| | Universitas Negeri Surabaya<br>Faculty of Mathematics and Natural Sciences<br>Biology Education Masters Study Program | Document Code |
|---|---|---|

# SEMESTER LEARNING PLAN

| Courses | CODE | Course Family | Credit Weight | | | SEMESTER | Compilation Date |
|---|---|---|---|---|---|---|---|
| Biology Education Research Design | 1234503002 | | T=3 | P=0 | ECTS=6.72 | 2 | July 17, 2024 |

| AUTHORIZATION | SP Developer | Course Cluster Coordinator | Study Program Coordinator |
|---|---|---|---|
| | ..... | ..... | Prof. Dr. Yuliani, M.Si. |

**Learning model**: Project Based Learning

**Program Learning Outcomes (PLO)**

- PLO study program which is charged to the course
- Program Objectives (PO)
- PLO-PO Matrix

| P.O |
|---|

- 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 |

**Short Course Description**: This course examines the meaning and scope of quantitative research, qualitative research, and development research and making proposals. The study is accompanied by theories and applications related to the research process, research problems, theoretical foundations, hypotheses, samples and sampling, research variables, research instruments, data collection techniques and data analysis using various software-based data analysis programs, accompanied by a review of qualitative research articles, quantitative, development. This course is presented theoretically including examples of innovative research designs based on local wisdom/bioecopreneurship and assignments, especially producing products in the form of research proposals.

**References**

**Main :**


1. Creswell, J.W. 2015. Riset Pendidikan: Perencanaan, Pelaksanaan, dan Evaluasi Riset Kualitatif dan Kuantitatif Edisi Kelima. Yogyakarta: Pustaka Pelajar.
2. Fraenkel, J.R., Wallen, N.E., Hyun, H. H. 2012. How to Design and Evaluate Research in Education. New York: McGraw-Hill Companies, Inc.
3. Prain, V., Hand, B. 2019. Theorizing the Future of Science Education Research. Springer.
4. Tang, K.S., Danielsson, K. (ed.) 2018. Global Developments in Literacy Research for Science Education. Springer International Publishing.
5. Tuckman B.W., Harper, B.E. 2012. Conducting Educational Research. Sixth Edition. New York: Harcourt Bace Javanovich, Inc.
6. Artikel yang relevan dari jurnal yang bereputasi


**Supporters:**

**Supporting lecturer**: Dr. Rinie Pratiwi Puspitawati, M.Si.
Prof. Dr. Endang Susantini, 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 | Analyzing the nature of research | 1. Explain the nature of research<br>2. Compare different research approaches<br>3. Explain the various types of research | **Form of Assessment** : Participatory Activities | DiscussionPresentationAssignment to create a biology education thesis resume (3 x 50 minutes)<br>3 X 50 | | | 5% |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **2** | Able to formulate the problems to be raised in the proposal | 1. Identify the characteristics of a good problem formulation<br>2. Compare the problem formulation with the research questions<br>3. Formulate research objectives<br>4. Compare the aims and benefits of research | **Form of Assessment** : Participatory Activities | DiscussionPresentationAssignment to determine the problem to be raised in the thesis (1 x 50 minutes) Visit the website for online lectures Chat regarding how to formulate the problemc. Provide feedback regarding the problem formulation (2 x 50 minutes)<br>3 X 50 | | | 5% |
| **3** | Analyze the nature of variables and hypotheses | 1. Skilled at identifying variables<br>2. Skilled at defining variables operationally<br>3. Skilled in formulating research hypotheses<br>4. Explain research ethics | **Form of Assessment** : Participatory Activities | Discussion Presentation Practice identifying variables and formulating hypotheses according to the problem raised (3 x 50 minutes)<br>3 X 50 | | | 5% |
| **4** | Skilled in conducting literature reviews to deduce theories and synthesize frameworks of thought | 1. Determine the types of library sources<br>2. Skilled in making citations<br>3. Skilled in deducing theories to synthesize a framework of thinking | **Form of Assessment** : Participatory Activities | 3 X 50 | Visiting websites for online lecturesDiscussing and giving feedback onlineDoing literature review assignments using ICT (2 x 50 minutes) | | 5% |
| **5** | Analyze the nature of sampling | 1. Explain the meaning of sample and sampling<br>2. Explain sampling techniques<br>3. Skilled in doing sampling | **Criteria:**<br>Skilled in conducting sampling<br><br>**Form of Assessment** : Participatory Activities | Discussion Presentation Assignment determine research sample (3 x 50 minutes)<br>3 X 50 | | | 5% |
| **6** | Skilled in compiling adequate research instruments that meet validity and reliability | 1. Explain the meaning of data<br>2. Explain the meaning of research instruments<br>3. Skilled in choosing adequate research instruments<br>4. Skilled in determining the validity and reliability of research instruments | **Form of Assessment** : Participatory Activities | PresentationDiscussionAssignment to prepare an instrument design (1 x 50 minutes)Visiting the website for online lecturesDiscussion of research instruments and providing feedback onlineDoing the assignment to prepare an instrument (2 x 50 minutes)<br>3 X 50 | | | 5% |
| **7** | Analyze data collection and data analysis techniques | 1. Explain the meaning of data collection and data analysis<br>2. Explain the characteristics of data collection and data analysis<br>3. Skilled in carrying out data collection and data analysis using SPSS, Nvivo software | **Form of Assessment** : Participatory Activities | DiscussionPresentationAssignment on the use of various platforms for data collection techniques and data processing software (SPSS, nvivo, etc.) (3 x 50 minutes)<br>3 X 50 | | | 5% |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **8** | Midterm exam | | **Form of Assessment** : Test | 3 X 50 | | | 15% |
| **9** | Skilled in creating quantitative, qualitative, mixed method, development research and PTK research designs according to the chosen problem | 1. Explain the nature of quantitative research<br>2. Give examples of research with quantitative research designs<br>3. Skilled in creating quantitative research designs on biology education topics | | 3 X 50 | Presentations Discussions Assignments (1 x 50 minutes) Visiting the website for online lectures Discussions about quantitative research designs and providing feedback online Doing assignments to create quantitative research designs (2 x 50 minutes) | | 5% |
| **10** | Skilled in creating quantitative, qualitative, mixed method, development research and PTK research designs according to the chosen problem | 1. Explain the nature of qualitative research, mixed methods<br>2. Give examples of research with qualitative research designs, mixed methods<br>3. Skilled in creating qualitative research designs, mixed methods on biology education topics | **Form of Assessment** : Participatory Activities | PresentationDiscussion of qualitative research designAssignment to create a qualitative research design (3 x 50 minutes)<br>3 X 50 | | | 5% |
| **11** | Skilled in creating quantitative, qualitative, mixed method, development research and PTK research designs according to the chosen problem | 1. Explain the nature of development research<br>2. Give examples of research with a development research design<br>3. Skilled in creating development research plans on biology education topics | **Form of Assessment** : Participatory Activities | Presentation Discussion on development research design Assignment to create a development research design (3 x 50 minutes)<br>3 X 50 | | | 5% |
| **12** | Skilled in creating quantitative, qualitative, mixed method, development research and PTK research designs according to the chosen problem | 1. Explain the nature of PTK research<br>2. Give an example of research with a PTK research design<br>3. Skilled in preparing PTK plans | **Form of Assessment** : Participatory Activities | PresentationDiscussionAssignment (1 x 50 minutes) Visiting the website for online lecturesDiscussing the PTK design and providing feedback onlineDoing the task of preparing the PTK design (2 x 50 minutes)<br>3 X 50 | | | 5% |
| **13** | Can prepare a thesis proposal independently and responsibly | Skilled in writing research proposals to solve biology education problems | **Criteria:**<br>1. Research update<br>2. library sources<br>3. writing ethics<br><br>**Form of Assessment** : Project Results Assessment / Product Assessment | PresentationDiscussionThesis proposal writing workshop (3 x 50 minutes)<br>3 X 50 | | | 10% |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **14** | Can prepare a thesis proposal independently and responsibly | Skilled in writing research proposals to solve biology education problems | **Form of Assessment** : Project Results Assessment / Product Assessment | PresentationDiscussionThesis proposal writing workshop (3 x 50 minutes)<br>3 X 50 | | | 10% |
| **15** | Can prepare a thesis proposal independently and responsibly | Skilled in writing research proposals to solve biology education problems | **Criteria:**<br><br>**Form of Assessment** : Project Results Assessment / Product Assessment | PresentationDiscussionThesis proposal writing workshop (3 x 50 minutes)<br>3 X 50 | | | 15% |
| **16** | Final exams | | | Can prepare a thesis proposal independently and responsibly<br>3 X 50 | | | 20% |

**Evaluation Percentage Recap: Project Based Learning**

| No | Evaluation | Percentage |
|---|---|---|
| 1. | Participatory Activities | 50% |
| 2. | Project Results Assessment / Product Assessment | 35% |
| 3. | Test | 15% |
| | | 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.