PROGRAM STUDI MAGISTER TEKNIK GEOMATIKA
MASTER OF GEOMATICS ENGINEERING

BUKU PEDOMAN MATA KULIAH

COURSES MODULE HANDBOOK

SURVEI REKAYASA LANJUT

ADVANCED ENGINEERING SURVEY

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

8. Survei Rekayasa Lanjut / *Advanced Engineering Survey*

Nama modul *Module name*	**Survey Rekayasa Lanjut** *Advanced Engineering Survey*
Tingkatan *Module level*	Pasca Sarjana (S2) *Master Degree*
Kode *Code*	CM235601
Mata kuliah *Course*	Survey Rekayasa Lanjut *Advanced Engineering Survey*
Semester *Semester*	III (tiga) atau IV (empat) *III (three) or IV (four)*
Penanggung jawab mata kuliah *Person responsible for the module*	Prof. Mokhamad Nur Cahyadi, S.T., M.Sc., Ph.D.
Dosen *Lecturer*	Prof. Mokhamad Nur Cahyadi, S.T., M.Sc., Ph.D.
Bahasa *Language*	Bahasa Indonesia dan Bahasa Inggris *Indonesian and English*
Relasi pada kurikulum *Relation to curriculum*	Matakuliah Pilihan Wajib Bidang Minat untuk Program Master Teknik Geomatika *Elective Course (Mandatory for the Chosen Area of Specialist) for Master of Geomatics Engineering*
Tipe pertemuan, jam tatap muka *Type of teaching, contact hours*	Kuliah, 2.5 jam x 16 minggu per semester *Lecture, 2.5 hours x 16 weeks per semester*
Beban belajar *Workload*	Kuliah: 2.5 jam x 14 minggu = 35 jam Penugasan terstruktur: 5 jam x 14 minggu= 70 jam Kegiatan mandiri: 6 jam x 14 minggu = 84 jam Ujian: 2.5 jam x 2 kali = 5 jam Total = 194 jam Lecture: 2.5 hours x 14 weeks = 35 hours Structured exercises and assignments: 5 hours x 14 weeks = 70 hours Independent activities: 6 hours x 14 weeks = 84 hours Exam: 2.5 hours x 2 time = 5 hours Total = 194 hours
Kredit *Credits*	3 SKS *3 credits*
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*	

<table>
<tr><td>Capaian Pembelajaran / Course Learning Outcomes

Module objectives/ Course learning outcomes</td><td>1. Mampu menganalisa penggunaan rumus dasar matematika, geomatri dan triginometri
2. Mampu menganalisa tinggi dan kemiringan bangunan
3. Mampu menganalisa pematokan (uit zet) untuk bangunan
4. Mampu menganalisa volume galian tanah (galian timbunan)

1. Able to analyze the use of basic mathematics, geomatrics and triginometry formulas
2. Able to analyze the height and slope of buildings
3. Able to analyze benchmarking (uit zet) for buildings
4. Able to analyze the volume of soil excavation (excavation embankment)</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></table></td></tr>
<tr><td>Mata kuliah wajib prasyarat
Mandatory prerequisites</td><td>-</td></tr>
<tr><td>Pokok Bahasan

Content</td><td>1. Konsep kalkulus untuk survei rekayasa
2. Geometri jalan raya
3. Konsep Alinemen horisontal
4. Staking Out Alinemen Horisontal
5. Konsep Alinemen vertikal
6. Staking Out Alinemen vertikal
7. Konsep koordinat untuk melakukan uitzet bangunan
8. Konsep koordinat untuk Menghitung tinggi bangunan dan kemiringan bangunan

1. Basic concepts of calculus for engineering surveys
2. Highway geometry in general
3. Basic concept of horizontal alignment
4. Staking out horizontal alignment
5. Basic concept of vertical alignment
6. Staking out vertical alignment
7. The concept of coordinates to carry out building uitzets
8. Coordinate concepts to calculating building height and building slope.</td></tr>
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<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>30%</td></tr>
<tr><td>Tugas 2
Assignment 2</td><td>20%</td></tr>
<tr><td>Evaluasi Akhir Semester
Final Semester Exam</td><td>30%</td></tr>
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<td>Media yang digunakan
Media employed</td>
<td>Classical teaching tools with whiteboard and powerpoint presentation</td>
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<td>Daftar Pustaka
Reading list</td>
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