Course Code	TKEE165014
Course Name	Power System Operation
Course Instructors	Sasongko Pramono Hadi,
Course Type	Selected Elective
Course Classification	Engineering Topics
Credit / Contact Hour per Week	3 / 150 minutes per Week
Course Description	The purpose of this course is to provide understanding to students regarding the purpose and scope / problems of power system operation. Furthermore, the students are also able to understand the concept and use method of problem solving method of power system operation including economic dispatch, unit commitment, generation with limited energy supply, control of generation, power system security and state estimation in power systems.
Prerequisites Courses	Analysis of Power System
Covered Student Outcome	**Fundamental and Engineering Knowledge (a)**

Learning Outcome	1. Students are able to mastering methods for solving power system operation problems 2. Students are able to formulate power system operation problems 3. Students are able to apply methods for solving small-scale power system operation problems 4. Students are able to analyze operating system power condition 5. Students are able to evaluate the operating conditions of the system
Topic	1. Objectives and scope of power system operation 2. Characteristic of generating unit 3. Economic dispatch 4. Unit commitment 5. Generation with limited energy supply 6. Control of generation 7. Power System security 8. State estimation in power systems

Direct Asessment		
	Direct Asessment Plan	**Measured Learning Outcome**
	Homework/Quiz	LO1,LO2,LO3,LO4,LO5
	Final Project Assignment	LO4,LO5
	Presentation	LO4,LO5
	Mid Exam	LO1,LO2
	Final Exam	LO3,LO4,LO5

Indirect Asessment	Questionnaire (EDOM)
References	[1] A. J. Woods and B. F. Wollenberg. 2013. Power Generation, Operation, and Control, 3nd ed., John Wiley & Sons. [2] Ross Baldick. 2006. Applied Optimization: Formulation and Algorithms for Engineering Systems. Cambridge University Press. [3] Selected papers from IEEE and IEE journal publications and conference proceedings.