

<b>COURSE</b>	Name	: Dynamics and Stability of Power System
	Code	: EE184913
	Credits	: 3
	Semester	: Elective

### Description of Course

Dynamics and stability of the power system course discuss about dynamic stability (steady state) and the regulatory system in the power system from the center of the power generation system to the load.

### Learning Outcomes

#### Knowledge

(P01) Mastering the concepts and principles of science and engineering mathematics, and implementing them in the form of procedures for analysis and design in power systems, control systems, multimedia telecommunications, or electronics.

#### Specific Skill

(KK01) Able to formulate engineering problems in power systems, control systems, multimedia telecommunications, or electronics.

#### General Skill

(KU02) Able to demonstrate independent performance, quality, and measurable.

#### ATTITUDE

(S09) Demonstrating attitude of responsibility on work in his/her field of expertise independently.

(S11) Trying his/her best to achieve perfect results.

(S12) Working together to be able to make the most of his/her potential.

### Course Learning Outcomes

#### Knowledge

Mastering electric power system modeling to perform dynamic stability analysis (steady state), and able to make improvements and innovations from systems that have been designed.

#### Specific Skill

Able to do power system modeling in mathematical form and able to do simulations using programming package language (Matlab, ETAP, or Powerlib) to analyze system stability.

#### General Skill

Able to demonstrate independent, quality and measurable performance in analyzing the dynamics and stability of the electricity system.

#### Attitude

Having responsibility in work, both individually and in groups.

### Main Subjects

1. Special Matrix

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2. State space
  3. Controllability, Observability, and Stability
  4. Base of Stability
  5. Linear Model SMIB
  6. Excitation Control System
  7. Power System Stabilizer
  8. Load Frequency Control
  9. Torsional Oscillation
  10. Multi Machine System

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#### Reference(s)

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- [1] Imam Robandi, Modern Power System Control, Penerbit ANDI Yogyakarta, 2009.
- [2] Imam Robandi, Desain Sistem Tenaga Modern, Penerbit Andi, Yogyakarta, 2006
- [3] P. Kundur, Power System Stability, McGraw Hill, 1994
- [4] P.M. Anderson and A.A. Fouad Fouad, Power System Control and Stability, John Wiley & Sons, Inc., 2003

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#### Prerequisite(s)

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EE184402 Introduction to Power System  
EE184511 Power System Analysis

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