Master in Mathematics

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MODULE HANDBOOK

Module Name	**Teori Permainan (*Game Theory*)**
Module level, if applicable	**Master Program**
Code, if applicable	MMM-6320
Subtitle, if applicable	
Courses, if applicable	**GameTheory**
Semester(s) in which the module is taught	2nd(second) semester
Person responsible for the module	Chair of The Lab. of Applied Mathematics
Lecturer(s)	Prof. Dr. Salmah, M.Si.
Language	Bahasa Indonesia
Relation to curriculum	Elective course
Teaching methods	150 minutes lectures and 180 minutes structured activities per week.
Workload (incl. contact hours, self-study hours)	Total workload is 136 hours per semester, which consists of 150 minutes lectures per week for 14 weeks, 180 minutes structured activities per week, 180 minutes individual study per week, in total is 16 weeks per semester, including mid exam and final exam.
Credit points	3
Required and recommended prerequisites for joining the module	-

Module objectives/intended learning outcomes	After completing these course the students will be able: CO1. To solve noncooperative game with two players. CO2. to solve cooperative game with two players. CO3. to solve cooperative game with n players. CO 4. to solve linear quadratic dynamic game cooperative with two players CO5. To relate between the theory and applications of optimization problem, and to interpret the solutions.
Content	Topics include noncooperative game 2 players, domination, mixed strategy, cooperative game two players, TU games and NTU games, feasible area of cooperative TU game, feasible area of cooperative NTU games, Pareto solution of cooperative TU games, Pareto solution of cooperative NTU games, cooperative games n players, coalitional form, Shapley value, nucleolus, introduction to optimal control, linear quadratic dynamic game two players cooperative, application of game to real problems, introduction to advance theory in game.
Examination forms	Essay, oral presentation
Study and examination requirements	The minimum requirement (final grade) to pass the course is D. The final mark will be weighted as follows: <table><tr><td>No.</td><td>Assessment methods (components, activities)</td><td>Weight (percentage)</td></tr><tr><td>1.</td><td>Final Examination</td><td>30%-40%</td></tr><tr><td>2.</td><td>Mid-term Examination</td><td>30%-40%</td></tr><tr><td>3.</td><td>Class Activities: Quiz, Homework, etc.</td><td>20%-30%</td></tr></table>
Media employed	Board, LCD Projector, Laptop/Computer/Tablet, eLok/Simaster
Reading list	1. Thomas, L.C., 2011, *Games Theory and Applications*, Dover Publications; Illustrated edition 2. Ferguson, T.S., 2020, *A Course in Game Theory*, WSPC 3. Narahari, Y., 2020, *Game Theory And Mechanism Design*, World Scientific 4. Engwerda, Jacob, 2005, *LQ Dynamic Optimization and Differential Games,* John wiley & sons, Tilburg University, Netherlands.

CO-PLO Mapping

	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6
CO 1		√	√			
CO 2		√	√			
CO 3		√	√			
CO 4		√	√			
CO 5					√	

Compilation Date   :

Modified Date   :