

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

Document Code

SEMESTER LEARNING PLAN

| UTHORIZATION SP Developer Course Cluster Coordinator Study Program Coordinator VITHORIZATION SP Developer Course Cluster Coordinator Study Program Coordinator Dr. Muchils, S.Pd., M.Pd. Prof. Dr. Harun Nasrudin, M.S. Prof. Dr. Utiya Azizah, M.P. earning model Project Based Learning Prof. Dr. Utiya Azizah, M.P. "Porgaram PLO Study program which is charged to the course Prof. Dr. Utiya Azizah, M.P. PLO10 Able to design, implement, evaluate, learn and develop chemistry learning media by utilizing Information and Communication Technology (CPL 4) PLO12 PLO11 Able to demonstrate chemical pedagogical knowledge about designing, implementing and evaluating chemistry learning (CPL 2) Program Objectives (PO) PO 1 Utilize several learning resources and ICT to develop assessments. PO - 3 PO - 3 Skilled in managing various forms of assessment shat are appropriate to the learning indicators to achieved. PO - 4 Demonstrate the ability to use time in designing assessments. PO - 5 Master the concepts and principles of evaluation, measurement, assessment and be able to apply them in assess learning processes and outcomes in the affective, cognitive and psychomotor doma that are adequate to learning indicators and are able to develop assessment guidelines. PO - 7 | AUTHORIZATION SP Developer Course Cluster Coordinator Study Program Coordinator AUTHORIZATION SP Developer Course Cluster Coordinator Study Program Coordinator Dr. Muchlis, S.Pd., M.Pd. Prof. Dr. Harun Nasrudin, M.S. Prof. Dr. Utiya Azizah, M.Pd. Program Operation Plootantian and develop the mistry learning media by utilizing information and Communication Technology (CPL 4) PLO-10 Able to deeign, implement, evaluate, learn and develop chemistry learning media by utilizing information and Communication Technology (CPL 4) PLO-12 Able to deeign implement, evaluate, learn and develop assessments. PLO-12 Able to demonstrate chemical pedagogical knowledge about designing, implementing and evaluating chemistry learning indicators to achieved. PO-2 Demonstrate critical thinking skills in selecting assessments. PO-3 Skilled in managing various forms of evaluation, measurement, assessment and be able to apply them in assess and utcomes and principles of evaluation, measurement, assessment and be able to apply them in assess fearing processes and outcomes in the affective, cognitive and psychomotor doma that are adequate to learning indicators and are able to develop assessment and be able to apply them in assess service being measured. PO-5 Master the concepts and principles of evaluation, measurement, assessment and be able to apply them in assess learning processes and outcomes in the affectue, cognitive and psychomotor doma tha | AUTHORIZATION Learning model Project Based L Program Learning Outcomes (PLO) PLO study program PLO-10 Program Object PO - 1 PO - 1 PO - 3 PO - 4 PO - 5 PO - 6 PO - 7 PO - 7 | Dr. Muchlis, | er | | cts | | | | | May 7, 2023 Coordinator |
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| SP Developer Course Cluster Coordinator Study Program Coordinator Dr. Muchlis, S.Pd., M.Pd. Prof. Dr. Harun Nasrudin, M.S. Prof. Dr. Utiya Azizah, M.P. Program ondel Project Based Learning Prof. Dr. Harun Nasrudin, M.S. Prof. Dr. Utiya Azizah, M.P. Program ondel PLO study program which is charged to the course PLO-10 Able to design, implement, evaluate, learn and develop chemistry learning media by utilizing Information and Communication Technology (CPL 4) PLO-10 Able to design, implement, evaluate, learn and develop chemistry learning media by utilizing Information and Communication Technology (CPL 2) Program Objectives (PO) Po-11 Utilize several learning resources and ICT to develop assessments. P0-2 Demonstrate critical thinking skills in selecting assessments. PO-3 P0-3 Skilled in managing various forms of assessments. PO-4 P0-4 Demonstrate the ability to use time in designing assessments. PO-5 P0-5 Master the concepts and principles of evaluation, measurement, assessment and be able to apply them in assess learning processes and outcomes in the affective, cognitive and psychomotor dome that are adequate to learning indicators not able to develop assessment guidelines. P0-6 Create instruments to assess learning processes and outcomes in the affective, cognitive and psychomotor dome | AUTHORIZATION SP Developer Course Cluster Coordinator Study Program Coordinator Image: Course Cluster Coordinator Study Program Coordinator Prof. Dr. Utya Azizah, M.P. Image: Cluster Coordinator Prof. Dr. Utya Azizah, M.P. Prof. Dr. Harun Nasrudin, M.S. Prof. Dr. Utya Azizah, M.P. Image: Cluster Coordinator Project Based Learning Project Based Learning Prof. Dr. Utya Azizah, M.P. PLO Study program which is charged to the course Economunication Technology (CPL 4) Prof. Dr. Harun Nasrudin, M.S. Prof. Dr. Utya Azizah, M.P. PLO Study program which is charged to the course Economunication Technology (CPL 4) Prof. Dr. Harun Nasrudin, M.S. Prof. Dr. Utya Azizah, M.P. PLO-10 Able to design, implement, evaluate, learn and develop chemistry learning media by utilizing Information and Communication Technology (CPL 4) Prof. Dr. Utya Azizah, M.P. PLO-12 Able to design, implement, evaluate, learn and develop chemistry learning prof. Prof. Dr. Utya Azizah, M.P. Port Dr. 1 Utilize several learning resources and ICT to develop assessments. Prof. Dr. 1 Utilize several learning resources and ICT to develop assessments. Prof. Dr. 4 Demonstrate chealing volues forms of assessments. Prof. Dr. 4 Demonstrate the ability to use time in designing assessments. | Learning modelProject Based LProgram Learning Outcomes | Dr. Muchlis, | | - Program Subje | | Clust | ter Co | ordinator | Study Program | Coordinator |
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| | PO Matrix at the end of each learning stage (Sub-PO) | DO Matrix at th | he end of each loars | ning stage (Sul | h-PO) | | | | | | |

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| Short Course Descrip | otion | evaluation strateg | ning, objectives, fun gies (paper & pencil , class-based evalu | and | altern | iative | evaluatio | on), forn | ns of e | evalua | ation i | istrum | ents, r | ubrics, | analys | sis and | interp | | |
| Referen | ices | Main : | | | | | | | | | | | | | | | | | |
| | | McGraw- 3. 3. Arikun dan prak 4. 4. Brookt 5. 5. Georg 6. 6. Glenco 7. 7. I. Naik | s, Richard I. (2004). Hill Book Company. to, Suharsimi / I. Ja tisi pendidikan . Jaka art, Susan M. 2010 e, David. 2005. Exa be Series. Tanpa Ta , S.P. 2004. Role of on, David W. and J I Bacon. | abar, arta: . Hov mina hun. eval | Cepi BumiA w to as tion ar Perfor uation | Safruc Aksara ssess nd eva rmanc in edu | ddin Abd higher-o luation in e Asses ucation . | ul. 2008 rder thin n educa sment ir New De | 3. Eva king s tion . N The S elhi: Ar | luasi kills ir New E Scien 1mol F | progra n your Delhi: (ce Cla Public | am per classr Commo ssroor ations | ndidika oom. A onweal n. New PVT. | n: ped lexanc th. York: | oman t Iria: AS McGra | teoritis SCD. aw- Hill | bagi n Comp | nahasis any. | swa |
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| Support lecturer | | Prof. Dr. Harun N Prof. Dr. Hj. Rudia Prof. Dr. Utiya Az Dr. Muchlis, S.Pd | ana Agustini, M.Pd. izah, M.Pd. | | | | | | | | | | | | | | | | |
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| 2 | Analyze the suitability of assessments with competencies | Analyzing the suitability of KD and examples of assessments in the syllabus Provide suggestions to improve assessments in accordance with KD | Criteria: Participation with a weight of 20%, Assignments with a weight of 30%, UTS with a weight of 20% and UAS with a weight of 30% Form of Assessment : Participatory Activities, Tests | Lectures, information discussions, assignments, presentations 2x50" | Material: The meaning of assessment in education and learning, References: 1 Team. 2015. Student Handbook: Evaluation. Yogyakarta: Absolute Media. Material: 2. Assessment at various levels of education References: 5. George, David. 2005. Examination and evaluation in education. New Delhi: Commonwealth. | 5% |
|---|---|---|--|--|--|-----|
| 3 | Explain the differences between the old and revised Bloom's taxonomy. | Students can explain the Taxonomy of the attitude domain. | Criteria: Participation with a weight of 20%, Assignments with a weight of 30%, UTS with a weight of 20% and UAS with a weight of 30% Form of Assessment : Participatory Activities | Lectures, information discussions, assignments, presentations. 2x50 | Material: Understanding measurement, assessment and evaluation. Library: 1 Team. 2015. Student Handbook: Evaluation. Yogyakarta: Absolute Media. Material: Test status, measurement, assessment and evaluation. References: 7. I. Naik, SP 2004. Role of evaluation in education. New Delhi: Anmol Publications PVT. | 10% |

| 4 | Develop assessment indicators for the domains of attitudes, knowledge and skills (cognitive, affective and psychomotor). | Students can develop assessment indicators for the domains of attitudes, knowledge and skills (cognitive, affective and psychomotor). | Criteria: Participation with a weight of 20%, Assignments with a weight of 30%, UTS with a weight of 20% and UAS with a weight of 30% Form of Assessment : Project Results Assessment / Product Assessment, Test | Lectures, information discussions, assignments. 2x50" | attitud domai Refere Team. Studer Handb Evalua Yogya Absolu Materi Taxon attitud domai Refere Arikun Suhar. Jabar, Safruc Abdul. Evalua educa progra theore guidar studer educa progra theore guidar studer educa progra theore guidar studer BuniA BumiA Materi Taxon knowle domai Refere Subar Safruc Abdul. Evalua educa progra theore guidar studer educa progra theore guidar studer educa progra theore guidar studer educa progra theore guidar studer educa progra theore guidar studer educa progra theore guidar studer educa progra theore guidar studer educa progra theore guidar studer educa progra theore guidar studer educa practit Jakart. BumiA Materi Taxon Knowle domai Refere Brookd Susan How to higher thinkin your c. Alexar | omy of ens ences: 1 2015. It vook: ation. tation. karta: ute Media. ial: omy of ens ences: 3. to, simi / I. CCepi Idin 2008. ation of tional mrs: tical ice for its and tional ioners. a: kksara. ial: omy of edge ns ences: 4. hart, M. 2010. o assess -order g skills in lassroom. ndria: ial: omy of edge ns ences: 4. hart, M. 2010. o assess -order g skills in lassroom. ndria: | 10% |
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| 5 | Develop learning outcomes tests and rubrics. | Students can explain the meaning, advantages and disadvantages of the test. Students can explain the techniques, types and forms of tests. | Criteria: Participation with a weight of 20%, Assignments with a weight of 30%, UTS with a weight of 20% and UAS with a weight of 30% Form of Assessment : Participatory Activities, Tests | Lectures, information discussions, assignments. 2x50" | the psycho domai Refer <i>Glenca</i> No Ye Perfor | omy of pmotor n ence: 6. oe Series. ar. mance sment in cience oom. oom. ork: aw-Hill | 10% |

| 6 | Explain the definition, advantages and disadvantages of authentic assessment | Students can explain the meaning of authentic assessment, the advantages and disadvantages of authentic assessment | Criteria: Participation with a weight of 20%, Assignments with a weight of 30%, UTS with a weight of 20% and UAS with a weight of 30% Form of Assessment : Participatory Activities | Lectures, information discussions, assignments. 2x50 | Material: Understanding the advantages and disadvantages of tests Literature: 1 Team. 2015. Student Handbook: Evaluation. Yogyakarta: Absolute Media. Material: Understanding the advantages and disadvantages of tests. References: 3. Arikunto, Suharsimi / I. Jabar, Cepi Safruddin Abdul. 2008. Evaluation of educational programs: theoretical guidance for students and educational practitioners. Jakarta: BumiAksara. Material: Techniques, types and forms of tests References: 5. George, David. 2005. Examination and evaluation in education. New Delhi: | 5% |
|---|---|---|--|--|---|----|
| 7 | Explain the types of authentic assessments and their assessment rubrics. | Students can explain various types of authentic assessments, for example: performance assessments, journals, project assignments, portfolios, affective domain assessments (character behavior and social skills), etc. | Criteria: Participation with a weight of 20%, Assignments with a weight of 30%, UTS with a weight of 20% and UAS with a weight of 30% Form of Assessment : Project Results Assessment / Product Assessment, Test | Lectures, information discussions, assignments. 2x50 | Commonwealth. Material: Test assessment rubric, scoring, converting scores into grades. Library: 1 Team. 2015. Student Handbook: Evaluation. Yogyakarta: Absolute Media. Material: Interpretation of learning results. Library: 1 Team. 2015. Student Handbook: Evaluation. Yogyakarta: Absolute Media. Material: Test review. References: 7. I. Naik, SP 2004. Role of evaluation in education. New Delhi: Anmol Publications PVT. | 5% |

| 8 | UTS | UTS | Criteria: Participation with a weight of 20%, Assignments with a weight of 30%, UTS with a weight of 20% and UAS with a weight of 30% Form of Assessment : Test | 2x50" | Material: Understanding Learning Evaluation and types of assessment instruments Literature: 1 Team. 2015. Student Handbook: Evaluation. Yogyakarta: Absolute Media. | 0% |
|---|---|---|--|--|--|----|
| 9 | Analyze learning outcomes tests and rubrics | Students can explain the meaning of authentic assessment. | Criteria: Participation with a weight of 20%, Assignments with a weight of 30%, UTS with a weight of 20% and UAS with a weight of 30% Form of Assessment : Test | Case study, Lecture, discussion- information, assignment 2x50 | Material: Understanding authentic assessment References: 8. Johnson, David W. and Johnson, Robert T. 2002. Meaningful Assessment Manageable and Cooperative process. Boston: Allyn and Bacon. Material: Advantages and disadvantages of authentic assessment. References: 8. Johnson, David W. and Johnson, Robert T. 2002. Meaningful Assessment Manageable and Cooperative process. Boston: Allyn and Bacon. | 5% |

| 10 | Analyze learning outcomes tests and rubrics. | Students can explain scoring, grading and converting scores into grades. | Criteria: Participation with a weight of 20%, Assignments with a weight of 30%, UTS with a weight of 20% and UAS with a weight of 30% Form of Assessment : Test | Case study, Lecture, discussion- information, assignment 2x50 | Material: Types of authentic assessments, for example: performance assessments, journals, project assignments, portfolios, affective domain assessments (characteristic behavior and social skills), etc. Bibliography: 2. Arends, Richard I. (2004). Guide to Field Experiences ad Portfolio Development: to accompany ;learning to teach. New York: McGraw- Hill Book Company. Material: Types of authentic assessments, for example: performance assessments, portfolios, affective domain assessments (character behavior and social skills), etc. Library: 6. Glencoe Series. No Year. Performance Assessment in The Science Classroom. New York: McGraw-Hill Company. | 5% |
|----|--|---|---|--|--|----|
| 11 | Explain the types of validity. Describe the validity of assessment instruments. | Students can explain the types of validity. Students can describe the validity of the test instrument. | Criteria: Participation with a weight of 20%, Assignments with a weight of 30%, UTS with a weight of 20% and UAS with a weight of 30%. Form of Assessment : Test | Lectures, discussion- information, assignments 2x50 | Material: Authentic assessment rubric, scoring, converting scores into grades. References: 8. Johnson, David W. and Johnson, Robert T. 2002. Meaningful Assessment Manageable and Cooperative process. Boston: Allyn and Bacon. Material: Authentic assessment rubric, scoring, converting scores into grades. Bibliography: 5. George, David. 2005. Examination and evaluation in education. New Delhi: Commonwealth. | 5% |

| 12 | Explain the various methods of finding reliability coefficients. | Students can explain various methods for finding reliability coefficients. | Criteria: Participation with a weight of 20%, Assignments with a weight of 30%, UTS with a weight of 20% and UAS with a weight of 30% Form of Assessment : Test | Lectures, discussion- information, assignments 2x50 | Material: validity and reliability. Library: 1 Team. 2015. Student Handbook: Evaluation. Yogyakarta: Absolute Media. Material: factors that influence validity. Bibliography: 5. George, David. 2005. Examination and evaluation in education. New Delhi: Commonwealth. Material: factors that influence reliability. References: 3. Arikunto, Suharsimi / I. Jabar, Cepi Safruddin Abdul. 2008. Evaluation of educational programs: theoretical guidance for students and educational practitioners. Jakarta: | 5% |
|----|--|--|---|---|--|----|
| 13 | Calculating test reliability. | Students can calculate test reliability. | Criteria: Participation with a weight of 20%, Assignments with a weight of 30%, UTS with a weight of 20% and UAS with a weight of 30%. Form of Assessment : Test | Case Study, Lectures, informational discussions, assignments. 2x50 | BumiAksara. Material: various methods for finding reliability coefficients. References: 7. I. Naik, SP 2004. Role of evaluation in education. New Delhi: Anmol Publications PVT. Material: various methods for finding reliability coefficients. Library: 1 Team. 2015. Student Handbook: Evaluation. Yogyakarta: Absolute Media. | 5% |

| 14 | Analyze the question items. | Students can analyze test items, including: level of achievement of indicators for criteria-referenced items, sensitivity index for criteria- referenced items, level of difficulty of test items, discriminating power, effectiveness of options, validity of norm-referenced items. | Criteria: Participation with a weight of 20%, Assignments with a weight of 30%, UTS with a weight of 20% and UAS with a weight of 30%. Form of Assessment : Test | Case Study, Lecture, information- discussion, 2x50 assignments | Material: Calculating the reliability of tests based on norms and benchmarks. Library: 1 Team. 2015. Student Handbook: Evaluation. Yogyakarta: Absolute Media. Material: Calculating the reliability of tests based on norms and benchmarks. References: 7. I. Naik, SP 2004. Role of evaluation in education. New Delhi: Anmol Publications PVT. | 15% |
|----|-----------------------------|---|---|---|---|-----|
| 15 | Interpret test results. | Students can interpret test results. | Criteria: Participation with a weight of 20%, Assignments with a weight of 30%, UTS with a weight of 30%. Form of Assessment : Test | Case Study, Lectures, informational discussions, assignments. | Material: questions, including: level of achievement of criteria- referenced item indicators, sensitivity index of criterion- referenced items, level of difficulty of test items, discriminating power, effectiveness of options, validity of norm- referenced items. Reference: 1 Team. 2015. Student Handbook: Evaluation. Yogyakarta: Absolute Media. Material: questions, including: level of achievement of criteria- referenced item indicators, sensitivity index of criterion- referenced items, level of difficulty of test items, discriminating power, effectiveness of options, validity of norm- referenced items. Reference: 3. Arikunto, Suharsimi / I. Jabar, Cepi Safruddin Abdul. 2008. Evaluation of educational programs: theoretical guidance for students and educational practitioners. Jakarta: BumiAksara. | 5% |

| | | | | | Material: questions, including: level of achievement of criteria- referenced item indicators, sensitivity index of criterion- referenced items, level of difficulty of test items, discriminating power, effectiveness of options, validity of norm- referenced items. Reference: 3. Arikunto, Suharsimi / I. Jabar, Cepi Safruddin Abdul. 2008. Evaluation of educational programs: theoretical guidance for students and educational practitioners. Jakarta: BumiAksara. | |
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| 16 | UTS | UTS | Criteria: Participation with a weight of 20%, Assignments with a weight of 30%, UTS with a weight of 20% and UAS with a weight of 30% Form of Assessment : Test | 2x50" | Material: Qualitative study of questions to quantitative study of questions References: 1 Team. 2015. Student Handbook: Evaluation. Yogyakarta: Absolute Media. | 0% |

Evaluation Percentage Recap: Project Based Learning

| 200 | addition i croondage neodapi i roject Baced Ecan | iing |
|-----|--|------------|
| No | Evaluation | Percentage |
| 1. | Participatory Activities | 22.5% |
| 2. | Project Results Assessment / Product Assessment | 7.5% |
| 3. | Test | 70% |
| | | 100% |

Notes

- 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.