



# THE GUIDELINES

## DESIGN II

### PROPELLER and SHAFTING ARRANGEMENT

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SUBJECT : DESIGN II / PROPELLER and  
SHAFTING ARRANGEMENT

DOCUMENT TITLE : THE GUIDELINES FOR DESIGN II/  
PROPELLER and SHAFTING  
ARRANGEMENT

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**BAB I  
PENDAHULUAN  
(Dok. No. 01/D2/II/2018/01)**

Panduan ini bertujuan sebagai pedoman mata kuliah Desain II (ME184519). Pedoman ini terdiri 3 (tiga) bagian utama:

1. Prosedur & Administrasi;
2. Laporan & Gambar;
3. Standar dokumentasi.

**BAB II  
PROSEDUR & ADMINISTRASI  
(Dok. No. 01/D2/II/2018/02)**

**1.1. PRASYARAT**

1.1.1. Mahasiswa yang akan mengikuti Mata Kuliah Desain II: Propeller dan Perencanaan Perporosan berkode ME184519 ini adalah yang telah menempuh mata kuliah sebagai berikut:

- a. ME184203 Teori Bangunan dan Konstruksi Kapal.
- b. ME184309 Mekanika Teknik.

1.1.2. Mahasiswa yang akan mengikuti Mata Kuliah Desain II: propeller dan sistem Perporosan berkode ME184519 ini adalah yang telah menempuh dan mendapatkan nilai minimal D untuk mata kuliah sebagai berikut:

- a. ME184412 Tahanan dan propulsi Kapal.
- b. ME184415 Desain I: Rencana Garis.

1.1.3. Mahasiswa harus memiliki nilai TOEFL minimal 459.

**CHAPTER I  
INTRODUCTION  
(Doc. No. 01/D2/II/2018/01)**

The purpose of this guidelines as a guide for Design II (ME184519). It consists of 3 (three) main sections:

1. Procedure & Administration;
2. Report & Drawing;
3. Standard of documentation.

**CHAPTER II  
PROCEDURE & ADMINISTRATION  
(Doc. No. 01/D2/II/2018/02)**

**1.1 PRE-REQUISITE**

1.1.1 Students who will follow Design II Course: Propeller and Shafting Arrangement with course code ME184519 have taken the following courses:

- a. ME184203 Theory of Ship Construction & Strength.
- b. ME184309 Engineering Mechanics.

1.1.2 Students who will follow Design II Course: Propeller and Shafting Arrangement with course code ME184519 have taken and get score minimum D for the following courses:

- a. ME184412 Ship Resistance and Propulsion.
- b. ME184415 Design I: Lines Plan.

1.1.3 Students must have a TOEFL score at least 459.

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1.1.4. Mahasiswa Lintas Jalur mengikuti Peraturan yang telah ditetapkan.

1.1.4 *Lintas Jalur* students follow the regulations.

## 1.2. PELAKSANAAN

## 1.2 IMPLEMENTATION

1.2.1. Detail pelaksanaan pengerjaan Desain II: Propeller dan Sistem Perporosan ini diatur sesuai dengan: (Dok. No. 01/D2/II/2018/04) PROSEDUR PELAKSANAAN.

1.2.1 Detailed implementation of Design II: Propellers and Shafting Arrangement is arranged in accordance with: (Doc. No. 01/D2/II/2018/04) PROCEDURE OF IMPLEMENTATION.

1.2.2. Pertemuan perdana diadakan pada minggu pertama perkuliahan yang akan disampaikan oleh Koordinator Desain II atau Dosen lain yang mewakili, dengan materi dan rangkaian kegiatan sebagai berikut:  
a. Penjelasan pengerjaan Tugas;  
b. Pembagian jenis sistem pelumasan pada stern-tube;  
c. Pembagian dosen pembimbing.

1.2.2 The kick of meeting will be held in the first week of the lecture to be delivered by the Design II Coordinator or other Lecturers who represent, with the following material and activities:  
a. Explanation about Design II scope;  
b. Distribution of the type of lubrication system on the stern-tube;  
c. Distribution of supervisor.

1.2.3. Pengisian Form Desain II: Propeller dan Perencanaan Perporosan tersebut pada 1.2.2. diatur dengan: (Dok. No. 01/D2/II/2018/04) PROSEDUR PELAKSANAAN.

1.2.3 Design II Form Filling: Propeller and Shafting Arrangement on 1.2.2. arranged according to: (Doc. No. 01/D2/II/2018/04) PROCEDURE OF IMPLEMENTATION.

1.2.4. Surat Tugas sesuai dengan Form 01: SURAT TUGAS diberikan setelah Dosen Pembimbing ditetapkan.

1.2.4 Letter of Assignment in accordance with Form 01: LETTER OF ASSIGNMENT given after Supervisor is assigned.

1.2.5. Koordinator Desain II: Propeller dan Perencanaan Perporosan akan memberikan pembekalan materi yang bersesuaian. Adapun materi akan diberikan adalah sebagai berikut:

1.2.5 Design II Coordinator: Propeller and Shafting Arrangement will provide appropriate material preparation. The material will be given is as follows:



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| <ul style="list-style-type: none"> <li>a. Materi I: Perencanaan Propeller;</li> <li>b. Materi II: Perencanaan Poros &amp; Bantalan;</li> <li>c. Materi III: Perencanaan Stern Tube.</li> </ul> | <ul style="list-style-type: none"> <li>a. Material I: Propeller Arrangement;</li> <li>b. Material II: Shaft &amp; Bearing Arrangement;</li> <li>c. Material III: Stern Tube Arrangement.</li> </ul> |
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- |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
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| <p>1.2.6. Asistensi dengan Dosen Pembimbing dilakukan untuk setiap bahasan materi dan dicatat serta diparaf oleh Dosen pembimbing yang bersangkutan pada Form 02: LOG BOOK.</p> <p>1.2.7. Pemantauan dan evaluasi pengerjaan dilakukan oleh Dosen Pembimbing dan Koordinator Desain II sesuai dengan Form 03: PROGRES PENYELESAIAN.</p> <p>1.2.8. Penilaian oleh Dosen Pembimbing dilakukan sesuai dengan Form 04: PENILAIAN dan nilai akan diupload di SIM akademik oleh Dosen Pembimbing.</p> <p>1.2.9. Koordinator Desain II akan memberikan tanda tangan pada gambar dan laporan yang telah disetujui oleh Dosen Pembimbing, selambat-lambatnya 1 (satu) minggu setelah hari terakhir UAS (Ujian Akhir Semester) dilaksanakan.</p> <p>1.2.10. Semua mahasiswa yang mengambil Desain II: Propeller dan Sistem Perporosan <b>wajib hadir</b> pada setiap pertemuan yang telah dijadwalkan.</p> <p>1.2.11. Hal-hal lain yang belum tercantum pada butir-butir diatas dapat</p> | <p>1.2.6 Assistance with Supervisor is done for each subject material and recorded as well and signed by Supervisor on Form 02: LOG BOOK.</p> <p>1.2.7 Monitoring and evaluation of work is done by Supervisor and Design II Coordinator in accordance with Form 03: PROGRESS OF COMPLETION.</p> <p>1.2.8 Assessment by Supervisor is done in accordance with Form 04: ASSESSMENT and the results will be uploaded in SIM akademik by Supervisor.</p> <p>1.2.9 Design II Coordinator will provide a signature on the drawing and report that has been approved by Supervisor, at the latest 1 (one) week after the last day of UAS (Final Exam).</p> <p>1.2.10 All students who take Design II: Propellers and Shafting Arrangement <b>must attend</b> at every scheduled meeting in classroom.</p> <p>1.2.11 Other items not listed in the above items may be given at the time of the</p> |
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diberikan pada saat pertemuan dan/atau melalui pengumuman.

meeting and/or by announcement.

### 1.3. SANKSI

1.3.1. Secara umum Peraturan dan Sanksi akademik mengikuti Peraturan Akademik ITS yang berlaku.

1.3.2. Bila sampai dengan Minggu Ketiga mahasiswa belum menemui Dosen Pembimbing tanpa alasan yang kuat, maka dianggap mahasiswa mengundurkan diri dan diharuskan membatalkan mata kuliah Desain II: Propeller dan Perencanaan Perporosan ini atau mendapat nilai E.

1.3.3. Mahasiswa yang dengan alasan tertentu dan dibuktikan dengan dokumen yang jelas sehingga tidak dapat menemui Dosen Pembimbing sesuai point 1.3.2. diatas maka harus mengisi Form 05: FORM KETERLAMBATAN

1.3.4. Bila sampai dengan akhir waktu sesuai target penyelesaian, mahasiswa belum menyelesaikan pekerjaannya dan atau belum melengkapi laporan pengerjaan, maka pada Hasil penilaian akhir mahasiswa mendapat nilai E.

1.3.5. Mahasiswa yang kedapatan dan secara syah terbukti telah melakukan **kecurangan**, baik secara digital maupun manual akan diproses sesuai dengan Peraturan yang berlaku di ITS.

### 1.3 PUNISHMENT

1.3.1 In general, the academic regulations and punishment follow the ITS Academic Regulations.

1.3.2 If until the Third week the student has not met the Supervisor for no reason, then the student is considered resigned and required to cancel the course of Design II: Propeller and Shafting Arrangement or get an E score.

1.3.3 Students with specific reasons and proved with documents that clearly and therefore can not meet the Supervisor appropriate point 1.3.2 above it must fill Form 05: LATE PROGRESS FORM

1.3.4 If until the end of time according to the completion target, the student has not finished the work and/or not yet completed the report, then in the final assessment result the student will get an E score.

1.3.5 Students who are caught and legally proven to have **cheating**, either digitally or manually will be processed in accordance with the regulations in ITS.

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| <p>1.3.6. Mahasiswa yang tidak mampu menyelesaikan target pada setiap monitoring, maka tidak dibolehkan untuk melanjutkan ke tahap berikutnya dan mendapat nilai E.</p> <p>1.3.7. Bila ada mahasiswa yang melakukan <b>"DROP"</b> mata kuliah dan tidak menyelesaikan, maka tidak dibolehkan mengambil mata kuliah ini pada semester berikutnya dan mendapat nilai E.</p> | <p>1.3.6 Students who are not able to complete the target on each of monitoring, it is not allowed to proceed to the next stage and get an E score.</p> <p>1.3.7 If there are students who do <b>"DROP"</b> courses and do not complete, then it is not allowed to take this course in the next semester and get an E score.</p> |
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### BAB III LAPORAN & STANDARD GAMBAR (Dok. No. 01/D2/II/2018/03)

#### 2.1. STRUKTUR LAPORAN

- 2.1.1. Laporan Desain II : Propeller dan Sistem Perporosan ini terdiri dari 4 (empat) bagian utama dan Lampiran-lampiran. Adapun bagian-bagian tersebut adalah sebagai berikut:  
 BAB I: *Pendahuluan*  
 BAB II: *Perhitungan propeller*  
 BAB III: *Perhitungan poros & bantalan*  
 BAB IV: *Perhitungan stern tube*  
 LAMPIRAN-LAMPIRAN

#### 2.1.2. Format Kertas dan penulisan

- 2.1.2.1. Kertas yang digunakan untuk membuat laporan adalah ukuran **B5** dengan berat **80 gram**.

#### 2.1.2.2. Format Penulisan Laporan

- a. **Margin** kiri 2,5 cm; margin atas 2 cm; margin kanan 1 cm; dan margin bawah 2 cm.
- b. Font yang digunakan adalah standar **Arial**. Font lain dapat

### CHAPTER III REPORT & DRAWING STANDARD (Doc. No. 01/D2/II/2018/03)

#### 2.1. REPORT STRUCTURES

- 2.1.1. Design II Report: Propeller and Shafting Arrangement consist of 4 (four) main sections and appendix. The sections are as follows:  
 CHAPTER I: *Introduction*  
 CHAPTER II: *Propeller calculation*  
 CHAPTER III: *Shaft & Bearing calculation*  
 CHAPTER IV: *Stern tube calculation*  
 APPENDIXS

#### 2.1.2. Paper Format and Writing

- 2.1.2.1. The paper used to make the report is a **B5** size weighing **80 grams**.

#### 2.1.2.2. Report writing format

- a. Left **margin** 2,5 cm; top margin 2 cm; right margin 1 cm; bottom margin 2 cm.
- b. The font used is the **Arial** standard. Other fonts can be

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- digunakan untuk formula atau lambang lain yang spesifik.
- c. Kata-kata dalam bahasa asing harus dibuat *italic*.

d. **Besar Font:**

- I. Judul Bab menggunakan huruf besar dengan font 14 pt.
- II. Judul Sub-Bab dengan font 12 pt.
- III. Judul Sub-seksi dengan font 11 pt.
- IV. Isi laporan dengan font ukuran 11 pt.

- e. Jarak baris yang digunakan adalah **1 (satu) spasi**.

- 2.1.2.3. Laporan dijilid *soft cover*.
- 2.1.2.4. Soft-copy Laporan DESAIN II disimpan di CD / DVD.
- 2.1.2.5. Format sampul laporan:

Format sampul laporan dapat dilihat pada **Lampiran A**

2.1.3. BAB I: PENDAHULUAN

- Filosofi Desain
- Data Ukuran Utama Kapal
- Data Gb. Lines Plan
- Data Gb. Midship Section
- Data Gb. CL Construction Profile
- Aturan dan Regulasi

2.1.4. BAB II: PERHITUNGAN PROPELLER

- Perhitungan Tahanan Kapal
- Perhitungan Kebutuhan Power Motor
- Pemilihan Propeller
- Perhitungan Resiko Cavitasi
- Engine Propeller Matching
- Penetapan Pemilihan Motor Induk, Gearbox, dan Tipe Propeller

used for formulas or other specific symbols.

- c. Words in foreign languages should be made *italic*.

d. **Font Size:**

- I. Title Chapter capitalized with 14 pt font.
- II. Title of Sub-Chapter or Section with 12 pt font.
- III. Title Sub-section with 11 pt font.
- IV. Report content with 11 pt font.

- e. The line spacing used is **1 (one) space**.

- 2.1.2.3. Report bound to soft cover.
- 2.1.2.4. Soft-copy DESIGN II report is stored on CD / DVD.
- 2.1.2.5. Reports cover format:

The report cover format can be seen in **Appendix A**

2.1.3. CHAPTER I: INTRODUCTION

- Design Philosophy
- Ship Principal Dimension
- Lines Plan Drawing
- Midship Section Drawing
- CL Construction Profile Drawing
- Rules and Regulations

2.1.4. CHAPTER II: PROPELLER CALCULATION

- Ship Resistance Calculation
- Powering Calculation
- Selecting Propeller
- Cavitation Risk Calculation
- Engine Propeller Matching
- Selecting Main Engine, Gearbox, and Propeller

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- 2.1.5. BAB III: PERHITUNGAN POROS DAN BANTALAN POROS
- Perhitungan Poros Propeller
  - Perhitungan Poros Antara (jika ada)
  - Perencanaan Konis Poros Propeller
  - Perencanaan Spie Poros Propeller
  - Perencanaan Flens Poros
  - Perencanaan Mur poros propeller
  - Perencanaan Bantalan Poros lain (jika ada)

- 2.1.6. BAB IV: PERHITUNGAN STERN TUBE
- Perencanaan stern-post dan AP-bulkhead
  - Perencanaan Tabung Poros (Stern-tube)
  - Perencanaan Bantalan Poros depan
  - Perencanaan Bantalan Poros belakang
  - Perencanaan Rumah bantalan
  - Perencanaan Kecedapan stern-tube
  - Perencanaan Rope-guard
  - Perencanaan Pelumasan bantalan

- 2.1.7. LAMPIRAN-LAMPIRAN
- Gambar Rencana Garis (kertas B5)
  - Gambar Midship Section (kertas B5)
  - Gambar Construction Profile (kertas B5)
  - Spesifikasi Teknis/Brosur/Leaflet dari Maker
  - Form 01: SURAT TUGAS
  - Form 02: LOG BOOK
  - Form 03: PROGRES PENYELESAIAN
  - Form 04: PENILAIAN
  - Form 05: KETERLAMBATAN

## 2.2. STANDARD GAMBAR

- 2.2.1. Jumlah Gambar
- Setiap mahasiswa harus menyelesaikan 3 (tiga) buah gambar pada DESAIN II, yaitu:
- a. **Gambar 1:** Gambar detail daun Propeller
  - b. **Gambar 2:** Gambar Poros dan Stern Tube
  - c. **Gambar 3:** Gambar sistem

- 2.1.5. CHAPTER III:SHAFT AND BEARING CALCULATION
- Shaft Propeller Calculation
  - Intermediate Shaft Calculation (if any)
  - Shaft Conical Arrangement
  - Shaft Spie Arrangement
  - Shaft Flens Arrangement
  - Shaft Nut Arrangement
  - Shaft Bearing Arrangement (if any)

- 2.1.6. CHAPTER IV:STERN TUBE CALCULATION
- Stern-post and AP-bulkhead Arrangement
  - Stern-tube Arrangement
  - Forward Bearing Arrangement
  - Tail Bearing Arrangement
  - Bearing Housing Arrangement
  - Stern-tube Watertight Arrangement
  - Rope-guard Arrangement
  - Bearing Lubricating Arrangement

- 2.1.7. APPENDIXS
- Lines Plan Drawing (B5 paper)
  - Midship Section Drawing (B5 paper)
  - Construction Profile Drawing (B5 paper)
  - Technical Specification/Brosur/Leaflet from Maker
  - Form 01: LETTER OF ASSIGNMENT
  - Form 02: LOG BOOK FORM
  - Form 03: PROGRESS OF COMPLETION
  - Form 04: ASSESSMENT FORM
  - Form 05: LATE PROGRESS FORM

## 2.2. DRAWING STANDARD

- 2.2.1. Number of Drawing
- Each student must complete 3 (three) drawings of DESAIN II, that is:
- a. **Drawing 1:** Propeller Blade Drawing.
  - b. **Drawing 2:** Shafting Arrangement Drawing.
  - c. **Drawing 3:** Shafting

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perporosan sesuai konstruksi kapal.

Arrangement with ship construction profile Drawing.

- 2.2.2. Ukuran dan jenis Kertas Gambar
- Ukuran kertas gambar adalah **A2** (*fitted paper scale*)
  - Jenis kertas gambar adalah putih (**HVS**) minimal **70 gr**.
  - Garis tepi gambar 2,5 cm dari tepi kertas gambar.

- 2.2.2. Size and type of Drawing Paper
- The size of the drawing paper is **A2** (*fitted paper scale*)
  - The paper type is white paper (**HVS**) of at least **70 grams**.
  - Outline drawing 2.5 cm from the edge of the drawing paper.

- 2.2.3. Susunan Gambar
- Gambar 1: Gambar detail daun Propeller.  
Pada kertas gambar, dari atas ke bawah tersusun berikut ini:
    - Gambar detail Daun propeller.  
Dari kiri ke kanan tersusun sebagai berikut:
      - Side view
      - Projected & Developed Area View
      - Expanded Area View
    - Data Gambar.
      - Tabel Ukuran Utama Kapal
      - Tabel Data Utama Propeller
      - Tabel Data material propeller
      - Kepala Gambar

- 2.2.3. Drawing Plan
- Drawing 1: Propeller Blade Drawing.  
On the drawing paper, from top to bottom is arranged below:
    - Detail drawing of propeller blade.  
From left to right are arranged as follows:
      - Side view
      - Projected & Developed Area View
      - Expanded Area View
    - Drawing data.
      - Table of Ship Principal Dimension
      - Table of Propeller Data
      - Table of Propeller Material
      - Head of Drawing

- Gambar 2: Gambar Poros dan Stern tube  
Pada kertas gambar, dari atas ke bawah tersusun berikut ini:
  - Gambar detail Poros dan Stern tube.  
Dari kiri ke kanan tersusun sebagai berikut:
    - Stern-post & bulkhead sideview
    - Shafting sideview
    - Shafting & accessories arrangement sideview
    - Detail of stern-tube aft-bearing

- Drawing 2: Shaft and Stern tube Drawing  
On the drawing paper, from top to bottom is arranged below:
  - Detail Shaft and Stern tube drawing.  
From left to right are arranged as follows:
    - Stern-post & bulkhead sideview
    - Shafting sideview
    - Shafting & accessories arrangement sideview
    - Detail of stern-tube aft-bearing

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- Detail of stern-tube forward-bearing
- Detail of coupling to intermediate-shaft or gearbox
- Detail of propeller boss & shaft fitting
- Detail penampang melintang
- Data Gambar.
  - Tabel Ukuran Utama Kapal
  - Tabel Data Utama Poros dan Stern Tube
  - Tabel Data material untuk sistem perporosan
  - Kepala Gambar

c. Gambar 3: Gambar sistem perporosan sesuai konstruksi kapal.

- Data Gambar.
  - Tabel Ukuran Utama Kapal
  - Tabel Data Utama Main engine, Gearbox, Poros, Stern Tube, Bearing, dan Propeller
  - Tabel Data material untuk propeller dan sistem perporosan
  - Kepala Gambar

#### 2.2.4. Soft Copy Data

Semua pekerjaan gambar harus disampaikan kepada Dosen Pembimbing dan Dosen Koordinator dalam bentuk soft copy yang terdiri dari gambar-gambar dalam format Auto-CAD. Warna dan format cover CD adalah:

Format cover CD dapat dilihat pada Lampiran B

#### 2.2.5 Format Kepala Gambar

Kepala gambar harus mengikuti standar yang sudah ditetapkan.

Format kepala gambar dapat dilihat pada Lampiran C

- Detail of stern-tube forward-bearing
- Detail of coupling to intermediate-shaft or gearbox
- Detail of propeller boss & shaft fitting
- Detail of cross-section view
- Drawing data.
  - Table of Ship Principal Dimension
  - Table of Shaft and Stern tube main Data
  - Table of Shafting Equipments Material
  - Head of Drawing

c. Drawing 3: Shafting Arrangement with ship construction profile dwg.

- Drawing data.
  - Table of Ship Principal Dimension
  - Table of Main engine, gearbox, Shaft, Stern tube, bearing, and propeller Data
  - Table of propeller and shafting equipments material
  - Head of Drawing

#### 2.2.4. Soft Copy File

All drawing must be submitted to the Supervisor and Coordinator Lecturer in the form of soft copy consisting of the drawings in Auto-CAD format. The colors and format of the CD cover are:

The CD cover format can be seen in Appendix B

#### 2.2.5 Head of Drawing Format

The head of drawing must follow the standard.

The head of drawing format can be seen in Appendix C



## DESIGN II: PROPELLER and SHAFTING ARRANGEMENT

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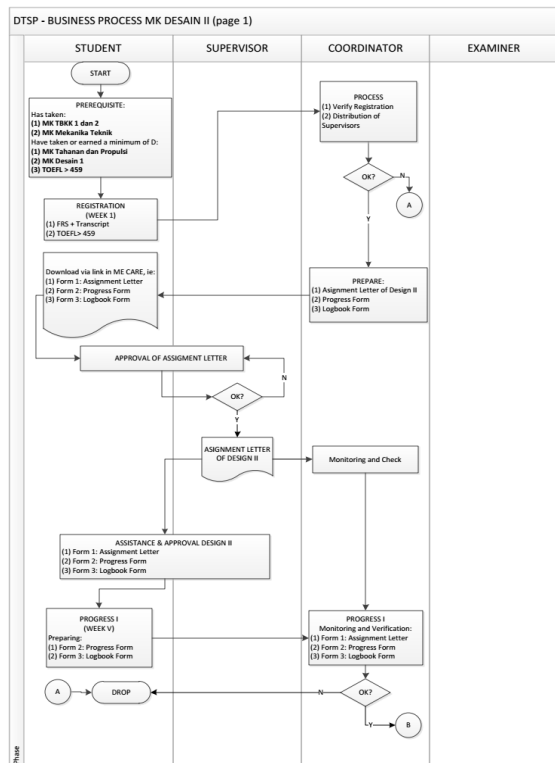
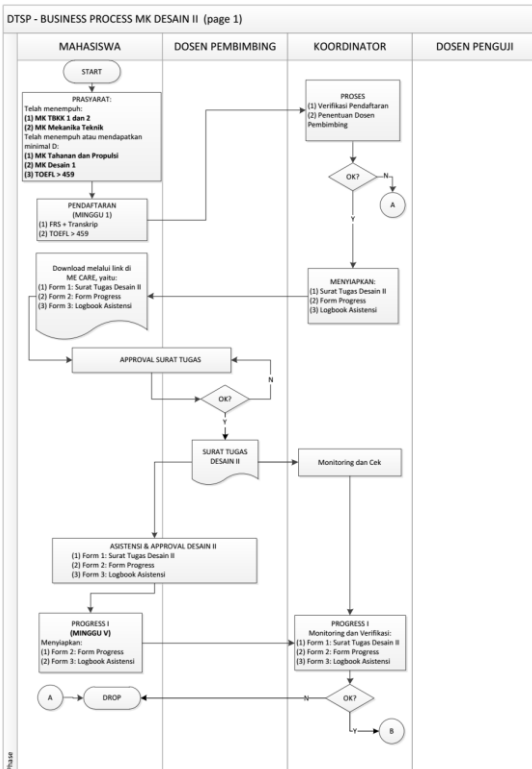
Date: February 2019

### BAB IV PROSEDUR PELAKSANAAN

(Dok. No. 01/D2/II/2018/04)

### CHAPTER IV PROCEDURE OF IMPLEMENTATION

(Doc. No. 01/D2/II/2018/04)







## DESIGN II: PROPELLER and SHAFTING ARRANGEMENT

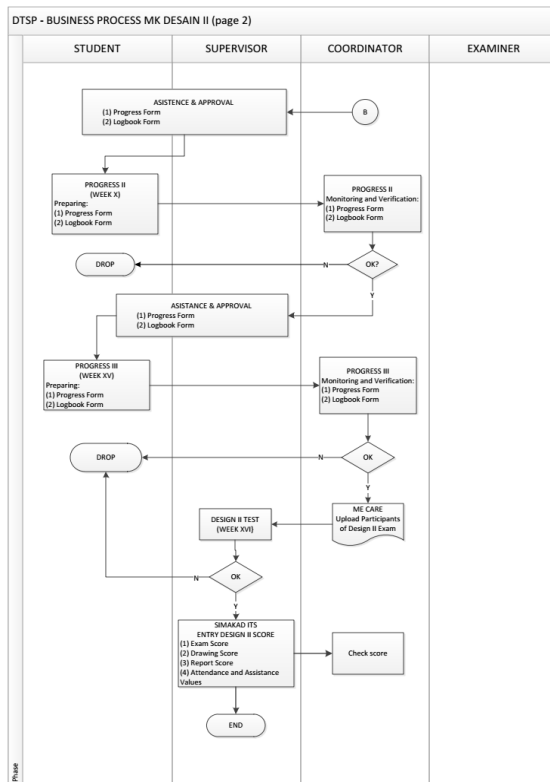
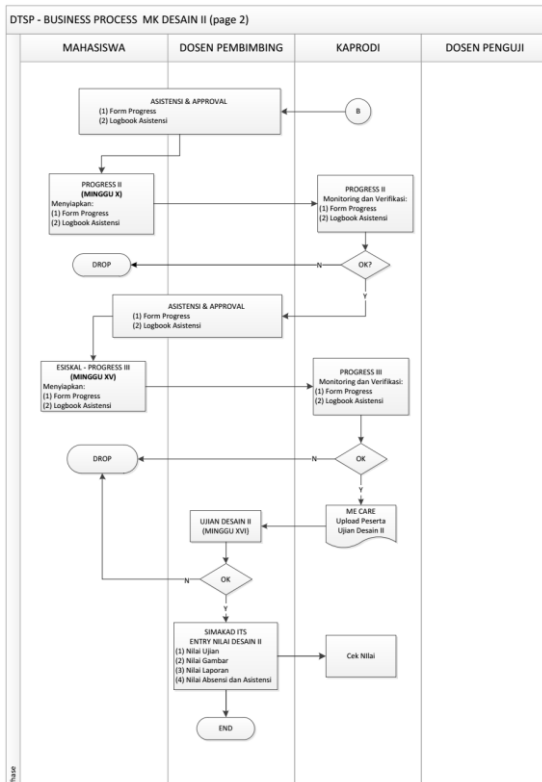
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## LAMPIRAN A APPENDIX A



**DEPARTEMEN TEKNIK SISTEM PERKAPALAN  
FAKULTAS TEKNOLOGI KELAUTAN  
INSTITUT TEKNOLOGI SEPULUH NOPEMBER (ITS)  
SURABAYA**

*(Arial 14 pt utk Dept Teknik Sist Perkapalan & 12 pt utk FTK, ITS, Surabaya)*

**DESAIN II – ME 184519** *(Arial, 16pt)*

**PROPELLER DAN SISTEM PERPOROSAN** *(18pt)*

**SEMESTER GANJIL/GENAP 20XX** *(12 pt)*

**NAMA KAPAL** *(14pt)*

**CLASS NOTATION** *(14pt)*

**MAHASISWA:** *(12pt)*

**NAMA MAHASISWA** *(12pt)*

**NRP.** *(12pt)*

**DOSEN PEMBIMBING:** *(12pt)*

**NAMA PEMBIMBING** *(12pt)*

**NIP.** *(12pt)*

*Catatan:*

1. Warna dasar cover adalah putih.
2. Warna garis dibawah logo ITS yaitu:
  - Biru untuk pengambilan ke-1.
  - Kuning untuk pengambilan ke-2.
  - Merah untuk pengambilan ke-3.
  - Hitam untuk pengambilan ke-4.



|                                                                                  |                                                              |                     |                             |
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## LAMPIRAN B APPENDIX B



|                                                                                  |                                                              |                     |                             |
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## LAMPIRAN C APPENDIX C

|         |                                                                                   |                                                                                                                              |        |             |  |
|---------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|--------|-------------|--|
| 3,0 cm  |  | <b>INSTITUT TEKNOLOGI SEPULUH NOPEMBER</b><br><b>FACULTY OF MARINE TECHNOLOGY</b><br><b>DEPARTMENT OF MARINE ENGINEERING</b> |        |             |  |
| 1,5 cm  | SHIP NAME                                                                         |                                                                                                                              |        |             |  |
| 1,5 cm  | PROPELLER DESIGN                                                                  |                                                                                                                              |        |             |  |
| 0,75 cm | SCALE :                                                                           | SIGNATURE                                                                                                                    | DATE   | INFORMATION |  |
| 0,75 cm | STUDENT :                                                                         |                                                                                                                              |        |             |  |
| 0,75 cm | SUPERVISOR :                                                                      |                                                                                                                              |        |             |  |
| 0,75 cm | COORDINATOR :                                                                     |                                                                                                                              |        |             |  |
|         | 8,0 cm                                                                            | 3,5 cm                                                                                                                       | 2,5 cm | 4,0 cm      |  |

|         |                                                                                   |                                                                                                                              |        |             |  |
|---------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|--------|-------------|--|
| 3,0 cm  |  | <b>INSTITUT TEKNOLOGI SEPULUH NOPEMBER</b><br><b>FACULTY OF MARINE TECHNOLOGY</b><br><b>DEPARTMENT OF MARINE ENGINEERING</b> |        |             |  |
| 1,5 cm  | SHIP NAME                                                                         |                                                                                                                              |        |             |  |
| 1,5 cm  | SHAFTING ARRANGEMENT                                                              |                                                                                                                              |        |             |  |
| 0,75 cm | SCALE :                                                                           | SIGNATURE                                                                                                                    | DATE   | INFORMATION |  |
| 0,75 cm | STUDENT :                                                                         |                                                                                                                              |        |             |  |
| 0,75 cm | SUPERVISOR :                                                                      |                                                                                                                              |        |             |  |
| 0,75 cm | COORDINATOR :                                                                     |                                                                                                                              |        |             |  |
|         | 8,0 cm                                                                            | 3,5 cm                                                                                                                       | 2,5 cm | 4,0 cm      |  |

|         |                                                                                     |                                                                                                                              |        |             |  |
|---------|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|--------|-------------|--|
| 3,0 cm  |  | <b>INSTITUT TEKNOLOGI SEPULUH NOPEMBER</b><br><b>FACULTY OF MARINE TECHNOLOGY</b><br><b>DEPARTMENT OF MARINE ENGINEERING</b> |        |             |  |
| 1,5 cm  | SHIP NAME                                                                           |                                                                                                                              |        |             |  |
| 1,5 cm  | SHAFTING ARRANGEMENT<br>WITH CONSTRUCTION PROFILE                                   |                                                                                                                              |        |             |  |
| 0,75 cm | SCALE :                                                                             | SIGNATURE                                                                                                                    | DATE   | INFORMATION |  |
| 0,75 cm | STUDENT :                                                                           |                                                                                                                              |        |             |  |
| 0,75 cm | SUPERVISOR :                                                                        |                                                                                                                              |        |             |  |
| 0,75 cm | COORDINATOR :                                                                       |                                                                                                                              |        |             |  |
|         | 8,0 cm                                                                              | 3,5 cm                                                                                                                       | 2,5 cm | 4,0 cm      |  |

|                                                                                  |                                                              |                     |                             |
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Format penulisan isi laporan adalah sebagai berikut.

|                                                                                   |                                                                      |                  |  |
|-----------------------------------------------------------------------------------|----------------------------------------------------------------------|------------------|--|
|  | <b>DESAIN II</b><br><b>PROPELLER dan SISTEM</b><br><b>PERPOROSAN</b> | Doc. No. (9pt) : |  |
|                                                                                   |                                                                      | Rev (9pt) :      |  |
|                                                                                   |                                                                      | Date (9pt) :     |  |
|                                                                                   |                                                                      | Page (9pt) :     |  |

## **BAB I** (Arial, 14pt) **PENDAHULUAN** (Arial, 14pt)

- 1.1. Filosofi Desain (Arial, 12pt)  
 Filosofi desain yaitu... (Arial, 11pt) *semua dalam spasi 1*

|                                                                                  |                                                              |  |                             |
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