



# Satuan Acara Pengajaran

ENMT800102 - Manufaktur Lanjut

Pengajar

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*Prof. Dr. Ir. Dedi Priadi DEA.*

*Dr. Deni Ferdian S.T., M.Sc.*

## Minggu 1

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**Materi** Pendahuluan: Pembentukan Logam dalam Proses Manufaktur

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**Media** PPT

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**Referensi**

1. John Campbell, Castings, Second Edition, Elsevier Butterwoth-Heinemann, 2004
2. John Campbell, Castings Practice: The Ten Rules of Castings, Elsevier Butterwoth-Heinemann, 2005
3. Hosford W.F and Robert M. Caddel., Metal Forming: Mechanic and Metallurgy, Prentice Hall Inc, 1983
4. Harris, J.N., Mechanical Working of Metals. Theory and Practice, Pergamon Press, 1983
5. Dieter, G.F., Mechanical Metallurgy, Mc- Graw-Hill, 1976
6. Lenel, Powder Metallurgy, Principles and Application, MPIF, 1980
7. German R.M, Powder Metallurgy Science, 1987

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**Aktivitas** Menjelaskan secara umum pembagian proses2 manufaktur material beserta produk2nya

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## Minggu 2

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**Materi** Cetakan dan Dapur Peleburan

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**Media**

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- Referensi**
1. Hosford W.F and Robert M. Caddel., Metal Forming: Mechanic and Metallurgy, Prentice Hall Inc, 1983
  2. Harris, J.N., Mechanical Working of Metals. Theory and Practice, Pergamon Press, 1983
  3. Dieter, G.F., Mechanical Metallurgy, Mc- Graw-Hill, 1976
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**Aktivitas**

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Minggu 3

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**Materi** Gating System & Casting Simulation

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**Media**

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- Referensi**
1. John Campbell, Castings, Second Edition, Elsevier Butterworth-Heinemann, 2004
  2. John Campbell, Castings Practice: The Ten Rules of Castings, Elsevier Butterworth-Heinemann, 2005
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**Aktivitas**

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Minggu 4

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**Materi** Pengecoran Aluminium (Aluminum Casting):  
Jenis Proses

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**Media**

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- Referensi**
1. Hosford W.F and Robert M. Caddel., Metal Forming: Mechanic and Metallurgy, Prentice Hall Inc, 1983
  2. Harris, J.N., Mechanical Working of Metals. Theory and Practice, Pergamon Press, 1983
  3. Dieter, G.F., Mechanical Metallurgy, Mc- Graw-Hill, 1976
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**Aktivitas**

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Minggu 5

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**Materi** Pengecoran Baja Paduan dan Paduan Super (Alloy Steel & Super Alloy Casting)  
Pengecoran Khusus dan Masa Depan Proses Pengecoran (Special Casting & Future Trend of Casting)

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## Media

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- Referensi**
1. John Campbell, Castings, Second Edition, Elsevier Butterwoth-Heinemann, 2004
  2. John Campbell, Castings Practice: The Ten Rules of Castings, Elsevier Butterwoth-Heinemann, 2005
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## Aktivitas

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### Minggu 6

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**Materi** Pembentukan logam/metal forming: Klasifikasi proses, Pengaruh parameter proses, Mekanika Pembentukan. Manufaktur berbantuan komputer

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**Media** Perkuliahan tatap muka dan latihan/diskusi. Slide show PPT

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- Referensi**
1. Hosford W.F and Robert M. Caddel., Metal Forming: Mechanic and Metallurgy, Prentice Hall Inc, 1983
  2. Harris, J.N., Mechanical Working of Metals. Theory and Practice, Pergamon Press, 1983
  3. Dieter, G.F., Mechanical Metallurgy, Mc- Graw-Hill, 1976
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## Aktivitas

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### Minggu 7

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**Materi** Proses Penempaan: Perkembangan proses, Cacat produk, material mampu tempa  
Proses ekstrusi: Mekanika proses dan cacat produk.

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**Media** Tatap muka, diskusi, slide show PPT

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- Referensi**
1. John Campbell, Castings, Second Edition, Elsevier Butterwoth-Heinemann, 2004
  2. John Campbell, Castings Practice: The Ten Rules of Castings, Elsevier Butterwoth-Heinemann, 2005
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## Aktivitas

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### Minggu 8

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**Materi** Penarikan kawat dan Pengerolan logam: Parameter proses, Mampu bentuk, Permasalahan dan cacat proses. Pengerolan panas dan pengerolan dingin

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**Media** Slide show, diskusi, tugas paper

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**Referensi**

1. Hosford W.F and Robert M. Caddel., Metal Forming: Mechanic and Metallurgy, Prentice Hall Inc, 1983
2. Harris, J.N., Mechanical Working of Metals. Theory and Practice, Pergamon Press, 1983
3. Dieter, G.F., Mechanical Metallurgy, Mc- Graw-Hill, 1976

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**Aktivitas**

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## Minggu 9

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**Materi** Advance proses manufaktur: Large plastic Deformation, Severe Plastic Deformation, Thermo Mechanical Control Process

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**Media** Slide show, tugas paper, diskusi

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**Referensi**

1. John Campbell, Castings, Second Edition, Elsevier Butterwoth-Heinemann, 2004
2. John Campbell, Castings Practice: The Ten Rules of Castings, Elsevier Butterwoth-Heinemann, 2005

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**Aktivitas** Slide show, tugas paper, diskusi

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## Minggu 10

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**Materi** Penarikan (Drawing)

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**Media**

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**Referensi**

1. Hosford W.F and Robert M. Caddel., Metal Forming: Mechanic and Metallurgy, Prentice Hall Inc, 1983
2. Harris, J.N., Mechanical Working of Metals. Theory and Practice, Pergamon Press, 1983
3. Dieter, G.F., Mechanical Metallurgy, Mc- Graw-Hill, 1976

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**Aktivitas**

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## Minggu 11

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**Materi** Pengecoran Aluminium (Aluminium Casting) Cacat Cor dan Pencegahannya

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**Media**

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- Referensi**
1. John Campbell, Castings, Second Edition, Elsevier Butterwoth-Heinemann, 2004
  2. John Campbell, Castings Practice: The Ten Rules of Castings, Elsevier Butterwoth-Heinemann, 2005
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**Aktivitas**

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Minggu 12

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**Materi** Pembentukan Logam Lembaran (Sheet Metal Forming)

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**Media**

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- Referensi**
1. Hosford W.F and Robert M. Caddel., Metal Forming: Mechanic and Metallurgy, Prentice Hall Inc, 1983
  2. Harris, J.N., Mechanical Working of Metals. Theory and Practice, Pergamon Press, 1983
  3. Dieter, G.F., Mechanical Metallurgy, Mc- Graw-Hill, 1976
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**Aktivitas**

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Minggu 13

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**Materi** Besi Cor (Cast Iron): BTK, BTN, ADI

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**Media**

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- Referensi**
1. John Campbell, Castings, Second Edition, Elsevier Butterwoth-Heinemann, 2004
  2. John Campbell, Castings Practice: The Ten Rules of Castings, Elsevier Butterwoth-Heinemann, 2005
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**Aktivitas**

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Minggu 14

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**Materi** Pembentukan Logam Lembaran (Sheet Metal Forming)

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**Media**

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- Referensi**
1. Hosford W.F and Robert M. Caddel., Metal Forming: Mechanic and Metallurgy, Prentice Hall Inc, 1983
  2. Harris, J.N., Mechanical Working of Metals. Theory and Practice, Pergamon Press, 1983
  3. Dieter, G.F., Mechanical Metallurgy, Mc- Graw-Hill, 1976
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**Aktivitas**

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Minggu 15

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**Materi** Pemrosesan Thermomekanis(Thermomechanical Processing)

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**Media**

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- Referensi**
1. Hosford W.F and Robert M. Caddel., Metal Forming: Mechanic and Metallurgy, Prentice Hall Inc, 1983
  2. Harris, J.N., Mechanical Working of Metals. Theory and Practice, Pergamon Press, 1983
  3. Dieter, G.F., Mechanical Metallurgy, Mc- Graw-Hill, 1976
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**Aktivitas**

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Minggu 16

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**Materi** Ujian Tengah Semester  
  
Pengecoran Baja Paduan dan Paduan Super (Alloy Steel & Super Alloy Casting)

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**Media**

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**Referensi**

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**Aktivitas**

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Minggu 17

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**Materi** Pengecoran Baja Paduan dan Paduan Super (Alloy Steel & Super Alloy Casting)  
  
Pengecoran Khusus dan Masa Depan Proses Pengecoran (Special Casting & Future Trend of Casting)

---

**Media**

---

- Referensi**
1. John Campbell, Castings, Second Edition, Elsevier Butterwoth-Heinemann, 2004
  2. John Campbell, Castings Practice: The Ten Rules of Castings, Elsevier Butterwoth-Heinemann, 2005
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**Aktivitas**

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Minggu 18

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**Materi** Ujian tengah Semester

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**Media**

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**Referensi**

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**Aktivitas**

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Minggu 19

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**Materi** Karakterisasi Serbuk  
  
Pra Kompaksi:  
Mixing, Blending, Alloying, Lubricating

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**Media**

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- Referensi**
1. Lenel, Powder Metallurgy, Principles and Application, MPIF, 1980
  2. German R.M, Powder Metallurgy Science, 1987
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**Aktivitas**

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Minggu 20

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**Materi** Proses Kompaksi

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**Media**

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- Referensi**
1. Lenel, Powder Metallurgy, Principles and Application, MPIF, 1980
  2. German R.M, Powder Metallurgy Science, 1987
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**Aktivitas**

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## Minggu 21

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**Materi** Proses Penyinteran (Sintering Process)

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**Media**

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**Referensi** 1. Lenel, Powder Metallurgy, Principles and Application, MPIF, 1980  
2. German R.M, Powder Metallurgy Science, 1987

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**Aktivitas**

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## Minggu 22

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**Materi** Aplikasi Metalurgi Serbuk

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**Media**

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**Referensi** 1. Lenel, Powder Metallurgy, Principles and Application, MPIF, 1980  
2. German R.M, Powder Metallurgy Science, 1987

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**Aktivitas**

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## Minggu 23

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**Materi** Tugas dan Presentasi Proses Metalurgi Serbuk (Powder Metallurgy)

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**Media**

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**Referensi** 1. Lenel, Powder Metallurgy, Principles and Application, MPIF, 1980  
2. German R.M, Powder Metallurgy Science, 1987

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**Aktivitas**

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## Minggu 24

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**Materi** Ujian Proses Metalurgi Serbuk (Powder Metallurgy)

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**Media**

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**Referensi** 1. Lenel, Powder Metallurgy, Principles and Application, MPIF, 1980  
7. German R.M, Powder Metallurgy Science, 1987

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**Aktivitas**

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