	Universitas Negeri Surabaya Faculty of Mathematics and Natural Sciences Undergraduate Chemistry Education Study Program	Document Code

SEMESTER LEARNING PLAN

Courses	CODE	Course Family	Credit Weight			SEMESTER	Compilation Date
Vocational School Chemistry Learning	8420402216	Study Program Elective Courses	T=2	P=0	ECTS=3.18	5	July 18, 2024

AUTHORIZATION	SP Developer	Course Cluster Coordinator	Study Program Coordinator
	.....	.....	Prof. Dr. Utiya Azizah, M.Pd.

Learning model: Project Based Learning

Program Learning Outcomes (PLO)

PLO study program which is charged to the course

PLO-6	Able to adapt to various developments in chemical science, continue to develop and learn throughout life to continue education, both formal and informal (CPL 8)
PLO-7	Applying logical, critical, systematic and innovative thinking in the context of the development or implementation of science, technology and art that pays attention to and applies humanities values appropriate to the field of chemistry education in solving problems (CPL 5)
PLO-10	Able to design, implement, evaluate, learn and develop chemistry learning media by utilizing Information and Communication Technology (CPL 4)
PLO-12	Able to demonstrate chemical pedagogical knowledge about designing, implementing and evaluating chemistry learning (CPL 2)

Program Objectives (PO)

PO - 1	Have the ability to analyze chemistry teaching materials in vocational schools according to the applicable curriculum

PLO-PO Matrix

P.O	PLO-6	PLO-7	PLO-10	PLO-12
PO-1				

PO Matrix at the end of each learning stage (Sub-PO)

P.O	Week															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PO-1																

Short Course Description: Study of chemistry learning in vocational schools which includes chemistry characteristics, chemistry teaching materials, and chemistry learning strategies in vocational schools through literature studies, project assignments, and discussions

References

Main :

1. Kurikulum SMK tahun 2006 dan 2013
2. Lutfi, Achmad. 2004. Pencemaran Lingkungan (Kode KIM 08). Jakarta: Direktorat Pendidikan Kejuruan Direktorat Jend. Pendidikan Dasar dan Menengah Depdikbud.
3. Lutfi, Achmad. 2004. Kimia Lingkungan(Kode KIM 16) . Jakarta: Direktorat Pendidikan Kejuruan Direktorat Jend. Pendidikan Dasar dan Menengah Depdikbud.

Supporters:

Supporting lecturer: Prof. Dr. Achmad Lutfi, M.Pd.
Rusly Hidayah, S.Si., M.Pd.

Week-	Final abilities of each learning stage (Sub-PO)	Evaluation		Help Learning, Learning methods, Student Assignments, [Estimated time]		Learning materials [References]	Assessment Weight (%)
		Indicator	Criteria & Form	Offline (*offline*)	Online (*online*)		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Have the ability to analyze chemistry teaching materials in vocational schools according to the applicable curriculum	1. Differentiate between the objectives of learning chemistry in high school and vocational school. 2. Explain the characteristics of teaching materials in vocational school	**Criteria:** Nhir is (participation value") (assignment value x 3) (UTS value%22) UAS value (3) divided by 10A ak **Form of Assessment** : Participatory Activities	Presentation, service. 2 X 50		**Material:** analyzing vocational school chemistry teaching materials **Reader:** *Lutfi, Achmad. 2004. Environmental Chemistry (KIM Code 16). Jakarta: Directorate of Vocational Education Directorate General. Primary and Secondary Education Department of Education and Culture.*	5%
2	Have the ability to analyze chemistry teaching materials in vocational schools according to the applicable curriculum	1. Differentiate between the objectives of learning chemistry in high school and vocational school. 2. Explain the characteristics of teaching materials in vocational school	**Criteria:** The final NA is (participation value") (assignment value x 3) (UTS value%22) UAS value (3) divided by 10 **Form of Assessment** : Participatory Activities	Presentation, service. 2 X 50		**Material:** analyzing vocational school chemistry teaching materials **Reader:** *Lutfi, Achmad. 2004. Environmental Chemistry (KIM Code 16). Jakarta: Directorate of Vocational Education Directorate General. Primary and Secondary Education Department of Education and Culture.*	5%
3	Have the ability to characterize chemical material in vocational schools in accordance with the curriculum	1. Explain the differences in chemistry learning objectives in various vocational school programs, 2. Define adaptive and non-adaptive chemistry 3. Explain typical teaching materials in vocational schools	**Criteria:** Attached **Form of Assessment** : Participatory Activities	Presentation, discussion and administration 2 X 50		**Material:** characteristics **Library:** *2006 and 2013 Vocational School Curriculum*	5%

4	Have the ability to characterize chemical material in vocational schools in accordance with the curriculum	1. Explain the differences in chemistry learning objectives in various vocational school programs, 2. Define adaptive and non-adaptive chemistry 3. Explain typical teaching materials in vocational schools	**Criteria:** Attached **Form of Assessment** : Participatory Activities	Presentation, discussion and administration 2 X 50		**Material:** characteristics **Library:** *2006 and 2013 Vocational School Curriculum*	5%
5	Able to design chemistry learning at vocational school in accordance with the expertise program	Able to prepare syllabus and lesson plans for studying chemistry in various vocational school programs.	**Criteria:** The final NA is (participation value") (assignment value x 3) (UTS value%2 2) UAS value (3) divided by 10 **Form of Assessment** : Participatory Activities	Presentations, discussions and workshops 2 X 50		**Material:** designing learning **References:** *2006 and 2013 Vocational School Curriculum*	5%
6	Able to design chemistry learning at vocational school in accordance with the expertise program	Able to prepare syllabus and lesson plans for studying chemistry in various vocational school programs.	**Criteria:** The final NA is (participation value") (assignment value x 3) (UTS value%2 2) UAS value (3) divided by 10 **Form of Assessment** : Participatory Activities	Presentations, discussions and workshops 2 X 50		**Material:** designing learning **References:** *2006 and 2013 Vocational School Curriculum*	5%
7	Able to design chemistry learning at vocational school in accordance with the expertise program	Able to prepare syllabus and lesson plans for studying chemistry in various vocational school programs.	**Criteria:** The final NA is (participation value") (assignment value x 3) (UTS value%2 2) UAS value (3) divided by 10 **Form of Assessment** : Participatory Activities	Presentations, discussions and workshops 2 X 50		**Material:** designing learning **References:** *2006 and 2013 Vocational School Curriculum*	5%
8	--	--	**Criteria:** Nhir is (participation value") (assignment value x 3) (UTS value%2 2) UAS value (3) divided by 10A ak **Form of Assessment** : Test	UTS 2 X 50		**Material:** chemistry material in vocational schools. **Library:** *2006 and 2013 vocational school curriculum*	5%
9	Have the ability to relate chemical material to vocational skills programs.	1. Explain chemistry topics that must be practiced in vocational schools. 2. Relate chemistry material to skills programs in vocational schools	**Criteria:** The final NA is (participation value") (assignment value x 3) (UTS value%2 2) UAS value (3) divided by 10 **Form of Assessment** : Participatory Activities	Presentation, discussion and administration 2 X 50		**Material:** chemistry material in vocational schools. **Library:** *2006 and 2013 vocational school curriculum*	5%

10	Have the ability to relate chemical material to vocational skills programs.	1. Explain chemistry topics that must be practiced in vocational schools. 2. Relate chemistry material to skills programs in vocational schools	**Criteria:** The final NA is (participation value") (assignment value x 3) (UTS value%2 2) UAS value (3) divided by 10 **Form of Assessment** : Participatory Activities	Presentation, discussion and administration 2 X 50		**Material:** chemistry material at vocational school **Reader:** *Lutfi, Achmad. 2004. Environmental Chemistry (KIM Code 16). Jakarta: Directorate of Vocational Education Directorate General. Primary and Secondary Education Department of Education and Culture.*	5%
11	Have the ability to relate chemical material to vocational skills programs.	1. Explain chemistry topics that must be practiced in vocational schools. 2. Relate chemistry material to skills programs in vocational schools	**Criteria:** The final NA is (participation value") (assignment value x 3) (UTS value%2 2) UAS value (3) divided by 10 **Form of Assessment** : Participatory Activities	Presentation, discussion and administration 2 X 50		**Material:** chemistry material at vocational school **Reader:** *Lutfi, Achmad. 2004. Environmental Chemistry (KIM Code 16). Jakarta: Directorate of Vocational Education Directorate General. Primary and Secondary Education Department of Education and Culture.*	5%
12	Able to plan vocational school students' needs for chemistry material	1. Create learning tools for chemistry subjects in vocational schools	**Criteria:** The final NA is (participation value") (assignment value x 3) (UTS value%2 2) UAS value (3) divided by 10 **Form of Assessment** : Participatory Activities	Presentations, discussions and workshops 2 X 50		**Material:** learning tools **Reader:** *Lutfi, Achmad. 2004. Environmental Chemistry (KIM Code 16). Jakarta: Directorate of Vocational Education Directorate General. Primary and Secondary Education Department of Education and Culture.*	5%
13	Able to plan vocational school students' needs for chemistry material	1. Create learning tools for chemistry subjects in vocational schools	**Criteria:** The final NA is (participation value") (assignment value x 3) (UTS value%2 2) UAS value (3) divided by 10 **Form of Assessment** : Participatory Activities	Presentations, discussions and workshops 2 X 50		**Material:** lesson plan **Reader:** *Lutfi, Achmad. 2004. Environmental Pollution (KIM Code 08). Jakarta: Directorate of Vocational Education Directorate General. Primary and Secondary Education Department of Education and Culture.*	5%

14	Have the ability to teach chemistry in vocational schools in peer teaching	1. Try out lesson plans prepared in limited classes.	**Criteria:** The final NA is (participation grade") (assignment grade%2 3) (UTS grade%2 2) UAS grade (3) divided by 10 **Form of Assessment** : Participatory Activities	Practice and discussion 2 X 50		**Material:** vocational chemistry **Reader:** *Lutfi, Achmad. 2004. Environmental Pollution (KIM Code 08). Jakarta: Directorate of Vocational Education Directorate General. Primary and Secondary Education Department of Education and Culture.*	5%
15	Has the ability to teach chemistry at vocational schools in pear teching (P	1. Try out lesson plans prepared in limited classes.	**Criteria:** The final NA is (participation grade") (assignment grade%2 3) (UTS grade%2 2) UAS grade (3) divided by 10 **Form of Assessment** : Participatory Activities	Practice and discussion 2 X 50		**Material:** vocational school chemistry **Library:** *2006 and 2013 vocational school curriculum*	5%
16	Has the ability to teach chemistry at vocational schools in pear teching (P	1. Try out lesson plans prepared in limited classes.	**Criteria:** The final NA is (participation grade") (assignment grade%2 3) (UTS grade%2 2) UAS grade (3) divided by 10 **Form of Assessment** : Participatory Activities, Tests	Practice and discussion 2 X 50		**Material:** vocational school chemistry **Library:** *2006 and 2013 vocational school curriculum*	25%

Evaluation Percentage Recap: Project Based Learning

No	Evaluation	Percentage
1.	Participatory Activities	82.5%
2.	Test	17.5%
		100%

Notes

1. **Learning Outcomes of Study Program Graduates (PLO - Study Program)** are the abilities possessed by each Study Program graduate which are the internalization of attitudes, mastery of knowledge and skills according to the level of their study program obtained through the learning process.
2. **The PLO imposed on courses** are several learning outcomes of study program graduates (CPL-Study Program) which are used for the formation/development of a course consisting of aspects of attitude, general skills, special skills and knowledge.
3. **Program Objectives (PO)** are abilities that are specifically described from the PLO assigned to a course, and are specific to the study material or learning materials for that course.
4. **Subject Sub-PO (Sub-PO)** is a capability that is specifically described from the PO that can be measured or observed and is the final ability that is planned at each learning stage, and is specific to the learning material of the course.
5. **Indicators for assessing** ability in the process and student learning outcomes are specific and measurable statements that identify the ability or performance of student learning outcomes accompanied by evidence.
6. **Assessment Criteria** are benchmarks used as a measure or measure of learning achievement in assessments based on predetermined indicators. Assessment criteria are guidelines for assessors so that assessments are consistent and unbiased. Criteria can be quantitative or qualitative.
7. **Forms of assessment:** test and non-test.
8. **Forms of learning:** Lecture, Response, Tutorial, Seminar or equivalent, Practicum, Studio Practice, Workshop Practice, Field Practice, Research, Community Service and/or other equivalent forms of learning.
9. **Learning Methods:** Small Group Discussion, Role-Play & Simulation, Discovery Learning, Self-Directed Learning, Cooperative Learning, Collaborative Learning, Contextual Learning, Project Based Learning, and other equivalent methods.

10. **Learning materials** are details or descriptions of study materials which can be presented in the form of several main points and sub-topics.
11. **The assessment weight** is the percentage of assessment of each sub-PO achievement whose size is proportional to the level of difficulty of achieving that sub-PO, and the total is 100%.
12. TM=Face to face, PT=Structured assignments, BM=Independent study.