Module Name:	Live at Cellular Level *Kehidupan Tingkat Sel*
Module Level:	Bachelor Degree/Undergraduate Program
Course Code:	8420103067
Abbreviation, if applicable:	KTS
Sub-heading, if applicable:	
Courses included in the module, if applicable:	Not applicable
Semester/term	VII/fourth year (senior)
Module coordinator(s):	Ahmad Qosyim, S.Si., M.Pd.
Lecturer(s):	Prof. Dr. Erman, M.Pd. Ahmad Qosyim, S.Si., M.Pd. Guntur Tri Mulyono, S.Si., M.Si.
Language:	*Bahasa Indonesia* (Indonesian Language)
Classification within the curriculum:	Compulsory Course / ~~Elective Studies~~
Teaching format/class hours per week during the semester:	3 contact hours of lectures (Indonesia credit semester or *sks**)
Workload:	3 x 50 minutes lectures, 3 x 60 minutes structured activity, 3 x 60 minutes individual activity, 14 weeks per semester, 119 total hours per semester ~ 4.77 ECTS**
Credit point:	3 *sks* (4.77 ECTS)
Requirements:	– General Biology (Code: 8420103023) – General Chemistry (Code: 8420103074) – Introduction to Biochemistry (Code: 8420103163)
Learning goals/competencies:	**Course Learning Outcomes (CLO):** After taking this course, university students have ability to; 1. **Using science and technology to explore data and information** (principles / laws / theories) to explain cells and the processes that occur in them and to solve problems related to life at the cellular level. 2. **Explain the concepts, principles, and cell theory, including**: structure and function of cells and cell organelles, structure and function of the plasma membrane, biological structure and function of proteins and nucleic acids, mechanisms of protein synthesis, cell growth and proliferation, materials and reactions chemistry that supports the role of function and supports the structure of cell organelles, as well as differentiation and determination used to formulate alternative solutions to relevant problems. 3. Make strategic decisions based on the analysis of information and data relating to life at the cellular level in the context of being a science teacher candidate. 4. Able to work independently, work together in

<table>
<tr><td></td><td>collaborative teams, show a responsible attitude for both individual and team assignments, and communicate ideas, opinions and arguments orally / in writing

Sub-CLOs:
1. Search the literature from various sources / ICT for cell concepts, principles, and theory
2. Describe the structure and function of cells and their organelles
3. Describe the structure and function of cells and their organelles
4. Identifying the factors that influence cell-level life in terms of components, structure, composition, biochemical processes and functions of each cell organelle either independently or in groups
5. Describe various disorders of cell function and their causes as well as efforts to overcome problems of life at the cellular level
6. Describe the process of protein synthesis, cell growth and proliferation and the factors that influence it
7. Describe the process of protein synthesis, cell growth and proliferation and the factors that influence it</td></tr>
<tr><td>Content:</td><td>The study of life at the cellular level includes the structure, function and biochemical processes in each cell organelle, including the biological function of proteins and nucleic acids, protein synthesis mechanisms, cell growth and proliferation, materials and chemical reactions that support the role, function, and structure. cell organelles and differentiation and determination which are carried out through theoretical studies and discussions.</td></tr>
<tr><td>Attribute Soft skill:</td><td>Discipline, collaboration, responsibility, and argumentation in the natural classroom setting</td></tr>
<tr><td>Study/exam achievements:</td><td>Students are considered to be competent and pass if at least get 40% of the maximum final grade. The final grade (NA) is calculated based on the following weight:

<table>
<tr><th>Assessment Components</th><th>Percentage Contribution</th></tr>
<tr><td>Participation</td><td>20%</td></tr>
<tr><td>Assignment</td><td>30%</td></tr>
<tr><td>Mid-semester test</td><td>20%</td></tr>
<tr><td>Final semester test</td><td>30%</td></tr>
<tr><td>Total</td><td>100%</td></tr>
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<tr><td>Learning Methods</td><td>Constructivism, student-centered approach, project-based learning, lecturing, discussion, and presentation (structured activities), and flip learning</td></tr>
<tr><td>Form of Media:</td><td>LCD, PowerPoint slides, worksheets</td></tr>
<tr><td>Literature (main references):</td><td>1. Gatot, Suparno, Djoko Budiono, dan Sri Kencananingsih. 2014. Handout Kehidupan Tingkat Sel. Unesa.</td></tr>
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	2. Karp, Gerald. 2010. *Cell Biology 6th Edition International Student Version*. Wiley & Sons. 3. Wong, EV. 2009. *Cells: Molecules and Mechanisms*. Louisville: Axolotl Academic Publishing Company. 4. Sheeler, P. and D.E. Bianchi. 1987. *Cell and Molecular Biology*. Canada: John Wiley & Sons. 5. Thorpe, N.O. 1984. *Cell Biology*. New York: John Wiley & Sons. 6. Albert, B., et al. 1983. *Molleculer Biology of The Cell*. New York: Garland Publishing Inc.
Notes:	***1 *sks* in learning process = three contact hours that consist of: (a) scheduled instruction in a classroom or laboratory (50 minutes); (b) structured activity (60 minutes); and (c) individual activity (60 minutes)** according to the Regulation of Indonesia Ministry of Research, Technology, and Higher Education No. 44 Year 2015 jo. the Regulation of Indonesia Ministry of Research, Technology, and Higher Education No. 50 Year 2018.
	****1 sks = 1,59 ECTS**