

Modules Description

M1. General and Personality Knowledge:

Studies that can provide an understanding of divine, human, moral, love for the country and have nationalism and responsibility to the state and have ethics in speaking and expressing ideas and opinions correctly and responsibly.

	Course	CSU	Type
M1. General and Personality Knowledge	1. Pancasila	2	Compulsory
	2. Religion	2	
	3. Civic	2	
	4. Indonesia	2	
	Total	8	

M2. Basic Science:

Study material about basic science knowledge which refers to improving the quality of life in society for the sake of the survival and sustainability of nature.

	Course	CSU	Type
M2. Basic Science	1. Calculus	3	Compulsory
	2. Basic Physic	3	
	3. Basic Chemistry	3	
	4. General Biology	2	
	5. Basic Statistic	3	
	6. Environmental Education	2	

M3. General pedagogical knowledge:

This group of course provides an understanding of the basic concepts of education, general pedagogical knowledge, and knowledge of students, knowledge of the learning context, and knowledge of the objectives, values and philosophy of learning.

	Course	CSU	Type
M3. General pedagogical knowledge	1. Basic Science Education	2	Compulsory
	2. Introduction of Education	2	
	3. Student Psychology Development	2	
	4. Teaching Profession	2	

	5. Philosophy of Science	2	
	6. Learning and Teaching	3	
	Total	13	

M4. Content Pedagogical Knowledge:

The chemistry courses presented consist of theoretical and practical courses which contain basic and applied concepts including physical chemistry, analytical chemistry, inorganic chemistry, organic chemistry and biochemistry. This course aims to provide mastery of chemical material that supports the professionalism of chemical education graduates.

	Course	CSU	Type
M4. Content Pedagogical Knowledge	Chemistry Teaching and Learning Strategy	3	Compulsory
	Chemistry Instruction Planning	3	
	Assessment of Chemistry Instruction	3	
	Chemistry Curriculum Review	3	
	Research Method of Chemistry Education	3	
	Microteaching (PPL I) *)	2	
	Seminar of Chemistry Education *)	2	
	Teaching Experience (PPL II) *)	4	
	Total	23	

M5. Content Knowledge:

The chemistry courses presented consist of theoretical and practical courses which contain basic and applied concepts including physical chemistry, analytical chemistry, inorganic chemistry, organic chemistry and biochemistry. This course aims to provide mastery of chemical material that supports the professionalism of chemical education graduates.

	Course	CSU	Type
M5. Content Knowledge	Advance Basic Chemistry	3	Compulsory
	Chemistry Laboratory Management	2	
	Organic Chemistry I	3	
	Experiment of Organic Chemistry I	2	
	Inorganic Chemistry	2	
	Analytical chemistry I	3	
	Experimental of Analytical Chemistry I	1	
	Physical Chemistry I	3	
	Inorganic Chemistry II	2	

	Organic Chemistry II	3	
	Experiment of Organic Chemistry II	2	
	Analytical Chemistry II	3	
	Experiment of Analytical Chemistry II	1	
	Physical Chemistry II	3	
	Experiment of Inorganic Chemistry	2	
	Physical Inorganic Chemistry	2	
	Organic Chemistry III	2	
	Experiment of Physical Chemistry I	1	
	Biochemistry	3	
	Chemical Bonding	2	
	Instrument of Analytical Chemistry	2	
	Experiment of Instrumental Analytical Chemistry	1	
	Experiment of Biochemistry	2	
	Experiment of Physical Chemistry II	1	
	Nuclear and Radiochemistry	2	
	Food Chemistry	3	
	Environmental Chemistry	2	
	Total	58	

M6. Other field expertise (multi and interdisciplinary):

These group of courses are prepared to support students both in studying chemistry, education, and in completing theses. Community experience provides opportunities for students to develop social skills and apply the knowledge and skills that have been acquired. Some of these courses are compulsory and some are elective. The elective courses presented consist of theoretical courses which contain basic and applied concepts. This course aims to deepen interest in certain fields of chemistry and support the completion of student thesis research and gain insight in the fields of education and science as well as technology and industry.

	Course	CSU	Type
M6. Other field expertise (multi and interdisciplinary)	English	2	Compulsory
	Mathematical Chemistry	2	
	Philosophy of Science	2	
	Entrepreneurship	2	
	Community Experience (KKN) *)	3	
	Thesis *)	6	
	Statistic of Education	2	Elective
	Introduction of Biotechnology	2	
	Industrial Chemistry	2	
	Chemistry Learning Simulation	2	

	Industrial Microbiology	2	
	Chemistry Curriculum Vocational Studies	2	
	IT-based Learning Media	2	
	Pharmaceutical Chemistry	2	
	Natural Organic Chemistry	2	
	Waste Management	2	
	Polymer Chemistry	2	
	Computational Chemistry	2	
	Total	41	