



UNIVERSITAS NEGERI PADANG
 FACULTY OF MATHEMATICS AND NATURAL SCIENCES MATHEMATICS
 DEPARTMENT, MATHEMATICS STUDY PROGRAM Main Campus Universitas
 Negeri Padang.
 Jalan Prof. Dr. Hamka Air Tawar Padang, Sumatera Barat
 Telepon: +62 751 7053902, Fax: +62 751 7055628
 Email: humas@unp.ac.id

Bachelor of Science in Mathematics

MODULE HANDBOOK

| | |
|---|---|
| Module name: | Numerical Analysis |
| Module level, if applicable: | Bachelor |
| Code: | MAT2.62.7012 |
| Sub-heading, if applicable: | - |
| Classes, if applicable: | Numerical Analysis |
| Semester: | 7 th |
| Module coordinator: | Head of Analysis Expertise Group |
| Lecturer(s): | Muhammad Subhan, M.Si. |
| Language: | Indonesian Language and English |
| Classification within the curriculum: | Elective course in the fourth year (7 th semester) Bachelor Degree |
| Teaching format / class hours per week during the semester: | <ul style="list-style-type: none"> a. Lectures: Project Based Learning with methods such as expository, discussion, and presentation. (3 x 50 minutes = 150 minutes). b. Structured assignment: Weekly individual written assignment. (3 x 60 minutes = 180 minutes). c. Individual study (3 x 60 minutes = 180 minutes) |
| Workload: | The total workload is 136 hours per semester, which consists of 150 minutes lectures, 180 minutes structured activities, and 180 minutes of self-study. In total, there are 16 weeks per semester, including midterm and final exams. |
| Credit points: | 3 sks = 4,53 ECTS |
| Prerequisites course(s): | Ordinary Differential Equations, Real Analysis, Numerical Methods |
| Course outcome: | <p>After completing this course, the students have the ability to:</p> <ul style="list-style-type: none"> CO1. Students show scientific ethics, responsibility, creativity, honesty, and confidence. CO2. Students are able to analyze the convergence and error of some simple numerical methods. CO3. Students are able to compare numerical methods of similar problems, especially recent methods to the standard ones. CO4. Students are able to implement the numerical methods on the computer. CO5. Students able to communicate effectively |

| | |
|--------------------------|--|
| | CO6. Students are able to use computers to execute numerical algorithms. |
| Study/exam achievements: | <p>The final grade will be weighted as follows:</p> <p>The assessment consists of a final project (35%), activities (20%), and a task (45%).</p> <p>The final project entails group discussion of the topic and writing of the final report. Weekly tasks (fixing specific problems) come in two flavors: group and individual. After collecting the group task, presentations are held in the classroom and focus on the group members' performances.</p> |
| Forms of media: | White Board, laptop, Projector, e-learning via elearning2.unp.ac.id, and zoom meeting. |
| Literature: | <ol style="list-style-type: none"> 1. Kincaid, Numerical Analysis 3rd ed, ITP, 2002. 2. Karris, Numerical Analysis Using MATLAB and Excel, Oxford 2007. |

PLO and CO mapping

| | PLO1 | PLO2 | PLO3 | PLO4 | PLO5 | PLO6 | PLO7 | PLO8 | PLO9 | PLO10 |
|-----|------|------|------|------|------|------|------|------|------|-------|
| CO1 | ✓ | ✓ | | | | | | | | |
| CO2 | | | | ✓ | | | | | | |
| CO3 | | | | ✓ | | | | | | |
| CO4 | | | | | ✓ | | | | | |
| CO5 | | | | | | | ✓ | | | |
| CO6 | | | | | | ✓ | | | | |