PROGRAM STUDI MAGISTER TEKNIK GEOMATIKA
MASTER OF GEOMATICS ENGINEERING

BUKU PEDOMAN MATA KULIAH

COURSES MODULE HANDBOOK

ANALISIS DATA HIDRO-OSEANOGRAFI

HYDRO-OCEANOGRAPHY DATA ANALYSIS

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

25. Analisis Data Hidro-Oseanografi / *Hydro-Oceanography Data Analysis*

Nama modul *Module name*	**Analisis Data Hidro-Oseanografi** *Hydro-Oceanography Data Analysis*
Tingkatan *Module level*	Pasca Sarjana (S2) *Master Degree*
Kode *Code*	CM235801
Mata kuliah *Course*	Analisis Data Hidro-Oseanografi *Hydro-Oceanography Data Analysis*
Semester *Semester*	III (tiga) atau IV (empat) *III (three) or IV (four)*
Penanggung jawab mata kuliah *Person responsible for the module*	Danar Guruh Pratomo, S.T., M.T., Ph.D.
Dosen *Lecturer*	Danar Guruh Pratomo, S.T., M.T., 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, 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: 2.5 jam x 14 minggu= 35 jam Kegiatan mandiri: 2.5 jam x 14 minggu= 35 jam Ujian: 2.5 jam x 2 kali = 5 jam Paper review: 3 jam x 14 = 42 jam Studi Case-based: 3 jam x 14 = 42 jam Total = 194 jam *Lecture: 2.5 hours x 14 weeks = 35 hours* *Structured exercises and assignments: 2.5 x 14 weeks = 35 hours* *Independent activities: 2.5 x 14 weeks = 35 hours Exam: 2.5 hours x 2 time = 5 hours* *Paper review: 3 jam x 14 = 42 hours* *Case-based study: 3 jam x 14 = 42 hours* *Total = 194 hours*
Kredit *Credits*	3 SKS *3 credits*
Persyaratan sesuai dengan peraturan ujian	Minimum 80% kehadiran untuk mengikuti ujian tertulis

Requirements according to theexamination regulations	*Minimum 80% attendance in this course in order to take the exams*
Deskripsi Mata Kuliah *Description of Course*	Mata kuliah Analisis Data Hidrografi merupakan mata kuliah pilihan bidang Hidrografi dan Kelautan yang bertujuan untuk memberikan penjelasan mengenai proses manajemen dan analisis data hidrografi sehingga akan menjadi informasi yang dapat bermanfaat. Pada mata kuliah ini, mahasiswa akan diajarkan mengenai data-data yang dibutuhkan dan dihasilkan dalam survei hidrografi beserta sistem pada data hidrografi tersebut. Diharapkan melalui kuliah ini mahasiswa mengetahui standart yang digunakan dalam pelaksanaan survei hidrografi dan pengolahan data hasil survei hidrografi. Teknik-tehnik akuisisi data baik secara vertikal maupun horizontal juga akan dijelaskan dalam mata kuliah ini. Selain itu, juga akan diberikan gambaran mengenai pelaksanaan survei menggunakan instrument akustik dan non-akustik. Tahap perencanaan desain survei hingga pengolahan dan analisis data hasil survei hidrografi dengan berbagai macam metode yang digunakan juga diajarkan pada mata kuliah ini. *Hydrographic Data Analysis Course is an elective course in the field of hydrography and marine that aims to provide an explanation about the process of management and analysis of hydrophobic data so that it will be useful information. In this course, students will be taught about the data required and produced in hydrographic surveys along with the system on such hydrografic data. It is hoped that through this lecture the students will learn the standards used in the implementation of hydrographic surveys and the processing of the data of the Hydrographical Survey results. The techniques of data acquisition both vertically and horizontally will also be described in this course. In addition, an overview of the conduct of surveys using acoustic and non-acoustic instruments will be provided. The planning stages of survey design to the processing and analysis of hydrographic survey data with a variety of methods used are also taught in this course.*
Capaian Pembelajaran / *Course Learning Outcomes*	1. Mampu menjelaskan data yang dibutuhkan dalam survei hidrografi 2. Mampu menjelaskan mengenai marine spatial data infrastructure: pengertian, parameter, kerangka dan pengaplikasiannya 3. Mampu memahami metadata dalam survei hidrografi

	4. Memiliki pengetahuan tentang standar survei hidrografi di Indonesia dan internasional 5. Mampu menjelaskan teknik yang digunakan dalam akuisisi data hidrografi baik penentuan secara vertikal maupun horizontal 6. Mampu memahami pelaksanaan survei menggunakan instrumen akustik dan non-akustik beserta perencanaan desain survei 7. Mampu melakukan pengolahan data hidrografi dan membangun basis data hidrografi 8. Mampu menganalisis data hidrografi hasil pengolahan
Module objectives/ course learning outcomes	*1. Able to explain the data required in hydrographic surveys* *2. Able to explain about marine spatial data infrastructure: definition, parameters, frameworks and applications* *3. Able to understand metadata in hydrographic surveys* *4. Has knowledge of hydrographic survey standards in Indonesia and internationally* *5. Able to explain the techniques used in hydrographic data acquisition both vertically and horizontally* *6. Able to understand the execution of surveys using acoustic and non-acoustic instruments along with survey design planning* *7. Able to perform hydrographic data processing and build hydrografic database* 8. *Able to analyze hydrographic data from processing*
CPMK dan hubungan dengan CPL Prodi *Learning outcomes and their corresponding to PLOs*	

	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								✓	

Mata kuliah wajib prasyarat *Mandatory prerequisites*	-
Pokok Bahasan	1. Penjelasan Akuisisi Data Hidrografi berbagai Metode 2. Komponen metadata hasil survei hidrografi

<table>
<tr><td>Content</td><td>3. Pengambilan dan pengolahan data hidrografi menggunakan instrumen Singlebeam Echosounder (SBES)
4. Pengunaan berbagai metode pada visualisasi data hidrografi
5. Aspek penyimpanan data dan pembangunan basis data hidrografi
6. Distribusi data hidrografi

1. Description of Hydrographic Data Acquisition in Different Methods
2. Hydrographic survey metadata component
3. Data acquisition and processing of hydrographic data using Singlebeam Echosounder instrument (SBES)
4. Application of various methods to hydrographic data visualization
5. Aspects of data storage and hydrographic database development
6. Hydrographic data distribution</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>25%</td></tr>
<tr><td>Evaluasi Tengah Semester
Mid Semester Exam</td><td>25%</td></tr>
<tr><td>Tugas 2
Assignment 2</td><td>25%</td></tr>
<tr><td>Evaluasi Akhir Semester
Final Semester Exam</td><td>25%</td></tr>
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<tr><td>Media yang digunakan
Media employed</td><td>Classical teaching tools with white board and power point presentation</td></tr>
<tr><td>Daftar Pustaka
Reading list</td><td></td></tr>
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