UNIVERSITAS SEBELAS MARET
FACULTY OF TEACHER TRAINING AND EDUCATION
BACHELOR OF BIOLOGY EDUCATION STUDY PROGRAM
Building D 3rd Floor FTTE UNS Jl Ir. Sutami No. 36 A Kentingan Surakarta 57126 Indonesia
E-mail: biologi@fkip.uns.ac.id; Website: https://biologi.fkip.uns.ac.id/en/

Strategy of Biology Learning

Undergraduate Programme in Biology Education **Module Handbook**

Module Name	Strategy of Biology Learning (Strategi Pembelajaran Biologi)
Module level	Undergraduate Programme
Course Code	02013142005
Abbreviation, if applicable	-
Courses included in the module, if applicable	-
Semester/Term	3rd
Module coordinator (s)	Dr. Sri Widoretno, M.Pd.
Lecturer (s)	Dr. Sri Widoretno, M.Pd. Dr. Bowo Sugiharto, M.Pd.
Language	Bahasa Indonesia (Indonesian Language)
Classification within the curriculum	Compulsory/~~Elective~~
Teaching format/class hours per week during the semester	**Direct instruction/flipped classroom (blended learning): 26.7 hours / Week: lecture, discussion, workshop** **Structured Activity: 32 hours / Week** (Through the case method with analysis of journal articles, students learn innovative learning methods, through Team-based projects students develop STEM-based chemistry learning, and traditional and modern chemistry learning media) **Individual Activity : 32 hours / Week** (Students learn various learning methods according to the demands of 21st century learning from various sources)
Workload	
Credit Points	2 CSU (3 ECTS)
Requirements	-

Type	**CSU**	**Face to Face**	**Structured Activities**	**Self-study**
T	2	26.7h (0.88 ECTS)	32h (1.06 ECTS)	32h (1.06 ECTS)
Total	2	90.7h (3 ECTS)		

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<table>
<tr><td>Learning goals/competencies</td><td>PLO 3 They are able to analyse, evaluate, design, and implement the lesson plan, and counselling program based on pedagogical knowledge.
PLO 7 They are able to solve problem and present the idea argumentatively.
PLO 8 They are able to communicate verbal and nonverbal effectively using the proper media.

CLO 1 Students are able to explain knowledge about approaches, strategies, models, methods and techniques in biology learning
CLO 2 Students are able to apply approaches, strategies, models, methods and techniques used in Biology learning in high school
CLO 3 Students are able to evaluate approaches, strategies, models, methods and techniques used in learning in learning that is already taking place in high school levels
CLO 4 Students are able to communicate the results of the preparation and evaluation of the approaches, strategies, models, methods and techniques used in learning

<table>
<tr><th>CLO/ PLO</th><th>PLO1</th><th>PLO2</th><th>PLO3</th><th>PLO4</th><th>PLO5</th><th>PLO6</th><th>PLO7</th><th>PLO8</th><th>PLO9</th><th>PLO 10</th></tr>
<tr><td>CLO1</td><td></td><td></td><td>*</td><td></td><td></td><td></td><td>*</td><td>*</td><td></td><td></td></tr>
<tr><td>CLO2</td><td></td><td></td><td>*</td><td></td><td></td><td></td><td>*</td><td>*</td><td></td><td></td></tr>
<tr><td>CLO3</td><td></td><td></td><td>*</td><td></td><td></td><td></td><td>*</td><td>*</td><td></td><td></td></tr>
<tr><td>CLO4</td><td></td><td></td><td>*</td><td></td><td></td><td></td><td>*</td><td>*</td><td></td><td></td></tr>
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<tr><td>Content</td><td>To achieve the specified learning outcomes, the study materials discussed include:
1. Approach
2. Model
3. Method
4. Technique</td></tr>
<tr><td>Attribute Soft skill</td><td>1. Able to think conceptually, analytically, and logically
2. Have good communication skills
3. Able to solve problem and present the idea argumentatively</td></tr>
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<table>
<tr><td>Study/exam achievements:</td><td>Student is required to attend the face-to-face lecture minimum 75% to be able to take Mid and Final exam. It considered to complete the course and pass if student obtain at least 60% of maximum final score. The final score (FS) is calculated based on the following ratio:

<table>
<tr><th>Aspect</th><th>(%)</th></tr>
<tr><td>Report of Case analysis</td><td>30</td></tr>
<tr><td>Participation and Project</td><td>30</td></tr>
<tr><td>Mid-Term Test</td><td>20</td></tr>
<tr><td>Final Exam</td><td>20</td></tr>
<tr><td>Final Score</td><td>100</td></tr>
</table>
</td></tr>
<tr><td>Form of Media</td><td>Power point slide, essay and curriculum document</td></tr>
<tr><td>Literature (primary references)</td><td>
1. Arends, R. (2012). Learning to Teach (9 ed.). New Yotk: Mc Graw Hill.
2. Eggen, P., & Kauchak, D. (2012). Strategies for Teachers: Teaching Content and Thinking Skills. Sixth edition. https://doi.org/10.1177/019263658807250832
3. Joyce, B., Weil, M., & Calhoun, E. (2015). Models of Teaching, Ninth Edition. New Jersey: Person Education, Inc.
4. Olio, J. M. D., & Donk, T. (2007). Models of Teaching: Connecting Student Learning With Standards. California: Sage Publications, Inc.
5. Kneebone, R., Kidd, J., Nestel, D., Asvall, S., Paraskeva, P., & Darzi, A. (2002). An innovative model for teaching and learning clinical procedures. *Medical education*, *36*(7), 628-634.
6. Ellis, E. S. (1991). An instructional model for teaching learning strategies. *Focus on exceptional children*, *23*(6), 1-24.
7. Kaur, G. (2011). Study and analysis of lecture model of teaching. *International Journal of Educational Planning & Administration*, *1*(1), 9-13.
8. Gobert, J. D., & Buckley, B. C. (2000). Introduction to model-based teaching and learning in science education. *International Journal of Science Education*, *22*(9), 891-894.
9. Freeman, D. (1989). Teacher training, development, and decision making: A model of teaching and related
</td></tr>
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strategies for language teacher education. *TESOL quarterly*, *23*(1), 27-45.
10. Ryan, M., & Ryan, M. (2013). Theorising a model for teaching and assessing reflective learning in higher education. *Higher Education Research & Development*, *32*(2), 244-257.

Assessment

Assessment Techniques

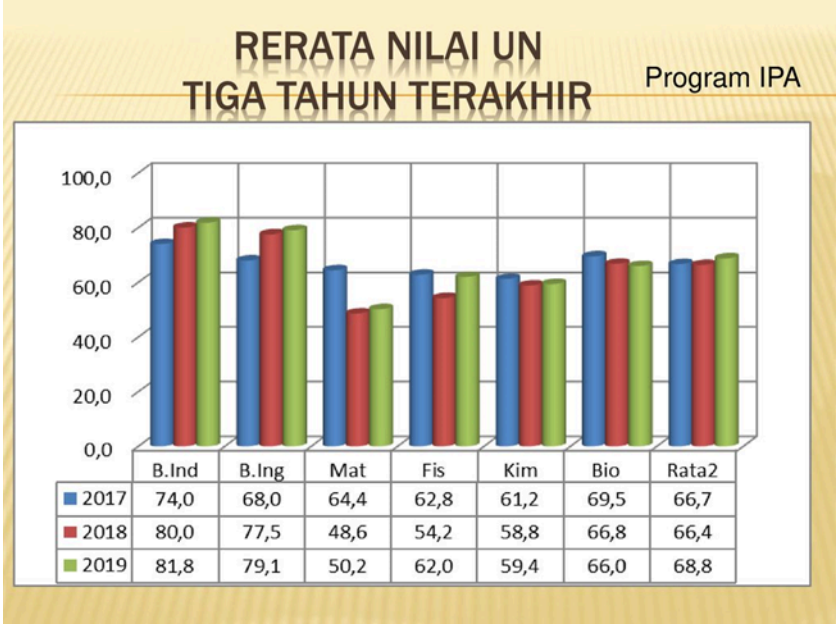
Evaluation	Technique	Instrument
Attitude	Observation	1.Rubric for process assessment and/or 2.Portfolio or design work for results assessment
General Skills	Observation, participation, performance, written test, oral test, and questionnaire	
Special Skill		
Knowledge		
The final result of the assessment is an integration of various assessment techniques and instruments used.		

FINAL EXAM

1. One of the characteristics of learning in the 2013 curriculum is active learning, where students are actively involved in forming their knowledge and solving problems, but in reality students are still passive in participating in learning. This is because, most teachers still use the lecture method so that students are less able to explore their abilities. In addition, biology learning in Indonesia still requires students to memorize, the teacher has not provided space for students to look for problems or find their own solutions in everyday life. Teachers need to actively participate in training, so that they can follow the demands of student centered learning.

   Based on the description, write down at least 2 problems from the causes of not implementing active learning in Indonesia!

2. Look at the diagram of the average UN scores for the last three years below.



	B.Ind	B.Ing	Mat	Fis	Kim	Bio	Rata2
2017	74,0	68,0	64,4	62,8	61,2	69,5	66,7
2018	80,0	77,5	48,6	54,2	58,8	66,8	66,4
2019	81,8	79,1	50,2	62,0	59,4	66,0	68,8

Based on these data, explain how the Biology National Examination scores from the last three years when compared to other subjects!

3. The advantage of the discussion method is that students can exchange ideas in solving problems, but this method usually dominated by students who already have the previous provision, so that other students who do not have the provision will be passive and tend to listen to alpha girl/alpha boy. As a teacher, you must pay attention to the character of each student, before carrying out the discussion method, the teacher must have a technique so that learning runs ideally. One solution is that the teacher can ask students to study from home about what will be the topic of discussion, so that all students have their own provisions.
   Based on these problems, do you think the solution given by the teacher is the right one? Give your argument!
4. The implementation of online learning requires teachers to be creative in determining the application to be used. Teachers can use various kinds of online learning applications. In addition, the government has also facilitated learning from home through TVRI live streaming for all levels. So there are no words that students do not learn. The government also does not specify a method that should be used in the implementation of learning from home. The teacher is free to determine the method to be used which of course with effective

and efficient considerations. To see how the implementation of learning from home carried out by teachers, on April 22 to 25, 2020, a data collection instrument was distributed in the form of a google form to teachers in Jambi Province. The following is a diagram of the results of the online learning classroom management implementation report.





Based on the graph, write your conclusions about the platforms (Syncronus and asyncronus) that are widely used when learning online!

5. Learning strategies have a strong relationship with learning objectives. This relationship can be seen from the description of the behavior and competencies that must be possessed by students during and after class hours in the way that must be taken to achieve these goals. The learning strategy requires human resources as a support to achieve its goals. This also

applies vice versa, human resources, especially educators without having a strategy in learning, then the learning process will be nil. Based on the description, explain why as a prospective Biology teacher it is important to learn Learning Strategies!