COURSE	Name	:	Multi-agent Systems
	Code	:	EE184925
	Credits	:	3
	Semester	:	Elective

Description of Course

The multi-agent systems course discusses the concepts of multi-agent systems: control and applications, static agreement protocols between agents, dynamic agreement protocols, agreements in random noise, formation control, inter-agent cooperative control, information-based estimates derived from multi-agent, conflict between agents.

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 as a preparation for further education or professional career.

(P02) Mastering the concepts and principles of engineering, and implementing them in the form of procedures for analysis and design in power systems, control systems, multimedia telecommunications, or electronics.

(P03) Mastering the concepts and principles of design procedure 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.

(KK02) eing able to describe the completion of engineering problems in power systems, control systems, multimedia telecommunications, or electronics.

General Skill

(KU01) Able to apply logical, critical, systematic and innovative thinking in the context of development or implementation of science and technology that concerns and implements the value of humanities in accordance with their area of expertise.

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

(KU12) Able to implement information and communication technology (ICT) in the context of implementation of his/her work.

Attitude

(S09) Demonstrate responsible attitudes towards the work in the 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 the facts, concepts, procedures, and principles of multi-agent systems.

Specific Skill

Able to analyze protocol agreements, formation control, cooperative control, estimates of multi-agent information, conflicts among agents.

General Skill

Able to use Matlab / Simulink software to simulate protocol agreement, formation control, cooperative control, estimation of multi agent information, conflict between agent.

Attitude

Demonstrating a responsible attitude towards the work in the field of expertise independently.

Working together to be able to take full advantage of their potential.

Main Subjects

1. The concept of multi-agent system: control and application
2. Static agreement protocol between agents
3. Dynamic agreement protocol between agents
4. Agreement among agents in random noise
5. Formation control between agents
6. Cooperative control between agents
7. Estimates based on information come from multi agents
8. Conflict between agents

Reference(s)

[1] Mehran Mesbahi, Magnus Egerstedt, "Graph Theoritic Methods in Multiagent Networks," 1stEdition, Princeton, New Jersey, 2010

Prerequisite(s)

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