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| | **Universitas Negeri Surabaya**<br>**Faculty of Mathematics and Natural Sciences**<br>**Undergraduate Chemistry Education Study Program** | **Document Code** |

# SEMESTER LEARNING PLAN

| Courses | CODE | Course Family | Credit Weight | | | SEMESTER | Compilation Date |
|---|---|---|---|---|---|---|---|
| **Chemistry English** | 8420402018 | Compulsory Study Program Subjects | **T=2** | **P=0** | **ECTS=3.18** | 2 | July 17, 2024 |

| AUTHORIZATION | SP Developer | Course Cluster Coordinator | Study Program Coordinator |
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| | Dr. Maria Monica Sianita Basukiwardojo, M.Si | Dr. Nuniek Herdyastuti, M.Si | Prof. Dr. Utiya Azizah, M.Pd. |

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| **Learning model** | **Case Studies** |

**Program Learning Outcomes (PLO)**

**PLO study program which is charged to the course**

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| **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-8** | Mastering the basics of scientific methods, designing and carrying out research, compiling scientific reports and communicating them both orally and in writing by utilizing information and communication technology in the field of education (CPL 6) |

**Program Objectives (PO)**

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| **PO - 1** | Students have the ability to utilize their abilities in English, the learning resources, and ICT to support mastery of concepts of chemistry terms, chemistry and chemical equipment in laboratory, and the names of chemical inorganic compounds (nomenclature) in English. |
| **PO - 2** | Students have the ability to make connections about their knowledge of English Vocabulary, Grammar and Structure with the Chemistry concepts in written text (text books, reading passages, articles, journals). |
| **PO - 3** | Students have the ability to utilize their abilities of listening and writing strategies to understand speech, lecture, talk, and seminar spoken in English and to make good presentations in English |
| **PO - 4** | Students have the responsibility to use their knowledge in English and Chemistry to help people in daily life honestly, and make a better world |

**PLO-PO Matrix**

| P.O | PLO-6 | PLO-8 |
|---|---|---|
| PO-1 | | |
| PO-2 | | |
| PO-3 | | |
| PO-4 | | |

**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 | | | | | | | | | | | | | | | | |
| PO-2 | | | | | | | | | | | | | | | | |
| PO-3 | | | | | | | | | | | | | | | | |
| PO-4 | | | | | | | | | | | | | | | | |

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| **Short Course Description** | Mastering the principles of scientific method, designing and conducting research, managing and communicating scientific reports, both in oral and written ways by using the information and communication technology. Capable to adapt to various developments in chemistry, develop and learn continuously throughout life to continue education, both formal and informal |

**References**

**Main :**


1. Sianita, Maria Monica, 2016. English for Chemistry Students. Surabaya: FMIPA UNIVERSITAS NEGERI SURABAYA
2. Lou, Robby, 2012. English Grammar and How to Use It – Workbook 1. Jakarta: Mobile English e-plus.

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| **Supporters:** | |
| 1. Atkins, Peter, 2011. Where would we be without Chemistry. Chemistry International, The New Magazine of the International Union of Pure and Applied Chemistry (IUPAC), vol 33 no 2, March – April 2011<br>2. Teaching and Learning Unit, University of Melbourne, 2010. Reading Skills, Melbourne: The University of Melbourne<br>3. Brown, Catrin and Ford, Mike, 2008: Standard Level Chemistry –Developed specifically for the IB Diploma, 1st ed. England: Pearson Education Limited Glaeser. ISBN:978- 0- 435994-46-4.<br>4. Bauer, Richard C, Birk, James P., Sawyer, Douglas J., 2001. Laboratory Inquiry in Chemistry, Canada: Brooks/ Cole. ISBN: 0-534-37694-0 | |
| **Supporting lecturer** | Dr. Maria Monica Sianita Basukiwardojo, M.Si.<br>Prof. Dr. Utiya Azizah, M.Pd.<br>Prof. Dr. Tukiran, M.Si.<br>Dr. Mitarlis, S.Pd., M.Si.<br>Rusly Hidayah, S.Si., M.Pd.<br>Dr. Dina Kartika Maharani, S.Si., M.Sc.<br>Bertha Yonata, S.Pd., M.Pd.<br>Dr. Indah Ardiningsih, S.Si, M.Sc.<br>Muhammad Nurrohman Sidiq, S.Si., M.Sc., Ph.D.<br>Dr. Andika Pramudya Wardana, S.Si., M.Si.<br>Nurina Rizka Ramadhania, S.Si. M.Si. |

| **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** | Explaining the chemistry terms, chemicals, laboratory equipment and their usage in English based on their knowledge | 1.1. Introduce the role of Chemistry in daily life<br>2.2. Explain the unfamiliar English words on Chemistry | **Criteria:**<br>Participation%2 2<br>Assignments%2 3<br>UTS%2 2 UAS%2 3<br><br>**Forms of Assessment** :<br>Participatory Activities, Practice/Performance, Tests | case study: procons about chemistry in daily life<br><br>Interactive discussion:<br>-pro-con about chemicals<br>- guessing the meaning of unfamiliar words especially in Chemistry<br>2 X 50 | | **Material:** Understanding Chemistry in English: Group activities: Types of Learner; Guidance to read: The Unfamiliar words, Grammar: Part of Speech, Articles, Referring back; Reading Selection: Chemistry in Daily Life.<br>**References:**<br>*1. Atkins, Peter, 2011. Where would we be without Chemistry. Chemistry International, The New Magazine of the International Union of Pure and Applied Chemistry (IUPAC), vol 33 no 2, March – April 2011* | 10% |

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| **2** | Explaining the chemistry terms, chemicals, laboratory equipment and their usage in English based on their knowledge | 1.1. Explain the laboratory equipment on Chemistry and their usage<br>2.2.Using the knowledge of parts of speech, articles, and referring back to analyzing paragraphs and sentences on chemistry text | **Criteria:**<br>Participation%2 2<br>Assignments%2 3<br>UTS%2 2 UAS%2 3<br><br>**Forms of Assessment** :<br>Participatory Activities, Practice/Performance, Tests | case study: procons about chemistry in daily life<br><br>Interactive discussion:<br>-pro-con about chemicals<br>- guessing the meaning of unfamiliar words especially in Chemistry<br>2 X 50 | | **Material:** Chemicals and Laboratory Equipment: Group activities: Recognizing Chemical equipment in Local Laboratory; Guidance to read: Reading Skills; Grammar: Word order, Types of Sentence; Reading Selection: Laboratory Equipment and their usage.<br>**Bibliography:**<br>*4. Bauer, Richard C, Birk, James P., Sawyer, Douglas J., 2001. Laboratory Inquiry in Chemistry, Canada: Brooks/ Cole. ISBN: 0-534-37694-0* | 10% |
| **3** | Explaining the chemistry terms, chemicals, laboratory equipment and their usage in English based on their knowledge | 1.1Explain the laboratory equipment on Chemistry and their usage<br>2.Using the knowledge of parts of speech, articles, and referring back to analyzing paragraphs and sentences on chemistry text | **Criteria:**<br>Participation%2 2<br>Assignments%2 3<br>UTS%2 2 UAS%2 3<br><br>**Forms of Assessment** :<br>Participatory Activities, Practice/Performance, Tests | case study: procons about chemistry in daily life<br><br>Interactive discussion:<br>-pro-con about chemicals<br>- guessing the meaning of unfamiliar words especially in Chemistry<br>2 X 50 | | **Material:** Chemicals and Laboratory Equipment: Group activities: Recognizing Chemical equipment in Local Laboratory; Guidance to read: Reading Skills; Grammar: Word order, Types of Sentence; Reading Selection: Laboratory Equipment and their usage.<br>**Bibliography:**<br>*4. Bauer, Richard C, Birk, James P., Sawyer, Douglas J., 2001. Laboratory Inquiry in Chemistry, Canada: Brooks/ Cole. ISBN: 0-534-37694-0* | 10% |

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| **4** | Changing the chemical formulas into chemical names in English and vice versa based on their basic knowledge on Chemistry | 1. Change the chemical formula into chemical names<br>2. Change the chemical names into chemical formulas<br>3. Identify the characteristics of adjective clause and adverb clause | **Criteria:**<br>Participation%2 2<br>Assignments%2 3<br>UTS%2 2 UAS%2 3<br><br>**Forms of Assessment** :<br>Participatory Activities, Practice/Performance, Tests | Interactive discussion: Naming Inorganic Compound The difference between adjective and adverb clauses Assignment 2 X 50 | | **Material:** Naming Inorganic Compound: Group activities: Recognizing Chemicals in Daily Life; Guidance to Read: Understanding Main Idea; Grammar: Adjective and Adverb Clauses; Reading Selection: Naming Inorganic Substances.<br>**References:**<br>*1. Sianita, Maria Monica, 2016. English for Chemistry Students. Surabaya: FMIPA STATE UNIVERSITY OF SURABAYA* | 10% |
| **5** | Changing the chemical formulas into chemical names in English and vice versa based on their basic knowledge on Chemistry | 1. Change the chemical formula into chemical names<br>2. Change the chemical names into chemical formulas<br>3. Identify the characteristics of adjective clause and adverb clause | **Criteria:**<br>Participation%2 2<br>Assignments%2 3<br>UTS%2 2 UAS%2 3<br><br>**Forms of Assessment** :<br>Participatory Activities, Practice/Performance, Tests | Naming Inorganic Compound Identifying the characteristics of adjective and adverb clauses Assignment<br><br>Assignment 2 X 50 | | **Material:** Naming Inorganic Compound: Group activities: Recognizing Chemicals in Daily Life; Guidance to Read: Understanding Main Idea; Grammar: Adjective and Adverb Clauses; Reading Selection: Naming Inorganic Substances.<br>**References:**<br>*1. Sianita, Maria Monica, 2016. English for Chemistry Students. Surabaya: FMIPA STATE UNIVERSITY OF SURABAYA* | 10% |

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| **6** | Changing the chemical formulas into chemical names in English and vice versa based on their basic knowledge on Chemistry | 1. Change the chemical formula into chemical names<br>2. Change the chemical names into chemical formulas<br>3. Identify the characteristics of adjective clause and adverb clause | **Criteria:**<br>Participation%2 2<br>Assignments%2 3<br>UTS%2 2 UAS%2 3<br><br>**Forms of Assessment** :<br>Participatory Activities, Practice/Performance, Tests | Naming Inorganic Compound<br><br>Assignment<br><br>Assignment<br>2 X 50 | | **Material:**<br>Naming Inorganic Compound: Group activities: Recognizing Chemicals in Daily Life; Guidance to Read: Understanding Main Idea; Grammar: Adjective and Adverb Clauses; Reading Selection: Naming Inorganic Substances.<br>**References:**<br>*1. Sianita, Maria Monica, 2016. English for Chemistry Students. Surabaya: FMIPA STATE UNIVERSITY OF SURABAYA* | 10% |
| **7** | Describing the process on chemistry presented as non-process reading into reading passage and vice versa using appropriate vocabulary and grammar. | 1. Describe cycles on chemistry using appropriate words<br>2. Change the chemical names into chemical formulas<br>3. Identify the characteristics of adjective clause and adverb clause | **Criteria:**<br>Participation%2 2<br>Assignments%2 3<br>UTS%2 2 UAS%2 3<br><br>**Forms of Assessment** :<br>Participatory Activities, Practice/Performance, Tests | Case study: Non process reading on Chemistry topic<br><br>Assignment<br>2 X 50 | | **Material:**<br>Chemical Process: Group activities: Recognizing Chemistry Process; Guidance to Read: Non-prose Reading; Grammar: Adjective clauses and Adjective Phrase; Reading Selection: Cycles on Chemistry<br>**Bibliography:**<br>*1. Sianita, Maria Monica, 2016. English for Chemistry Students. Surabaya: FMIPA STATE UNIVERSITY OF SURABAYA* | 10% |
| **8** | MIDTERM TEST | Indicators from first until seventh meeting | **Criteria:**<br>UTS%2 2 | MIDTERM TEST<br>2 X 50 | | | 0% |

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| **9** | Applying the listening strategies to understand the chemistry topic presented orally in English. | 1. Differentiate between to hear and to listen<br>2. Apply listening strategies to understand the content of speech, lecture, seminar<br>3. Identify noun clauses in chemistry text | **Criteria:**<br>Participation%2 2<br>UTS%2 2<br>Assignments%2 3<br>UAS%2 3<br><br>**Form of Assessment** : Participatory Activities, Practice/Performance | Problem Based Learning: Listening on Chemistry topic<br>Example: Listen to chemistry song on you-tube<br>Interactive discussion:<br>- Noun Clause<br>- Solubility Rules<br><br>Group assignment<br>2 X 50 | | **Material:** Listening Practice on Chemistry: Group activities: To Hear and To Listen; Guidance to Read: Listening Strategies; Grammar: Noun Clause; Reading Selection: Solubility Rules<br>**Bibliography:**<br>*1. Sianita, Maria Monica, 2016. English for Chemistry Students. Surabaya: FMIPA STATE UNIVERSITY OF SURABAYA* | 10% |
| **10** | Applying the listening strategies to understand the chemistry topic presented orally in English. | 1. Differentiate between to hear and to listen<br>2. Apply listening strategies to understand the content of speech, lecture, seminar<br>3. Identify noun clauses in chemistry text | **Criteria:**<br>Participation%2 2<br>UTS%2 2<br>Assignments%2 3<br>UAS%2 3<br><br>**Form of Assessment** : Participatory Activities, Practice/Performance | Problem Based Learning: Listening on Chemistry topic<br>Example: Listen to chemistry song on you-tube<br>Interactive discussion:<br>- Noun Clause<br>- Solubility Rules<br><br>Group assignment<br>2 X 50 | | **Material:** Listening Practice on Chemistry: Group activities: To Hear and To Listen; Guidance to Read: Listening Strategies; Grammar: Noun Clause; Reading Selection: Solubility Rules<br>**Bibliography:**<br>*1. Sianita, Maria Monica, 2016. English for Chemistry Students. Surabaya: FMIPA STATE UNIVERSITY OF SURABAYA* | 10% |

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| **11** | Applying the writing strategies to make short passages on Chemistry in English. | 1. Able to use listening strategies, Able to understand the concept of the rules of solubility in chemistry, Able to understand the characteristics of noun clause and identify its presence in a sentence<br>2. Choose the appropriate words in chemistry based on the topic chosen and list it<br>3. Write a short paragraph on a general topic<br>4. 3. Write a short paragraph on chemistry topic | **Criteria:**<br>Participation%2 2<br>Assignments%2 3<br>UTS%2 2 UAS%2 3<br><br>**Form of Assessment** :<br>Participatory Activities, Practice/Performance | Problem Based Learning:<br>- Academic writing<br>- Presentation performing Interactive discussion:<br>- Passive sentences<br>- Errors in Chemistry measurement<br>- Individual assignment<br>2 X 50 | | **Material:**<br>Writing on Chemistry Topic: Group activities: Question Words use in Writing; Guidance to Read: Writing Paragraphs and doing Presentations; Grammar: Passive Sentence; Reading Selection: Errors in Chemistry Measurement<br>**References:**<br>*1. Sianita, Maria Monica, 2016. English for Chemistry Students. Surabaya: FMIPA STATE UNIVERSITY OF SURABAYA* | 10% |
| **12** | Applying the writing strategies to make short passages on Chemistry in English. | 1. Able to use listening strategies, Able to understand the concept of the rules of solubility in chemistry, Able to understand the characteristics of noun clause and identify its presence in a sentence<br>2. Choose the appropriate words in chemistry based on the topic chosen and list it<br>3. Write a short paragraph on a general topic<br>4. Write a short paragraph on chemistry topic | **Criteria:**<br>Participation%2 2<br>Assignments%2 3<br>UTS%2 2 UAS%2 3<br><br>**Form of Assessment** :<br>Participatory Activities, Practice/Performance | Problem Based Learning:<br>- Academic writing<br>- Presentation performing Interactive discussion:<br>- Passive sentences<br>- Errors in Chemistry measurement<br>- Individual assignment<br>2 X 50 | | **Material:**<br>Writing on Chemistry Topic: Group activities: Question Words use in Writing; Guidance to Read: Writing Paragraphs and doing Presentations; Grammar: Passive Sentence; Reading Selection: Errors in Chemistry Measurement<br>**References:**<br>*1. Sianita, Maria Monica, 2016. English for Chemistry Students. Surabaya: FMIPA STATE UNIVERSITY OF SURABAYA* | 10% |

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| **13** | Applying the writing strategies to make short passages on Chemistry in English. | 1. Able to use listening strategies, Able to understand the concept of the rules of solubility in chemistry, Able to understand the characteristics of noun clause and identify its presence in a sentence<br>2. Choose the appropriate words in chemistry based on the topic chosen and list it<br>3. Write a short paragraph on a general topic<br>4. Write a short paragraph on chemistry topic | **Criteria:**<br>Participation%2 2<br>Assignments%2 3<br>UTS%2 2 UAS%2 3<br><br>**Form of Assessment** :<br>Participatory Activities, Practice/Performance | Problem Based Learning:<br>- Academic writing<br>- Presentation performing Interactive discussion:<br>- Passive sentences<br>- Errors in Chemistry measurement<br>- Individual assignment<br>2 X 50 | | **Material:**<br>Writing on Chemistry Topic: Group activities: Question Words use in Writing; Guidance to Read: Writing Paragraphs and doing Presentations; Grammar: Passive Sentence; Reading Selection: Errors in Chemistry Measurement<br>**References:**<br>*1. Sianita, Maria Monica, 2016. English for Chemistry Students. Surabaya: FMIPA STATE UNIVERSITY OF SURABAYA* | 10% |
| **14** | Utilizing the appropriate words and terms to present the chosen topic on Chemistry in English | 1. Able to use writing strategies, Able to understand the concept of using visual aids and appropriate language in doing presentations, Able to calculate in measuring solutions, Able to understand the characteristics and use of passive form<br>2. Match the appropriate words with the action in doing presentation<br>3. Choose a chemistry article to be presented | **Criteria:**<br>Participation has a weight of 2, UTS has a weight of 2, Assignments have a weight of 3, UAS has a weight of 3<br><br>**Forms of Assessment** :<br>Participatory Activities, Project Results Assessment / Product Assessment, Practice / Performance, Tests | Case study:<br>Doing presentation on Chemistry topic<br><br>Interactive discussion:<br>Topic on Chemistry<br>2 X 50 | | **Material:**<br>Group presentation<br>**References:**<br>*1. Sianita, Maria Monica, 2016. English for Chemistry Students. Surabaya: FMIPA STATE UNIVERSITY OF SURABAYA* | 10% |

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| **15** | Applying the knowledge of Chemistry in English to make a presentation about chemistry in English | 1. Able to use writing strategies, Able to understand the concept of using visual aids and appropriate language in doing presentations, Able to calculate in measuring solutions, Able to understand the characteristics and use of passive form<br>2. Rewrite the articles chosen on a short passage<br>3. Change the short passage into presentation slide | **Criteria:**<br>Participation has a weight of 2, UTS has a weight of 2, Assignments have a weight of 3, UAS has a weight of 3<br><br>**Form of Assessment** : Participatory Activities, Practice/Performance | Case study: Doing presentation on Chemistry topic<br><br>Interactive discussion: Topic on Chemistry<br>2 X 50 | | **Material:** Group presentation<br>**References:** *1. Sianita, Maria Monica, 2016. English for Chemistry Students. Surabaya: FMIPA STATE UNIVERSITY OF SURABAYA* | 10% |
| **16** | UAS | UAS | **Criteria:**<br>UAS weighs 3 | UAS<br>2 X 50 | | | 0% |

**Evaluation Percentage Recap: Case Study**

| No | Evaluation | Percentage |
|---|---|---|
| 1. | Participatory Activities | 55.81% |
| 2. | Project Results Assessment / Product Assessment | 2.5% |
| 3. | Practice / Performance | 55.81% |
| 4. | Test | 25.81% |
| | | 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.