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

Geophysics

Basic

Chemistry I

MKK 1101 / 3 CREDITS

Teaching Team:

Lecturer Team

GADJAH MADA UNIVERSITY
FACULTY OF MIPA
2021

	Gadjah Mada University Faculty of Mathematics and Natural Sciences Department of Physics / Undergraduate Geophysics Study Program 2021/2022 Academic Year	**Document Code:** .....

SEMESTER LEARNING PROGRAM AND ACTIVITY PLAN (RPKPS)

Course Code	Course Name	Weight (credits)		Semester	Course Status	Prerequisite Course
MKK 1101	*Basic Chemistry I*	*T: 3*	*P: -*	*Gasal*	*Required*	*-*

Brief Course Description	This course will study Introduction, Molecules, Ions and Chemical Formulas, Chemical Reactions; Reactions in solution, Energy changes in chemical reactions; Atomic Structure, Periodic Table; Ion Bonding vs Covalent bonding, Molecular Geometry and covalent bonding models.	
Graduate Learning Outcomes (ELOs) that are Charged to the MK	***CPL-1***	**Good Attitude**: Graduates are honest, disciplined, curious, critical, confident, independent, emotionally mature, cooperative, and trustworthy. Uphold the norms, values, morals, religion, general ethics and professional ethics, and actively play a role in the global sustainable development movement and behave professionally.
	CPL-2	**General knowledge mastery:** Graduates are able to apply basic science (mathematics, physics, chemistry, biology, geology), and geophysics in general and its relationship with other sciences such as geology, geodesy, geochemistry, geography, computing and information technology.
Course Learning Outcomes (CPMK)	**After completing this course, students are expected to be able to:**	
	CPMK-1	Students are able to understand the concept of atomic and molecular structure, [CPL-1, CPL-2]
	CPMK-2	Students understand reactions and energy changes, as well as the basic theory of chemical bonding [CPL-1, CPL-2]

SLO Mapping with CPMK

	CPMK1	CPMK2
CPL-1		
CPL-2		

CPMK linkage with Materials and Forms of Learning, and Time Allocation

	Learning Materials	Shape Learning	Allocation Time
CPMK-1	Introduction	TCL - SCL mixed	3 Hours
CPMK-1	Molecules	TCL - SCL mixed	3 Hours
CPMK-1	Ion	TCL - SCL mixed	3 Hours
CPMK-1	Chemical Formula	TCL - SCL mixed	3 Hours
CPMK-1	Chemical Reaction	TCL - SCL mixed	3 Hours
CPMK-1	Chemical reactions in solution	TCL - SCL mixed	3 Hours
		TCL - SCL mixed	3 Hours
UTS / Project Assignment Results / Case Analysis Results			

	CPMK-2	Energy changes in chemical reactions	TCL - SCL mixed	3 Hours
	CPMK-2	Atomic structure	TCL - SCL mixed	3 Hours
	CPMK-2	Periodic table	TCL - SCL mixed	3 Hours
	CPMK-2	Ionic Bond vs Covalent Bonding	TCL - SCL mixed	3 Hours
	CPMK-2	Molecular geometry	TCL - SCL mixed	3 Hours
	CPMK-2	Covalent Bonding Model	TCL - SCL mixed	3 Hours
			TCL - SCL mixed	3 Hours
	UAS / Project Assignment Results / Case Analysis Results			

Learning Method	TCL - SCL mixed
Student Learning Experience	Review, discussion, question and answer
Access to Learning Media/ LMS and Offline & Online Percentage	Whiteboard, LCD, Laptop/Computer

Assessment Method and Alignment with CPMK

Engineering Assessment	Percentage Assessment	Criteria. Indicator	CPMK-1	CPMK-2
Participatory Activities*)				
Project *Result /* Case Study Result / PBL Result*)				
Cognitive				
Tasks	**30**	**Assignment Grade**		
Quiz				
UTS	**30**	**Mid-term test score**		
UAS	**40**	**Final exam score**		
Total	**100**			

*) can also be obtained from UTS or UAS which are the results of participatory activities or project/case *study* results. In accordance with KPI 7, the **total percentage of** participatory activities and the results of projects / case studies / PBL results is at least 50%.

<table>
<tr><td>Reference List</td><td colspan="4">1. James E. Brady, Frederick A. Senese, 2009, Chemistry: The Study of Matter and Its Changes 5th edition.
2. Raymond Chang, Kenneth A. Goldsby, 2012, Chemistry, 11th Edition
3. Ralph H. Petrucci, William S. Harwood, F. Geoffrey Herring, 2002, General Chemistry: Principles and Modern Applications, 8th ed..</td></tr>
<tr><td>Name of Lecturer (Team Teaching)</td><td colspan="4">Chemistry Team</td></tr>
<tr><td rowspan="2">Authorization</td><td>Date of Preparation</td><td>Course Coordinator</td><td>Area of Expertise Coordinator (if any)</td><td>Head of Study Program</td></tr>
<tr><td>2022</td><td></td><td></td><td> 
Dr. Sudarmaji, MSi</td></tr>
</table>