

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
			Theory	Pract		
<b>Plumbing and Sanitation Practices</b>	SIP1.61.2301	Currency Class Mandatory Program Study	-	4	2	
Responsible Lecturer  Dr. Jonni Mardizal , MM			TTD Lecturer in Charge  _____			
<u>Information</u>	Dean of the Faculty of Engineering		Head of the Civil Engineering Department		K ord. S1 Study Program Education Technical angunan	
	Dr. Fahmi Rizal, M.Pd., MT NIP 195912041985031004		Faisal Ashar, Ph.D. NIP 19 750103 200312 1001		Drs. Revian Body, MSA. NIP 196 00103 198503 1003	
Graduate Learning Outcomes	<b>Learning Achievement of Graduates (CPL) Study Programs</b> 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: <ol style="list-style-type: none"> <li>Master <i>basic knowledge of science</i> (mathematics, natural sciences) and other scientific disciplines that form the basis of building engineering vocational education field for carrying out professional work (<i>Knowledge and Understanding</i>).               <ol style="list-style-type: none"> <li>1.1. Able to implement basic concepts of mathematics and physics to master subjects matter in the field of building engineering vocational education.</li> </ol> </li> </ol>					

- 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.

**Learning Achievement Eye Study (CP MK)**

<b>Course Learning Outcomes</b>	<b>CPMK</b>		<b>CPL</b>	
	1.	Mastering the manufacture of roof sanitation equipment, clean water installation and dirty water installation	1.1, 3, 1, 5.1	
	2.	Mastering tek nik basic welding to work building	1.2, 5.1	
	3.	Mastering how to install sanitary ware in a building	3.1, 6.3	
	4.	clean Skillfully translates planning drawings or designs of building utility systems in detail and calculations	3.1	
	5.	Mastering the manufacture of pipe wells as a source of water	5.1	
	6.	Master the basic techniques of processing and supplying clean water	6.1	
<b>Short description of Course</b>	<p>Eyes This course provides the knowledge Material practice of plumbing and sanitation is building or a complex, which is associated with penyediaan air bersih anyway, provision of water hot, tools sanitary and channeling water buangan; Keterampilan manufacture of threaded pipe galvanized and system installation plambing, pemasangan style t-tool sanitary ware to the building and skills to draw plan or draft system utility buildings in detail ( according ka i dah Gamba r Mechanical ) se c a r a clear and systematic.</p>			
<b>References</b>	<b>Main (RU):</b>			
	<ol style="list-style-type: none"> <li>1. <i>Standard National Indonesia (SNI) 8153: 2015 on system plumbing in construction of buildings</i></li> <li>2. <i>Babbit, HE (1960. Plambing, (3th.ed), Mc. Graw- Hill Book Company, New York, London, Toronto</i></li> <li>3. <i>Ervi Tahar, Toto Suparta, Agus Helmi. (1997) Fundamentals of Plumbing. Publisher Angkasa, Bandung</i></li> <li>4. <i>Harsono Wiryosumarto, Okumura, Toshie. (1981). Metal Welding Technology. PT. Pradnya Paramita, Jakarta</i></li> <li>5. <i>Rogen, Waren. (1975). Welding, Mc. Graw- Hill Book Company. Sydney, Auckland, New York, Toronto, Johannessburg, Singapore, Mexico, Panama, Tokyo.</i></li> </ol>			
	<b>Supporters (RP)</b>			
<ol style="list-style-type: none"> <li>1. <i>Samian. (1999) Labsheet of Steel and Welding Practices. UNP Faculty of Engineering, Padang</i></li> <li>2. <i>Martoyo Askari. (1999). Labsheet, Department of Civil Engineering FT. UNP</i></li> <li>3. <i>Martoyo Askari. (1985). Plumbing and Sanitation Las Oxygen-Assetin Series, FPTK IKIP Padang</i></li> </ol>				

	4. Maman Suratman . (2001). <i>Welding Techniques for Acetylene , Brazing, and Electric Arc Welding , Pustaka Grafika , Jakarta</i>	
<b>Learning Media</b>	<b>Software :</b>	<b>Hardware :</b>
		- Computers, LCD projectors and blackboards and devices - Equipment and practice materials - Tools Patron Self (APD)
<b>Teaching Team</b>	1. Dr., Jonni Mardizal , MM, 2. Muvi Yandra , S.Pd , M.Pd.T , 3. Nadra Mutiara Sari, S.Pd. , M.Eng 4. Yuwalitas Gusmaretta , S.Pd , M.Pd.T	
<b>Assessment</b>	Assessment Continuous ( <i>Continuous assessment</i> ) in accordance jobs are given	
<b>Terms Course</b>	There is no	

## LEARNING MATERIALS

minggu	Competencies to be achieved	Study Materials	Learning Methods and Strategies	Task / assignment	Assessment Criteria / Indicators	Referensi
(1)	CPMK- 1.1: [CPL1.1 ] Students are able to explain : 1. plambin equipment / material g 2. Health and safety at Plambing work	- General equipment and work materials in plumbing work - Health and Safety Work	- Explanation of material (1 x 50 ' ) - Discussion (2x50 ' ) - Practice (1x50 ' )	Each student is asked to name the designated equipment and look for the equipment mentioned	Suitability and accuracy of explanation	RU-2 and RU-4
Sunday	Competencies are about to be reached	Study Materials	Learning Methods and Strategies	Task / assignment	Assessment Criteria / Indicators	Reference
(2)	CPMK-1.2: [CPL 1.1 , 3.1 ] Students are able to make : 1. plate work with a bunch of premises n stained 2. connecting plates Single and double folding joints 3. connecting plates with keeling nails	- Explain the usability of the plate connection	- Explanation of Material (1x50 ' ) - Working on assignments (3x 50 ' )	Do it according to the given jobsheet	Work Process and Work Results	RU-4
(3)	CPMK- 1.3: [CPL 1. 1 , 3.1 ] Students are able to make double-angle square pipe joints	- Double angle pipe joints	- Explanation of Practice Materials (1x50 ' ) - Working on assignments (3x 50 ' )	Do it according to the given jobsheet	Work Process and Work Results	RU-4

(4)	CPMK-1.4: [CPL 1.1 , 3.1 ] Students are able to make a round corner double pipe joint	- Double angle round pipe joints	- Explanation of Practice Materials (1x50 ' ) - Working on assignments (3x 50 ' )	Do it according to the given jobsheet	Work Process and Work Results	RU-4
(5)	CPMK- 1.5 : [CPL5.1] Students are able to make short installations of galvanized pipes and PVC pipes	- Short open installation	- Explanation of Practice Materials (1x50 ' ) - Working on assignments (3x 50 ' )	Do it according to the given jobsheet	Work Process and work results	RU-1
Sunday	Competencies are about to be reached	Study Materials	Learning Methods and Strategies	Task / assignment	Assessment Criteria / Indicators	Reference
(6)	CPMK- 1.6 : [CPL5.1] Students are able to make galvanized pipe covered installations	- Installation of covered galvanized pipes	- Explanation of Practice Materials (1x50 ' ) - Working on assignments (3x 50 ' ) -	Do it according to the given jobsheet	Work Process and work results	RU-1
(7)	CPMK-2.1: [CPL 1.2] Students are able to make welding teeth with Electric welding	- Basic techniques of electric welding - The purpose of welding	- Explanation of Practice Materials (1x50 ' ) - Working on assignments (3x 50 ' ) -	Do it according to the given jobsheet	Work Process and work results	RU-5 RP-1

(8)	CPMK 2.2: [CPL 1.2, 5.1] Students are able to connect the strip plate seam I and connect the elbow strip plate	- Connecting plates with electric welding	- Explanation of Practice Materials (1x50 ' ) - Working on assignments (3x 50 ' }	Do it according to the given jobsheet	Work Process and work results	RU-5, RP-1
(9)	CPMK 2.3: [CPL1.2, 5.1] Students are able to connect tee plate strips and connect straight steel pipes with electric welding	- Welding Tee plate and steel pipe	- Explanation of Practice Materials (1x50 ' ) - Working on assignments (3x 50 ' }	Do it according to the given jobsheet	Work Process and work results	RU-5 RP-1
(10)	CPMK 2.4: [CPL 1.2, 5.1] Students are able to connect steel pipe angles with electric welding	- Splicing steel pipe angles	- Explanation of Practice Materials (1x50 ' ) - Working on assignments (3x 50 ' }	Do it according to the given jobsheet	Work Process and work results	RU-5 RP-1
(11)	CPMK 2.5: [ CPL 1.2, 3.2] Students Are Able to Make Welded Lasers with Acetelin Welding Connect the seam plate I with Las Asetelin	- Making welds with acetylene welding	- Explanation of Practice Materials (1x50 ' ) - Working on assignments (3x 50 ' }	Do it according to the given jobsheet	Work Process and work results	RU-5 RP-3
(12)	CPMK 3.1: [CPL 3.1] Students Are Able to Install squatting toilets and sitting toilets	- Installation of squatting toilets and sitting toilets	- Explanation of Practice Materials (1x50 ' ) - Working on assignments (3x 50 ' }	Do it according to the given jobsheet	Work Process and work results	RU-1
(13)	CPMK 3. 2 : [CPL3.1] Students are able to install a sink and urinal	- Installation of sinks and urinals	- Explanation of Practice Materials (1x50 ' ) - Working on assignments (3x 50 ' }	Do it according to the given jobsheet	Work Process and work results	RU-1





CPMK 2.4	Jobsheet 1 0	7.5	V																	
CPMK 2.5	Jobsheet 1 1	7.5	V						V											
CPMK 3.1	Jobsheet 1 2	5							V											
CPMK 3.2	Jobsheet 1 3	5							V											
CPMK 4.1	Jobsheet 1 4	5																	V	
CPMK 5.1	Jobsheet 1 5	5							V											
CPMK 6.1	Jobsheet 1 6	5																		V
Presence		10																		
TOTAL		100																		

### Components Pénil a his n

Midterm Exams : .. %

Final Semester Exams : .. %

Assignment : .. %

Attendance : .. %

Total : 100%

### Description Level P eni Laian

	Excellent	Good	Satisfy	Fail
Description				
Formulation				
Calculate				
Analysis				

### Scoring system

Score	Quality Rating	Quality Score	Quality Mention	Score	Quality Rating	Quality Score	Quality Mention
85-100	A	4.0	With compliments	55 - 59	C	2.0	Enough
80-84	I-	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	Well	≤ 39	E	0.0	Failed
65-69	B-	2.6	Pretty good	-	T	-	Delayed
60-64	C +	2.3	More than enough				

Note :  
 Jobsheet in a separate file