



THE GUIDELINES

DESIGN I /LINES PLAN

Authors:

Design Team of Department of Marine Engineering

DEPARTMENT OF MARINE ENGINEERING
FACULTY OF MARINE TECHNOLOGY - ITS
2018

Halaman ini sengaja dikosongkan
This page is intentionally left blank



SUBJECT : DESIGN I / LINES PLAN

DOCUMENT TITLE : THE GUIDELINES FOR DESIGN I /
LINES PLAN

DOCUMENT NO : 01/D1-LP/II/2018

DISCLAIMER

Manual desain ini hanya merupakan panduan untuk keperluan perkuliahan. Penulis tidak merekomendasikan panduan ini dipakai untuk keperluan industri dan komersial. Penulis tidak bertanggung-jawab bila terjadi kecelakaan yang diakibatkan oleh penggunaan manual ini untuk aplikasi industri dan komersial.


This design manual is a guidelines for educational purposes only. The authors do not recommend this guidelines for industrial and commercial purposes. The author is not liable in the event of any accident resulting from the use of this manual for industrial and commercial applications.

Halaman ini sengaja dikosongkan
This page is intentionally left blank

DAFTAR ISI

DAFTAR ISI	5
1. PENDAHULUAN / <i>OVERVIEW</i>	1
2. PROSEDUR / <i>PROCEDURE</i>	1
3. LAPORAN / <i>REPORT</i>	2
4. STANDAR DOKUMENTASI / <i>STANDARD OF DOCUMENTATION</i>	4
5. CONTOH PENULISAN LAPORAN/ <i>TEMPLATE OF REPORT</i>	11

Halaman ini sengaja dikosongkan
This page is intentionally left blank

	DESIGN I LINES PLAN		Doc. No 01/D1-LP/II/2018	
	GUIDELINES		Rev. 00	Page 1 of 26
			Date: February 2018	

1. PENDAHULUAN / OVERVIEW

Panduan ini bertujuan sebagai pedoman mata kuliah Desain I (ME141310).

Pedoman ini terdiri dari 3 bagian utama:

1. Prosedur
2. Laporan
3. Standar dokumentasi

The guidelines is intended as a guide for Design I (ME141310). It consists of 3 main sections:

1. Procedures
2. Reports
3. Standard of documentation

2. PROSEDUR / PROCEDURE

Prosedur dalam pengambilan mata kuliah Desain I (ME141310) secara garis besar dapat dilihat pada **Lampiran B**.

2.1 Mata Kuliah Pra-syarat

Mahasiswa harus mengambil mata kuliah pra-syarat berikut sebelum mengambil Desain I (ME141330).

Berikut adalah mata kuliah pra-syarat:

1. Pengantar Teknologi Kelautan (MT141201)
2. Teori Bangunan Kapal 1 (ME141301).

2.2 Pelaksanaan Pekerjaan

Dalam pengerjaan tugas Desain I mahasiswa mengerjakan secara Individu.

2.2.1 Dosen Pembimbing

Satu Dosen pembimbing yang ditentukan oleh manajemen Departemen Teknik Sistem Perkapalan (DTSP) membimbing satu kelompok mahasiswa

2.2.2 Deliverable

Tim harus menyerahkan hasil design I berupa:

- Laporan
- Gambar Lines Plan

The procedures for Design I (ME141310), generally can be seen in **Appendix B**.

2.1 Pre-Requisite courses

Students must take the following pre-requisite courses before taking Design I (ME141330). Here are the pre-requisites:

1. Introduction to Marine Technology (MT141201)
2. Introduction to Naval Architecture (ME141301).

2.2 Project Execution

The student works independent.

2.2.2 Supervisors


The supervisor defined by the management of Marine Engineering Department. And each one of them will supervises a group of students.

2.2.3 Deliverable

The team must deliver the results of Design I which includes:

- Report
- Lines Plan Drawing
- Cardboard Model

Note:

	DESIGN I LINES PLAN	Doc. No 01/D1-LP/II/2018	
	GUIDELINES	Rev. 00	Page 2 of 26
		Date: February 2018	

- Model karton lines plan catatan: Gambar, lampiran sudah disetujui telah disetujui oleh dosen pembimbing

2.2.3 Monitoring

Selama proses pengerjaan 16 minggu, ada 2 kali monitoring progress.

- Progress I (Week 8)
- Progress II (Week 16 + UAS)

Sudden death penalty:

Jika mahasiswa tidak mampu menyelesaikan target pada setiap monitoring, maka tidak diperkenankan untuk melanjutkan ke tahap berikutnya.

No Point of Return:

Bila ada mahasiswa yang melakukan “Drop” mata kuliah dan tidak menyelesaikan. Maka tidak akan diperkenankan untuk mengambil mata kuliah ini pada semester depannya.

Drawing, and attachments must have been approved by the supervisor

2.2.4 Monitoring

There are 2 times monitoring progress for 16 weeks.

- Progress I (Week 8)
- Progress II (Week 16 + Final Exam)

Sudden death penalty:

If the student is not able to complete the target on each monitoring, he/she is not allowed to proceed to the next stage.

No Point of Return:

Once decided to take this course must be finish. Those who dropped this course will not be allowed to take in the next consecutive semester.

3. LAPORAN / REPORT

Struktur laporan Desain I / Lines Plan terdiri dari 3 bagian utama, yaitu:

- a. Bab I : Filosofi Desain
- b. Bab II :Detail Perhitungan
- c. Lampiran (Maxsurf, Drawing, dll)

3.1 Bab I: Filosofi Desain

Bab 1 terdiri dari beberapa item wajib, yaitu:


1. Filosofi umum Lines Plan
2. Curve of sectional Area.

The structure of Design I report, consists of 3 main parts, namely i.e.:

- a. Chapter I :Design Philosophy
- b. Chapter II:Detail of Calculation
- c. Chapter III: Lines Plan Drawing
- d. Attachment (Maxsurf, Drawing, etc)

3.1 Chapter I:Design Philosophy

The report of Design 1/Lines Plan consist of several items, namely i.e.:

	DESIGN I LINES PLAN		Doc. No 01/D1-LP/II/2018
	GUIDELINES		Rev. 00
			Page 3 of 26
			Date: February 2018

3. Body Plan
4. Half Breadth Plan
5. Sheer Plan
6. Geladak Utama.

Lihat **Lampiran A** untuk outline penulisan report.

3.2 Bab II: Detail Perhitungan

Detail perhitungan merupakan pendukung dari isi filosofi desain. Detail Perhitungan tambahan dapat ditambahkan apabila diperlukan. Detail perhitungan terdiri dari (minimal):

II.1 Penentuan Ukuran Utama

II.2 Pembuatan A/2T, B/2

II.3 Pembuatan linggi haluan dan buritan.

II.4 Pembuatan Geladak utama, akil, kubu-kubu

Format detail perhitungan dapat dilihat **Lampiran A**

3.3 Lampiran

3.3.1 Gambar

Gambar yang dikumpulkan adalah Gambar lines plan yang sudah di setujui oleh dosen pembimbing dan kordinator Design 1.

Format gambar data dilihat pada **lampiran A**

2.1.1 Lain-lain

Bila ada lampiran tambahan yang diperlukan untuk mendukung detail perhitungan.

1. General Philosophy of Lines Plan Design
2. Design Steps
3. Principal Dimension
4. Maxsurf Visualization.

See **Appendix A** for writing report outline.

3.2 Detail of Calculation

Detail of calculation supports the content of the design philosophy. Additional calculations may be added when considered necessary to be added. Detail of calculation consist of (at least):

II.1 Principal Dimension calculation

II.2 A/2T and B/2 Calculation

II.3 Design of Bow and Stern

II.4 Design of Main deck, Sheer, Bulwark.

See **Appendix A** for format of calculation detail.

3.3 Attachment


3.3.1 Drawing

The drawing to be submitted must be approved by supervisor and coordinator of Design 1.

See **Appendix A** for format of drawing.

3.3.2 Others

If any additional attachments are required to support detail of calculations.

	DESIGN I LINES PLAN	Doc. No 01/D1-LP/II/2018	
	GUIDELINES	Rev. 00	Page 4 of 26
		Date: February 2018	

4. STANDAR DOKUMENTASI / STANDARD OF DOCUMENTATION

4.1 Format Penulisan Laporan

- a. Ukuran kertas adalah B5, dengan berat minimal 70 gr.
- b. Left margin 2,5 cm; top margin 2 cm; right margin 1 cm; bottom margin 2 cm.
- c. Font standar yang digunakan adalah **Franklin Gothic Book**. Font lain dapat digunakan untuk formula atau lambang lain yang spesifik.
- d. Besar Font:
 - i. Judul BAB menggunakan huruf kapital dengan ukuran font 14 pt.
 - ii. Judul sub bab dari tiap bab menggunakan ukuran font 12 pt.
 - iii. Judul sub seksi dari tiap bab menggunakan ukuran font 11 pt.
 - iv. Isi dari bab menggunakan font ukuran 10 pt.
- e. Spasi
 - i. Spasi yang digunakan untuk penulisan laporan adalah 1 (satu) spasi.

4.2 Format Gambar

- a. Ukuran kertas gambar disesuaikan dengan skala dengan tabel berikut:

Panjang Kapal	Skala
>100m	1:100
101m-150m	1:125,150
151m-200m	1:150,200
- b. Garis tepi gambar adalah 20 mm dari tepi kertas


4.1 Format of Writing

- a. The paper size is B5, weighing at least 70 grams.
- b. Left margin 2,5 cm; top margin 2 cm; right margin 1 cm; bottom margin 2 cm.
- c. The standard font is the Franklin Gothic Book. Other fonts can be used for formulas or other specific symbols.
- d. The size of font:
 - i. Title CHAPTER uses capital letters with 14 pt font size.
 - ii. The section title of each chapter uses a 12 pt font size.
 - iii. The sub-section title of each chapter uses the 11 pt font size.
 - iv. The contents of the chapter use a 11 pt size font.
- e. Spacing
 - i. The spacing for report writing is 1 (one) spacing.

4.2 Format of Drawing

- a. The size of the drawing paper is adjusted based on table below:

Ship's Length	Scale
>100m	1:100
101m-150m	1:125,150
151m-200m	1:150,200
- b. the border of the drawing is 20 mm from the edge of the paper
- c. Head of drawing is 120 mm x 60 mm

	DESIGN I LINES PLAN		Doc. No 01/D1-LP/II/2018
	GUIDELINES		Rev. 00
			Page 5 of 26
			Date: February 2018

- c. kepala gambar berukuran 120 mm x 60 mm

4.3 Soft Copy

Semua pekerjaan harus diserahkan ke koordinator dalam bentuk soft copy sebelum ujian dimulai. Semua pekerjaan disimpan dalam CD yang terdiri dari :

- a. Seluruh pekerjaan yang disimpan dalam satu file dalam format **PDF**, yang terdiri dari:
 - i. Filosofi desain
 - ii. Detail Perhitungan
 - iii. Gambar Lines Plan

- b. Seluruh pekerjaan dalam format **asli**:
 - i. Filosofi desain dalam bentuk word
 - ii. Detail Perhitungan dalam format excel, spesifikasi peralatan dalam file html, pdf atau format lain
 - iii. Gambar Lines plan dalam bentuk autocad dan Maxsurf.

4.4 Model Karton

Model dari lines plan dibuat dari bahan karton model dengan ketebalan kertas 2-3mm. Model harus merepresentasikan lines plan yang dibuat dimana terdapat garis garis Sheer plan, half breadth plan, station.

4.3 Soft Copy


All documents must be submitted to the coordinator in soft copy before the examination. All documents is stored on a CD consisting of:

- a. All work stored in one file in **PDF** format, which consists of:
 - i. Design philosophy
 - ii. Detail of calculation
 - iii. Drawing for all systems


- b. All work in **native** format:
 - i. Design philosophy in word form
 - ii. Detail of calculation in excel format, equipment specifications in html, pdf or other format.
 - iii. All of drawings in autocad format and maxsurf.

4.4 Cardboard Model


The lines plan must be visualized in 3D cardboard model. The material of the model is cardboard model paper with 2-3mm thickness. The model must represents sheer plan, half breadth plan, station.

	DESIGN I LINES PLAN		Doc. No 01/D1-LP/II/2018
	GUIDELINES	Rev. 00	Page 6 of 26
		Date: February 2018	

LAMPIRAN A - Format Laporan
APPENDIX A – The Format of Report


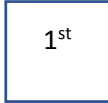
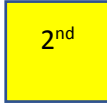
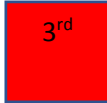

	DESIGN I LINES PLAN		Doc. No 01/D1-LP/II/2018
	GUIDELINES	Rev. 00	Page 7 of 26
		Date: February 2018	


Halaman ini sengaja dikosongkan
This page is intentionally left blank

	DESIGN I LINES PLAN	Doc. No 01/D1-LP/II/2018	
	GUIDELINES	Rev. 00	Page 8 of 26
		Date: February 2018	

Contoh Format Front Cover / Template of Front Cover


Design I/Lines Plan Report

				
	<i>Background of cover based on number of attempt</i>			
<p>DESIGN I – ME ME141310 (20pt)</p> <p>LINES PLAN (18pt)</p> <p>EVEN SEMESTER 2017/2018 (18pt)</p>				
<p>REPORT BOOK (Franklin Gothic Book 16pt)</p>				
<p>Prepared by: (Name of Student 1) – (NRP) (Franklin Gothic Book 11pt)</p>				
<p>Supervisor: (Franklin Gothic Book 12pt) (Name of Supervisor) (Franklin Gothic Book 11pt) (NIP. _____) (Franklin Gothic Book 11pt)</p>				
<p>DEPARTMENT OF MARINE ENGINEERING (16pt) FACULTY OF MARINE TECHNOLOGY (12pt) INSTITUT TEKNOLOGI SEPULUH NOPEMBER (ITS) (12pt) SURABAYA (12pt) 20XX (12pt)</p>				


	DESIGN I LINES PLAN		Doc. No 01/D1-LP/II/2018	
	GUIDELINES		Rev. 00	Page 9 of 26
			Date: February 2018	

Contoh Format Cover (Batas Setiap Bab) / *Template of Cover In each Chapter*


For Report of Chapter I


	<p style="text-align: center;">DESIGN I DESIGN PHILOSOPHY DEPARTMENT OF MARINE ENGINEERING font : FRANKLIN GOTHIC BOOK 14pt)</p>			
<p style="font-size: 24pt; font-weight: bold;">JUDUL BAB / TITTLE OF CHAPTER (e.g. DESIGN PHILOSOPHY)</p> <p style="font-size: 24pt; font-weight: bold;">(font : FRANKLIN GOTHIC BOOK 24pt BOLD)</p> <p style="text-align: center;">Doc.No. 01 - 42 VV WWXX (font : FRANKLIN GOTHIC BOOK 12 pt)</p> <p style="text-align: center;">(Font FRANKLIN GOTHIC BOOK 10 pt)</p>				
Rev.	Date	Remark	Prepared by Name of Student (signature)	Approved by Name of Supervisor (signature)

Contoh Format Cover (Batas Setiap Dokumen) / *Template of Cover In each Document*


	DESIGN I LINES PLAN	Doc. No 01/D1-LP/II/2018	
	GUIDELINES	Rev. 00	Page 10 of 26
		Date: February 2018	


For Report of Machinery Electrical

	<p style="text-align: center;">DESIGN I DETAIL CALCULATION DEPARTMENT OF MARINE ENGINEERING font : FRANKLIN GOTHIC BOOK 14pt)</p>			
<p>JUDUL BAB / TITTLE OF CHAPTER (e.g. DETAIL CALCULATION) (font : FRANKLIN GOTHIC BOOK 24pt BOLD)</p> <p style="text-align: center;">Doc.No. 02 - 42 W YZZ - EL (font : FRANKLIN GOTHIC BOOK 12 pt)</p> <p style="text-align: center;">(Font FRANKLIN GOTHIC BOOK 10 pt)</p>				
Rev.	Date	Remark	Prepared by Name of Student (signature)	Approved by Name of Supervisor (signature)

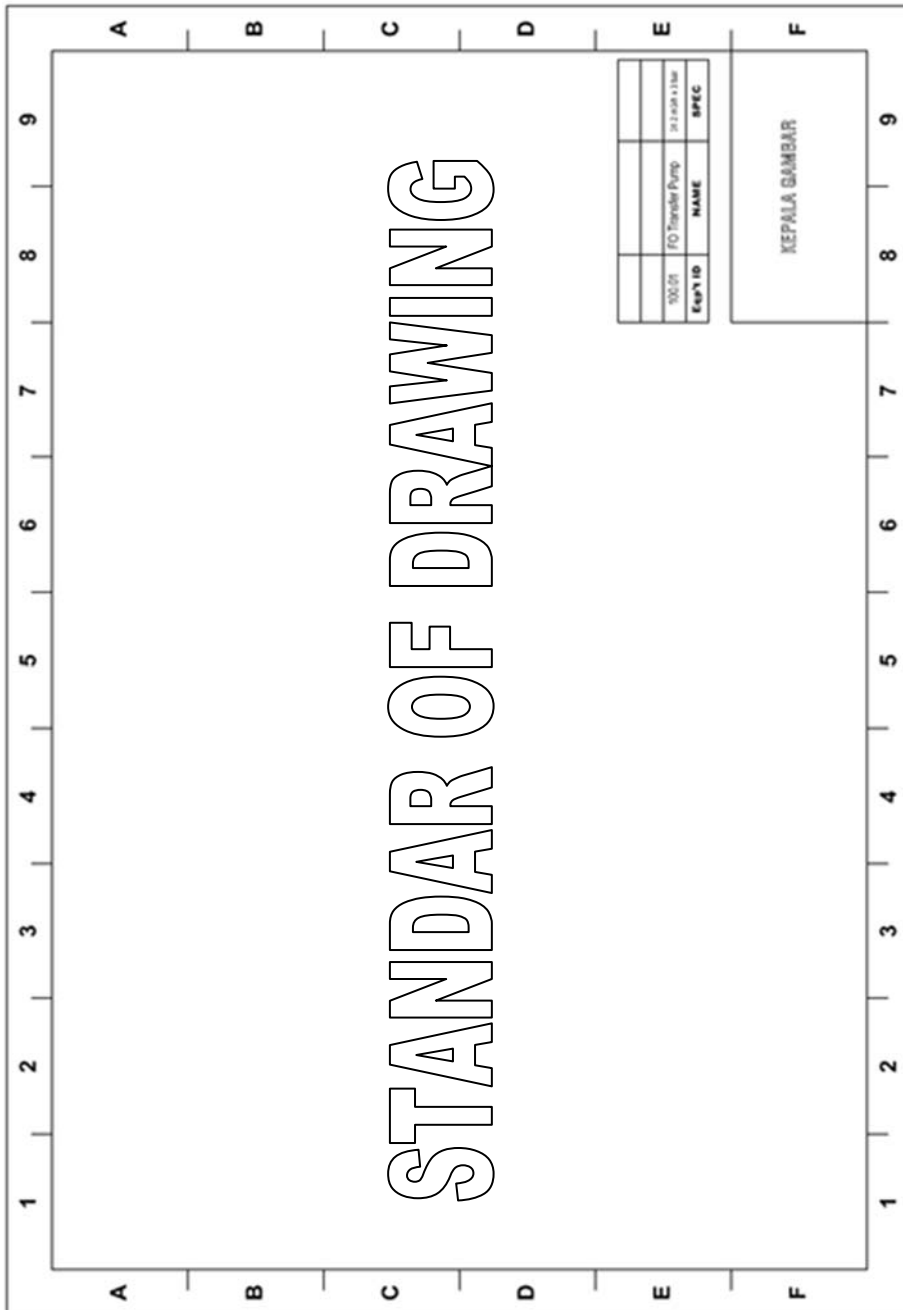
	DESIGN I LINES PLAN		Doc. No 01/D1-LP/II/2018	
	GUIDELINES		Rev. 00	Page 11 of 26
			Date: February 2018	


Contoh Penulisan Laporan / Template of Writing Report

	NAME OF CHAPTER (14pt Franklin Gothic Book)	Doc. No.	01 - 42 XX YYYY
		Rev. No.	BB
		Page	CC of DD
<p>I. 1 INTRODUCTION (12pt Franklin Gothic Book) Traditionally, the ship's hull form is represented graphically by a lines drawing. The lines drawing consists of projections of the intersection of the hull with a series of planes. The planes are equally spaced in each of the three dimensions (x, y, z). Planes in one dimension will be perpendicular to planes in the other two dimensions. We say that the sets of planes are mutually perpendicular or orthogonal planes. (11 Franklin Gothic Book)</p> <p>I.2 CURVE OF SECTIONAL AREA Curve sectional area is</p> <p>I.3 BODY PLAN Body Plan is</p> <p>I.4 HALF BREADTH PLAN Body Plan is</p> <p>I.5 SHEER PLAN Sheer Plan is</p> <p>I.6 Main Deck, Forecastle Deck, Poop Deck Main Deck is</p> <p>I.7 Terminology Lpp</p>			


	DESIGN I LINES PLAN	Doc. No 01/D1-LP/II/2018	
	GUIDELINES	Rev. 00	Page 12 of 26
		Date: February 2018	


Contoh Standar Gambar / Template of Drawing Standar




	DESIGN I LINES PLAN		Doc. No 01/D1-LP/II/2018	
	GUIDELINES		Rev. 00	Page 13 of 26
			Date: February 2018	


Contoh Standar Kepala Gambar / *Template of Head of Drawing Standar*
 *(dimension in millimeters)

15		DEPARTEMENT OF MARINE ENGINEERING DOUBLE DEGREE PROGRAM INSTITUT TEKNOLOGI SEPULUH NOPEMBER HOCHSCHULE WISMAR			15	
	Name of Ship		EVEN SEMESTER 2017/2018		12,5	
			Prepared by: Name of student 1 Number of student 1	Signature		
	Name of System		Name of student 2 Number of student 2	Signature		10
			Supervisor :	Signature		10
Scale	Team no.	Dwg no.	Rev.		7,5	

15		DEPARTEMENT OF MARINE ENGINEERING INSTITUT TEKNOLOGI SEPULUH NOPEMBER			15	
	Name of Ship		EVEN SEMESTER 2017/2018		12,5	
			Prepared by: Name of student 1 Number of student 1	Signature		
	Name of System		Name of student 2 Number of student 2	Signature		10
			Supervisor :	Signature		10
Scale	Team no.	Dwg no.	Rev.		7,5	

	DESIGN I LINES PLAN		Doc. No 01/D1-LP/II/2018
	GUIDELINES	Rev. 00	Page 14 of 26
		Date: February 2018	

LAMPIRAN B – Business Process
APPENDIX B-Business Process

	DESIGN I LINES PLAN		Doc. No 01/D1-LP/II/2018
	GUIDELINES	Rev. 00	Page 15 of 26
		Date: February 2018	

Halaman ini sengaja dikosongkan
This page is intentionally left blank