PROGRAM STUDI MAGISTER TEKNIK GEOMATIKA
MASTER OF GEOMATICS ENGINEERING

BUKU PEDOMAN MATA KULIAH

COURSES MODULE HANDBOOK

3D MODEL

3D MODEL

DEPARTEMEN TEKNIK GEOMATIKA

Fakultas Teknik Sipil, Perencanaan, dan Kebumian

DEPARTMENT OF GEOMATICS ENGINEERING

Faculty of Civil Engineering, Planning, and Geo Engineering

INSTITUT TEKNOLOGI SEPULUH NOPEMBER

23. 3D Model / *3D Model*

Nama modul *Module name*	**3D Model** *3D Model*
Tingkatan *Module level*	Pasca Sarjana (S2) *Master Degree*
Kode *Code*	CM235710
Mata kuliah *Course*	3D Model *3D Model*
Semester *Semester*	III (tiga) atau IV (empat) *III (three) or IV (four)*
Penanggung jawab mata kuliah *Person responsible for the module*	Hepi Hapsari Handayani, S.T., M.Sc., Ph.D.
Dosen *Lecturer*	Hepi Hapsari Handayani, S.T., M.Sc., Ph.D.
Bahasa *Language*	Bahasa Indonesia dan Bahasa Inggris *Indonesian and English*
Relasi pada kurikulum *Relation to curriculum*	Mata kuliah pilihan untuk Program Master Teknik Geomatika *Elective Courses for Master of Geomatics Engineering*
Tipe pertemuan, jam tatap muka *Type of teaching, contact hours*	Kuliah, 1.67 jam x 16 minggu per semester *Lecture, 1.67 hours x 16 weeks per semester*
Beban belajar *Workload*	Kuliah: 1.67 jam x 14 minggu = 23.38 jam Penugasan terstruktur: 2 jam x 14 minggu= 28 jam Kegiatan mandiri: 2 jam x 14 minggu = 28 jam Ujian: 1.67 jam x 2 kali = 3.34 jam Paper review: 2.83 jam x 14 = 39.62 Studi Case-based: 2.83 jam x 14 = 39.62 Total = 161.96 jam *Lecture: 1.67 hours x 14 weeks = 23.38 hours* *Structured exercises and assignments: 2 hours x 14 weeks = 28 hours* *Independent activities: 2 hours x 14 weeks = 28 hours* *Exam: 1.67 hours x 2 time = 3.34 hours* *Paper review: 2.83 jam x 14 = 39.62* *Case-based study: 2.83 jam x 14 = 39.62* *Total = 161.96 hours*
Kredit *Credits*	2 SKS + 2 SKS tambahan beban *2 credits + 2 credits additional activities*
Persyaratan sesuai dengan peraturan ujian *Requirements according to theexamination regulations*	Minimum 80% kehadiran untuk mengikuti ujian tertulis *Minimum 80% attendance in this course in order to take the exams*

Deskripsi Mata Kuliah *Description of Course*	Geoinformasi tiga dimensi adalah data yang menggambarkan fitur geografis dalam ruang 3D dengan himpunan koordinat (x, y, z). Definisi ini meliputi luas tentang berbagai bentuk data, seperti space dalam ruang 3D, model elevasi digital (DEM), dan model bangunan serta kota 3D. Metodologi utama dalam ikhtisar ini adalah tinjauan literatur dan sintesis. Kuliah mencakup literatur ilmiah, laporan proyek, serta sumber lain tentang ilmu geoinformasi 3D dengan fokus pada pemanfaatan model kota 3D secara komprehensif dan sistematis. *Three-dimensional geoinformation is data that describes geographic features in 3D space with a set of (x, y, z) coordinates. This general definition results in encompassing a broad notion of different forms of data, such as movement trajectories in 3D space, digital elevation models (DEMs), and 3D models of building and cities. The main methodology in this overview is a literature review and a synthesis. We have screened scientific literature, project reports as well and online resources on 3D geoinformation science with a focus on the utilization of 3D city models in a comprehensive and systematic manner.*
Capaian Pembelajaran / *Course Learning Outcomes* *Module objectives/ Course learning outcomes*	1. Mahasiswa mampu memahami tipe tipe model bangunan yang terdapat dalam kawasan kota, kabupaten kota, kota, wilayah 2. Mahasiswa mampu membedakan tingkat level of details bangunan sesuai dengan karektiristik bangunan dan tujuan penggunaan 3. Mahasiswa mampu mengembangkan ide penerapan 3D model bangunan dalam aplikasi untuk perencanaan kota, mitigasi bencana, penataan lingkungan, dll 4. Mahasiswa mampu melakukan satu metode rekontruksi bangunan untuk membentuk 3D model bangunan atau kota dalam scope kecil 1. *Students are able to understand the types of building models found in city areas, city districts, cities, regions.* 2. *Students can differentiate the level of detail of buildings according to building characteristics and intended use.* 3. *Students are able to develop ideas for applying 3D building models in applications for urban planning, disaster mitigation, environmental planning, etc.*

<table>
<tr><td></td><td>4. Students are able to carry out a building reconstruction method to form a 3D model of a building or city within a small scope</td></tr>
<tr><td>CPL Prodi yang dibebankan
Learning outcomes and their corresponding to PLOs</td><td>
<table>
<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>
<tr><td>CLO.1</td><td></td><td></td><td></td><td></td><td>✓</td><td></td><td></td><td></td><td></td></tr>
<tr><td>CLO.2</td><td></td><td></td><td></td><td></td><td>✓</td><td></td><td></td><td></td><td></td></tr>
<tr><td>CLO.3</td><td></td><td></td><td></td><td></td><td></td><td></td><td>✓</td><td></td><td></td></tr>
<tr><td>CLO.4</td><td></td><td></td><td></td><td></td><td></td><td></td><td>✓</td><td></td><td></td></tr>
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<tr><td>Mata kuliah wajib prasyarat
Mandatory prerequisites</td><td>-</td></tr>
<tr><td>Pokok Bahasan

Content</td><td>1. Tipe tipe model bangunan yang terdapat dalam kawasan kota, kabupaten kota, kota, wilayah
2. Tingkat level of details bangunan sesuai dengan karektiristik bangunan dan tujuan penggunaan.
3. Ide penerapan 3D model bangunan dalam aplikasi untuk perencanaan kota, mitigasi bencana, penataan lingkungan, dll
4. Metode rekontruksi bangunan untuk membentuk 3D model bangunan atau kota dalam scope kecil

1. The types of building models found in city areas, city districts, cities, regions.
2. The level of detail of buildings according to building characteristics and intended use.
3. Ideas for applying 3D building models in applications for urban planning, disaster mitigation, environmental planning, etc.
4. Building reconstruction method to form a 3D model of a building or city within a small scope.</td></tr>
<tr><td>Pembelajaran dan Persyaratan Ujian
Study and examination requirements and forms of examination</td><td>
<table>
<tr><th>Rencana Evaluasi</th><th>Bobot
Weight</th></tr>
<tr><td>Tugas
Assignment</td><td>20%</td></tr>
<tr><td>Evaluasi Tengah Semester
Middle Term Examination</td><td>25%</td></tr>
<tr><td>Project
Project</td><td>25%</td></tr>
<tr><td>Final Project
Final Project</td><td>30%</td></tr>
</table>
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<tr><td>Media yang digunakan
Media employed</td><td>Classical teaching tools with whiteboard and powerpoint presentation</td></tr>
</table>

Daftar Pustaka *Reading list*	