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

Module name:	Mathematical Modelling
Module level, if applicable:	Bachelor
Code:	MAT1.62.6002
Subheading, if applicable:	-
Classes, if applicable:	Mathematical Modelling
Semester:n	6^{th}(sixth)
Module coordinator:	Head of Applied Mathematics Expertise Group
Lecturer(s):	Dra. Media Rosha, M.Si, Muhammad Subhan, M.Si., and Rara Sandhy Winanda, S.Pd., M.Sc.
Language:	Indonesian Language and English
Classification within the curriculum:	Compulsory course in the third year (6^{th} semester) Bachelor Degree
Teaching format / class hours per week during the semester:	a. Lectures: Project Based Learning with methods such as expository, discussion, and presentation (4 x 50 minutes = 200 minutes). b. Structured assignment: Weekly individual written assignment (4 x 60 minutes = 240 minutes). c. Individual study (4 x 60 minutes = 240 minutes).
Workload:	The total workload is 181.33 hours per semester, which consists of 200 minutes lectures, 240 minutes structured assignment, and 240 minutes of self-study. In total, there are 16 weeks per semester, including midterm and final exams.
Credit points:	4 SKS = 6.04 ECTS

Prerequisites course(s):	1. Ordinary Differential Equations 2. Operations Research 3. Elementary Statistics 4. Graph Theory
Course outcomes:	After taking this course, the students have the ability to: 1. Analyse the problem and choose the best model for solving it. 2. Carry out modelling in physics, biology, health, epidemics, and other fields.
Content:	1. Modelling change 2. Modelling process, proportionality, and geometric similarity 3. Model Fitting 4. Experimental Modelling 5. Modelling with a Differential Equation 6. Modelling with a Systems of Differential Equations
Study/ exam achievement	The final grade will be weighted as follows: The assessment consists of a final project (50%), a midterm exam (30%), and an assignment (20%). Students are separated into groups and discussed a model of a genuine problem as well as a method for analysing it. The final project entails group discussion to build a model, reviewing the paper, analysing it, giving an oral presentation, and writing the final report. A midterm test is taken to examine whether students understand the theory covered in the half-semester course.
Forms of media:	White Board, laptop, Projector, e-learning via elearning2.unp.ac.id, and zoom meeting.
Literature:	Main: 1. Giordano Maurice, 2003, A First Course in Mathematical Modelling, Brooks Cole. 2. Richard Haberman, 1991, Mathematical Models, Prentice hall. Recommended: 1. Rutherford, 1994, Mathematical Modeling Technique, University of Minnesota. 2. Maki Thompson, 1973, Mathematical Models and Application, Prentice Hall. 3. Widowati, Sutimin, 2007, Buku Ajar Pemodelan Matematika, FMIPA UNDIP

PLO and CO Mapping

	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PLO9	PLO10
CO1									✔	
CO2			✔							