

PROGRAM STUDI MAGISTER TEKNIK GEOMATIKA
MASTER OF GEOMATICS ENGINEERING



BUKU PEDOMAN MATA KULIAH *COURSES MODULE HANDBOOK*

PEMETAAN BAWAH TANAH
UNDERGROUND SURVEY

DEPARTEMEN TEKNIK GEOMATIKA
Fakultas Teknik Sipil, Perencanaan, dan Kebumihan

DEPARTMENT OF GEOMATICS ENGINEERING
Faculty of Civil Engineering, Planning, and Geo Engineering

INSTITUT TEKNOLOGI SEPULUH NOPEMBER

<p>Capaian Pembelajaran / Course Learning Outcomes</p> <p><i>Module objectives / Course learning outcomes</i></p>	<ol style="list-style-type: none"> 1. Mahasiswa mampu menganalisa pemetaan bawah tanah dengan peralatan terrestrial 2. Mahasiswa mampu menganalisa pemetaan bawah tanah dengan metode fotogrametri 3. Mahasiswa mampu menganalisa pemetaan bawah tanah dengan metode pengikatan dan survey dengan drone bawah tanah <ol style="list-style-type: none"> 1. <i>Students are able to analyze underground mapping with terrestrial equipment</i> 2. <i>Students are able to analyze underground mapping using photogrammetric methods</i> 3. <i>Students are able to analyze underground mapping using the binding method and survey with underground drones</i> 																																								
<p>CPL Prodi yang dibebankan <i>Learning outcomes and their corresponding to PLOs</i></p>	<table border="1" data-bbox="695 864 1283 1050"> <thead> <tr> <th></th> <th>PLO.1</th> <th>PLO.2</th> <th>PLO.3</th> <th>PLO.4</th> <th>PLO.5</th> <th>PLO.6</th> <th>PLO.7</th> <th>PLO.8</th> <th>PLO.9</th> </tr> </thead> <tbody> <tr> <th>CLO.1</th> <td></td> <td></td> <td></td> <td>✓</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <th>CLO.2</th> <td></td> <td></td> <td></td> <td></td> <td>✓</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <th>CLO.3</th> <td></td> <td></td> <td></td> <td></td> <td></td> <td>✓</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		PLO.1	PLO.2	PLO.3	PLO.4	PLO.5	PLO.6	PLO.7	PLO.8	PLO.9	CLO.1				✓						CLO.2					✓					CLO.3						✓			
	PLO.1	PLO.2	PLO.3	PLO.4	PLO.5	PLO.6	PLO.7	PLO.8	PLO.9																																
CLO.1				✓																																					
CLO.2					✓																																				
CLO.3						✓																																			
<p>Mata kuliah wajib prasyarat <i>Mandatory prerequisites</i></p>	<p>-</p>																																								
<p>Pokok Bahasan</p>	<ol style="list-style-type: none"> 1. Metode terestris dalam survey bawah tanah 2. Jenis - jenis infrastruktur underground survey yang ada di Indonesia 3. Strategi dan analisa metode terestris untuk pemetaan bawah tanah khususnya dengan analisa peningkatan dan uitzet 4. Dasar-dasar dan analisa fotogrametri untuk pemetaan bawah tanah 5. Fotogrametri dalam maintanance infrastruktur pemetaan bawah tanah 6. Close range fotogrametri untuk merencanakan dan mengevaluasi struktur bangunan underground survey 7. Laser scanner dan backpack lidar 8. Waterpass untuk studi deformasi underground survey dan fotogrametri 																																								

<p><i>Content</i></p>	<ol style="list-style-type: none"> 1. <i>Terrestrial methods for underground surveying</i> 2. <i>Types of underground survey infrastructure in Indonesia</i> 3. <i>Strategy and analysis of terrestrial methods for underground mapping, especially with improvement and uitzet analysis</i> 4. <i>Basics and analysis of photogrammetry for underground mapping</i> 5. <i>Photogrammetry in underground mapping infrastructure maintenance</i> 6. <i>Close range photogrammetry to plan and evaluate underground survey building structures</i> 7. <i>Laser scanners and backpack lidar for underground survey</i> 8. <i>Waterpass for underground survey and photogrammetry</i> 										
<p>Pembelajaran dan Persyaratan Ujian <i>Study and examination requirements and forms of examination</i></p>	<table border="1" data-bbox="711 860 1430 1256"> <thead> <tr> <th data-bbox="711 860 1238 938">Rencana Evaluasi</th> <th data-bbox="1238 860 1430 938">Bobot Weight</th> </tr> </thead> <tbody> <tr> <td data-bbox="711 938 1238 1016">Tugas 1 <i>Assignment 1</i></td> <td data-bbox="1238 938 1430 1016">25%</td> </tr> <tr> <td data-bbox="711 1016 1238 1095">Evaluasi Tengah Semester <i>Mid Semester Exam</i></td> <td data-bbox="1238 1016 1430 1095">25%</td> </tr> <tr> <td data-bbox="711 1095 1238 1173">Tugas 2 <i>Assignment 2</i></td> <td data-bbox="1238 1095 1430 1173">25%</td> </tr> <tr> <td data-bbox="711 1173 1238 1256">Evaluasi Akhir Semester <i>Final Semester Exam</i></td> <td data-bbox="1238 1173 1430 1256">25%</td> </tr> </tbody> </table>	Rencana Evaluasi	Bobot Weight	Tugas 1 <i>Assignment 1</i>	25%	Evaluasi Tengah Semester <i>Mid Semester Exam</i>	25%	Tugas 2 <i>Assignment 2</i>	25%	Evaluasi Akhir Semester <i>Final Semester Exam</i>	25%
Rencana Evaluasi	Bobot Weight										
Tugas 1 <i>Assignment 1</i>	25%										
Evaluasi Tengah Semester <i>Mid Semester Exam</i>	25%										
Tugas 2 <i>Assignment 2</i>	25%										
Evaluasi Akhir Semester <i>Final Semester Exam</i>	25%										
<p>Media yang digunakan <i>Media employed</i></p>	<p>Classical teaching tools with whiteboard and powerpoint presentation</p>										
<p>Daftar Pustaka <i>Reading list</i></p>											