



UNIVERSITAS NEGERI PADANG
FACULTY OF MATHEMATICS AND NATURAL SCIENCES
MATHEMATICS DEPARTMENT, MATHEMATICS STUDY PROGRAM
Main Campus Universitas Negeri Padang.
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Bachelor of Science in Mathematics

MODULE HANDBOOK

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| Module name: | Game Theory |
| Module level, if applicable: | Bachelor |
| Code: | MAT2.62.8005 |
| Sub-heading, if applicable: | - |
| Classes, if applicable: | Game Theory |
| Semester: | 8 th |
| Module coordinator: | Head of Applied Mathematics Expertise Group |
| Lecturer(s): | Muhammad Subhan, M.Si. |
| Language: | Indonesian Language and English |
| Classification within the curriculum: | Elective course in the fourth year (8 th semester) Bachelor Degree |
| Teaching format / class hours per week during the semester: | <ol style="list-style-type: none">Lectures: by Project Based Learning with methods such as presentations, group, and class discussion. (2 x 50 minutes = 100 minutes)Structured assignment: Weekly individual written assignment (2 x 60 minutes = 120 minutes)Individual study (2 x 60 minutes = 120 minutes) |
| Workload: | Total workload is 90.67 hours per semester which consists of 100 minutes lectures, 120 minutes structured activities, and 120 minutes self-study per week for 16 weeks. |
| Credit points: | 2 SKS = 3,02 ECTS |
| Prerequisites course(s): | Probability Theory, Operation Research |

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| <p>Course outcomes:</p> | <p>After taking this course the students have ability to:</p> <p>CO1. Show scientific ethics, responsibility, creativity, honesty and confidence.</p> <p>CO2. Analyze games with pure and mixed strategy and games with information.</p> <p>CO3. Interpret recent application of game theory in real-world problems.</p> <p>CO4. Communicate effectively.</p> <p>CO5. Use a computer to visualize and to find solutions to game theory problems.</p> |
| <p>Content:</p> | <ol style="list-style-type: none"> 1. The Meaning of Game Theory 2. Components and Types of Game Theory 3. Rules of Game Theory 4. Pure and Mixed Strategy 5. Games with Information, Asymmetric Informations. |
| <p>Study/exam achievements:</p> | <p>The final grade will be weighted as follows:</p> <p>The assessment consists of a final project (75%) and activities (25%).</p> <p>The final project entails group discussion of the topic, reviewing the paper, analyzing it, giving an oral presentation, and writing the final report.</p> <p>Students' activities consist of group discussion, attendance, and weekly assignments.</p> |
| <p>Forms of media:</p> | <p>White Board, laptop, Projector, e-learning via elearning2.unp.ac.id, and zoom meeting.</p> |
| <p>Literature:</p> | <ol style="list-style-type: none"> 1. Rasmussen (2005). Games and Information. 4th ed. Indiana Univ. 2. Carmichael (2005). A Guide to Game Theory. Pearson. 3. Elementary Linear Algebra Mazalov (2014). Mathematical Game Theory and Applications. John Wiley. |

PLO and CO Mapping

| | PLO1 | PLO2 | PLO3 | PLO4 | PLO5 | PLO6 | PLO7 | PLO8 | PLO9 | PLO10 |
|-----|------|------|------|------|------|------|------|------|------|-------|
| CO1 | ✓ | ✓ | | | | | | | | |
| CO2 | | | | | | | ✓ | | | |
| CO3 | | | ✓ | | | | | | | |
| CO4 | | | ✓ | | | | | | | |
| CO5 | | | | | | ✓ | | | | |