangkatnya
Team Teaching	Dr. Nurhasan Syah, M.Pd., Dr. Fahmi Rizal, M.Pd., Dr. Indrati Kusuma Ningrum, M.Pd.	
Assessment	UTS, UAS, Quiz, Tugas Mandiri.	
Requirements Subject	Statistics Course	

MATERI PEMBELAJARAN

Weeks	Competence to be achieved	Study Materials	Learning Methods and Strategies	Assignments / task	Assessment Criteria / Indicators	Rreference

Weeks	Competence to be achieved	Study Materials	Learning Methods and Strategies	Assignments / task	Assessment Criteria / Indicators	Rreference
(1)	CPMK-1 Knowledge and understanding of: 1. Basics of Statistics 2. Understanding statistics 3. Statistical Functions 4. Use of Statistics	**Basics, Understanding, Functions and Use of Statistics**	Lectures and Discussions	Quiz	1. Attitude 2. Knowledge 3. Skills	RU 1 RP 3
(2)	CPMK-2 Knowledge and understanding of: 1. Statistical data 2. Measurement Scal	**Statistical Data and Measurement Scale**	Lectures and Discussions	Quiz	1. Attitude 2. Knowledge 3. Skills	RU 1 RP 3
(3)	CPMK-3 Knowledge and Understanding about: 1. Measurement of the Central Trend 2. Application of Computer Analysis	**Central Tendency with the SPSS Applicatio**	Lecture and Independent Work	Independent task	1. Attitude 2. Knowledge 3. Skills	RU 1 RP 3
(4)	CPMK-4 Knowledge and Understanding about: 1.Range (Range) 2.Deviation 3.Variance (Variance)	**Data Spread Size**	Lecture and Independent Work	Independent task	1. Attitude 2. Knowledge 3. Skills	RU 1 RP 3

Weeks	Competence to be achieved	Study Materials	Learning Methods and Strategies	Assignments / task	Assessment Criteria / Indicators	Rreference
	4. Quartiles					
(5)	CPMK-5 Knowledge and Understanding of the Z Score	**Average Test For One Sample**	Lecture and Independent Work	Quiz, Independent task	1. Attitude 2. Knowledge 3. Skills	RU 1 RP 3
(6) & (7)	CPMK-6 Knowledge and Understanding of the T Test	**Average Difference Test**	Lecture and Independent Work	Quiz, Independent task	1. Attitude 2. Knowledge 3. Skills	RU 1 RP 3
(8)	**Mid-Semester Evaluation through Mid-Semester Examination**					
(9)	CPMK-7 Knowledge and Understanding of Hypothesis Testing	**ANOVA (Analysis of Varians) test**	Lecture and Independent Work	Independent task	1. Attitude 2. Knowledge 3. Skills	RU 1 RP 2 RP 3
(10)	CPMK-8 Knowledge and understanding of statistical analysis techniques regarding the relationship between two	**Correlational Analysis**	Lecture and Independent Work	Independent task	1. Attitude 2. Knowledge 3. Skills	RU 1 RP 3

Weeks	Competence to be achieved	Study Materials	Learning Methods and Strategies	Assignments / task	Assessment Criteria / Indicators	Rreference
	or more variables					
(11)	CPMK-9 Knowledge and understanding of the approach method for modeling the relationship between one dependent variable and one independent variable	**Simple Regression Analysis**	Lecture and Independent Work	Independent task	1. Attitude 2. Knowledge 3. Skills	RU 1 RP 1 RP 3
(12)	CPMK-10 Knowledge and understanding of a value that gives a strong influence or relationship between two or more variables together with other variables	**Multiple Correlation Analysis**	Lecture and Independent Work	Independent task	1. Attitude 2. Knowledge 3. Skills	RU 1 RP 3
(13)	CPMK-11 Knowledge and understanding of regression models that involve more than one independent variable.	**Multiple Regression Analysis**	Lecture and Independent Work	Independent task	1. Attitude 2. Knowledge 3. Skills	RU 1 RP 1 RP 3
(14)	CPMK-12 Knowledge and understanding of: the test used to determine the accuracy of a measuring	**Validity test**	Lecture and Independent Work	Independent task	1. Attitude 2. Knowledge 3. Skills	RU 1 RP 3

Weeks	Competence to be achieved	Study Materials	Learning Methods and Strategies	Assignments / task	Assessment Criteria / Indicators	Rreference
	instrument in measuring data					
(15)	CPMK-13 Knowledge and understanding of the consistency of a measurement result	**Reliability Test**	Lecture and Independent Work	Quiz, Independent task	1. Attitude 2. Knowledge 3. Skills	RU 1 RP 3
(16)	**Final Semester Evaluation (Evaluation which is intended to determine the final achievement of student learning outcomes)**					

Correlation between CPMK and CPL and Assessment Methods

	Assesment	Bobot (%)	CPL-1			CPL-2				CPL-3				CPL-4			CPL-5			CPL-6		
			1	2	3	1	2	3	4	1	2	3	4	1	2	3	1	2	3	1	2	3
CPMK 1	QUIZ, Mid Test, Final Test, Individual Task	**90**																				
CPMK 2																						
CPMK 3																						
CPMK 4																						
CPMK 5																						
CPMK 6																						
CPMK 7																						
CPMK 8																						
CPMK 9																						
CPMK 10																						
CPMK 11																						
CPMK 12																						
CPMK 13																						
Kehadiran		**10**																				
TOTAL		**100**																				

Assessment Components

Mid Semester Exam : 25%
Final Semester Examination : 35 %
Assignments of Papers by Group : 30 %
Presence : 10%
Total : 100 %

Rating Level Description

	Excellent	Good	Satisfy	Fail
Description	90-100	70-89	51-69	< 50
Formulations	90-100	70-89	51-69	< 50
Calculate	90-100	70-89	51-69	< 50
Analysis	90-100	70-89	51-69	< 50

Scoring system

Score	Quality Value	Quality Score	Designation of Quality	Score	Quality Value	Quality Score	Sebutan Mutu
85 – 100	A	4.0	With compliments	55 – 59	C	2.0	Enough
80 – 84	A-	3.6	Very very good	50 – 54	C-	1.6	Not enough
75 – 79	B+	3.3	Very well	40 – 49	D	1.0	Less
70 – 74	B	3.0	Good	≤ 39	E	0.0	Failed
65 – 69	B-	2.6	Pretty good	-	T	-	Delayed
60 – 64	C+	2.3	More than enough				

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Telp. (0751) 7055644, Fax (0751) 7055628, website: www.ft.unp.ac.id, e-mail: info@ft.unp.ac.id

MID TERM

Course	:	Statistical Analysis
Code/SCU	:	SIP317 / 2 SCU
Nature of the Exam	:	*Open Book*
Lecturer	:	Dr. Nurhasan Syah, M.Pd. Dr. Fahmi Rizal, M.Pd., .M.T. Dr. Indrati Kusuma Ningrum, M.Pd
Time	:	120 Minutes

No	X	Y
1	20	3,a
2	18	4,b
3	25	2,c
4	20	4,d
5	10	3,e
6	12	4,a
7	16	3,b
8	14	3,c
9	18	2,d
10	12	2,e
∑	∑X	∑Y

Dari data disamping, hitunglah :

1. **Korelasi X dengan Y**
2. **Sumbangan X terhadap Y**
3. **Persamaan Regresi Liniear dan Grafik**

Bobot Nilai :

1. **Ketepatan Judul (5%)**
2. **Ketepatan Rumusan Masalah (5%)**
3. **Hipotesis Verbal dan Statistik (10%)**
4. **Hasil Korelasi sampai kesimpulan (30%)**
5. **Hasil Analisis Determinasi sampai kesimpulan (20%)**
6. **Hasil Analisis Regresi dan Grafik (30%)**

Note : a, b, c, d, dan e, sesuaikan dengan nomor NIM

SELAMAT BEKERJA

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FINAL EXAM

Course	:	Statistical Analysis
Code/SCU	:	SIP317 / 2 SCU
Nature of the Exam	:	*Open Book*
Lecturer	:	Dr. Nurhasan Syah, M.Pd. Dr. Fahmi Rizal, M.Pd., .M.T. Dr. Indrati Kusuma Ningrum, M.Pd
Time	:	120 Minutes

The Building Material Testing Laboratory conducted research on Cement Water Factor (X) with Concrete Compressive Strength (Y) wanted to know:

1. Is there a relationship between the Total Cement Water Factor (X) and the Concrete Compressive Strength (Y)? and what is the contribution of the Cement Water Factor (X) to the Compressive Strength of the Concrete (Y) (Correlation Analysis)
2. Are there differences in the compressive strength of mixed concrete Model A (YES) and Mixed Concrete Model B (YB)? (Comparative Analysis)

Obtained data:

Concrete Mix A		
No.	X (cc)	Y (kg/cm)
1	3a	30,e
2	2b	28,d
3	4c	29,c
4	3d	32,b
5	3e	31,a
6	5e	29,e
7	4d	30,d
8	2c	31,c
9	2d	30,b
10	4e	31,a

Campuran Beton B		
No	X (cc)	Y (kg/cm)
1	4a	33,e
2	3b	29,d
3	2c	30,c
4	3d	31,b
5	4e	33,a
6	5a	30,e
7	2b	31,d
8	3c	29,c
9	2d	32,b
10	3e	33,a

Catatan :

Nomor BP/Nim	**1**	**3**	**0**	**2**	**2**	**7**	**4**
Penyesuaian Data	**-**	**-**	**a**	**b**	**C**	**d**	**e**

Settlement:
Each one is answered with 6 steps :

1. Write a Research Title! (Cap 5%)
2. Write a Problem Formulation! (Cap 5%)
3. Write a Hypothesis! (Cap 10%)
4. Data analysis! (Cap 50%)
5. Interpretation of Analysis Results (Cap 20%)
6. Conclusion! (Cap 10%)

Happy working

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QUIZ

Course	:	ANALISIS STATISTIK
Code / SCU	:	SIP317 / 2 SCU
Nature of the Exam	:	Close Book
Lecturer	:	Dr. Nurhasan Syah, M.Pd.
		Dr. Fahmi Rizal, M.Pd., .M.T.
		Dr. Indrati KUsuma Ningrum, M.Pd

Group	Qusetion	Max Score
CPMK-3	Calculating the area on a Normal Curve: a. Area over Z = + 1.00 (with picture) b. Area under Z = + 2.00 (with picture) c. Area over Z = + 1.64 (with picture) d. Area under Z = - 1.96 (with picture) e. The area between Z = + 1.50 and - 1.50 (with picture)	5 %
CPMK-8	If the population of children with IQ approaches the normal distribution with a mean of 10b and a standard deviation of 1a. Calculate the percentage of each IQ below: a. IQ 100 what%, b. IQ 120 what% c. IQ 75 what%, d. IQ 95 what%, e. IQ 140 what%	5 %

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INDIVIDUAL TASK

Course	:	ANALISIS STATISTIK
Kode / SKS	:	SIP317 / 2 SKS
Nature of the Exam	:	Close Book
Lecturer	:	Dr. Nurhasan Syah, M.Pd.
		Dr. Fahmi Rizal, M.Pd., .M.T.
		Dr. Indrati KUsuma Ningrum, M.Pd

Question :

A student wants to do research on students of class X Building Drawing Engineering at SMK Negeri 1 Bukittinggi regarding Drawing Interests with Learning Outcomes of the Building Construction Drawing Training eye to find out:

1. Is there a relationship between Drawing Interest (X) and the Learning Outcomes of the Building Construction Drawing Training Course (Y)? and how much is the contribution of Drawing Interest (X) to Learning Outcomes of Building Construction Drawing (Y) (Correlation Analysis)
2. Is there a significant difference between the Learning Outcomes of Class X TGB 1 Students (Y1) and the Learning Outcomes of Class X TGB 2 Students (Y2)? (Comparative Analysis)

Obtained data:

X TGB 1		
No.	X (cc)	Y1 (kg/cm)
1	11a	72a
2	11b	75b
3	13c	81c
4	14d	90d
5	13e	82e
6	11a	75a
7	12b	78b
8	14c	90c
9	11d	75d
10	10e	70e
11	10a	68a
12	13b	84b
13	13c	84c
14	13d	85d

X TGB 2		
No	X (cc)	Y2 (kg/cm)
1	12a	80a
2	13b	81b
3	11c	70c
4	11d	70d
5	11e	75e
6	11a	72a
7	12b	78b
8	13c	84c
9	11d	72d
10	12e	80e
11	11a	70a
12	11b	72b
13	11c	74c
14	11d	72d

15	10e	65e

15	12e	78e

Note :

Nomor BP/Nim	**1**	**4**	**0**	**7**	**3**	**0**	**1**	**6**
Penyesuaian Data	**-**	**-**	**-**	**a**	**b**	**c**	**d**	**e**

Solution:
Each one is answered with 6 steps:
1. Write a Research Title! (Cap 5%)
2. Write a Problem Formulation! (Cap 5%)
3. Write a Hypothesis! (Cap 10%)
4. Data analysis! (Cap 50%)
5. Interpretation of Analysis Results (Cap 20%)
6. Conclusion! (Cap 10%)