



KEMENTERIAN PENDIDIKAN DAN KEBUDAYAAN
UNIVERSITAS NEGERI PADANG
FAKULTAS TEKNIK

JURUSAN TEKNIK SIPIL

Alamat: Jl. Prof. Dr. Hamka Kampus UNP Air Tawar Padang 25131
(0751)7059996; <http://sipil.ft.unp.ac.id>; sipil@ft.unp.ac.id

Bachelor of Education in Building Engineering

MODULE HANDBOOK

Module name:	Structural Analysis
Module level, if applicable:	Undergraduate
Code:	SIP1.61.5302
Sub-heading, if applicable:	-
Classes, if applicable:	-
Semester:	5th
Module coordinator:	Dr. Eng. Prima Yane Putri, S.T, M.T
Lecture(s):	Prima Zola, S.T, M.T; Annisa Prita Melinda, S.T., M.T., etc
Language:	Bahasa Indonesia
Classification within the curriculum:	Compulsory course
Teaching format/ class hours per week during the semester:	<ol style="list-style-type: none"> 1. 150 menit tatap muka 2. 180 menit untuk tugas kegiatan terstruktur 3. 180 menit kegiatan mandiri
Workload:	8160 menit
Credit points:	3
Prerequisites course(s):	Statics, Engineering Mechanics, Concrete Structure, Steel Structure
Course outcomes:	<p>After taking this course the students have ability to:</p> <p>CO1. Identify type of structures and concept of structural analysis</p> <p>CO2. Understand basic of structural analysis program (SAP2000) software.</p> <p>CO3. Analyze beam structure</p> <p>CO4. Analyze plane frame structure</p> <p>CO5. Analyze and design space frame structure</p> <p>CO6. Analyze sloped truss structure</p> <p>CO7. Analyze and design space truss structure</p> <p>CO8. Understand definition of earthquake, type of earthquake, and the process of earthquake.</p> <p>CO9. Understand the level of earthquake risk in Indonesia, earthquake parameter and earthquake measurements as well as the effect of earthquakes on buildings.</p> <p>CO10. Understand the basic principles of Planning and Construction of Simple Earthquake Resistant Buildings (Basic requirements for building earthquake-safer houses) and methods for repairing buildings damaged by an earthquake.</p> <p>CO11. Understand Analysis and Design of Structures due to Earthquake Loads with the Equivalent Static Method</p> <p>CO12. Designing various structural systems for various load combinations</p>
Content:	This course is an application of the Statics, Engineering Mechanics, Steel Structure and Concrete Structure courses. In this course, students can analyze and design structures using the basic concepts of structural analysis and structural analysis software (SAP2000)



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	student version). In this course, students also have knowledge about earthquakes, the process of earthquakes, earthquake conditions in Indonesia, and the effects of earthquakes on buildings.																					
Study / exam achievements:	<p>Attitude assessment is carried out at each meeting by observation and / or self-assessment techniques using the assumption that basically every student has a good attitude. The student is given a value of very good or not good attitude if they show it significantly compared to other students in general. The result of attitude assessment is not a component of the final grades, but as one of the requirements to pass the course. Students will pass from this course if at least have a good attitude.</p> <p>The final mark will be weight as follow:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>No</th> <th>CO</th> <th>Assessment Object</th> <th>Assessment Technique</th> <th>Weight</th> </tr> </thead> <tbody> <tr> <td rowspan="4" style="text-align: center;">1</td> <td rowspan="4" style="text-align: center;">CO1-CO12</td> <td>a. Individual assignment</td> <td rowspan="4" style="text-align: center;">Presentation/ Written test</td> <td style="text-align: center;">15%</td> </tr> <tr> <td>b. Group assignment</td> <td style="text-align: center;">25%</td> </tr> <tr> <td>c. Mid Exam</td> <td style="text-align: center;">30%</td> </tr> <tr> <td>d. Final Exam</td> <td style="text-align: center;">30%</td> </tr> <tr> <td colspan="4" style="text-align: center;">Total</td> <td style="text-align: center;">100%</td> </tr> </tbody> </table>	No	CO	Assessment Object	Assessment Technique	Weight	1	CO1-CO12	a. Individual assignment	Presentation/ Written test	15%	b. Group assignment	25%	c. Mid Exam	30%	d. Final Exam	30%	Total				100%
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		c. Mid Exam		30%																		
		d. Final Exam		30%																		
Total				100%																		
Forms of media:	Board, LCD Projector, Laptop/Computer																					
Literature:	<ol style="list-style-type: none"> 1. Iman Satyarno dkk, 2012, Belajar SAP2000 Seri 1 Analisis Gempa, Zamil Publishing, Jogjakarta, Indonesia. 2. Iman Satyarno dkk, 2012, Belajar SAP2000 Seri 1, Zamil Publishing, Jogjakarta, Indonesia 3. Prima Yane Putri, 2007, Analisis dan Desain Struktur Rangka dengan SAP2000 versi Student, Penerbit UNP Press, Padang, Indonesia. 4. Prima Yane Putri, 2019, Analisis Struktur dan Perancangan Konstruksi Menggunakan SAP2000, Penerbit UNP Press, Padang, Indonesia. 5. Tavio & Usman Wijaya, 2019, Desain Gempa Berbasis Kinerja, Penerbit Andi, Yogyakarta, Indonesia. 6. Teddy Boen, 2016, Belajar dari Kerusakan akibat Gempa Bumi: Bangunan Tembokan Nir-Rekayasa di Indonesia, UGM Press, Yogyakarta, Indonesia. 7. Weaver Jr., W., dan Gere., J.M., 1989, Analisis Matriks Untuk Struktur Rangka, edisi kedua, Penerbit Erlangga, Jakarta, Indonesia. 8. Wiryanto Dewobroto, 2013, Komputer Rekayasa Struktur dengan SAP2000, penerbit Dapur Buku, Jakarta, Indonesia. 																					



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	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6
CO1	√					
CO2	√					
CO3	√	√				
CO4	√	√				
CO5	√	√				
CO6	√	√				
CO7	√	√				
CO8		√				
CO9		√				
CO10		√	√			
CO11					√	√
CO12						√