TEACHING PLAN

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

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

COURSE	CODE	COURSE CLUSTER	CREDITS		SEM	VERSION
			Theory	Practice		
Building Drawing Construction						

Lecturer in Charge	**Nadra Mutiara Sari, S.Pd.,M.Eng**	**Lecturer in Charge**

Remarks	**Dean of Faculty of Engineering**	**Head of Civil Engineering Department**	**Coordinator of CEVE**
	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)

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

Course Learning Outcomes (CLO): BUILDING DRAWING CONSTRUCTION

Course LO	PLO
1. Have knowledge about soil and its characteristics as a building site, building structures, types of single-story building foundations.	1.1, 1.3
2. Able to draw type of shallow foundation (stone foundation)	1.3, 2.4, 3.4, 6.1, 6.2, 6.3
3. Understand the reinforced concrete construction in non-storey buildings	1.3, 2.4, 3.4, 6.1, 6.2, 6.3
4. Understand the construction of floors and building walls with various materials	1.3, 2.4, 3.4, 6.1, 6.2, 6.3
5. Understand the construction of door frames, doors, windows, and ventilation	1.3, 2.4, 3.4, 6.1, 6.2, 6.3
6. Understand the construction of the truss, ceiling, able to draw the construction of the truss and ceiling	1.3, 2.4, 3.4, 6.1, 6.2, 6.3
7. Understand the roof and truss construction and draw the roof truss construction	1.3, 2.4, 3.4, 6.1, 6.2, 6.3

Course Description

This course provides knowledge and understanding of the construction of single-story building components and can describe and drawing the components of a one-story building manually.

Literature

Main (ML) :

1. Konstruksi Bangunan Gedung, oleh Ir. Iman Subarkah.
   Penerbit Idea Dharma Bandung.
2. Konstruksi Bangunan 1, 2 oleh Henz Prick, tahun 1980
3. A. Text Book of Building Construction oleh SK Sharma dan BK Kaul
   Penerbit S Chand & Co. (PVT) LTD, tahun 1976
4. Ringkasan Ilmu Bangunan Bagian A dan B oleh J Kwantes dkk terjemahan Hendarsin H. Penerbit Erlangga, tahun 1983
5. Konstruksi Bangunan Gedung oleh Ir. Sugeng Djojowirono
   Penerbit Keluarga Mahasiswa Teknik Sipil Fakultas Teknik UGM, tahun 1988
   Bangunan Bertingkat Rendah

Supporting (SL)

	1. Israr, Chairul. ***Konstruksi Bangunan dan Menggambar Seri Sambungan dan Hubungan Kayu***. Padang: MRC, 1984. 2. Jabar, Maryati. ***Dasar-Dasar Menggambar Teknik***. Padang: MRC, 1983. 3. Schaarwachter. ***Perspektif untuk Para Arsitek***. Jakarta: Erlangga, 1984. 4. Gambar – Gambar Dasar Ilmu Bangunan 1, 2, 3 dan Suplemen Seri Bina Bangunan oleh R. Sugiharjo, BAE, tahun 1976 5. Diktat Kuliah Konstruksi Bangunan Gedung – Gedung I dan II oleh R. Soemadi. Penerbit ITB 6. Keputusan Menteri PU – RI No 441/KPTS/1998 tentang Persyaratan Teknis Bangunan Gedung	
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, Nadra Mutiara Sari, S.Pd.,M.Eng., Laras Oktavia Andreas, S.Pd., M.Pd	
Assessment	Mid-Semester Exam, Final Exam, Individual Assignment, Group Assignment, Presentation	
Prerequisite	n.a.	

TEACHING MATERIAL

Week	Expected Competency	Study Material	Teaching Method and Strategy	Assignment	Assessment Criteria/ Indicator	Reference
(1)	CLO-1 1. Knowledge and understanding of: a. Soil b. Soil Characteristic c. Determination of foundation type based on soil type.	**Soil characteristics and determination of single-story building foundation.**	Lecture and discussion	Single-story house plan drawing	1. Attitude 2. Knowledge 3. Skill	ML & SL
(2)	CLO-2 1. Knowledge and understanding of shallow foundation types. 2. Skill to draw shallow foundation plan	**Shallow Foundation Drawing**	Lecture and discussion	Stone foundation plan drawing	1. Attitude 2. Knowledge 3. Skill	ML & SL
(3)	CLO-2 Skill to draw stone		Demonstration, lecture and discussion	Section and details of stone foundation	1. Attitude 2. Knowledge	ML & SL

Week	Expected Competency	Study Material	Teaching Method and Strategy	Assignment	Assessment Criteria/ Indicator	Reference
	foundation.			drawing	3. Skill	
(4)	CLO-3 1. Knowledge and understanding of: a. Beam b. Column c. Riang beam	**Reinforced concrete construction in single-story buildings**		Details reinforced concrete drawing	1. Attitude 2. Knowledge 3. Skill	ML & SL
(5)	CLO-3 Skill to draw longitudinal section dan cross section od single-story building		Demonstration, lecture and discussion	Longitudinal and cross section drawing	1 Attitude 2. Knowledge 3. Skill	ML & SL
(6)	CLO-4 1. Knowledge and understanding of the type of floor	**Floor and wall construction**	Demonstration, lecture and discussion	Ceramic floor plan drawing	1 Attitude 2. Knowledge 3. Skill	ML & SL
(7)	CLO-4 2. Knowledge and understanding of the types of wall		Lecture and discussion		1. Attitude 2. Knowledge 3. Skill	ML & SL
(8)	**Mid-semester Evaluation through Mid-Semester Exam**					
(9)	**CLO-5** 1. Knowledge and understanding of the construction of door frames, door, windows, and ventilatuon 2. Skill to draw the frame and door construction.	**Door frames, doors, windows and ventilation construction**	Demonstration, lecture and discussion	1. Door dan windows plan drawing of single-story building 2. Details and section drawing of doors and windows frames.	1. Attitude 2. Knowledge 3. Skill	ML & SL
(10)			Demonstration, lecture and discussion	Details and section drawing of doors and	1. Attitude 2. Knowledge	ML & SL

Week	Expected Competency	Study Material	Teaching Method and Strategy	Assignment	Assessment Criteria/ Indicator	Reference
				windows.	3. Skill	
(11)	CLO-5 Skill to draw ventilation construction		Demonstration, lecture and discussion	Details and section drawing of ventilation	1. Attitude 2. Knowledge 3. Skill	ML & SL
(12)	**CLO-6** 1. Knowledge and understanding of truss construction. 2. Skill to draw truss construction	**Truss construction, ceilings**	Demonstration, lecture and discussion	Truss construction drawing (completed with section and details).	1. Attitude 2. Knowledge 3. Skill	ML & SL
(13)	**CLO-6** 1. Knowledge and understanding of ceilings construction 2. Skill tro draw: a. Ceilings construction b. Ceilings plan		Demonstration, lecture and discussion	1. Ceilings plan drawing 2. Ceilings construction drawing	1. Attitude 2. Knowledge 3. Skill	ML & SL
(14)	Knowledge and understanding of roof construction	**Construction and truss of roof**	Lecture and discussion	Ceiling plan drawing	1. Attitude 2. Knowledge 3. Skill	ML & SL
(15)	Skill to drawa roof and roof truss		Lecture and discussion	Roof construction and roof truss drawing	1. Attitude 2. Knowledge 3. Skill	ML & SL
(16)	**Final Exam (Evaluation to reveal the learning outcomes of students)**					

Note :

Correlation between CLO, PLO and Assessment Methods

	Assesment	Weigh	PLO-1	PLO-2	PLO-3	PLO-4	PLO-5

		t (%)	1	2	3	1	2	3	4	1	2	3	4	1	2	3	1	2	3
CLO 1	Mid-Semester Exam (Question1)	5																	
CLO 2	Mid-Semester Exam (Question2)	5																	
CLO 3	Mid-Semester Exam (Question3)	5																	
CLO 4	Mid-Semester Exam (Question4)	5																	
CLO 5	Quiz	5																	
CLO 6	Final Exam	25																	
CLO 7																			
Final Assignment (CLO 1-7)		40																	
Presence		10																	
TOTAL		**100**																	

Assessment Component

Mid-Semester Exam : 20 %

Quisz : 5%

Final Exam : 25 %

Assignment : 40 %

Presence : 10 %

Total : 100 %

Description of Assessment Level

	Excellent	Good	Satisfy	Fail
Description	80-100	70-79	51-69	>50
Formulation	-	-	-	-
Count	-	-	-	-
Analysis	90-100	70-89	51-69	>50

Assessment System

Score Range	Grade Letter	Grade Point	Notes	Score Range	Grade Letter	Grade Point	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				