



TEACHING PLAN
BUILDING ENGINEERING VOCATIONAL EDUCATION (BEVE) STUDY PROGRAM
CIVIL ENGINEERING DEPARTMENT, FACULTY OF ENGINEERING, UNIVERSITAS NEGERI PADANG

COURSE	CODE	COURSE CLUSTER	Credits		SEM	VERSION
			Theory	Practice		
Engineering Drawing	SIP1.61.1107	Study Program Compulsory Courses	1	2	1	
Lecturer in Charge	Laras Oktavia Andreas., S.Pd.,M.Pd.T			Lecturer in Charge		
				Laras Oktavia Andreas., S.Pd.,M.Pd.T		
<u>Remarks</u>	Dean of Faculty of Engineering	Head of Civil Engineering Department	Coordinator of BEVE			
	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			
Program Learning Outcomes	Program Learning Outcomes (PLO)					
	1. The ability to apply basic knowledge of science (mathematics, natural sciences) and other multidisciplinary knowledges which are the basis of Building Engineering Vocational Education field in carrying out its professional work (Knowledge and Understanding). 1.1. Able to show good understanding and to implement the basic concept of mathematics to solve various problems in building engineering field. 1.2. Have a high understanding and able to implement the basic concept of Physics and Chemistry (natural sciences) in building engineering field. 1.3. Have a high understanding and able to implement the basic concept of basic engineering (Mechanics, Engineering Drawings) in building engineering field. 2. The ability to think critically and creatively in identifying, formulating, problem solving, and					

evaluating various problems in building engineering vocational education field by using the most appropriate and effective scientific method (Engineering analysis, investigations and assessment).

- 2.1. Able to identify various technical problems in building engineering field.
 - 2.2. Able to analyze various technical problems in building engineering field.
 - 2.3. Able to evaluate various technical problems in building engineering field.
 - 2.4. Able to communicate Engineering Analysis, Investigation and Assessment materials to students / training.
3. The reliable ability to plan, implement, and supervise the works in building engineering field. (Engineering design).
- 3.1. Able to implement shop drawings in collaboration with various related parties.
 - 3.2. Able to manage building engineering works by paying attention to environmental, social, health and safety aspects.
 - 3.3. Able to supervise the implementation of building engineering works
 - 3.4. Able to communicate Engineering Design material to students.
4. The reliable ability to plan, implement, and evaluate the learning process in Building Engineering Vocational Education study program (Education design).
- 4.1. Able to plan the curriculum and learning process in building engineering field.
 - 4.2. Able to carry out, control, evaluate and improve the quality of the learning process.
 - 4.3. Able to develop an effective, efficient and interesting teaching media.
5. The ability to adapt to and innovate towards the development of science and technology and implement it into educational and professional work goals by considering non-technical risks that may occur (Engineering practice).
- 5.1. Able to innovate and develop the 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

	<p>supervision processes of buildings.</p> <p>6. Social and managerial competencies, collaboration and effective communication skills, entrepreneurial character, environmental insight, and awareness of the importance of lifelong learning (Transferable and softskill).</p> <p>6.1. Able to work creatively, innovatively, collaboratively, carefully, responsibly, and responsive to environmental change.</p> <p>6.2. Have curiosity and critical thinking, open-minded, and objective.</p> <p>6.3. Able to communicate effectively, and to collaborate in a team work.</p>	
Course Learning Outcomes	Course Learning Outcomes (CLO): Drawing Planning	
	Course LO	PLO
	1. Ability skill to draw an object properly and correctly in accordance with the rules of technical drawing.	1.1, 1.3, 3.4, 6.1, 6.3
	2. Have a knowledge and skills regarding lines, letters, numbers, scales, sizes, etiquette when drawing.	1.1, 1.3, 3.4, 6.3
	3. Have a knowledge about the application of the scale when drawing.	1.1, 1.3, 2.4, 3.4, 6.1
	4. Have a knowledge and skills in the application of American compound projection and European compound projection when drawing.	1.1, 1.3, 2.4, 3.4, 6.1
	5. Have a knowledge and drawing skills in the application of axonometry and Oblique.	1.1, 1.3, 2.4, 3.4, 6.1
	6. Have a knowledge and skills of Vanishing 1 Point and 2 Vanishing point perspective drawing skills.	1.1, 1.3, 2.4, 3.4, 6.1, 6.2, 6.3
	7. Have a knowledge and ability in making floor plans and applying civil engineering symbols at the time of drawing.	1.1, 1.3, 3.4, 6.1, 6.2, 6.3
Course Description	The Engineering Drawing course is included in the Scientific and Skills Course (MKK) group, which is the basis for building construction and other supporting courses with material covering the functions and maintenance of drawing equipment, image etiquette, geometric drawings, elements of technical drawing projection, sketch, perspective, and application of technical drawing symbols.	
Literature	Main:	

	<ol style="list-style-type: none"> 1. Israr, Chairul. <i>Konstruksi Bangunan dan Menggambar Seri Sambungan dan Hubungan Kayu</i>. Padang: MRC, 1984. 2. Jabar, Maryati. <i>Dasar-Dasar Menggambar Teknik</i>. Padang: MRC, 1983. 3. Schaarwachter. <i>Perspektif untuk Para Arsitek</i>. Jakarta: Erlangga, 1984. 4. Gambar – Gambar Dasar Ilmu Bangunan 1, 2, 3 dan Suplemen Seri Bina Bangunan oleh R. Sugiharjo, BAE, tahun 1976 5. Keputusan Menteri PU – RI No 441/KPTS/1998 tentang Persyaratan Teknis Bangunan Gedung 	
	Supporting:	
	<ol style="list-style-type: none"> 1. Konstruksi Bangunan Gedung, oleh Ir. Iman Subarkah. Penerbit Idea Dharma Bandung. 2. Konstruksi Bangunan 1, 2 oleh Henz Prick, tahun 1980 3. Ringkasan Ilmu Bangunan Bagian A dan B oleh J Kwantes dkk terjemahan Hendarsin H. Penerbit Erlangga, tahun 1983 	
Teaching Media	Software:	Hardware:
	-	Computer, LCD Projector and White Board
Team Teaching	Drs. Revian Body, MSA., Risma Apdeni, ST., MT., Yuwalitas Gusmareta, S.Pd., M.Pd, Laras Oktavia Andreas, S.Pd., M.Pd.T, Fani Keprila., S.Pd., M.Pd.T Nadra Mutiara Sari, S.Pd.,M.Eng.,	
Assessment	MID Semester Exam, Final Semester Exam, Independent Task & Group, Assignments, Group Presentations.	
Prerequisite	N/A	

TEACHING MATERIAL

Week	Expected Competency	Study Material	Teaching Method and Strategy	Assignment	Assessment Criteria/ Indicator	Referene
(1)	CLO -1 - Students know the main drawing equipment used to draw techniques.	Image Equipment	Lectures, demonstrations, questions and answers		1. Attitude 2. Knowledge	RU 2 RU 4
(2)	CLO -2, CLO -3 - Students are able to use drawing tools in making various kinds of lines, symbols and etiquette drawing techniques.	Lines, Letters, Numbers, Scale, Size and Image Labels	Lectures, demonstrations, questions and answers	Drawing 1: Lines, Letters, Numbers, Size, Image Etiquette	1. Attitude 2. Knowledge 3. Skills	RU 2 RU 3 RU 4

Week	Expected Competency	Study Material	Teaching Method and Strategy	Assignment	Assessment Criteria/ Indicator	Referene
	- Students know and apply scales, letters, numbers, and measurement techniques in drawing techniques.					
(3)	CLO -2, CLO -3, CLO -4 - Students are able to know and apply geometric constructions to an object. - Students are skilled in drawing geometric constructions.	Geometric Drawing	Lectures, demonstrations, questions and answers	Drawing 2: Geometric Drawing	1. Attitude 2. Knowledge 3. Skills	RU 2 RU 3 RU 4
(4)	CLO -3, CLO -4 - Students are able to know the nature of the projection plane and projection lines. - Students are skilled in drawing projections.	Projection (objects in the form of points, lines, planes, and spaces)	Lectures, demonstrations, questions and answers	Drawing 3: Projections Drawing	1. Attitude 2. Knowledge 3. Skills	RU 2 RU 3 RU 4
(5)	CLO -3, CLO -4 - Students are able to understand the difference between American and European projections. - Students skilled in drawing American projections.	American Projections	Lectures, demonstrations, questions and answers	Drawing 4: Simple american object projection image	1. Attitude 2. Knowledge 3. Skills	RU 2 RU 3 RU 4
(6)	CLO -3, CLO -4 - Students are able to know the American compound projection - Students are skilled in drawing American projections.	American projection (depicts 6 visible objects in the projection plane opening)	Lectures, demonstrations, questions and answers	Drawing 5: American projection image of complex / plural objects	1. Attitude 2. Knowledge 3. Skills	RU 2 RU 3 RU 4

Week	Expected Competency	Study Material	Teaching Method and Strategy	Assignment	Assessment Criteria/ Indicator	Referene
(7)	CLO -3, CLO -4 -Students are able to know the American compound projection - Students are skilled in drawing American projections.	American projection (depicts 6 visible objects in the projection plane openings)	Lectures, demonstrations, questions and answers	Drawing 6: Projection image of american wood connection object	1. Attitude 2. Knowledge 3. Skills	RU 1 RU 2 RU 3 RU 4
(8)	MID Semester Exam					
(9)	CLO -3, CLO -4 - Students are able to know European compound projections - Students are skilled in drawing European projections.	European Projections	Lectures, demonstrations, questions and answers	Drawing 7: European projection image of wooden joint object	1. Attitude 2. Knowledge 3. Skills	RU 1 RU 2 RU 3 RU 4
(10)	CLO -5 - Students are able to understand axonometric and oblique projection images - Have the skills to describe axonometric and oblique projections	Proyeksi Axonometry (isometric, dimetri, trimetric) Oblique Projection	Lectures, demonstrations, questions and answers	Drawing 8: Wooden construction joints, masonry	1. Attitude 2. Knowledge 3. Skills	RU 1 RU 2 RU 3 RU 4 RU 5
(11)	CLO -6 - Students are able to know the application of the conversion in 2-dimensional to 3d-dimensional images. - Skilled students describe civil engineering objects in 2 dimensions to 3 dimensions.	Convert from 2D to 3D	Lectures, demonstrations, questions and answers	Drawing 9: Make 2 D to 3 D image objects	1. Attitude 2. Knowledge 3. Skills	RU 4 RP 1 RP 2

Week	Expected Competency	Study Material	Teaching Method and Strategy	Assignment	Assessment Criteria/ Indicator	Referene
(12)	CLO -6 - Students are able to know the application of the conversion in 2d to 3dimensional images - Skilled students describe civil engineering objects in 2 dimensions to 3 dimensions.	Convert from 2D to 3D	Lectures, demonstrations, questions and answers	Drawing 10: Make 2 D to 3 D image objects	1. Attitude 2. Knowledge 3. Skills	RU 4 RP 1 RP 2
(13)	CLO -6 - Students are able to know the kinds and elements of perspective drawing - Students are skilled in the technique of making 1 vanishig point perspective images manually	Vanishing 1 Point Perspective	Lectures, demonstrations, questions and answers	Drawing 11: Creates a 1 vanishing point perspective image	1. Attitude 2. Knowledge 3. Skills	RU 2 RU 3
(14)	CLO -6 Students are able to know the kinds and elements of perspective drawing - Students are skilled in the technique of making 1 vanishing point perspective images manually	Vanishing 2 Point Perspective	Lectures, demonstrations, questions and answers	Drawing 12: Creates a 2 vanishing point perspective image	1. Attitude 2. Knowledge 3. Skills	RU 2 RU 3
(15)	CLO -7 - Students are able to know material regarding floor plans on a building.	Draw a floor plan and symbols on the picture	Lectures, demonstrations, questions and answers	Drawing 13: Make the image look like a 1-story residential house	1. Attitude 2. Knowledge 3. Skills	RU 4 RU 5 PU 1

Week	Expected Competency	Study Material	Teaching Method and Strategy	Assignment	Assessment Criteria/ Indicator	Referene
	- Students are skilled in drawing simple building plans according to the civil engineering symbols in the picture - .					
(16)	Final Semester Exam					

Notes:

Students carry out drawing assignments every week.

Relations of CLO and PLO with Assesment Method

	Assesment	Weight (%)	PLO-1			PLO -2				PLO -3				PLO -4				PLO -5			PLO -6			
			1	2	3	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	1	2	3	
CLO 1	MID Semester Exam	20%																						
CLO 2																								
CLO 3																								
CLO 4	Quiz	5%																						
CLO 5	Final Semester Exam	25%																						
CLO 6																								
CLO 7																								
Big Task Project		40%																						
Presence		10%																						
TOTAL		100%																						

Assessment Components

MID Semester Exam	: 20 %
Quiz	: 5%
Final Semester Exam	: 25 %
Task	: 40 %
Presence	: 10 %
Total	: 100 %

Description of Assessment Level

	<i>Excellent</i>	<i>Good</i>	<i>Satisfy</i>	<i>Fail</i>
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

Assessment System

Score Range	Grade Letter	Grade Point	Notes	Score Range	Grade Point	Angka Mutu	Notes
85 – 100	A	4.0	Exceptional	55 – 59	C	2.0	Quite Satisfactory
80 – 84	A-	3.6	Excellent	50 – 54	C-	1.6	Poor
75 – 79	B+	3.3	Very good	40 – 49	D	1.0	Very Poor
70 – 74	B	3.0	Good	≤ 39	E	0.0	Fail
65 – 69	B-	2.6	Fairly Good	-	T	-	Delayed
60 – 64	C+	2.3	Satisfactory				



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MID SEMESTER EXAM

Course : Engineering Drawing
Code / Credits : SIP1.61.1107/ 3 SKS
Type of Exam :
Lecturer : Drs. Revian Body, MSA.
Risma Apdeni., ST., MT
Yuwalitas Gusmareta., S.Pd., M.Pd.T
Laras Oktavia Andreas., S.Pd., M.Pd.T
Fani Keprila., S.Pd., M.Pd.T
Time Allocation :
Maximum Grade :



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FINAL SEMESTER EXAM

Course : Engineering Drawing
Code / Credits : SIP1.61.1107/ 3 SKS
Type of Exam :
Lecturer : Drs. Revian Body, MSA.
Risma Apdeni., ST., MT
Yuwalitas Gusmareta., S.Pd., M.Pd.T
Laras Oktavia Andreas., S.Pd., M.Pd.T
Fani Keprila., S.Pd., M.Pd.T
Time Allocation :
Maximum Grade :



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TASK

Course : Engineering Drawing
Code / Credits : SIP1.61.1107/ 3 SKS
Type of Exam :
Lecturer : Drs. Revian Body, MSA.
Risma Apdeni., ST., MT
Yuwalitas Gusmareta., S.Pd., M.Pd.T
Laras Oktavia Andreas., S.Pd., M.Pd.T
Fani Keprila., S.Pd., M.Pd.T
Time Allocation :
Maximum Grade :