



SEMESTER LEARNING PLAN (RPS)
PROGRAM OF BUILDING ENGINEERING VOCATIONAL EDUCATION (BEVE)
DEPARTMENT OF CIVIL ENGINEERING, FACULTY OF ENGINEERING,
STATE UNIVERSITY OF 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 <u>Dr. Nurhasan Syah, M.Pd.</u> NIP. 19601105 198602 1 001			
<u>Information</u>	Dean of the Faculty of Engineering	Head of the Civil Engineering Department	Study Program Coordinator			
	<u>Dr. Fahmi Rizal, M.Pd., M.T</u> NIP. 195912041985031004	<u>Faisal Ashar, Ph.D.</u> NIP. 19750103 200312 1001	<u>Drs. Revian Body, MSA.</u> NIP. 19600103 198503 1003			
Graduate Learning Outcomes	Learning Achievement of Graduate Study Programs					
	1. Able to apply basic science knowledge (mathematics, natural sciences) and other multidisciplinary disciplines which form the basis of the field of Building Engineering Vocational Education in carrying out professional work in the field (Knowledge and Understanding) 1.1. Able to show a good understanding and implement basic mathematical concepts to solve various problems in the field of building engineering.					

- 1.2. Have a high understanding and can implement basic concepts of physics and chemistry (natural sciences) in the field of building engineering.
- 1.3. Have a high understanding and can implement the basic principles of basic engineering (mechanics, engineering drawings, materials science) in the field of building engineering.
2. Able to think critically and creatively in identifying, formulating, problem solving, evaluating various problems in the field of Building Engineering Vocational Education with the most appropriate and effective scientific methods (Engineering analysis, investigations and assessment).
 - 2.1. Able to identify various technical problems in the field of building engineering
 - 2.2. Able to analyze various technical problems in the field of building engineering
 - 2.3. Able to evaluate various technical problems in the building sector
3. Have a reliable ability in designing, implementing and supervising building engineering works (Engineering design).
 - 3.1. Able to realize work drawings in collaboration with various related parties.
 - 3.2. Able to manage building engineering work by paying attention to environmental, social, health and safety aspects.
 - 3.3. Able to supervise the implementation of building engineering work
4. Have a reliable ability to design, implement and evaluate the learning process in Building Engineering Vocational Education (Education design).
 - 4.1. Able to design curriculum and learning process in the field of building engineering.
 - 4.2. Able to implement, control, evaluate and improve the quality of the learning process
 - 4.3. Able to develop effective, efficient, and attractive learning media.

5. Having the ability to adapt and innovate to the development of science and technology and implement it into the goals of education and professional work by considering possible non-technical risks (Engineering practice)
 - 5.1. Able to innovate and develop technology in the field of building engineering by considering social, economic and environmental aspects.
 - 5.2. Able to analyze environmental conditions in the planning, implementation and supervision of buildings.
 - 5.3. Implement information technology and computers into the planning, implementation, and supervision processes of buildings.
6. Have social and managerial competence, work together, communicate effectively, have entrepreneurial character, are environmentally friendly and aware of the importance of lifelong learning (transferable and soft skills).
 - 6.1. Able to work creatively, innovatively, collaboratively, be careful, responsible, responsive to environmental changes.
 - 6.2. Have curiosity, think critically, are open-minded, and objective.
 - 6.3. Able to communicate effectively and work together in a team work.

Course Learning Outcomes	Learning Achievement of Course (CPMK)	
	CPMK	CPL
	1. Able to understand the basics, meaning, function and use of statistics	2.2, 2.3, 6.1, 6.2, 6.3
	2. Able to understand statistical data and measurement scale	2.2, 2.3, 6.1, 6.2, 6.3
	3. Can process central tendency statistical data with the SPSS application	2.2, 2.3, 6.1, 6.2, 6.3
	4. Can perform statistical data dissemination	2.2, 2.3, 6.1, 6.2, 6.3
	5. Able to perform average test for one sample	2.2, 2.3, 6.1, 6.2, 6.3
	6. Able to perform average difference test	2.2, 2.3, 6.1, 6.2, 6.3
	7. Able to perform ANOVA (Analysis of Variance) test	2.2, 2.3, 6.1, 6.2, 6.3
	8. Can perform correlational analysis	2.2, 2.3, 6.1, 6.2, 6.3
	9. Can perform simple regression analysis	2.2, 2.3, 6.1, 6.2, 6.3
	10. Able to perform multiple correlation analysis	2.2, 2.3, 6.1, 6.2, 6.3
	11. Able to perform multiple regression analysis	2.2, 2.3, 6.1, 6.2, 6.3
	12. Can do a validity test	2.2, 2.3, 6.1, 6.2, 6.3
13. Dapat melakukan uji reliabilitas	2.2, 2.3, 6.1, 6.2, 6.3	
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	
	Supporting 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	Reference
(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

Weeks	Competence to be achieved	Study Materials	Learning Methods and Strategies	Assignments / task	Assessment Criteria / Indicators	Reference
(4)	CPMK-4 Knowledge and Understanding about: 1. Range (Range) 2. Deviation 3. Variance (Variance) 4. Quartiles	Data Spread Size	Lecture and Independent Work	Independent task	1. Attitude 2. Knowledge 3. Skills	RU 1 RP 3
(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 & CPMK-7 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

Weeks	Competence to be achieved	Study Materials	Learning Methods and Strategies	Assignments / task	Assessment Criteria / Indicators	Rreference
(10)	CPMK-8 Knowledge and understanding of statistical analysis techniques regarding the relationship between two or more variables	Correlational Analysis	Lecture and Independent Work	Independent task	1. Attitude 2. Knowledge 3. Skills	RU 1 RP 3
(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	Multiple Regression Analysis	Lecture and Independent Work	Independent task	1. Attitude 2. Knowledge 3. Skills	RU 1 RP 1 RP 3

Weeks	Competence to be achieved	Study Materials	Learning Methods and Strategies	Assignments / task	Assessment Criteria / Indicators	Reference
	involve more than one independent variable.					
(14)	CPMK-12 Knowledge and understanding of: the test used to determine the accuracy of a measuring instrument in measuring data	Validity test	Lecture and Independent Work	Independent task	1. Attitude 2. Knowledge 3. Skills	RU 1 RP 3
(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)					

Keterkaitan CPMK dengan CPL dan Metode Assesment

	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				



KEMENTERIAN PENDIDIKAN DAN KEBUDAYAAN
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JURUSAN TEKNIK SIPIL

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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
Σ	ΣX	ΣY

Dari data disamping, hitunglah :

1. Korelasi X dengan Y
2. Sumbangan X terhadap Y
3. Persamaan Regresi Linier 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 KUsoma 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
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15	12e	78e
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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%)