PROGRAM STUDI MAGISTER TEKNIK GEOMATIKA
MASTER OF GEOMATICS ENGINEERING

BUKU PEDOMAN MATA KULIAH

COURSES MODULE HANDBOOK

GLOBAL GEODETIC OBSERVING SYSTEM

GLOBAL GEODETIC OBSERVING SYSTEM

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

7. Sistem Observasi Geodetik Global */ Global Geodetic Observing System*

Nama modul *Module name*	**Sistem Observasi Geodetik Global** *Global Geodetic Observing System*
Tingkatan *Module level*	Pasca Sarjana (S2) *Master Degree*
Kode *Code*	CM235507
Mata kuliah *Course*	Sistem Observasi Geodetik Global *Global Geodetic Observing System*
Semester *Semester*	III (tiga) atau IV (empat) *III (three) or IV (four)*
Penanggung jawab mata kuliah *Person responsible for the module*	Ira Mutiara Anjasmara, S.T., M.Phil., Ph.D.
Dosen *Lecturer*	Ira Mutiara Anjasmara, S.T., M.Phil., 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*

<table>
<tr><td>Deskripsi Mata Kuliah

Description of Course</td><td>Dalam mata kuliah ini akan dipelajari global geodesy observing system (GGOS)s ebagai kontribusi dari ilmu geodesi dalam mempelajari sistem Bumi, dinamikanya, responnya terhadap perubahan iklim. Perkembangan dari teknik geodesi modern terutama yang berbasis satelite menjadi komponen utama dalam GGOS.

In this course, global geodesy observing systems (GGOS) will be studied as a contribution from the science of geodesy in studying the Earth system, its dynamics, and its response to climate change. The development of modern geodetic techniques, especially satellite-based ones, is a main component in GGOS.</td></tr>
<tr><td>Capaian Pembelajaran / Course Learning Outcomes

Module objectives/ Course learning outcomes</td><td>1. Mampu menjelaskan tujuan, capaian, and teknologi terkini dari geodesi
2. Mampu menjelaskan kontribusi ilmu kebumian khususnya persyaratan geodesi dalam memahami dinamika planet
3. Mampu menjelaskan dan mendeskripsikan pentingnya observasi Bumi dalam memenuhi kebutuhan masyarakat yang semkin global
4. Mampu mengindentifikasi dan memanfaatkan teknik-teknik geodesi modern dalam GGOS dan pemanfaatannya dalam isu-isu masyarakat global

1. Able to explain the goals, achievements, and latest techbology in geodesy
2. Able to explain the contribution of the Earth science especially requirements for geodesy in understanding the dynamic planet
3. Able to to elaborate the importance of Earth observation in serving the needs of an increasingly global society
4. Able to identify and utilize the modern geodetic techniques in GGOS and their use in global societal issues</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></td><td></td><td></td><td></td><td></td><td>✓</td><td>✓</td><td></td><td></td><td></td></tr>
</table>
</td></tr>
</table>

<table>
<tr><td>Mata kuliah wajib prasyarat
Mandatory prerequisites</td><td>-</td></tr>
<tr><td>Pokok Bahasan

Content</td><td>1. Tujuan, capaian, dan alat geodesi modern
2. Planet dinamis: Persyaratan ilmu kebumian untuk geodesi
3. Pengamatan bumi: Melayani kebutuhan masyarakat
4. Geodesi: landasan untuk menjelajahi planet, tata surya, dan sekitarnya
5. Persyaratan pengguna ilmiah dan masyarakat yang terintegrasi serta spesifikasi fungsional untuk GGOS
6. Sistem Pengamatan Geodesi Global (GGOS) masa depan

1. The goals, achievements, and tools of modern geodesy
2. A dynamic planet: Earth science requirements for geodesy
3. Earth observation: Serving the needs
4. Geodesy: foundation for exploring the planets, the solar system and beyond
5. Integrated scientific and societal user requirements and functional specifications for the GGOS
6. The future Global Geodetic Observing System (GGOS)</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 1
Assignment 1</td><td>20%</td></tr>
<tr><td>Evaluasi Tengah Semester
Mid Semester Exam</td><td>20%</td></tr>
<tr><td>Tugas 2
Assignment 2</td><td>30%</td></tr>
<tr><td>Evaluasi Akhir Semester
Final Semester Exam</td><td>30%</td></tr>
</table></td></tr>
<tr><td>Media yang digunakan
Media employed</td><td>Classical teaching tools with whiteboard and powerpoint presentation</td></tr>
<tr><td>Daftar Pustaka
Reading list</td><td></td></tr>
</table>