SEMESTER STUDY PLAN
GENERAL PHYSICS
(COMPULSORY COURSE)

DEPARTMENT OF MATHEMATICS AND DATA SCIENCE
FACULTY OF MATHEMATICS AND NATURAL SCIENCES
UNIVERSITAS ANDALAS
2024

SEMESTER STUDY PLAN (SSP)
BACHELOR PROGRAM OF MATHEMATICS
FACULTY OF MATHEMATICS AND NATURAL SCIENCES
UNIVERSITAS ANDALAS

Course Name	Course Code	URL *I-Learn*	Credits	Semester	Compilation Date
General Physics	MAT61105	https://sci.ilearn.unand.ac.id	2	1	15 May 2024

Person In Charge	Study Plan Creator	Head of Research Group	Head of Study Program
	Dwi Pujiastuti, M.Si Dian Milvita, M.Si Drs. Mora, M.Si	-	Dr. Noverina Alfiany

Intended Learning Outcomes (ILO) and Performance Indicator (PI)		
	Intended Learning Outcomes	
	ILO-2	Possesses profound knowledge of the basic concept mathematics PI-1: An ability to explain basic mathematical concepts PI-2: An ability to provide examples that are relevant to basic mathematical concepts PI-3: An ability to determine solutions to simple problems using basic mathematical concepts
	ILO-4	An ability to use concept and fundamental technique of mathematics in solving simple mathematical problems PI-1: An ability to choose appropriate basic mathematical concepts and techniques in solving simple mathematical problems PI-2: An ability to illustrate simple mathematical problems based on appropriate basic mathematical concepts and techniques PI-3: An ability to solve simple mathematical problems using appropriate basic mathematical concepts and techniques
	Course Learning Outcomes	
	1	An ability to explain the concepts of physics theory in daily life
	2	An ability to identify physics problems and find solutions to them

	3	An ability to demonstrate discipline, honesty, and responsibility in participating in lecture activities
Brief Description	The focus of this course is on understanding quantities and measurements, as well as establishing a solid foundation in classical physics principles and problem-solving, particularly in the fields of kinematics and particle dynamics; work and energy; fluid mechanics; temperature and heat; current and resistance; oscillations and waves.	
Course Materials	1. Introduction, Quantities, and Measurements 2. Particle Kinematics 3. Particle Dynamics 4. Work and Energy 5. Fluid Mechanics 6. Temperature and Heat 7. Current and Resistance 8. Oscillations and Waves	
References	**Main:** 1. Paul A. Tipler, Fisika untuk Sains dan Teknik, Jilid 1, Erlangga, 1998. 2. Paul A. Tipler, Fisika untuk Sains dan Teknik, Jilid 2, Erlangga, 2001. **Additional:** 3. Douglas C. Giancoli, Fisika, Jilid 1, Jilid 1, Erlangga, 2001. 4. Douglas C. Giancoli, Fisika, Jilid 1, Jilid 2, Erlangga, 2001. 5. www. Hyperphysics.com	
Learning Media	**Software:** ● LMS Unand (http://fmipa.ilearn.unand.ac.id/) ● Zoom meeting ● Whatsapp	**Hardware:** ● Computer/Laptop ● Smartphone
Team Teaching	1. Dwi Pujiastuti, M.Si 2. Dian Milvita, M.Si 3. Drs. Mora, M.Si	

Assessment	-
Required courses	-
Academic Norms	https://akademik.unand.ac.id/images/2022-03-30%20Peraturan%20Rektor%20Nomor%207%20Tahun%202022%20Penyelenggaraan%20Pendidikan-khusus%20Bab%20II.pdf

Weekly Study Plan

Week / Meet (1)	Course Outcomes (2)	Indicator (3)	Assessment (4)	Activities/Forms of Learning [Time estimated]					Subject, references (10)	Weight (11)
				Synchronous*		Asynchronous**		Media (9)		
				Face to face Offline (5)	Face to face Online (6)	Individual (7)	Collaboration (8)			
1-2	CLO-2 An ability to explain the division of science based on groups CLO-4 An ability to identify fundamental and derived quantities, as well as the An ability to solve problems related to unit conversion, scientific notation, and	• Discipline in fulfilling the course contract • Accuracy in understanding related materials • Accuracy in answering assignment questions • Neatness in completing assignments • Originality of assignment results	Assignment 1	Teaching and discussion: • Introduction to the Course Syllabus (RPS). • Delivery of material • Discussion and Q&A [1 x 2 x 50 minutes]		Students search for references and study learning materials [1 x 2 x 120 minutes]		• LMS (ilearn UNAND)	• Assessment Criteria, Course Syllabus (RPS), Syllabus, Course Contract • Introduction, Measurement , and Units	5

	significant figures									
3-4	CLO-2 An ability to explain the concept of particle kinematics. CLO-4 An ability to identify problems and find solutions regarding particle kinematics.	• Accuracy in understanding related materials • Accuracy in answering assignment questions • Neatness in completing assignments • Originality of assignment results	Assignment 2	Teaching and discussion: • Delivery of material • Discussion and Q&A [1 x 2 x 50 minutes]		Students search for references and study learning materials [1 x 2 x 120 minutes]		• LMS (ilearn UNAND)	• Particle Kinematics	5
5-6	CLO-2 An ability to explain the concepts of work and energy CLO-4 An ability to identify	• Accuracy in explaining and understanding related materials • Accuracy in answering assignment questions	• Assignment 3 • Quiz 1	Teaching and discussion: • Delivery of material • Discussion and Q&A [1 x 2 x 50 minutes]		Students search for references and study learning materials [1 x 2 x 120 minutes]		• LMS (ilearn UNAND)	• Particle Dynamics	5

	problems and find solutions related to work and energy	• Neatness in completing assignments • Originality of assignment results • Accuracy in answering quizzes								
7	CLO-2 An ability to explain the concepts of work and energy CLO-4 An ability to identify problems and find solutions related to work and energy	• Accuracy in understanding related materials • Accuracy in answering assignment questions • Neatness in completing assignments • Originality of assignment results	• Assignment 4	Teaching and discussion: • Delivery of material • Discussion and Q&A [1 x 2 x 50 minutes]		Students search for references and study learning materials [1 x 2 x 120 minutes]		• LMS (ilearn UNAND)	• Work and Energy	5
8	**MID-TERM EXAM**									
9-10	CLO-2 An ability to explain the concept of fluid mechanics CLO-4	• Accuracy in understanding related materials • Accuracy in answering	• Assignment 5	Teaching and discussion: • Delivery of material • Discussion and Q&A		Students search for references and study learning materials [1 x 2 x 120 minutes]		• LMS (ilearn UNAND)	• Fluid Mechanics	**5**

	An ability to identify problems and find solutions related to fluid mechanics	assignment questions ● Neatness in completing assignments ● Originality of assignment results		[1 x 2 x 50 minutes]						
11-12	CLO-2 An ability to understand temperature and heat CLO-4 An ability to identify problems and find solutions related to temperature and heat	● Accuracy in understanding related materials ● Accuracy in answering assignment questions ● Neatness in completing assignments ● Originality of assignment results ● Accuracy in answering quizzes	● Assignment 6 ● Quiz 2	Teaching and discussion: ● Delivery of material ● Discussion and Q&A [1 x 2 x 50 minutes]		Students search for references and study learning materials - [1 x 2 x 120 minutes]		● LMS (ilearn UNAND)	● Temperature and Heat	**5**
13-14	CLO-2 An ability to understand temperature and heat CLO-4	● Accuracy in understanding related materials ● Accuracy in answering	● Assignment 7	Teaching and discussion: ● Delivery of material ● Discussion and Q&A		Students search for references and study learning materials		● LMS (ilearn UNAND)	● Current and Resistance	**5**

	An ability to identify problems and find solutions related to temperature and heat	assignment questions ● Neatness in completing assignments Originality of assignment results		[1 x 2 x 50 minutes]		[1 x 2 x 120 minutes]				
15	CLO-2 An ability to understand oscillation and wave CLO-4 An ability to identify problems and find solutions related to oscillation and wave	● Accuracy in understanding related materials ● Accuracy in answering assignment questions ● Neatness in completing assignments ● Originality of assignment results	● Assignment 8	Teaching and discussion: ● Delivery of material ● Discussion and Q&A [1 x 2 x 50 minutes]		Students search for references and study learning materials [1 x 2 x 120 minutes]		● LMS (ilearn UNAND)	● Oscillation and Wave	**5**
									Total Weight	100%
16	**FINAL EXAM**									

1 credit = 50 minutes face-to-face meeting, 60 minutes structured study, 60 minutes independent study
Each meeting duration is 2 credits = 2×50 minutes

Indicators, Criteria, and Assessment Weights

1. Assessment weight for each Assessment

NO	Assessment	Weight (%)
1	Mid-Term Exam	30
2	Final Exam	30
3	Homework	15

4	Quizzes	15
5	Attendance	5
6	Attitude	5
TOTAL		**100**

2. Assessment weight for Intended Learning Outcome
   - CLO-1: 50 %
   - CLO-2: 50 %

Assessment Plan Table:

No.	CLO	Assessment						Weigth (%)
		Mid-Term Exam (%)	Final Exam (%)	Homework (%)	Quizzes (%)	Attendance (%)	Attitude (%)	
1	An ability to master the concepts of physical theory (CLO-2, CLO-4)	15	15	5	5	-	-	40

2	An ability to identify physics problems and find solutions (CLO-2, CLO-4)	15	15	10	10	-	-	50
3	An ability to demonstrate discipline, honesty, and responsibility in attending lectures (CLO-2, CLO-4)	-	-	-	-	5	5	10
Total		**20**	**20**	**30**	**30**			**100**

Information:
TK: Group ask