



# BUKU PEDOMAN MATA KULIAH COURSES MODULE HANDBOOK

KARTOGRAFI DAN GEOVISUALISASI  
CARTOGRAPHY AND GEOVISUALIZATION

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

## 20. Kartografi dan Geovisualisasi / Cartography and Geovisualization

<b>Nama modul</b> <i>Module name</i>	Kartografi dan Geovisualisasi <i>Cartography and Geovisualization</i>
<b>Tingkatan</b> <i>Module level</i>	Pasca Sarjana (S2) <i>Master Degree</i>
<b>Kode</b> <i>Code</i>	CM235707
<b>Mata kuliah</b> <i>Course</i>	Kartografi dan Geovisualisasi <i>Cartography and Geovisualization</i>
<b>Semester</b> <i>Semester</i>	III (tiga) atau IV (empat) <i>III (three) or IV (four)</i>
<b>Penanggung jawab mata kuliah</b> <i>Person responsible for the module</i>	Dr.-Ing. Noorlaila Hayati, S.T., M.T.
<b>Dosen</b> <i>Lecturer</i>	Dr. Ing. Ir. Teguh Hariyanto, M.Sc. Dr.-Ing. Noorlaila Hayati, S.T., M.T.
<b>Bahasa</b> <i>Language</i>	Bahasa Indonesia dan Bahasa Inggris <i>Indonesian and English</i>
<b>Relasi pada kurikulum</b> <i>Relation to curriculum</i>	Matakuliah Pilihan untuk Program Master Teknik Geomatika <i>Elective Course for Master of Geomatics Engineering</i>
<b>Tipe pertemuan, jam tatap muka</b> <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>
<b>Beban belajar</b> <i>Workload</i>	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 Total = 82.72 jam  <i>Lecture: 1.67 hours x 14 weeks = 23.38 hours</i> <i>Structured exercises and assignments: 4 hours x 14 weeks = 28 hours</i> <i>Independent activities: 4 hours x 14 weeks = 28 hours</i> <i>Exam: 1.67 hours x 2 time = 3.34 hours</i> <i>Total = 82.72 hours</i>
<b>Kredit</b> <i>Credits</i>	2 SKS <i>2 credits</i>
<b>Persyaratan sesuai dengan peraturan ujian</b> <i>Requirements according to the examination regulations</i>	Minimum 80% kehadiran untuk mengikuti ujian tertulis <i>Minimum 80% attendance in this course in order to take the exams</i>

<b>Deskripsi Mata Kuliah</b>	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.
<i>Description of Course</i>	<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>
<b>Capaian Pembelajaran / Course Learning Outcomes</b>	<ol style="list-style-type: none"> <li>1. Mampu menjelaskan konsep tentang Kartografi, meliputi arti peta, posisi suatu tempat dan tujuan kartografi.</li> <li>2. Mampu membedakan peta yang beredar di masyarakat.</li> <li>3. Mampu menjelaskan prosedur pembuatan peta secara complex.</li> <li>4. Mampu membuat peta tematik dari serangkaian data yang tersedia (data sekunder).</li> <li>5. Mampu menjelaskan analitik dan otomatisasi kartografi.</li> <li>6. Mampu memahami konsep peta tematik dalam 2D dan 3D.</li> <li>7. Mampu menjelaskan aplikasi pemetaan digital beserta cara visualisasinya.</li> <li>8. Mampu memahami perkembangan mutakhir teknologi pemetaan digital.</li> </ol>

<i>Module objectives/Course learning outcomes</i>	<ol style="list-style-type: none"> <li>1. Able to explain the concept of cartography including the meaning of maps, the position of a place and the purpose of cartography.</li> <li>2. Able to distinguish maps circulating in the community.</li> <li>3. Able to explain the procedure of making a map in a complex term.</li> <li>4. Able to create thematic maps from a set of available data (secondary data).</li> <li>5. Able to explain cartographic analytics and automatic cartography.,</li> <li>6. Able to understand the concept of thematic maps in 2D and 3D.</li> <li>7. Able to explain digital mapping applications and how to visualize them.</li> <li>8. Able to understand the latest developments in digital mapping technology.</li> </ol>																																																																																										
<b>CPMK dan hubungan dengan CPL Prodi</b> <i>Learning outcomes and their corresponding to PLOs</i>	<table border="1" style="margin-left: auto; margin-right: auto;"> <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> <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> <tr> <td>CLO.5</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> </tr> <tr> <td>CLO.7</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> </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					✓					CLO.4				✓						CLO.5					✓					CLO.6				✓						CLO.7				✓						CLO.8				✓					
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<b>Mata kuliah wajib prasyarat</b> <i>Mandatory prerequisites</i>	-																																																																																										
<b>Pokok Bahasan</b>	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.																																																																																										
<i>Content</i>	<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>																																																																																										

<b>Pembelajaran dan Persyaratan Ujian</b> <i>Study and examination requirements and forms of examination</i>	<b>Rencana Evaluasi</b>		<b>Bobot Weight</b>
	Pembuatan peta dasar Making a base map		15%
	Pembuatan peta tematik Making a thematic map		10%
	Evaluasi Tengah Semester Mid Term Exam		20%
	Pembuatan webmapping Making webmapping		25%
	Evaluasi Akhir Semester Final Examination		30%
<b>Media yang digunakan</b> <i>Media employed</i>	Classical teaching tools with white board and power point presentation		
<b>Daftar Pustaka</b> <i>Reading list</i>	<ol style="list-style-type: none"> <li>1. Villanueva, K.J. 1984. <i>Kartografi</i>. Jurusan Teknik Geodesi FTSP ITB. Bandung.</li> <li>2. Wolf, Paul, R. 1974. <i>Elementary of Photogrammetry</i></li> <li>3. Kraak, MJ., Omerling, J. 1996. <i>Cartography Petzation of spatial data</i>. Prentice Hall. London</li> <li>4. Yuwono, 2009. <i>Kartografi</i>. Prodi teknik Geomatika ITS. 2009. Surabaya</li> </ol>		