



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

MODULE HANDBOOK

Module name:	Mathematics Learning Design
Module level, if applicable:	Bachelor
Code:	MAT1.61.5301
Sub-heading, if applicable:	-
Classes, if applicable:	Mathematics Learning Design
Semester:	5 th (fifth)
Module coordinator:	Dr. Edwin Musdi, M.Pd.
Lecturer(s):	Dr. Edwin Musdi, M.Pd., and Team
Language:	Bahasa Indonesia and English
Classification within the curriculum:	Study Program Compulsory Course
Teaching format/ class hours per week during the semester:	<p>Teaching format:</p> <ul style="list-style-type: none"> ● Lectures (face to face activities): Project Based Learning with Presentations, Group and Class Discussion methods, ● Structured assignment, ● Independent activities, ● Practice <p>3 x 170 minutes = 510 minutes = 8.50 hours</p>
Workload:	<p>16 weeks per semester include Midterm Exam and Final Exam which consist of:</p> <ul style="list-style-type: none"> ● 1.67 hours lectures (2 x 50 minutes) per week, ● 2 hours structured assignments (2 x 60 minutes) per week, ● 2 hours independent study (2 x 60 minutes) per week, ● 2.83 hours practice (1 x 170 minutes) per week, <p>16 x 170 x 3 = 8160 Minutes = 136 hours = 4.53 ECTS</p>
Credit points:	3 SKS (4.53 ECTS)
Prerequisites course(s):	Study Middle School Math Curriculum, Mathematics Instruction Strategies, and Psychology of Mathematical Instructions

<p>Course outcomes:</p>	<p>After taking this course, the students have ability to:</p> <p>CO1: Explain the concept of learning outcomes, graduates' competence standards, content standard, process standard and assessment standard in Indonesia education, learning programs by year and by semester, syllabus, lesson plan, learning worksheet and assessment instrument.</p> <p>CO2: Apply the concept learning outcomes, graduates' competence standards, content standard, process standard, syllabus, lesson plan, learning worksheet and assessment instrument in mathematics learning.</p> <p>CO3: Analyze the content standard, process standard and assessment standard in Indonesia education.</p> <p>CO4: Evaluate the learning outcomes, syllabus, lesson plan, learning worksheet and assessment instrument</p> <p>CO5: Design the learning outcomes, syllabus, lesson plan, learning worksheet and assessment instrument in mathematics learning</p> <p>CO6: Create a bundle document of learning programs by year and by semester, syllabus, lesson plan, learning worksheet and assessment instrument in mathematics learning.</p> <p>CO7: Show responsibility attitude towards works by self and by team works.</p>
<p>Content:</p>	<p>This course discusses:</p> <ol style="list-style-type: none"> 1. content standards 2. indicators of competence achievement 3. learning objectives 4. academic calendar 5. annual program 6. semester program 7. analyzing and mapping basic competences in content standards 8. syllabus components 9. creating syllabus 10. creating lesson plan <ol style="list-style-type: none"> a. analyzing learning content for basic competence b. creating and developing indicators 11. designing learning scenarios 12. learning materials 13. learning media 14. students' worksheets 15. assessment 16. lesson plan simulations

<p>Study/exam achievements:</p>	<p>Total Score= (20% x Midterm Exam Score) + (20% x Final Exam Score) + (50% x Assignments including presentations and project) + (10% x Affective Score, participations, and attendance)</p> <p>The initial cut - off points for grades A, A-, B+, B, B-, C+, C, C-, and D should not be less than 85, 80, 75, 70, 65, 60, 55, 50, and 40 out of 100 respectively.</p> <p>Explanation:</p> <p>1. Midterm Exam</p> <ul style="list-style-type: none"> ✓ Midterm Exam will be conducted in the 9th meeting ✓ Midterm Exam is in the form of a written test (essay) and will be conducted in the classroom ✓ The time allocation is 120 minutes according to the module schedule <p>2. Final Exam</p> <ul style="list-style-type: none"> ✓ Final Exam will be conducted in the 16th meeting. ✓ Final Exam is in the form of a written test (essay) and will be conducted in the classroom. ✓ The time allocation is 120 minutes which follows the Final Exam schedule provided by the Department. <p>3. Assignment</p> <ul style="list-style-type: none"> ✓ Presentations: the participants of the module will be divided into several small groups. Each of the groups will assign to particular topic related to the material in Mathematics Learning Design. They should discuss the topic, prepare the paper and conduct a class presentation. They also should include in their presentation about video analyzing of examples on implementation of mathematics instruction strategies. ✓ Project assignment: <ul style="list-style-type: none"> a. Students make a compilation of their design for teaching mathematics. They are divided into small groups and assigned to design for particular semester in school mathematics topics (junior and senior high school level). The compilation includes the analysis of Core competence, Basic Competence and Indicators of Competence Achievement, analyzing the academic calendar, designing annual programs, semester programs, mapping basic competencies and syllabus. Then, students will work individually to design lesson plans, teaching materials, student worksheets, learning media, and assessment according to the division of school
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	<p>mathematics topics in their respective groups.</p> <p>b. Lesson Plan Simulation: Students choose a lesson plan that they have already design during the course and conduct a simulation of it.</p> <p>4. Affective Assessment</p> <ul style="list-style-type: none"> ✓ Affective assessment is held in every meeting by observing students' attitude in the classroom. ✓ The assessment is based on the observation sheet by using the given scoring rubrics.
Forms of media:	Board, LCD Projector, Laptop/Computer
Literature:	<ol style="list-style-type: none"> 1. Charles M. Reigeluth, Brian J. Beatty, and Rodney D. Myers, (2017) Instructional-Design Theories and Models, Volume Iv Historicity, Routledge 711 Third Avenue, New York, NY10017 2. Horn, I. S. (2017). Motivated: Designing Math Classrooms where Students Want to Join in. Amerika Serikat: Heinemann. 3. Task Design in Mathematics Education: An ICMI Study 22. (2016). Amerika Serikat: Springer International Publishing. 4. Rock, D., Brumbaugh, D. K. (2013). Teaching Secondary Mathematics. Britania Raya: Routledge. 5. Depdikbud. 2016. Permendikbud Nomor 20 tentang Standar Kompetensi Lulusan. Jakarta: Depdikbud 6. Depdikbud. 2016. Permendikbud Nomor 21 tentang Standar Isi (Kerangka Dasar dan Struktur Kurikulum). Jakarta: Depdikbud 7. Depdikbud. 2016. Permendikbud Nomor 22 tentang Standar Proses. Jakarta: Depdikbud 8. Depdikbud. 2016. Permendikbud Nomor 23 tentang Standar Penilaian. Jakarta: Depdikbud 9. Depdikbud 2016. Permendikbud Nomor 24 tentang Kompetensi Inti dan Kompetensi Dasar. Jakarta: Depdikbud 10. Peraturan menteri pendidikan dan kebudayaan nomor 24 tahun 2016 tentang kompetensi inti dan kompetensi dasar pelajaran pada kurikulum 2013 pada pendidikan dasar dan pendidikan menengah 11. J. Michael Spector M.J. Bishop Dirk Ifenthaler (2014) Educational Communications and Technology: Issues and Innovations, Springer Cham Heidelberg New York Dordrecht London. 12. Ahmad Fauzan. 2012. Perangkat Perkuliahan Evaluasi Pembelajaran Matematika. Padang: FMIPA UNP 13. Morrison, G. R., Ross, S. M., Kalman, H., Kemp, J. E. (2010). Designing Effective Instruction. Britania Raya: Wiley. 14. National Council of Teacher of Mathematics. NCTM Standards. 15. Panduan Pengembangan Silabus, BSNP

