Module Description/Course Syllabi

Study Programme: Mathematics (Master Degree)
Faculty of Mathematics and Natural Sciences
Universitas Andalas

1. *Course number and name*

MAT81101 Research Method and Scientific Publication

2. *Credits and contact hours/Number of ECTS credits allocated*

3/4,53 ECTS

3. *Instructors and course coordinator*

Tim Dosen

4. *Text book, title, author, and year*

Thomas., C. G. 2021. *Research Methodology and Scientific Writing*. 2nd Edition. Springer Nature.

5. *Recommended reading and other learning resources/tools*

J. Paul T.P. Wong, *How to Write a Research Proposal*, Featured Article, 2002.

6. *Specific course information*

A. Brief description of the content of the course (catalog description)

The materials in this course are related to mathematical research models, browsing literature, writing proposals, how to write a thesis, tips for international scientific publications, writing articles, and tips for presentations.

B. Prerequisites or corequisites

-

C. Indicate whether a required or elective course in the program

Required

D. Level of course unit (according to EQF: first cycle Bachelor, second cycle Master)

Second cycle degree

E. Year of study when the course unit is delivered (if applicable)

1st Year

F. Semester when the course unit is delivered

Odd Semester

G. Mode of delivery (face-to-face, distance learning)

Face to face

7. *Intended Learning Outcomes*

ILO-1: Possesses good ethics and integrity.
PI-1: Possess academic ethics.
PI-2: Demonstrate academic integrity.

ILO-2: Mastering mathematical concepts and applications (real analysis, advanced linear algebra, and statistics) in solving complex mathematical problems. (ILO-2)

PI-1. Able to explain mathematical concepts (Real Analysis, Advanced Linear Algebra, and Statistics).
PI-2. Able to identify complex mathematical problems.
PI-3. Able to solve complex mathematical problems.

ILO-3: An ability to identify, explain and generalize simple mathematics.
PI-1. Able to identify theories used in related mathematical problems.
PI-2. Able to apply theories for advancement in related fields (advanced theory).
PI-3. Able to use advanced theory to solve related mathematical problems.

8. *Course Learning Outcomes:*

1. Student will be able to understand mathematical research models (ILO-1: PI-1, PI-2, ILO-2: PI-1, PI-2)
2. Student will be able to browse literature (ILO-2: PI-1, PI-2 ; ILO-3: PI-1, PI-2)
3. Student will be able to write proposals (ILO-2: PI-1, PI-2 ; ILO-3: PI-1, PI-2)
4. Student will be able to know how to write a thesis (ILO-2: PI-1, PI-2; ILO-3: PI-1, PI-2)
5. Student will be able to know the tips of international scientific publications (ILO-2: PI-1, PI-2; ILO-3: PI-1, PI-2)
6. Student will be able to know how to write articles and presentation (ILO-1: PI-1, PI-2; ILO-2: PI-1, PI-2; ILO-3: PI-1, PI-2)

9. *Brief list of topics to be covered*

How to do math research, how to browse literature, how to write a proposal, how to write a thesis,, international scientific publication tips, and how to write articles and presentations,

10. Learning and teaching methods

Small group discussion
PjBL
Directed Learning

11. Language of instruction

Bahasa Indonesia

12. Assessment methods and criteria

Summative Assessment:

1. Assignment: 33.4%
2. Quiz: 16.7%
3. Midterm : 16.7%
4. Final exam : 16.7%
5. Presentation : 16.7%

Formative Assessment:

1. Thumb up and thumb down
2. Minutes paper

SEMESTER STUDY PLAN

RESEARCH METHODS AND SCIENTIFIC PUBLICATIONS

(COMPULSORY COURSE)

DEPARTMENT OF MATHEMATICS AND DATA SCIENCE

FACULTY OF MATHEMATICS AND NATURAL SCIENCES

ANDALAS UNIVERSITY

2024

	SEMESTER STUDY PLAN **STUDY PROGRAM: MASTER OF MATHEMATICS** **FACULTY OF MATHEMATICS AND NATURAL SCIENCES** **ANDALAS UNIVERSITY**

SEMESTER STUDY PLAN

Course Name	Course Code	*I-Learn* URL	Credits	Semester	Compilation Date
RESEARCH METHODS AND SCIENTIFIC PUBLICATIONS	MAT81101	https://sci.ilearn.unand.ac.id	3	2	May 6th, 2024

Person in Charge	Study Plan Creator	Head of the Study Program
	Prof. Dr. Ferra Yanuar, M.Sc Dr. Haripamyu Dr. Dodi Devianto Dr. Susila Bahri Prof. Dr. Admi Nazra Dr. Arrival Rince Putri Dr. Mahdhivan Syafwan	Prof. Dr. Ferra Yanuar, M.Sc

Intended Learning Outcomes (ILO) and Performance Indicators (PI)	ILO STUDY PROGRAM	
	ILO-1	Possesses good ethics and integrity PI-1 Possess academic ethics. PI-2 Demonstrate academic integrity.

	ILO-2	Mastering mathematical concepts and applications (real analysis, advanced linear algebra, and statistics) in solving complex mathematical problems. PI-1. Able to explain mathematical concepts (Real Analysis, Advanced Linear Algebra, and Statistics). PI-2. Able to identify complex mathematical problems. PI-3. Able to solve complex mathematical problems.
	ILO-3	Comprehensive mastery of one or several theories for development in the fields of analysis, algebra, applied mathematics, statistics and combinatorial mathematics. PI-1. Able to identify theories used in related mathematical problems. PI-2. Able to apply theories for advancement in related fields (advanced theory). PI-3. Able to use advanced theory to solve related mathematical problems.
	Course Learning Outcome (CLO)	
	1. Students are able to understand mathematical research models (ILO -1 , ILO -2)	
	2. Students are able to browse literature (ILO -2, ILO - 3)	
	3. Students are able to write proposals (ILO -2, ILO - 3)	
	4. Students are able to know the procedures for writing a thesis (ILO -2, ILO - 3)	
	5. Students are able to know international scientific publication tips (ILO -2, ILO - 3)	
	6. Students are able to know the procedures for writing articles and presentations (ILO -2, ILO - 3)	
Brief Description	In this course, material is provided on how to conduct mathematical research , search for literature , write proposals , write a thesis , tips for international scientific publications and how to write articles and presentations .	
Study Materials	1. How to do mathematical research 2. How to search the literature	

<table>
<tr><td></td><td colspan="2">3. How to write a proposal
4. How to write a thesis
5. What are the tips for international scientific publications
6. How to write articles and presentations</td></tr>
<tr><td>References</td><td colspan="2">Main :

Thomas., CG 2021. Research Methodology and Scientific Writing . 2nd Edition. Springer Nature.

Additional:
J. Paul TP Wong, How to Write a Research Proposal , Featured Article, May 8, 2002.</td></tr>
<tr><td rowspan="2">Learning Media</td><td>Software :</td><td>Hardware :</td></tr>
<tr><td>• LMS Unand (http://fmipa.ilearn.unand.ac.id/)
• Zoom meetings
• WhatsApp</td><td>• Computer/Laptop
• Smartphones</td></tr>
<tr><td>Team Teaching</td><td colspan="2">Dr. Haripamyu
Dr. Dodi Devianto
Dr. Susila Bahri
Prof. Dr. Admi Nazra
Prof. Dr. Ferra Yanuar, M.Sc
Dr. Arrival Rince Putri
Dr. Mahdhivan Syafwan</td></tr>
<tr><td>Required courses</td><td colspan="2">-</td></tr>
<tr><td>Academic Norms</td><td colspan="2">Follow the Academic Regulations of the Andalas University Undergraduate Program</td></tr>
</table>

	(https://akademik.unand.ac.id/images/2022-03-30%20Peraturan%20Rector%20Norm%207%20 Tahun %202022%20Penelulenggaraan%20Pendidikan-special%20Chapter %20II.pdf)

1. Weekly Study Plan

WEEK (1)	COURSE OUTCOME(2)	INDICATORS (3)	ASSESSMENT (4)	LEARNING ACTIVITIES [ESTIMATED TIME] (5)					LEARNING MATERIALS [REFERENCE] (10)	WEIGHT (11)
				Synchronous		Asynchronous		MEDIA (9)		
				Face to face Offline (5)	Face to face Online (6)	Independent (7)	Collaborative (8)			
1- 2	CLO 1: Possesses good ethics and integrity (ILO - 1 , ILO - 2)	Discipline in implementing college contracts Accurate understanding of related material	Assignment 1 (16.7 %)	Studying : - Introduction to Study plan - discussion and question and answer course material [2 x 3 x 50 minutes]		Presentation and Discussion [2 x 3 x 12 0] minutes		LMS (ilearn UNAND)	What does it mean by Mathematical research, types and models.	16.7%
3-4	CLO 2: Ability to browse literature (ILO -2, ILO-3)	• Accurate understanding of related material	Quiz (16.7 %)	Accuracy in understanding related material		Students look for references and study material		LMS (ilearn UNAND) Zoom	Techniques and strategies browse the literature	16.7%

		• Accuracy in answering assignment questions • Neatness of task execution • Originality of task results		[2 x 3 x 50 minutes]		[2 x 3 x 12 0 minutes]				
5- 6	CLO 3: Ability to write proposals (ILO -2, ILO -3)	◆ Accuracy in understanding related material ◆ Accuracy in carry out a task . ◆ Neatness and originality of tasks	Assignment 2 (16.7 %)	Accuracy in understand related material [2 x 3 x 50 minutes]	Studying : - concept explanation - discussion and question and answer course material [2 x 3 x 6 0 minutes]	Activeness and routine tasks [2 x 3 x 6 0 minutes]		Presentation and Discussion	Proposal parts	16.7%
UTS										
7-9	CLO 4: Ability to write a thesis (ILO - 2, ILO -3)	• Accurate understanding of related material • Neatness of task execution	Midterm (16.7 %)	Studying : - discussion and question and answer course material		Students look for references and study material [3 x 3 x 12 0] minutes			Thesis parts	16.7%

		• Originality of task results		[3 x 3 x 50] minutes						
10-11	CLO 5: Tips for international scientific publications (ILO -2, ILO -3)	• Accurate understanding of related material • Neatness in completing tasks • Originality of task results	Presentation (16.5 %)	Studying : - concept explanation - discussion and question and answer course material [2 x 3 x 50 minutes]	Studying : - concept explanation - discussion and question and answer course material [2 x 3 x 60 minutes]	Students look for references and study lecture material [4 x 3 x 60 minutes		• LMS • Zoom	Things that need to be understood in scientific publications	16.5%
12-14	CLO 6: Ability to write articles and presentations (ILO -2, ILO -3)	• Accurate understanding of related material • Neatness in completing tasks • Originality of task results	Final exam (16.7 %)	Studying : - concept explanation - discussion and question and answer course material [3 x 3 x 50 minutes]	Studying : - concept explanation - discussion and question and answer course material [3 x 3 x 60 minutes]	Students look for references and study lecture material [3 x 3 x 60 minutes		LMS	● Parts of article writing ● How to present	16.7%
UAS										

2. Indicators, Criteria and Assessment Weights

A. Assessment Weight for Each Form of Assessment

NO	COMPONENT EVALUATION	WEIGHT (%)
Results Assessment		
1	Assignment 1	16.7
2	Quiz	16.7
3	Assignment 2	16.7
4	Midterm exam	16.7
5	Presentation	16.5
6	Final exam	16.7
TOTAL		**100**

B. Assessment Weight for Each Course Learning Outcome

- CLO-1: 16.7 %
- CLO 2: 16.7 %
- CLO 3: 16.7 %
- CLO 4: 1 6.7 %
- CLO 5: 16.5 %
- CLO 6: 16.7%

3.Assessment Plan Table

Form of assessment / Course Learning Outcomes (CLO)	Assignment 1	Quiz	Assignment 2	Midterm Exam	Presentation	Final Exam	Total of Proportion
1. Students are able to understand mathematical research models (ILO-1);	16.7%						16.7%
2. Students are able to browse literature (ILO -2, ILO -4)		16.7%					16.7%
3. Students are able to write proposals (ILO -2, ILO 4)			16.7%				16.7%
4. Students are able to know the procedures for writing a thesis (ILO -2, ILO -4)				16.7%			16.7%
5. Students are able to know international scientific publication tips (ILO -2, ILO -4)					16.5%		16.5%
6. Students are able to know the procedures for writing articles and presentations (ILO -2, ILO -4)						16.7%	16.7%