



TEACHING PLAN

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

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

COURSES	CODE	GROUP OF COURSES	SCU		SEM	VERSION
			Theory	Pract		
Praktek Batu Beton	SIP1.61.1101	Study Program Compulsory Courses	1	3	1	
Responsible Lecturer	Laras Oktavia Andreas., S.Pd.,M.Pd.T		the signature of the responsible lecturer <u>Laras Oktavia Andreas., S.Pd.,M.Pd.T</u>			
<u>Information</u>	Dean of the Faculty of Engineering	Head of the Civil Engineering Department	Study Program Coordinator Building Engineering Education			
	<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					
	<ol style="list-style-type: none"> 1. 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"> 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 (<i>Engineering analysis, investigation and assessment</i>) . 					

- 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.

	<p>5.2. Able to use information technology-based equipment (hardware) in field of building engineering vocational education.</p> <p>6. Possess a good ability to design, implement and evaluate the learning process in the field of building engineering vocational education (<i>Educational design</i>).</p> <p>6.1. Able to design curriculum and learning process of building engineering vocational education.</p> <p>6.2. Able to implement, control, evaluate and improve the quality of learning process through research in the field of building engineering vocational education.</p> <p>6.3. Able to develop an effective, efficient, and attractive learning media in the field of building engineering vocational education.</p>		
Course Learning Outcomes	Learning Achievement of Course		
	CPMK	CPL	
	1. Have knowledge of land measurement with building plan guidelines..	1.1, 1.2, 1.3 2.4, 3.4	
	2. Have the ability and skills to do bow plank installation work	1.1, 1.2, 1.3 2.4, 3.4,4.1,4.3	
	3. Knowing the installation of the cough foundation profile.	1.1, 1.2, 1.3 2.4, 3.4, 4.2	
	4. Have the ability and skills in installing profiles and river stone foundations for building works..	1.1, 1.2, 1.3 2.4, 3.4, 4.1,4.3	
	5. Know concrete blocks, concrete pillars and concrete floor slabs for buildings.	1.1, 1.2, 1.3 2.4, 3.4, 4.2	
	6. Have the ability and skills to install concrete beams, poles and slabs in buildings..	1.1, 1.2, 1.3 2.4, 3.4,4.1,4.3	
	7. Know the walls and types of masonry.	1.1, 1.2, 1.3 2.4, 3.4, 4.2	
	8. Have the ability and skills in brick wall installation.	1.1, 1.2, 1.3 2.4, 4.1,4.3	
	9. Knowing the ceramic wall and floor pairs.	1.1, 1.2, 1.3 2.4, 3.4, 4.2	
10. Have the ability and skills to install floor and wall tiles.	1.1, 1.2, 1.3 2.4, 3.4, 4.1,4.3		

Short descriptions of course	This course provides students with knowledge, abilities and skills in the practical field of concrete masonry work, which includes soil measurement for bow plank installation; excavation of soil; installation of stone facades; stone pairs; reinforcement and casting of columns and block beams, installation of brick walls, installation of tiles/tiles and floors according to SNI for simple buildings.	
References	Main(RU) :	
	1. Departemen Pendidikan dan Kebudayaan (1977). Ilmu Bangunan Gedung Jilid 1. Proyek Pengadaan Buku/Diktat Pendidikan Menengah Teknologi Jakarta	
	2. Dapartemen Pekerjaan Umum. (2009). Buku Saku Persyaratan Pokok Rumah yang Lebih Aman Gempa. Direktorat Jenderal Cipta Karya.	
	3. Jobshett (2019). Praktek Kerja Batu dan Beton. Jurusan Teknik Sipil FT-UNP.	
	Support (RP)	
	1. SNI 03-1726-2002, Tata Cara Perencanaan Ketahanan Gempa Untuk Bangunan.	
	2. SNI 03-2847-1992, Tata Cara Perencanaan Struktur Beton untuk Bangunan Gedung.	
Learning Media	Software:	Hardware:
	-	Laptop, LCD projectors and whiteboards with peripherals
Team Teaching	Dr. Nurhasansyah, M.Pd, Laras Oktavia Andreas, S.Pd., M.Pd.T, Nidal Zuwida, S.Pd., M.Pd.T	
Assessment	Practices and personal task	
Requirements Subject	None	

LESSON MATERIAL

Weeks	Competence to be achieved	Study Materials	Learning Methods and Strategies	Assignments / task	Assessment Criteria / Indicators	Rreference
(1)	CPMK -1 Students are able to: - know the type and function of tools in concrete masonry practice. - read the drawings and building plans.	Introduction to tools and floor plans.	Lectures, demonstrations and questions & answers	Personal task	1. Attitude 2. Knowledge	RU 1 RU 3
(2)	CPMK-2 Students are able to: - determine the location and height of the building based on the drawing/building plan. - Conducting soil excavation	Bouw plank	Lectures, demonstrations and questions & answers	Job 1: Bouw plank job practice, and Personal task	1. Attitude 2. Knowledge 3. Skills	RU 1 RU 3

Weeks	Competence to be achieved	Study Materials	Learning Methods and Strategies	Assignments / task	Assessment Criteria / Indicators	Rreference
	according to the project in the working drawing.					
(3)	CPMK-3, CPMK-4 Students are able to: - Choose a river stone that meets the requirements for the <i>anstampang</i> . - Arrange stones and fill sand following the size and conditions that have been determined.	River stone foundation	Lectures, demonstrations and questions & answers	Job 2: <i>Anstampang</i> installation practice and personal tasks	1. Attitude 2. Knowledge 3. Skills	RU 1 RU 2 RU 3
(4)	CPMK-3, CPMK-4 Students are able to: - - profile the foundation with the accuracy of the planned size.	River stone foundation	Lectures, demonstrations and questions & answers	Job 2: Practical Work foundation profiles and independent tasks and personal task	1. Attitude 2. Knowledge 3. Skills	RU 1 RU 2 RU 3
(5)	CPMK-3, CPMK-4 Students are able to: - Calculating the materials required for the foundation. - Choose river stones that qualify for the foundation. - Installing/arranging river stones according to the size and shape in the working drawing.	River stone foundation	Lectures, demonstrations and questions & answers	Job 2: The Practice of Pairing the river Stone Foundation and personal Tasks	1. Attitude 2. Knowledge 3. Skills	RU 1 RU 2 RU 3
(6)	CPMK-5, CPMK-6 Students are able to: - - Making pens for bending reinforcing steel and tapes on bearing wood.	reinforcing	Lectures, demonstrations and questions & answers	Job 3: The practice of making pens for bending steel and personal Tasks	1. Attitude 2. Knowledge 3. Skills	RU 1 RU 2 RP 2
(7)	CPMK-5, CPMK-6 Students are able to: - Calculate the amount of staple reinforcement and rods needed for	Sloof	Lectures, demonstrations and questions & answers	Job 3: Cutting, bending and stringing reinforcing steel for sloofs and	1. Attitude 2. Knowledge 3. Skills	RU 1 RU 2 RP 2

Weeks	Competence to be achieved	Study Materials	Learning Methods and Strategies	Assignments / task	Assessment Criteria / Indicators	Rreference
	<p>the beam sloof according to the working drawing.</p> <ul style="list-style-type: none"> - Cutting and bending reinforcing steel - Make a bag according to your needs - Making tofu (concrete decking) - Stringing reinforcing steel for sloof. 			personal tasks		
(8)	<p>CPMK-5, CPMK-6</p> <p>Students are able to:</p> <ul style="list-style-type: none"> - Calculating the materials required for formwork - Adjusting the formwork according to the working drawing. - Adjusting the loop reinforcement. - Making a 1: 2: 3 concrete mortar using the manual method for sloof blocks. 	Sloof	Lectures, demonstrations and questions & answers	Job 3: The practice of making formwork, casting sloof and personal task	<ol style="list-style-type: none"> 1. Attitude 2. Knowledge 3. Skills 	<p>RU 1</p> <p>RU 2</p> <p>RP 2</p>
(9)	<p>CPMK-5, CPMK-6</p> <p>Students are able to:</p> <ul style="list-style-type: none"> - Calculating the amount of staple reinforcement and rods needed for the structural column according to the working drawing. - Cutting and bending reinforcing steel - Make rods according to your needs. - Stringing reinforcing steel for sloof. 	column	Lectures, demonstrations and questions & answers	Job 3: Cutting, Bending and stringing column reinforcing steel and personal task	<ol style="list-style-type: none"> 1. Attitude 2. Knowledge 3. Skills 	<p>RU 1</p> <p>RU 2</p> <p>RP 2</p>
(10)	<p>CPMK-5, CPMK-6</p> <p>Students are able to:</p> <ul style="list-style-type: none"> - Calculating the required materials for structural column formwork. - Adjusting the formwork according to the working drawing. 	column	Lectures, demonstrations and questions & answers	Job 3: Practices for formwork making, column casting and personal task	<ol style="list-style-type: none"> 1. Attitude 2. Knowledge 3. Skills 	<p>RU 1</p> <p>RU 2</p> <p>RP 2</p>

Weeks	Competence to be achieved	Study Materials	Learning Methods and Strategies	Assignments / task	Assessment Criteria / Indicators	Reference
	- Making 1: 2: 3 concrete mortar manually for structural columns.					
(11)	CPMK-7, CPMK-8 Students are able to: - Make a ½ brick wall mounting profile. - Make a mortar for masonry specs with a 1: 4 mortar. - Installing ½ brick masonry for building walls.	brick masonry	Lectures, demonstrations and questions & answers	Job 4: Practice making profiles, ½ brick masonry and personal task	1. Attitude 2. Knowledge 3. Skills	RU 1 RU 3
(12)	CPMK-7, CPMK-8 Students can: - Creating an upright profile on the wall to be plastered. - Make dots in the shape of a circle/square in a vertical direction as a guideline for making plaster heads.	brick masonry	Lectures, demonstrations and questions & answers	Job 4: Practical work of plaster head profile and personal task	1. Attitude 2. Knowledge 3. Skills	RU 1 RU 3
(13)	CPMK-7, CPMK-8 Students can: - Doing sand sieve for plastering with a 1: 4 cement mix. Plaster the surface of the wall (vertical) and the horizontal surface.	brick masonry	Lectures, demonstrations and questions & answers	Job 4: Wall plastering practice and personal Task	1. Attitude 2. Knowledge 3. Skills	RU 1 RU 3
(14)	CPMK-7, CPMK-8 Students can: - Covering vertical and horizontal stucco surfaces.	brick masonry	Lectures, demonstrations and questions & answers	Job4: Practicing stucco wall and Personal Tasks	1. Attitude 2. Knowledge 3. Skills	RU 1 RU 3
(15)	CPMK-9, CPMK-10 Students can: - Creating a profile for installing floor tiles following the working drawing plan.	Tiles	Lectures, demonstrations and questions & answers	Job 5: The practice of installing floor tiles and personal task	1. Attitude 2. Knowledge 3. Skills	RU 1 RU 3

Weeks	Competence to be achieved	Study Materials	Learning Methods and Strategies	Assignments / task	Assessment Criteria / Indicators	Reference
	<ul style="list-style-type: none"> - Create a row of ceramic wall installation guidelines. - Cutting ceramics with manual or machine cutting tools. - Install tiles according to existing lane guidelines and check level and density of species. 					
(16)	CPMK-9, CPMK-10 Students can: <ul style="list-style-type: none"> - Creating a profile for wall tile installation following the work drawing plan, - Create a row of ceramic wall installation guidelines, - Cutting ceramics with manual or machine cutting tools. - Install the ceramic wall with the existing lane guidelines and check the level and density of spaces. 	Tiles	Lectures, demonstrations and questions & answers	Job 5: Practical wall tiles installation, and Independent Assignments	1. Attitude 2. Knowledge 3. Skills	RU 1 RU 3

Note:

Every week students have to carry out practical activities to identify the aspects of knowledge and skills in a simple construction work plan.

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	4	5	1	2	3	1	2	3
CPMK 1	Tugas Mandiri	5																						
CPMK 2	Job 1	10																						
CPMK 3	Job 2	10																						
CPMK 4	Job 2	10																						
CPMK 5	Job 3	10																						
CPMK 6	Job 3	10																						
CPMK 7	Job 4	10																						
CPMK 8	Job 4	10																						
CPMK 9	Job 5	10																						
CPMK 10	Job 5	10																						
Kehadiran		5																						
TOTAL		100																						

Komponen Penilaian

Job 1	:	10%
Job 2	:	20%
Job 3	:	20%
Job 4	:	20%
Job 5	:	20%
Tugas Mandiri	:	5%
<u>Kehadiran</u>	:	5%
Total	:	100 %

Deskripsi Tingkat Penilaian

	<i>Excellent</i>	<i>Good</i>	<i>Satisfy</i>	<i>Fail</i>
Deskripsi	90-100	70-89	51-69	>50
Formulasi	90-100	70-89	51-69	>50
Menghitung	90-100	70-89	51-69	>50
Analisis	90-100	70-89	51-69	>50

Sistem Penilaian

Nilai Angka	Nilai Mutu	Angka Mutu	Sebutan Mutu	Nilai Angka	Nilai Mutu	Angka Mutu	Sebutan Mutu
85 – 100	A	4.0	Dengan pujian	55 – 59	C	2.0	Cukup
80 – 84	A-	3.6	Sangat baik sekali	50 – 54	C-	1.6	Kurang cukup
75 – 79	B+	3.3	Baik sekali	40 – 49	D	1.0	Kurang
70 – 74	B	3.0	Baik	≤ 39	E	0.0	Gagal
65 – 69	B-	2.6	Cukup Baik	-	T	-	Tertunda
60 – 64	C+	2.3	Lebih dari cukup				



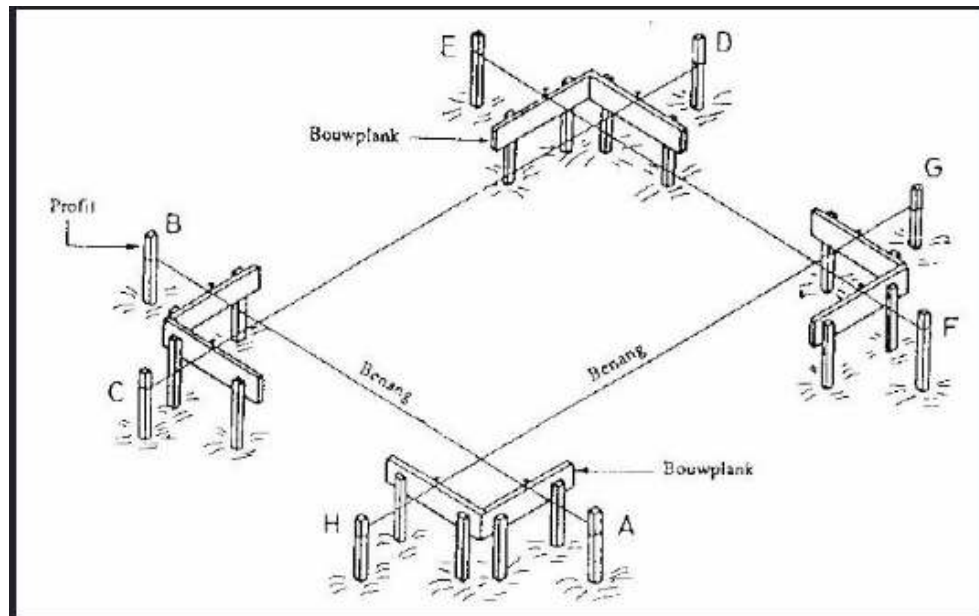
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info@ft.unp.ac.id

GAMBAR KERJA
JOB 1

Matakuliah : Praktek Batu Beton
Kode / SKS : SIP1.61.1101 / 4 SKS
Sifat Ujian : Pratikum
Dosen : Dr. Nurhasansyah, M.Pd,
LarasOktavia Andreas, S.Pd.,M.Pd.T,
NidalZuwida, S.Pd.,M.Pd.T
Waktu : 2x 4 x 50 Menit
Bobot nilai maksimal : 10 %

Praktek pemasangan bowplank





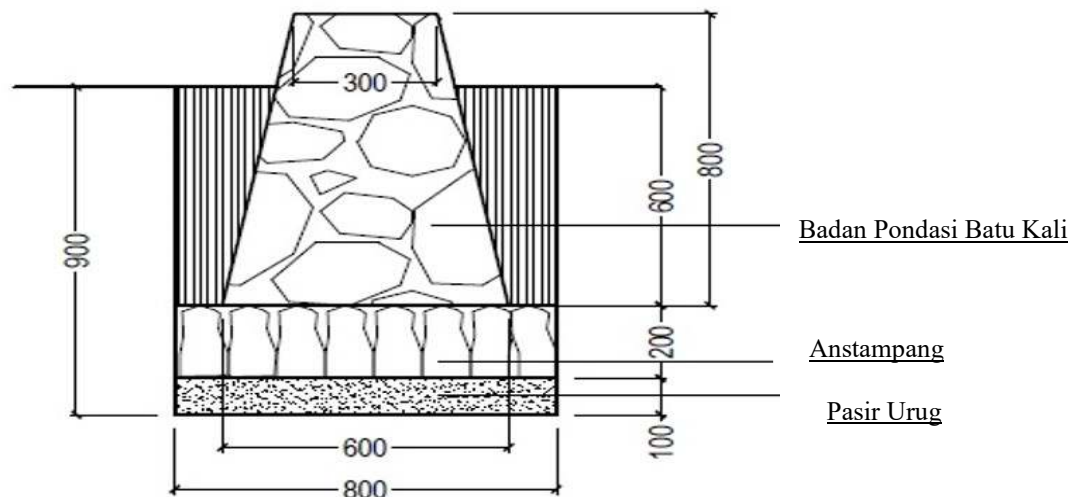
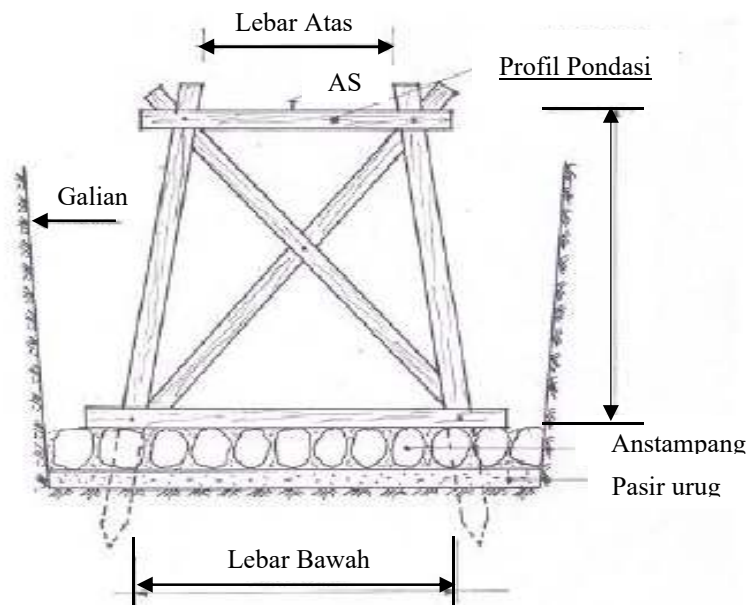
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GAMBAR KERJA
JOB 2

Matakuliah : Praktek Batu Beton
Kode / SKS : SIP1.61.1101 / 4 SKS
Sifat Ujian : Pratikum
Dosen : Dr. Nurhasansyah, M.Pd,
LarasOktavia Andreas, S.Pd.,M.Pd.T,
NidalZuwida, S.Pd.,M.Pd.T
Waktu : 2x 4 x 50 Menit
Bobot nilai maksimal : 20 %

Pondasi Batu Kali





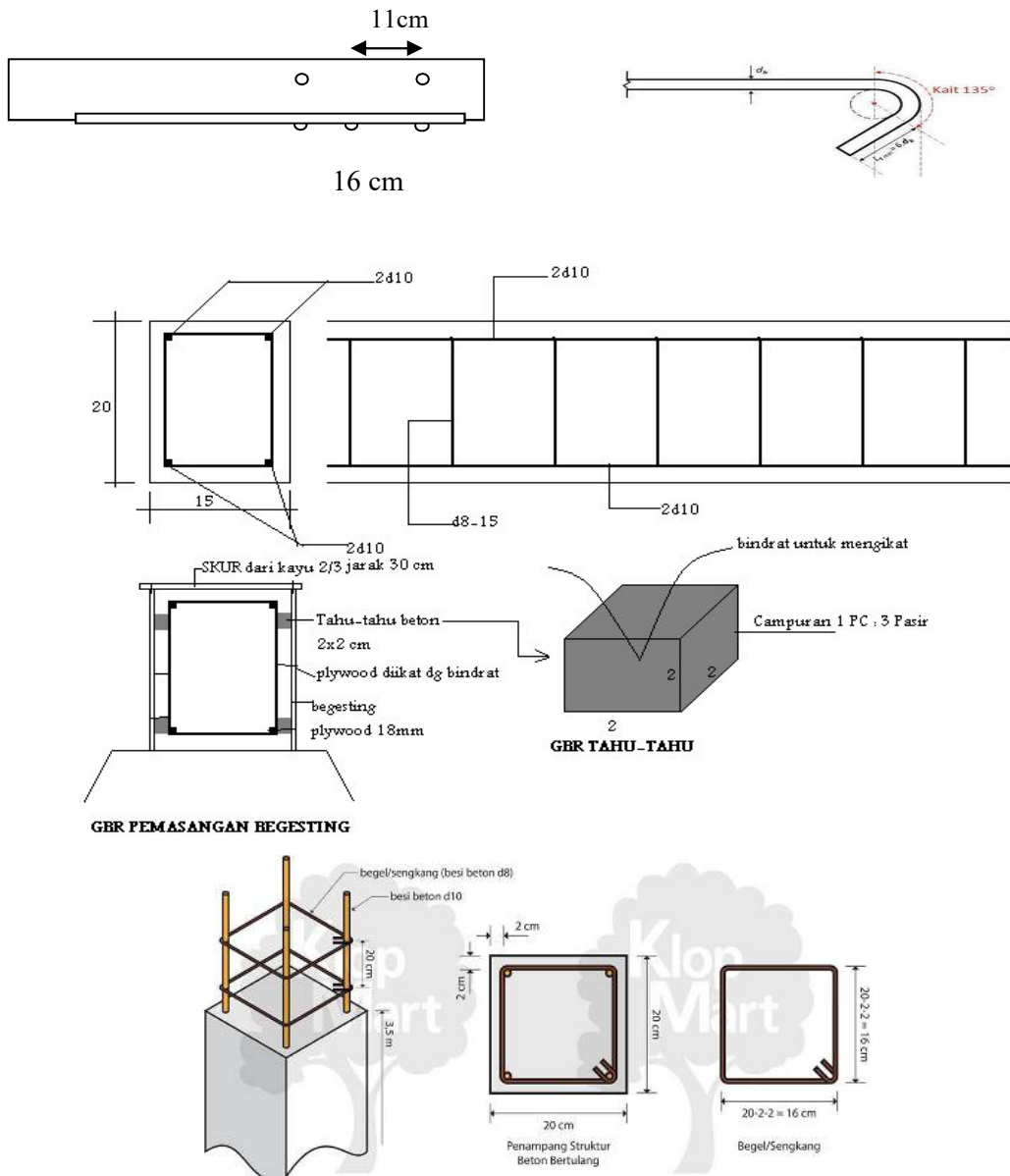
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info@ft.unp.ac.id

GAMBAR KERJA
JOB 3

Matakuliah : Praktek Batu Beton
Kode / SKS : SIP1.61.1101 / 4 SKS
Sifat Ujian : Pratikum
Dosen : Dr. Nurhasanyah, M.Pd,
LarasOktavia Andreas, S.Pd.,M.Pd.T,
NidalZuwida, S.Pd.,M.Pd.T
Waktu : 2x 4 x 50 Menit
Bobot nilai maksimal : 20 %

Praktek Pekerjaan Struktur Bangunan





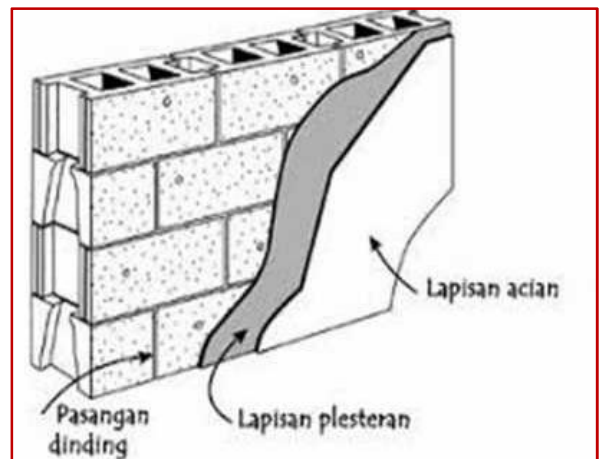
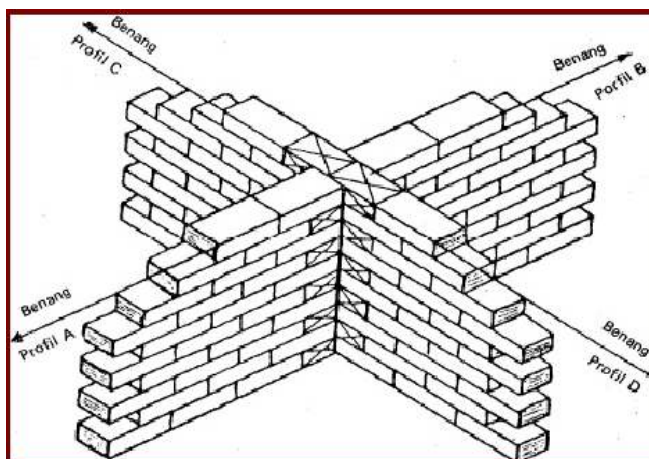
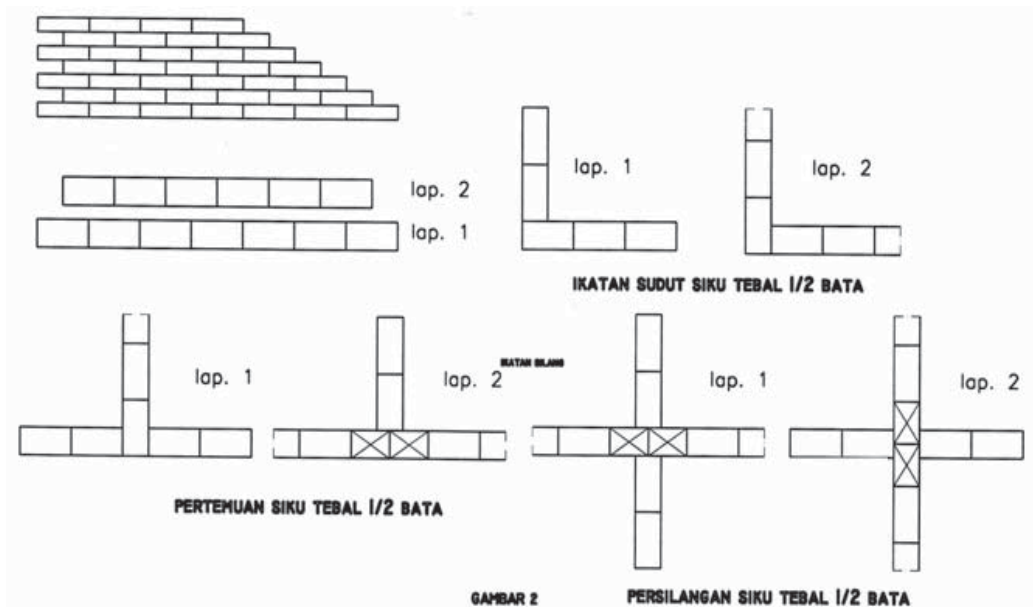
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GAMBAR KERJA
JOB 4

Matakuliah : Praktek Batu Beton
Kode / SKS : SIP1.61.1101 / 4 SKS
Sifat Ujian : Pratikum
Dosen : Dr. Nurhasansyah, M.Pd,
LarasOktavia Andreas, S.Pd.,M.Pd.T,
NidalZuwida, S.Pd.,M.Pd.T
Waktu : 2x 4 x 50 Menit
Bobot nilai maksimal : 20 %

Pasangan dinding 1/2 bata





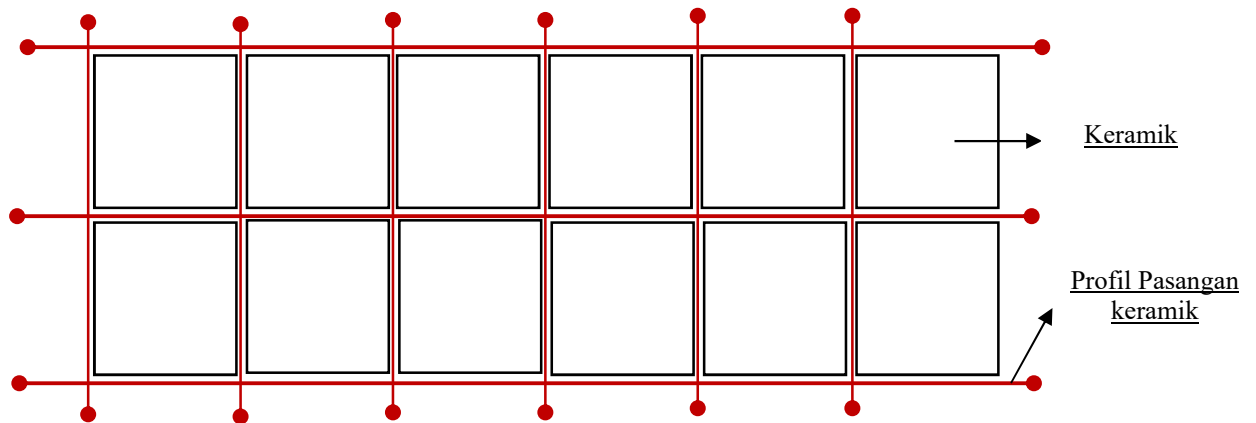
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info@ft.unp.ac.id

GAMBAR KERJA
JOB 5

Matakuliah : Praktek Batu Beton
Kode / SKS : SIP1.61.1101 / 4 SKS
Sifat Ujian : Pratikum
Dosen : Dr. Nurhasansyah, M.Pd,
LarasOktavia Andreas, S.Pd.,M.Pd.T,
NidalZuwida, S.Pd.,M.Pd.T
Waktu : 2x 4 x 50 Menit
Bobot nilai maksimal : 20 %

Pasangan Keramik





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TUGAS MANDIRI

Matakuliah : Praktek Batu Beton
Kode / SKS : SIP1.61.1101 / 4 SKS
Sifat Ujian : Laporan Praktek
Dosen : Dr. Nurhasansyah, M.Pd,
LarasOktavia Andreas, S.Pd.,M.Pd.T,
NidalZuwida, S.Pd.,M.Pd.T
Waktu : 2x 4 x 50 Menit
Bobot nilai maksimal : 5%

No	Soal	Nilai maks
1	Landasan teori	0,5
2	Langkah kerja	1
3	Alat dan bahan	0,5
4	Analisa perhitungan	1
5	Gambar kerja	1
6	kesimpulan	0,5
7	Daftar pustaka	0,5

Catatan:

Tugas mandiri berupa laporan yang dibuat setiap minggu oleh mahasiswa setelah melaksanakan praktek.