UNIVERSITAS NEGERI YOGYAKARTA
FACULTY OF MATHEMATICS AND NATURAL SCIENCES
DEPARTMENT OF CHEMISTRY EDUCATION
Jl. Colombo No. 1, Karangmalang, Yogyakarta
Phone : +62 274 548203 e-mail: kimia@uny.ac.id
Website: pendidikankimia.fmipa.uny.ac.id

Bachelor of Education in Chemistry **MODULE HANDBOOK**

Module name:	**Trend of Chemistry Research and Learning**
Module level, if applicable:	Undergraduate
Code:	MPK6211
Sub-heading, if applicable:	-
Classes, if applicable:	2
Semester:	7th
Module coordinator:	Dr. Das Salirawati
Lecturer(s):	**Sukisman Purtadi, S.Pd.,M.Pd.**
Language:	Bahasa Indonesia and English
Classification within the curriculum:	Compulsory Subject
Teaching format / class hours per week during the semester:	100 minutes lectures, 120 minutes individual study and 120 minutes structured activities per week.
Workload:	Total workload is 90.67 hours per semester which consists of 100 minutes lectures, 120 minutes structured activities, and 120 minutes individual study per week for 16 weeks.
Credit points:	2 SKS (3 ETCS)
Prerequisites course(s):	-
Course Outcome:	After taking this course, the students are expected to be able to: CO1. Develop their attitudes and values of knowledge to contribute / innovate in the world of chemical education according to the topic of discussion CO2. Understand recent developments in the world of education, philosophy, paradigm, and new theories in chemical education, and new trends in the assessment of chemical learning. CO3. Make mind-maps and papers / articles according to the topic of the topic
Content:	This courses discusses new trends in the field of chemical education, both in research and teaching and learning process issues in Indonesia and the world. The course consists of: • Recent developments in the world of education • Philosophy, paradigm, and new theories in chemical education • New trends in the assessment of chemical learning
Study / exam achievements:	Attitude assessment is carried out at each meeting by observation and/or self-assessment techniques using the assumption that basically every student has a good attitude. The student is marked very good or not good attitude if they show it significantly compared to other students in general. The result of attitude assessment is not taken into account in

<table>
<tr><td></td><td>the final grades, but as one of the requirements to pass the course. Students will pass from this course if at least have a good attitude.
The final mark will be weight as follow:

<table>
<tr><th>No</th><th>CO</th><th>Assessment Object</th><th>Assessment Technique</th><th>Weight</th></tr>
<tr><td>1</td><td>CO1,
CO2,
CO3.</td><td>Assignments
Participation
Quizzes

Final Exam</td><td>Written task
Written task
Oral/Written task
Written test</td><td>40%
20%
20%

20%</td></tr>
<tr><td colspan="4">Total</td><td>100%</td></tr>
</table>
</td></tr>
<tr><td>Forms of media:</td><td>Board, LCD Projector, Laptop/Computer</td></tr>
<tr><td>References:</td><td>NAP. Reaching Students: What Research Says About Effective Instruction in Undergraduate Science and Engineering (2015). Nancy Kober; Board on Science Education; Division on Behavioral and Social Sciences and Education; National Research Council
Stacey Bretz. Chemistry in the National Science Education Standards: Models for Meaningful Learning in the High School Chemistry Classroom
NAP. Guide to Implementing the Next Generation Science Standards (2015). Committee on Guidance on Implementing the Next Generation Science Standards; Board on Science Education; Division of Behavioral and Social Sciences and Education; National Research Council
NAP. STEM Integration in K-12 Education: Status, Prospects, and an Agenda for Research (2014) . Margaret Honey, Greg Pearson, and Heidi Schweingruber, Editors; Committee on Integrated STEM Education; National Academy of Engineering; National Research Council
NAP. Literacy for Science: Exploring the Intersection of the Next Generation Science Standards and Common Core for ELA Standards: A Workshop Summary (2014). Holly Rhodes and Michael Feder, Rapporteurs; Steering Committee on Exploring the Overlap Between "Literacy in Science" and the Practice of Obtaining, Evaluating, and Communicating Information; Board on Science Education; Division of Behavioral and Social Sciences and Education; National Research Council
NAP. Discipline-Based Education Research: Understanding and Improving Learning in Undergraduate Science and Engineering (2012) Susan R. Singer, Natalie R. Nielsen, and Heidi A. Schweingruber, Editors; Committee on the Status, Contributions, and Future Directions of Discipline-Based Education Research; Board on Science Education; Division of Behavioral and Social Sciences and Education; National Research Council
NAP. Developing Assessments for the Next Generation Science Standards (2014). James W. Pellegrino, Mark R. Wilson, Judith A. Koenig, and Alexandra S. Beatty, Editors; Committee on Developing Assessments of Science Proficiency in K-12; Board on Testing and Assessment; Board on Science Education; Division of</td></tr>
</table>

	Behavioral and Social Sciences and Education; National Research Council **International Journal Articles** Flaherty , A.A. (2020). A review of affective chemistry education research and its implications for future research. Chem. Educ. Res. Pract., 2020,21, 698-713 https://doi.org/10.1039/C9RP00200F Wei, B. (2020). The change in the intended Senior High School Chemistry Curriculum in China: focus on intellectual demands Chem. Educ. Res. Pract., 2020,21, 14-23 https://doi.org/10.1039/C9RP00115H Juntunen, M.K., & Aksela, M.K. (2014). Education for sustainable development in chemistry – challenges, possibilities and pedagogical models in Finland and elsewhere. Chem. Educ. Res. Pract., 2014,15, 488-500. https://doi.org/10.1039/C4RP00128A

PLO and CO mapping

	PLO					
	Attitude		Knowledge	Specific Skill	General Skill	
	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6
CO1					√	
CO2			√			
CO3			√			