



BUKU PEDOMAN MATA KULIAH
COURSE MODULE HANDBOOK

KARTOGRAFI DAN PEMETAAN DIGITAL
CARTOGRAPHY AND DIGITAL MAPPING

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

MATA KULIAH WAJIB (COMPULSORY COURSE)

Kartografi dan Pemetaan Digital / *Cartography and Digital Mapping*

Nama modul <i>Module name</i>	Kartografi dan Pemetaan Digital <i>Cartography and Digital Mapping</i>
Tingkatan <i>Module level</i>	Pasca Sarjana (S2) <i>Master Degree</i>
Kode <i>Code</i>	RM185201
Mata kuliah <i>Course</i>	Kartografi dan Pemetaan Digital <i>Cartography and Digital Mapping</i>
Semester <i>Semester</i>	II (dua) <i>II (two)</i>
Penanggung jawab mata kuliah <i>Person responsible for the module</i>	Noorlaila Hayati
Dosen <i>Lecturer</i>	Noorlaila Hayati Teguh Hariyanto
Bahasa <i>Language</i>	Bahasa Indonesia dan Bahasa Inggris <i>Indonesian and English</i>
Bahasa <i>Language</i>	Bahasa Indonesia dan Bahasa Inggris <i>Indonesian and English</i>
Relasi pada kurikulum <i>Relation to curriculum</i>	Mata kuliah wajib untuk Program Master Teknik Geomatika <i>Compulsory Courses for Master of Geomatics Engineering</i>
Tipe pertemuan, jam tatap muka <i>Type of teaching, contact hours</i>	Kuliah, 1.67 jam x 16 minggu per semester <i>Lecture, 1.67 hours x 16 weeks per semester</i>
Beban belajar <i>Workload</i>	Kuliah: 1.67 jam x 14 minggu = 23.38 jam Penugasan terstruktur: 4 jam x 14 minggu= 56 jam Kegiatan mandiri: 4 jam x 14 minggu = 56 jam Ujian: 1.67 jam x 2 kali = 3.34 jam Total = 138.72 jam <i>Lecture: 1.67 hours x 14 weeks = 23.38 hours</i> <i>Structured exercises and assignments: 4 hours x 14 weeks = 56 hours</i> <i>Independent activities: 4 hours x 14 weeks = 56 hours</i> <i>Exam: 1.67 hours x 2 time = 3.34 hours</i> <i>Total = 138.72 hours</i>
Kredit <i>Credits</i>	2 SKS <i>2 credits</i>

<p>Persyaratan sesuai dengan peraturan ujian <i>Requirements according to the examination regulations</i></p>	<p>Minimum 80% kehadiran untuk mengikuti ujian tertulis <i>Minimum 80% attendance in this course in order to take the exams</i></p>
<p>Deskripsi Mata Kuliah <i>Description of Course</i></p>	<p>Pada mata kuliah ini mahasiswa akan mempelajari tentang konsep Kartografi yang meliputi pengertian Peta dan sejarah peta. Pengertian peta yang dimaksud adalah arti peta, penggolongan peta menurut sifat, macam dan jenisnya. Setelah mengetahui arti peta, maka prosedur pembuatan peta diajarkan yaitu proses pemetaan yang terdiri dari: pengambilan data, pengolahan data dan penyajian data. Selanjutnya, mahasiswa akan mempelajari dan menelaah perkembangan kartografi dalam teknologi saat ini yang biasa disebut sebagai pemetaan digital. Mahasiswa diharapkan dapat mengimplementasikan peta dasar dan peta tematik dalam produk dokumen digital dan dapat divisualisasikan secara interaktif via online.</p> <p><i>In this course, students will learn the concept of Cartography such as the understanding of maps and the history of maps. It includes the meaning of the map, the classification of maps, and the types of maps. Furthermore, students learn the procedure for making maps, namely the mapping process which consists of data collection, data processing, and data presentation. Furthermore, students will study and examine the development of cartography in today's technology which is commonly referred to as digital mapping. Students are expected to be able to implement base maps and thematic maps in digital document products and can be visualized interactively using the internet.</i></p>
<p>Capaian Pembelajaran / Course Learning Outcomes</p>	<ol style="list-style-type: none"> 1. Mampu menjelaskan konsep tentang Kartografi, meliputi arti peta, posisi suatu tempat dan tujuan kartografi. 2. Mampu membedakan peta yang beredar di masyarakat. 3. Mampu menjelaskan prosedur pembuatan peta secara complex. 4. Mampu membuat peta tematik dari serangkaian data yang tersedia (data sekunder). 5. Mampu menjelaskan analitik dan otomatisasi kartografi. 6. Mampu memahami konsep peta tematik dalam 2D dan 3D.

<p><i>Module objectives/Course learning outcomes</i></p>	<ol style="list-style-type: none"> 7. Mampu menjelaskan aplikasi pemetaan digital beserta cara visualisasinya. 8. Mampu memahami perkembangan mutakhir teknologi pemetaan digital. <ol style="list-style-type: none"> 1. <i>Able to explain the concept of cartography including the meaning of maps, the position of a place and the purpose of cartography.</i> 2. <i>Able to distinguish maps circulating in the community.</i> 3. <i>Able to explain the procedure of making a map in a complex term.</i> 4. <i>Able to create thematic maps from a set of available data (secondary data).</i> 5. <i>Able to explain cartographic analytics and automatic cartography.,</i> 6. <i>Able to understand the concept of thematic maps in 2D and 3D.</i> 7. <i>Able to explain digital mapping applications and how to visualize them.</i> 8. <i>Able to understand the latest developments in digital mapping technology.</i> 																																																																																																																					
<p>CPMK dan hubungan dengan CPL Prodi <i>Learning outcomes and their corresponding to PLOs</i></p>	<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <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> <th>PLO.10</th> <th>PLO.11</th> <th>PLO.12</th> </tr> </thead> <tbody> <tr> <td>CLO.1</td> <td></td> <td>✓</td> <td></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> <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> <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> <td></td> <td></td> <td></td> </tr> <tr> <td>CLO.5</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>✓</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>CLO.6</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>✓</td> <td></td> <td></td> <td></td> </tr> <tr> <td>CLO.7</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>✓</td> <td></td> <td></td> <td></td> </tr> <tr> <td>CLO.8</td> <td></td> <td></td> <td></td> <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	PLO.10	PLO.11	PLO.12	CLO.1		✓											CLO.2		✓											CLO.3						✓							CLO.4		✓											CLO.5						✓							CLO.6									✓				CLO.7									✓				CLO.8									✓			
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<p>Pokok Bahasan <i>Content</i></p>	<p>Konsep Kartograf, penggolongan peta, prosedur pembuatan peta, pemahaman tentang skala, system koordinat, plotting Koordinat: pengertian koordinat kartesian, geografis, sistem koordinat, desain tata letak pada peta.</p> <p><i>Cartographic concept, map classification, mapmaking procedure, understanding of scale, coordinate system, coordinate plotting, cartesian coordinate definition, geographic, coordinate system, layout design on map.</i></p>																																																																																																																					

Pembelajaran dan Persyaratan Ujian <i>Study and examination requirements and forms of examination</i>	<table border="1"> <thead> <tr> <th>Rencana Evaluasi</th> <th>Bobot Weight</th> </tr> </thead> <tbody> <tr> <td>Membuat peta dasar di wilayah domisili <i>Create a base map in students's region</i></td> <td>10%</td> </tr> <tr> <td>Presentasi peta tematik dari peta riil <i>Present thematic maps from real data</i></td> <td>20%</td> </tr> <tr> <td>Mempresentasikan contoh aplikasi BIM <i>Mid Semester Exam</i></td> <td>10%</td> </tr> <tr> <td>Membuat dan presentasi web mapping <i>Create and present web mapping</i></td> <td>20%</td> </tr> <tr> <td>Evaluasi Tengah Semester <i>Middle Term Examination</i></td> <td>20%</td> </tr> <tr> <td>Evaluasi Akhir Semester <i>Final Examination</i></td> <td>20%</td> </tr> </tbody> </table>		Rencana Evaluasi	Bobot Weight	Membuat peta dasar di wilayah domisili <i>Create a base map in students's region</i>	10%	Presentasi peta tematik dari peta riil <i>Present thematic maps from real data</i>	20%	Mempresentasikan contoh aplikasi BIM <i>Mid Semester Exam</i>	10%	Membuat dan presentasi web mapping <i>Create and present web mapping</i>	20%	Evaluasi Tengah Semester <i>Middle Term Examination</i>	20%	Evaluasi Akhir Semester <i>Final Examination</i>	20%
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Media yang digunakan <i>Media employed</i>	Media pengajaran secara klasik dengan papan tulis dan presentasi power point <i>Classical teaching tools with white board and power point presentation</i>															
Daftar Pustaka <i>Reading list</i>	<ol style="list-style-type: none"> 1. Villanueva, K.J. 1984. <i>Kartografi</i>. Jurusan Teknik Geodesi FTSP ITB. Bandung. 2. Wolf, Paul, R. 1974. <i>Elementary of Photogrametry</i> 3. Kraak, MJ., Omerling, J. 1996. <i>Cartography Petzation of spatial data</i>. Prentice Hall. London 4. Yuwono, 2009. <i>Kartografi</i>. Prodi teknik Geomatika ITS. 2009. Surabaya 															