PROGRAM PLAN AND SEMESTER LEARNING ACTIVITIES (RPKPS) SCHOOL YEAR 2021/2022



Geophysics Basic Geology MFG 1104/ 2 credits

Mentoring Team:

Salahuddin Husein, ST, MSc, PhD Dr. Eng. Agung Setianto,

GADJAH MADA UNIVERSITY FACULTY OF MATHEMATICS AND NATURAL SCIENCES 2021



Gadjah Mada University

Faculty of Mathematics and Natural Sciences Department of Physics / S1 Geophysics Study Program Academic Year 2021/2022

Document Code:

SEMESTER LEARNING PROGRAM AND ACTIVITY PLAN (RPKPS)

Course Code	Course Name	Weight (credit)	Semester	Course Status	Prerequisite Courses
MFG 1104	Basic	T: P: 1	Complet	Mandatory	-
	Geolo	2	e		
Course Brief	Davis Carlana		41. 1	f.C1 4 14-	(f 1

Course Brief Description

Basic Geology introduces the basics of Geology to new students (first-year lectures) regarding the definition of geology, scientific coverage, the relationship of geology in the context of earth science in general; also presented material forming the Earth in the form of minerals and rocks, as well as geological processes involved in the rock cycle such as magmatism, volcanism, weathering, erosion, sedimentation, and metamorphism; how rocks deform and within geologic time frames, as well as how surface geological processes shape the evolving landscape on Earth; and how all of Earth's constituent materials and processes involved can be understood in the formation of natural resources and potential natural disasters.

Graduate Learning Outcomes (CPL) Charged to MK	CPL-1	Good Attitude: Students are expected to be able to develop a strong <i>curiosity</i> as a provision in the ability to learn independently, be able to think critically in filtering data and interpretation, and be confident and able to work together in conveying opinions and ideas in cases raised in learning.
	CPL-2	Mastery of general knowledge: Students are expected to be able to understand the application of basic science (mathematics, physics, chemistry and biology) in studying the process of formation of the Earth's constituent materials (minerals and rocks), rock deformation, geological time scales, geological processes that work in and on the surface of the Earth.
	CPL-3	Operational and comprehensive skills: Students are expected to be able to apply simple practical geological science in the design of natural resource exploration and efforts to mitigate potential natural disasters.
Солисо	A fton comple	ting the learning of this course students are expected to be able to

Course Learning Outcomes (CPMK)

After completing the learning of this course, students are expected to be able to:

CPMK-1 Students are expected to be able to apply basic science understanding

CI MIN I	(mathematics, physics, chemistry and biology) in studying the constituent materials of the Earth (minerals and rocks) and processes
	involved in the rock cycle (plate tectonics and exogenous processes)
	[CPL1, CPL2, CPL3]
CPMK-2	Students are expected to be able to apply basic science understanding
	(mathematics, physics, chemistry and biology) in studying rock
	deformation and geological time scales (<i>deep-time</i>). [CPL1, CPL2]
СРМК-3	Students are expected to be able to understand the concept of natural
	resource exploration and the concept of natural disaster mitigation

		Able to propose simple design	ns in exploi	ration and mitig	ation. [CPL3]			
CPL								
mapping		СРМК1	CPMK2	СРМК3				
with CPMK		CPL-1 V	V	CIVIKS				
with CI MIK		CPL-2 V	V					
		CPL-3 V		V				
CPMK link with Material		Learning Materials	Forms	of Learning	Time Allocation			
and Form of Learning, as	CPMK1	Introduction	TCL - S	CL mixed	2 Hours			
well as Time	CPMK1	Mineral	TCL - Se	CL mixed	2 Hours			
Allocation	СРМК1	Magmatism, Volcanism, and the Formation of Igneous Rocks	TCL - So	CL mixed	2 Hours			
	СРМК1	Weathering, Erosion, Sedimentation, and Sedimentary Rock	TCL - So	CL mixed	2 Hours			
	СРМК1	Metamorphism and the Formation of Malihan Rocks	TCL - So	CL mixed	2 Hours			
	СРМК2	Rock Deformation and Geological Structure	TCL - So	CL mixed	2 Hours			
	СРМК2	Geochronology and Geologic Time Scale	TCL - So	CL mixed	2 Hours			
		UTS/ Project Task Res	UTS/ Project Task Results/ Case Analysis					
	СРМК2	Earth's Interior	TCL - SCL mixed		2 Hours			
	CPMK2	Plate Tectonics	TCL - S	CL mixed	2 Hours			
	СРМК3	Mass Movement	TCL - S	CL mixed	2 Hours			
	СРМК3	Hydrological Cycle and Fluvial Process	TCL - SCL mixed		2 Hours			
	СРМК3	Hydrogeology and Groundwater Exploitation	TCL - S	CL mixed	2 Hours			
	СРМК3	Coastal Geology and Climate Change	TCL - SCL mixed		2 Hours			
	СРМК3	Geological Resources Exploration and Geological Hazard Mitigation TCL - SCL			2 Hours			
		UAS/ Project Task Res	sults/ Case	Analysis				
Learning Methods	TCL - SCL	mixed						
Student Learning Experience		eturers' explanations, questions and sthat are <i>up-to-date</i>	d answers,	quizzes, rubric	s, and discuss			

Access						
	PPT slides, reference books, and videos					
Learning Media						
Nieula 						
LMS						
and Offline						
&; Online						
Percentage				CDMIZ 1	CDMIZ 2	CDMIZ 2
Assessment Methods and Alignment with CPMK	Assessment Techniques	Assessment Percentage	Criteria/ Indikator	СРМК-1	СРМК-2	СРМК-3
. –	Participatory	80%	Able to	Application	Application	Understanding
	Activities*)	0070	play b	of basic	of	the concepts of
			and	mathematics	mathematic	resource
			discus i	and science	s and basic	exploration and
				in the rock	science in	disaster
<u> </u>				cycle	rock	mitigation
	Project	20%	Able to	Sequences	Identify fault	Describe the
	Results/Case		convey	bowen	types,	availability of
	Study Results/PBL		opinions	reactions, mineral	tectonic	natural resources
	Results*)			resistance,	plate types, and geologic	and the concept of energy distribution
	IXESUITS /			and	time scale	in disaster
				metamorphic	sequences	mitigation
				facies	Sequences	iningen
	Cognitive					
	Assignment	10		V	V	V
	Quiz	10		V	V	V
	UTS	40		V	V	
· –	UAS	40			V	V
L'	<u>Total</u>	100				
						icipatory activities
	or <i>project</i> /	case study	y results. I	n accordance v	with IKU 7, t l	he percentage of
	narticinators	, a ativiti a a	4			
	participatory	activities a	nd project r	esults/case stud	ies/PBL results	is at least 50%.
Reference	1. Borrero, I	F., F.S. Hess	, J. Hsu, G.	Kunze, S.A. Le	slie, S. Letro, N	I. Manga, L.
Reference	1. Borrero, I Sharp, T.	F., F.S. Hess Snow, and I	s, J. Hsu, G. D. Zike (201	Kunze, S.A. Le 3) Earth Science	eslie, S. Letro, Note: Geology, the	I. Manga, L.
List	1. Borrero, I Sharp, T. and the U	F., F.S. Hess Snow, and I niverse, Mc	s, J. Hsu, G. D. Zike (201 Graw-Hill F	Kunze, S.A. Le 3) Earth Science Education, 1029	eslie, S. Letro, Nee: Geology, the p.	M. Manga, L. Environment
List	1. Borrero, I Sharp, T. and the U 2. Carlson, I	F., F.S. Hess Snow, and I niverse, Mc D.H., C.C. P	s, J. Hsu, G. D. Zike (201 Graw-Hill E lummer, L.	Kunze, S.A. Le 3) Earth Science Education, 1029 Hammersley (2	eslie, S. Letro, Nee: Geology, the p.	M. Manga, L. Environment
List	 Borrero, I Sharp, T. and the U Carlson, I Earth Rev 	F., F.S. Hess Snow, and I niverse, Mc D.H., C.C. P realed, 9th e	s, J. Hsu, G. D. Zike (201 Graw-Hill F lummer, L. d., McGraw	Kunze, S.A. Le 3) Earth Science Education, 1029 Hammersley (2 -Hill, 645 p.	eslie, S. Letro, Nee: Geology, the p. 010) Physical C	M. Manga, L. Environment Geology
List	 Borrero, I Sharp, T. and the U Carlson, I Earth Rev Monroe, J 	F., F.S. Hess Snow, and I niverse, Mc D.H., C.C. P realed, 9th e I.S., R. Wica	s, J. Hsu, G. D. Zike (201 Graw-Hill F lummer, L. d., McGraw ander, R. Ha	Kunze, S.A. Le 3) Earth Science Education, 1029 Hammersley (2 4-Hill, 645 p. azlett (2007) Physical Research	eslie, S. Letro, Nee: Geology, the p. 010) Physical C	M. Manga, L. Environment Geology
List	 Borrero, I Sharp, T. and the U Carlson, I Earth Rev Monroe, J the Earth, 	F., F.S. Hess Snow, and I niverse, Mc D.H., C.C. P realed, 9th e I.S., R. Wica 6th ed., Tho	s, J. Hsu, G. D. Zike (201 Graw-Hill F Flummer, L. d., McGraw ander, R. Ha omson Broo	Kunze, S.A. Le 3) Earth Science Education, 1029 Hammersley (2 4-Hill, 645 p. azlett (2007) Physics Cole, 690 p.	eslie, S. Letro, Note: Geology, the p. 010) Physical Cysical Geology	M. Manga, L. Environment Geology Exploring
List	 Borrero, I Sharp, T. and the U Carlson, I Earth Rev Monroe, J the Earth, Murck, B 	F., F.S. Hess Snow, and I niverse, Mc D.H., C.C. P realed, 9th e I.S., R. Wica 6th ed., Tho W., and B.J.	s, J. Hsu, G. D. Zike (201 Graw-Hill F Flummer, L. d., McGraw ander, R. Ha omson Broo	Kunze, S.A. Le 3) Earth Science Education, 1029 Hammersley (2 4-Hill, 645 p. azlett (2007) Physical Research	eslie, S. Letro, Note: Geology, the p. 010) Physical Cysical Geology	M. Manga, L. Environment Geology Exploring
List	 Borrero, F. Sharp, T. and the U Carlson, F. Earth Rev Monroe, J. the Earth, Murck, B. Wiley, 55 	F., F.S. Hess Snow, and I niverse, Mc D.H., C.C. P realed, 9th e I.S., R. Wica 6th ed., Tho W., and B.J. 8 pp.	J. Hsu, G. D. Zike (201 Graw-Hill F lummer, L. d., McGraw ander, R. Ha bmson Broo J. Skinner (2	Kunze, S.A. Le 3) Earth Science Education, 1029 Hammersley (2 4-Hill, 645 p. azlett (2007) Physics Cole, 690 p. 2011) Visualizin	eslie, S. Letro, Nee: Geology, the p. 010) Physical Cysical Geology ag Geology, 3rd	M. Manga, L. Environment Geology Exploring ed., John
List	 Borrero, I Sharp, T. and the U Carlson, I Earth Rev Monroe, J the Earth, Murck, B Wiley, 55 Plummer, 	F., F.S. Hess Snow, and I niverse, Mc D.H., C.C. P realed, 9th e I.S., R. Wica 6th ed., Tho W., and B.J 8 pp. C.C., D.H.	J. Hsu, G. D. Zike (201 Graw-Hill F lummer, L. d., McGraw ander, R. Ha bmson Broo J. Skinner (2	Kunze, S.A. Le 3) Earth Science Education, 1029 Hammersley (2 4-Hill, 645 p. azlett (2007) Physics Cole, 690 p. 2011) Visualizin	eslie, S. Letro, Nee: Geology, the p. 010) Physical Cysical Geology ag Geology, 3rd	M. Manga, L. Environment Geology Exploring
List	 Borrero, I Sharp, T. and the U Carlson, I Earth Rev Monroe, J the Earth, Murck, B Wiley, 55 Plummer, ed., 595 p 	F., F.S. Hess Snow, and I niverse, Mc D.H., C.C. P realed, 9th e I.S., R. Wica 6th ed., Tho W., and B.J 8 pp. C.C., D.H.	s, J. Hsu, G. D. Zike (201 Graw-Hill F rlummer, L. d., McGraw ander, R. Ha omson Broo J. Skinner (2 Carlson, and	Kunze, S.A. Le 3) Earth Science Education, 1029 Hammersley (2 4-Hill, 645 p. azlett (2007) Physics Cole, 690 p. 2011) Visualizind d L. Hammersle	eslie, S. Letro, Note: Geology, the p. (010) Physical Coysical Geology ag Geology, 3rd (2016) Physical Coysical Coysical Geology	M. Manga, L. Environment Geology Exploring ed., John cal Geology, 15th
List	 Borrero, I Sharp, T. and the U Carlson, I Earth Rev Monroe, J the Earth, Murck, B Wiley, 55 Plummer, ed., 595 p Smith, G. 	F., F.S. Hess Snow, and I niverse, Mc D.H., C.C. P realed, 9th e I.S., R. Wica 6th ed., Tho W., and B.J 8 pp. C.C., D.H. , and A. Pur	s, J. Hsu, G. D. Zike (201) Graw-Hill F Plummer, L. d., McGraw ander, R. Ha pmson Broo J. Skinner (2 Carlson, and	Kunze, S.A. Le 3) Earth Science Education, 1029 Hammersley (2 4-Hill, 645 p. Editt (2007) Physics Cole, 690 p. 2011) Visualizind d L. Hammersle w Does Earth W	eslie, S. Letro, Note: Geology, the p. (010) Physical Coysical Geology ag Geology, 3rd (2016) Physical Coysical Coysical Geology	M. Manga, L. Environment Geology Exploring ed., John cal Geology, 15th
List	 Borrero, I Sharp, T. and the U Carlson, I Earth Rev Monroe, J the Earth, Murck, B Wiley, 55 Plummer, ed., 595 p Smith, G. the Proces 	F., F.S. Hess Snow, and I niverse, Mc D.H., C.C. P realed, 9th e f.S., R. Wica 6th ed., Tho W., and B.J 8 pp. C.C., D.H. , and A. Pur ss of Science	s, J. Hsu, G. D. Zike (201) Graw-Hill E clummer, L. d., McGraw ander, R. Ha comson Brood J. Skinner (2) Carlson, and (2013) Hove, 2nd ed., P	Kunze, S.A. Le 13) Earth Science Education, 1029 Hammersley (2 1-Hill, 645 p. 12lett (2007) Physics Cole, 690 p. 1011) Visualizing d L. Hammersle W Does Earth Wearson, 640 p.	eslie, S. Letro, Mee: Geology, the p. 010) Physical Coysical Geology ag Geology, 3rd ey (2016) Physical Coysical Geology	M. Manga, L. Environment Geology Exploring ed., John cal Geology, 15th eology and
List	 Borrero, I Sharp, T. and the U Carlson, I Earth Rev Monroe, J the Earth, Murck, B Wiley, 55 Plummer, ed., 595 p Smith, G. the Proces Tarbuck, 	F., F.S. Hess Snow, and I niverse, Mc D.H., C.C. P realed, 9th e I.S., R. Wica 6th ed., Tho .W., and B.J 8 pp. C.C., D.H. , and A. Pur ss of Science E.J., F.K. La	J. Hsu, G. D. Zike (201) Graw-Hill Elummer, L. d., McGrawander, R. Habomson Brood. Skinner (2) Carlson, and (2013) Hote, 2nd ed., Futgens, and	Kunze, S.A. Le 3) Earth Science Education, 1029 Hammersley (2) Hill, 645 p. Editt (2007) Physical ks Cole, 690 p. 2011) Visualizind d L. Hammersle w Does Earth Wearson, 640 p. D.G. Tasa (2016)	eslie, S. Letro, Mee: Geology, the p. 010) Physical Coysical Geology ag Geology, 3rd ey (2016) Physical Coysical Geology	M. Manga, L. Environment Geology Exploring ed., John cal Geology, 15th eology and
List	 Borrero, I Sharp, T. and the U Carlson, I Earth Rev Monroe, J the Earth, Murck, B Wiley, 55 Plummer, ed., 595 p Smith, G. the Proces Tarbuck, to Physica 	F., F.S. Hess Snow, and I niverse, Mc D.H., C.C. P realed, 9th e I.S., R. Wica 6th ed., Tho W., and B.J 8 pp. C.C., D.H. , and A. Pur ss of Science E.J., F.K. Lud Geology,	J. Hsu, G. D. Zike (201) Graw-Hill Flummer, L. d., McGraw ander, R. Habmson Brood J. Skinner (2) Carlson, and (2013) Hote, 2nd ed., Putgens, and 12th ed., Pe	Kunze, S.A. Le 13) Earth Science Education, 1029 Hammersley (2 1-Hill, 645 p. 12lett (2007) Physics Cole, 690 p. 1011) Visualizing d L. Hammersle W Does Earth Wearson, 640 p.	eslie, S. Letro, Mee: Geology, the p. 010) Physical Coysical Geology ag Geology, 3rd ey (2016) Physical Coysical Geology	M. Manga, L. Environment Geology Exploring ed., John cal Geology, 15th eology and
Name of S	 Borrero, I Sharp, T. and the U Carlson, I Earth Rev Monroe, J the Earth, Murck, B Wiley, 55 Plummer, ed., 595 p Smith, G. the Proces Tarbuck, 	F., F.S. Hess Snow, and I niverse, Mc D.H., C.C. P realed, 9th e I.S., R. Wica 6th ed., Tho W., and B.J 8 pp. C.C., D.H. , and A. Pur ss of Science E.J., F.K. Land Geology, sein, ST, M	J. Hsu, G. D. Zike (2016) Graw-Hill Folummer, L. d., McGraw ander, R. Habomson Brood J. Skinner (2013) Carlson, and an (2013) Hove, 2nd ed., Peutgens, and 12th ed., Peusc, PhD	Kunze, S.A. Le 3) Earth Science Education, 1029 Hammersley (2) Hill, 645 p. Editt (2007) Physical ks Cole, 690 p. 2011) Visualizind d L. Hammersle w Does Earth Wearson, 640 p. D.G. Tasa (2016)	eslie, S. Letro, Mee: Geology, the p. 010) Physical Coysical Geology ag Geology, 3rd ey (2016) Physical Coysical Geology	M. Manga, L. Environment Geology Exploring ed., John cal Geology, 15th eology and

(Team Teaching				
Authorization	Drafting Date	Course Coordinator	Coordinator of Expertise (if applicable)	Head of Study Program
	September 3 2022	Salahuddin Hussein		= Judamal.
				Dr. Sudarmaji, MSi