



# Satuan Acara Pengajaran

ENMT800011 - Peralatan Mekanika Industri

Pengajar

*Dr. Dwi Marta Nurjaya S.T., M.T.*

*Prof. Dr. Ir. Winarto M.Sc*

## Tujuan Perkuliahan

Mahasiswa mampu menjelaskan prinsip dasar, jenis dan aplikasi peralatan mekanik di industri seperti peralatan pipa pengalir (pipeline), peralatan pembangkit daya (boiler dan turbin), peralatan penukar kalor (heat exchanger) serta disain material yang dipakai serta kode (standard) yang diacu.

## Minggu 1

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**Materi**           INTRODUKSI:  
-Penjelasan SAP MK Peralatan Mekanik Industri  
-Introduksi Tentang Peralatan Mekanik Industri

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**Media**            LCD & SCELE

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**Referensi**       1. Peter Smith, Piping Materials Selection & Applications, Gulf Professional Publishing, Elsevier, 2005  
2. Mohinder Nayyar, "Piping Handbook", 7th Ed., McGraw-Hill Professional; 1999, ISBN: 0070471061  
3. Tyler G. Hicks, Power Plant Evaluation & Design Reference Guide, McGraw Hill, 1986  
4. Saranamutto et. al., Gas Turbine Theory, 5th Ed., Prentice Hall, 2001  
5. Smith Eric, Thermal Design of Heat Exchanger, Jon Willey & Son, 1996, New York.

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**Aktivitas**       Kuliah Tatap Muka

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## Minggu 2

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<b>Materi</b>	Piping System
<b>Media</b>	LCD & SCELE
<b>Referensi</b>	<ol style="list-style-type: none"> <li>1. Peter Smith, Piping Materials Selection &amp; Applications, Gulf Professional Publishing, Elsevier, 2005</li> <li>2. Mohinder Nayyar, "Piping Handbook", 7th Ed., McGraw-Hill Professional; 1999, ISBN: 0070471061</li> <li>3. Tyler G. Hicks, Power Plant Evaluation &amp; Design Reference Guide, McGraw Hill, 1986</li> <li>4. Saranavamutto et. al., Gas Turbine Theory, 5th Ed., Prentice Hall, 2001</li> <li>5. Smith Eric, Thermal Design of Heat Exchanger, Jon Willey &amp; Son, 1996, New York.</li> </ol>
<b>Aktivitas</b>	TATAP MUKA & TUGAS HOMEWORK

### Minggu 3

<b>Materi</b>	Standard API 1104 -1-5 of 15 Sections
<b>Media</b>	LCD & SCELE
<b>Referensi</b>	<ol style="list-style-type: none"> <li>1. Peter Smith, Piping Materials Selection &amp; Applications, Gulf Professional Publishing, Elsevier, 2005</li> <li>2. Mohinder Nayyar, "Piping Handbook", 7th Ed., McGraw-Hill Professional; 1999, ISBN: 0070471061</li> <li>3. Tyler G. Hicks, Power Plant Evaluation &amp; Design Reference Guide, McGraw Hill, 1986</li> <li>4. Saranavamutto et. al., Gas Turbine Theory, 5th Ed., Prentice Hall, 2001</li> <li>5. Smith Eric, Thermal Design of Heat Exchanger, Jon Willey &amp; Son, 1996, New York.</li> </ol>
<b>Aktivitas</b>	TATAP MUKA & TUGAS HOMEWORK

### Minggu 4

<b>Materi</b>	Standard API 1104 6 - 10 of 15 Sections
<b>Media</b>	LCD & SCELE

- Referensi**
1. Peter Smith, Piping Materials Selection & Applications, Gulf Professional Publishing, Elsevier, 2005
  2. Mohinder Nayyar, "Piping Handbook", 7th Ed., McGraw-Hill Professional; 1999, ISBN: 0070471061
  3. Tyler G. Hicks, Power Plant Evaluation & Design Reference Guide, McGraw Hill, 1986
  4. Saranavamutto et. al., Gas Turbine Theory, 5th Ed., Prentice Hall, 2001
  5. Smith Eric, Thermal Design of Heat Exchanger, Jon Willey & Son, 1996, New York.
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## Minggu 5

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**Materi** Standard API 1104  
11?15 of 15 Sections

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**Media** LCD & SCELE

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- Referensi**
1. Peter Smith, Piping Materials Selection & Applications, Gulf Professional Publishing, Elsevier, 2005
  2. Mohinder Nayyar, "Piping Handbook", 7th Ed., McGraw-Hill Professional; 1999, ISBN: 0070471061
  3. Tyler G. Hicks, Power Plant Evaluation & Design Reference Guide, McGraw Hill, 1986
  4. Saranavamutto et. al., Gas Turbine Theory, 5th Ed., Prentice Hall, 2001
  5. Smith Eric, Thermal Design of Heat Exchanger, Jon Willey & Son, 1996, New York.
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## Minggu 6

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**Materi** API-620/650  
Design and Construction of large welded low pressure storage tank, Large size storage tank

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**Media** LCD & SCELE

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- Referensi**
1. Peter Smith, Piping Materials Selection & Applications, Gulf Professional Publishing, Elsevier, 2005
  2. Mohinder Nayyar, "Piping Handbook", 7th Ed., McGraw-Hill Professional; 1999, ISBN: 0070471061
  3. Tyler G. Hicks, Power Plant Evaluation & Design Reference Guide, McGraw Hill, 1986
  4. Saranamutto et. al., Gas Turbine Theory, 5th Ed., Prentice Hall, 2001
  5. Smith Eric, Thermal Design of Heat Exchanger, Jon Willey & Son, 1996, New York.
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## Minggu 7

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**Materi** API-653  
Tank Inspection, Repair, Alteration, and Reconstruction

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**Media** LCD & SCELE

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- Referensi**
1. Peter Smith, Piping Materials Selection & Applications, Gulf Professional Publishing, Elsevier, 2005
  2. Mohinder Nayyar, "Piping Handbook", 7th Ed., McGraw-Hill Professional; 1999, ISBN: 0070471061
  3. Tyler G. Hicks, Power Plant Evaluation & Design Reference Guide, McGraw Hill, 1986
  4. Saranamutto et. al., Gas Turbine Theory, 5th Ed., Prentice Hall, 2001
  5. Smith Eric, Thermal Design of Heat Exchanger, Jon Willey & Son, 1996, New York.
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## Minggu 8

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**Materi** Boiler & Pressure Vessel

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**Media** LCD & SCELE

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- Referensi**
1. Peter Smith, Piping Materials Selection & Applications, Gulf Professional Publishing, Elsevier, 2005
  2. Mohinder Nayyar, "Piping Handbook", 7th Ed., McGraw-Hill Professional; 1999, ISBN: 0070471061
  3. Tyler G. Hicks, Power Plant Evaluation & Design Reference Guide, McGraw Hill, 1986
  4. Saranavamutto et. al., Gas Turbine Theory, 5th Ed., Prentice Hall, 2001
  5. Smith Eric, Thermal Design of Heat Exchanger, Jon Willey & Son, 1996, New York.
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## Minggu 9

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**Materi** Standard Related Pressure Vessel

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**Media** LCD & SCELE

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- Referensi**
1. Peter Smith, Piping Materials Selection & Applications, Gulf Professional Publishing, Elsevier, 2005
  2. Mohinder Nayyar, "Piping Handbook", 7th Ed., McGraw-Hill Professional; 1999, ISBN: 0070471061
  3. Tyler G. Hicks, Power Plant Evaluation & Design Reference Guide, McGraw Hill, 1986
  4. Saranavamutto et. al., Gas Turbine Theory, 5th Ed., Prentice Hall, 2001
  5. Smith Eric, Thermal Design of Heat Exchanger, Jon Willey & Son, 1996, New York.
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## Minggu 10

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**Materi** Standard : ASME Section VIII (1)

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**Media** LCD & SCELE

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- Referensi**
1. Peter Smith, Piping Materials Selection & Applications, Gulf Professional Publishing, Elsevier, 2005
  2. Mohinder Nayyar, "Piping Handbook", 7th Ed., McGraw-Hill Professional; 1999, ISBN: 0070471061
  3. Tyler G. Hicks, Power Plant Evaluation & Design Reference Guide, McGraw Hill, 1986
  4. Saranavamutto et. al., Gas Turbine Theory, 5th Ed., Prentice Hall, 2001
  5. Smith Eric, Thermal Design of Heat Exchanger, Jon Willey & Son, 1996, New York.
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## Minggu 11

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**Materi** Standard : ASME Section VIII (2)

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**Media** LCD & SCELE

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**Referensi**

1. Peter Smith, Piping Materials Selection & Applications, Gulf Professional Publishing, Elsevier, 2005
2. Mohinder Nayyar, "Piping Handbook", 7th Ed., McGraw-Hill Professional; 1999, ISBN: 0070471061
3. Tyler G. Hicks, Power Plant Evaluation & Design Reference Guide, McGraw Hill, 1986
4. Saranavamutto et. al., Gas Turbine Theory, 5th Ed., Prentice Hall, 2001
5. Smith Eric, Thermal Design of Heat Exchanger, Jon Willey & Son, 1996, New York.

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## Minggu 12

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**Materi** Boiler & Pressure Vessel Fabrication

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**Media** LCD & SCELE

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**Referensi**

1. Peter Smith, Piping Materials Selection & Applications, Gulf Professional Publishing, Elsevier, 2005
2. Mohinder Nayyar, "Piping Handbook", 7th Ed., McGraw-Hill Professional; 1999, ISBN: 0070471061
3. Tyler G. Hicks, Power Plant Evaluation & Design Reference Guide, McGraw Hill, 1986
4. Saranavamutto et. al., Gas Turbine Theory, 5th Ed., Prentice Hall, 2001
5. Smith Eric, Thermal Design of Heat Exchanger, Jon Willey & Son, 1996, New York.

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## Minggu 13

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**Materi** Invited Guest Lecture with regarding with Pressure Vessel & Boiler or heat exchanger

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**Media** LCD & SCELE

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- Referensi**
1. Peter Smith, Piping Materials Selection & Applications, Gulf Professional Publishing, Elsevier, 2005
  2. Mohinder Nayyar, "Piping Handbook", 7th Ed., McGraw-Hill Professional; 1999, ISBN: 0070471061
  3. Tyler G. Hicks, Power Plant Evaluation & Design Reference Guide, McGraw Hill, 1986
  4. Saranavamutto et. al., Gas Turbine Theory, 5th Ed., Prentice Hall, 2001
  5. Smith Eric, Thermal Design of Heat Exchanger, Jon Willey & Son, 1996, New York.
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## Minggu 14

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**Materi** Tugas Kelompok Mengenai Pengetahuan dan Aplikasi Pressure Vessel & Boiler

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**Media** LCD & SCELE

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- Referensi**
1. Peter Smith, Piping Materials Selection & Applications, Gulf Professional Publishing, Elsevier, 2005
  2. Mohinder Nayyar, "Piping Handbook", 7th Ed., McGraw-Hill Professional; 1999, ISBN: 0070471061
  3. Tyler G. Hicks, Power Plant Evaluation & Design Reference Guide, McGraw Hill, 1986
  4. Saranavamutto et. al., Gas Turbine Theory, 5th Ed., Prentice Hall, 2001
  5. Smith Eric, Thermal Design of Heat Exchanger, Jon Willey & Son, 1996, New York.
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## Minggu 15

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**Materi** Presentasi & Kumpulkan Paper Kelompok

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**Media** LCD & SCELE

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- Referensi**
1. Peter Smith, Piping Materials Selection & Applications, Gulf Professional Publishing, Elsevier, 2005
  2. Mohinder Nayyar, "Piping Handbook", 7th Ed., McGraw-Hill Professional; 1999, ISBN: 0070471061
  3. Tyler G. Hicks, Power Plant Evaluation & Design Reference Guide, McGraw Hill, 1986
  4. Saranavamutto et. al., Gas Turbine Theory, 5th Ed., Prentice Hall, 2001
  5. Smith Eric, Thermal Design of Heat Exchanger, Jon Willey & Son, 1996, New York.

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