

PORTFOLIO

ICT-based Learning Chemistry

ACADEMIC YEAR 2022/2023 EVEN SEMESTER



Course Coordinator:
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Teaching Team:
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CHEMISTRY DEPARTMENT
FACULTY OF MATHEMATICS AND NATURAL SCIENCE
UNIVERSITAS NEGERI SURABAYA

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A. SEMESTER LEARNING ACTIYITY PLAN

A.1. COURSE IDENTITY

Module Name	ICT-based Learning Chemistry
Module level	Bachelor
Abbreviation, if applicable	-
Sub-heading, if applicable	-
Course included in the module, if applicable	-
Semester/term	4 th /Second Year
Module coordinator(s)	Dr. Sukarmin, M.Pd
Lecturer(s)	Dr. Kusumawati Dwiningsih, S.Pd., M.Pd.
Language	Indonesian
Classification within the curriculum	Compulsory Course
Teaching format/class hours per week during the semester:	2 hours lecturers (50 min per hours)
Workload:	1 CU for bachelor degree equals to 3 workhours per week or 170 minutes (50' face to face learning, 60' structured learning, and 60' independent learning). In one semester, courses are conducted in 14 weeks (excluding mid and end-term exam). Thus, 1 CU equals to 39.67 workhours per semester. One CU equals to 1.587 ECTS.
Credit points:	2 CU (3,174 ECTS)
Prerequisites course(s):	-
Targeted learning outcomes:	<ol style="list-style-type: none">1. Able to analyze the pedagogical principles of chemistry and evaluate the relevance of various ICT applications in designing, implementing, and assessing chemistry learning.2. Able to design and implement innovative ICT-based chemistry learning and develop evaluation strategies to assess the effectiveness of its implementation.3. Able to evaluate appropriate chemical pedagogical approaches for the application of ICT in learning4. Able to develop evaluation strategies to assess the effectiveness of ICT implementation in chemistry learning.
Content:	<ol style="list-style-type: none">1. Basic concepts and principles of ICT-based chemistry learning2. Roles of ICT in chemistry education and curriculum implementation

	<ol style="list-style-type: none"> 3. Learning theories supporting ICT integration in chemistry learning 4. Characteristics of ICT-based learning models in chemistry 5. Analysis of chemistry learning needs supported by ICT 6. Digital learning resources and platforms for chemistry education 7. Design of ICT-based lesson plans and learning scenarios 8. Development of digital chemistry learning media 9. Interactive multimedia in chemistry learning 10. Virtual laboratories and simulations in chemistry education 11. Online assessment and evaluation in ICT-based chemistry learning 12. Development of digital worksheets (e-LKPD) for chemistry learning 13. Learning Management Systems (LMS) for chemistry instruction 14. Student-centered learning supported by ICT 15. Integration of 21st-century skills in ICT-based chemistry learning 16. Project-based and problem-based learning using ICT 17. Collaborative learning supported by digital technology 18. Evaluation of effectiveness of ICT-based chemistry learning 19. Ethical, safety, and accessibility issues in ICT-based learning 20. Best practices and innovations in ICT-based chemistry learning
Study / exam achievements:	<p>Students are considered to be competent and pass if at least get 55.</p> <p>Final score is calculated as follows: 20% participation + 30% assignment + 20% middle exam (UTS) & 30% final exam (UAS)</p> <p>Table index of graduation:</p> <ul style="list-style-type: none"> ● A = 4 (85 ≤ - < 100) ● A- = 3,75 (80 ≤ - < 85) ● B+ = 3,5 (75 ≤ - < 80) ● B = 3 (70 ≤ - < 75) ● B- = 2,75 (65 ≤ - < 75) ● C+ = 2,5 (60 ≤ - < 65) ● C = 2 (55 ≤ - < 60) ● D = 1 (40 ≤ - < 55) ● E = 0 (0 ≤ - < 40)

Media:	Computer, LCD, White board
Learning Methods	Individuals assignment, group assignment, discussion, presentation, and practicum
Literature:	<ol style="list-style-type: none"> 1. Bates, A. W. (2015). Teaching in a Digital Age: Guidelines for Designing Teaching and Learning. Vancouver, Canada: BCcampus OpenEd. 2. Anderson, T., & Dron, J. (2017). Teaching Crowds: Learning and Social Media in Online Learning Environments. Edmonton, Canada: Athabasca University Press. 3. Roblyer, M. D., & Hughes, J. E. (2018). Integrating Educational Technology into Teaching: Transforming Learning Across Disciplines. Boston: Pearson Education. 4. Bates, A. W. (Tony). (2019). Teaching in a Digital Age: Guidelines for Designing Teaching and Learning. Vancouver: Tony Bates Associates Ltd. 5. Anderson, T., & Garrison, D. R. (2016). E-Learning in the 21st Century: A Framework for Research and Practice. New York: Routledge. 6. Earl Aguilera (2022). Digital Literacies and Interactive Media: A Framework for Multimodal Analysis. New York: Routledge. 7. Garrison, D. R. & Vaughan, N. D. (2008). Blended Learning in Higher Education. 8. Moodle. (2023). Moodle Pty Ltd. Diakses dari https://moodle.org 9. PhET Interactive Simulations. (2023). University of Colorado Boulder. Diakses dari https://phet.colorado.edu 10. ChemCollective. (2023). Carnegie Mellon University. Diakses dari https://chemcollective.org 1. Canva. (2023). Canva Pty Ltd. Diakses dari https://www.canva.com 2. Genially. (2023). Genially Inc. Diakses dari https://www.genial.ly 3. Dwiningsih, K., & Sugandi, A. (2022). Validitas E-Modul Interaktif Sebagai Media Pembelajaran untuk Melatih Kecerdasan Visual Spasial pada Materi Ikatan Kovalen. PENDIPA Journal of Science Education, 6(2), 465-473. 4. Dwiningsih, K. (2021). Pengembangan E-Module Interaktif sebagai Sumber Belajar pada Materi Sistem Periodik Unsur. UNESA Journal of Chemical Education, 10(1), 76-83. . Dwiningsih, K., & Reky, A. (2018). Practicality Analysis of Developing the Student Worksheet Oriented Blended Learning in Acid Base Material. JKPK (Jurnal Kimia dan Pendidikan Kimia), 3(3), 171-182.

	<p>Dwiningsih, K. (2018). Pengembangan Media Pembelajaran Kimia Menggunakan Media Laboratorium Virtual Berdasarkan Paradigma Pembelajaran di Era Global. Kwangsan: Jurnal Teknologi Pendidikan, 6(2), 156-176.</p> <p>7. Dwiningsih, K. (2016). Keefektifan Multimedia Interaktif Berbasis Blended Learning untuk Meningkatkan Hasil Belajar Siswa. Kwangsan: Jurnal Teknologi Pendidikan, 4(2), 111-118.</p> <p>8. Dwiningsih, K. dkk. 2022. Penduan Penyusunan Perangkat Perkuliahan Microteaching Kimia. Surabaya: University Press</p>
Note	<ol style="list-style-type: none"> 1. Learning Outcomes of Study Program Graduates are abilities possessed by each Study Program graduate which is an internalization of attitude, mastery of knowledge and skills according to the level of study program obtained through the learning process. 2. Learning Outcomes of Study Program Graduates assigned to courses are some of the learning outcomes of study program graduates used for the formation/development of a course consisting of aspects of attitude, general skills, specific skills and knowledge. 3. Course Learning Outcomes are abilities that are specifically described from Study Program Graduate Learning Outcomes that are assigned to courses, and are specific to the study material or learning material for that course. 4. Subject Learning Outcomes are abilities that are specifically described from Course Learning Outcomes that can be measured or observed and are the final abilities that are planned at each stage of learning, and are specific to the course learning material.

A.2. COURSE TOPIC

The ICT-Based Chemistry Learning course equips students with the understanding and skills to utilize information and communication technology (ICT) to support the chemistry learning process. The main focus of this course is how ICT can be applied effectively to improve the quality of learning, both in planning, implementation, and evaluation. Lecture materials include the use of a learning management system (LMS) as a learning management medium, the use of supporting applications and software (e.g., chemical simulations, animations, virtual labs, and interactive applications), ICT integration strategies in face-to-face and online learning, and the

selection of digital learning resources that are appropriate to the characteristics of the chemistry material and the needs of students

A.3. COURSE PROGRAM

		UNIVERSITAS NEGERI SURABAYA FACULTY OF MATHEMATICS AND NATURAL SCIENCE UNDERGRADUATE PROGRAMME OF CHEMISTRY EDUCATION				Document Code	
		SEMESTER LEARNING ACTIIVITY PLAN					
COURSE		Code	Course Group	Credit Unit		Semester	Date
ICT-BASED LEARNING CHEMISTRY		3074213015	Physical Chemistry	T= 2	P= 1	4	October, 19 2024
AUTHORIZATION CHEMISTRY EDUCATION		Compiler		Coordinator		Head of Study Program	
		Dr. Kusumawati Dwiningsih, S.Pd., M.Pd.		Dr. Sukarmin, M.Pd		Prof. Dr. Utiya Azizah, M.Pd.	
Learning Outcomes	Program Learning Outcomes (PLO)						
	PLO7 (KN-2)	Able to demonstrate chemical pedagogical knowledge about designing, implementing, and evaluating chemistry learning					
	PLO9 (KN-4)	Able to design, implement, evaluate learning, and develop chemistry learning media by utilizing Information and Communication Technology.					
	Course Learning Outcomes (CLO)						
	CLO1	Students are able to analyze the pedagogical principles of chemistry and evaluate the relevance of various ICT applications in designing, implementing, and assessing chemistry learning. PLO-7					
	CLO2	Students are able to design and implement innovative ICT-based chemistry learning and develop evaluation strategies to assess the effectiveness of its implementation. PLO-9					
	CLO3	Students are able to evaluate appropriate chemical pedagogical approaches for the application of ICT in learning. PLO-7					
CLO4	Students are able to develop evaluation strategies to assess the effectiveness of ICT implementation in chemistry learning. PLO-9						

Brief Description of the Course	The ICT-Based Chemistry Learning course equips students with the understanding and skills to utilize information and communication technology (ICT) to support the chemistry learning process. The main focus of this course is how ICT can be applied effectively to improve the quality of learning, both in planning, implementation, and evaluation. Lecture materials include the use of a learning management system (LMS) as a learning management medium, the use of supporting applications and software (e.g., chemical simulations, animations, virtual labs, and interactive applications), ICT integration strategies in face-to-face and online learning, and the selection of digital learning resources that are appropriate to the characteristics of the chemistry material and the needs of students.	
Study Materials: Learning Materials	<ol style="list-style-type: none"> 1. Basic concepts and principles of ICT-based chemistry learning 2. Roles of ICT in chemistry education and curriculum implementation 3. Learning theories supporting ICT integration in chemistry learning 4. Characteristics of ICT-based learning models in chemistry 5. Analysis of chemistry learning needs supported by ICT 6. Digital learning resources and platforms for chemistry education 7. Design of ICT-based lesson plans and learning scenarios 8. Development of digital chemistry learning media 9. Interactive multimedia in chemistry learning 10. Virtual laboratories and simulations in chemistry education 11. Online assessment and evaluation in ICT-based chemistry learning 12. Development of digital worksheets (e-LKPD) for chemistry learning 13. Learning Management Systems (LMS) for chemistry instruction 14. Student-centered learning supported by ICT 15. Integration of 21st-century skills in ICT-based chemistry learning 16. Project-based and problem-based learning using ICT 17. Collaborative learning supported by digital technology 18. Evaluation of effectiveness of ICT-based chemistry learning 19. Ethical, safety, and accessibility issues in ICT-based learning 20. Best practices and innovations in ICT-based chemistry learning 	
Reference	Main:	<ol style="list-style-type: none"> 1. Bates, A. W. (2015). Teaching in a Digital Age: Guidelines for Designing Teaching and Learning. Vancouver, Canada: BCCampus OpenEd. 2. Anderson, T., & Dron, J. (2017). Teaching Crowds: Learning and Social Media in Online Learning Environments.

	<p>Edmonton, Canada: Athabasca University Press.</p> <ol style="list-style-type: none"> 3. Roblyer, M. D., & Hughes, J. E. (2018). Integrating Educational Technology into Teaching: Transforming Learning Across Disciplines. Boston: Pearson Education. 4. Bates, A. W. (Tony). (2019). Teaching in a Digital Age: Guidelines for Designing Teaching and Learning. Vancouver: Tony Bates Associates Ltd. 5. Anderson, T., & Garrison, D. R. (2016). E-Learning in the 21st Century: A Framework for Research and Practice. New York: Routledge. 6. Earl Aguilera (2022). Digital Literacies and Interactive Media: A Framework for Multimodal Analysis. New York: Routledge. 7. Garrison, D. R. & Vaughan, N. D. (2008). Blended Learning in Higher Education.
	<p>Additional:</p>
	<ol style="list-style-type: none"> 1. Moodle. (2023). Moodle Pty Ltd. Diakses dari https://moodle.org 2. PhET Interactive Simulations. (2023). University of Colorado Boulder. Diakses dari https://phet.colorado.edu 3. ChemCollective. (2023). Carnegie Mellon University. Diakses dari https://chemcollective.org 4. Canva. (2023). Canva Pty Ltd. Diakses dari https://www.canva.com 5. Genially. (2023). Genially Inc. Diakses dari https://www.genial.ly 6. Dwiningsih, K., & Sugandi, A. (2022). Validitas E-Modul Interaktif Sebagai Media Pembelajaran untuk Melatih Kecerdasan Visual Spasial pada Materi Ikatan Kovalen. <i>PENDIPA Journal of Science Education</i>, 6(2), 465-473. 7. Dwiningsih, K. (2021). Pengembangan E-Module Interaktif sebagai Sumber Belajar pada Materi Sistem Periodik Unsur. <i>UNESA Journal of Chemical Education</i>, 10(1), 76-83. 8. Dwiningsih, K., & Reky, A. (2018). Practicality Analysis of Developing the Student Worksheet Oriented Blended Learning in Acid Base Material. <i>JKPK (Jurnal Kimia dan Pendidikan Kimia)</i>, 3(3), 171-182. 9. Dwiningsih, K. (2018). Pengembangan Media Pembelajaran Kimia Menggunakan Media Laboratorium Virtual Berdasarkan Paradigma 10. Pembelajaran di Era Global. <i>Kwangsan: Jurnal Teknologi Pendidikan</i>, 6(2), 156-176. 11. Dwiningsih, K. (2016). Keefektifan Multimedia Interaktif Berbasis Blended Learning untuk Meningkatkan Hasil Belajar Siswa. <i>Kwangsan: Jurnal Teknologi Pendidikan</i>, 4(2), 111-118. 12. Dwiningsih, K. dkk. 2022. <i>Penduan Penyusunan Perangkat Perkuliahan Microteaching Kimia</i>. Surabaya: University Press
<p>Lecturer</p>	<p>Dr. Sukarmin, M.Pd. and Dr. Kusumawati Dwiningsih, S.Pd., M.Pd.</p>
<p>Prerequisite courses</p>	<p>–</p>

Meeting	The final ability of each activity	Assessment		Learning Forms, Learning Methods, Student Assignment		Reference	Rating Weight (%)
		Indicator	Criteria & Form	Offline	Online		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Students are able to analyze the urgency of ICT in 21st century chemistry learning through class discussions by providing at least two logical arguments.	<ol style="list-style-type: none"> 1. Can choose ICT-based media that suits the characteristics of the chemical material presented offline 2. Students can search for ICT-based media sources that are relevant to the chemistry material presented offline. 3. Students actively put forward arguments about the benefits of ICT to increase learning effectiveness. 	<p>Assessment criteria: Academic ethics and attitudes</p> <p>Assessment form : Participatory Activities</p>	Interactive lectures, class discussions, case study analysis. 2 X 50	Discussion and practice. Conducting research to obtain the necessary ICT media. 2 X 50	<p>Learning materials: Designing learning that uses digital technology</p> <p>Bibliography: <i>Bates, A. W. (2015). Teaching in a Digital Age: Guidelines for Designing Teaching and Learning. Vancouver, Canada: BCcampus OpenEd.</i></p> <p>Learning materials: An interactive and technology-based learning approach</p> <p>Bibliography: <i>Roblyer,</i></p>	3

						<i>M. D., & Hughes, J. E. (2018). Integrating Educational Technology into Teaching Transforming Learning Across Disciplines. Boston: Pearson Education.</i>	
2	Students are able to analyze the pedagogical principles of chemistry for ICT integration.	Linking pedagogical principles with ICT	Assessment criteria: Literature readiness, quality of analysis, contribution to discussion Assessment form : Participatory Activities, Portfolio Assessment	Group discussions, case studies. 2 X 50	Discussion and practice. Conducting research to obtain the necessary ICT media. 2 X 50	Learning materials: The role of social media and technology in education Bibliography: Anderson, T., & Garrison, D. R. (2016). E-Learning in the 21st Century: A Framework for Research and Practice. New York: Routledge. Learning materials:	5

						Designing learning that uses digital technology Bibliography: Bates, A. W. (2015). Teaching in a Digital Age: Guidelines for Designing Teaching and Learning. Vancouver, Canada: BCcampus OpenEd.	
3	Students are able to evaluate ICT applications in chemistry learning.	Assess the advantages & disadvantages of the application	Assessment criteria: accuracy of evaluation Assessment form : Project Result Assessment / Product Assessment	Application exploration (PhET, ChemCollective), group presentations 2 X 50	Discussion and practice Conducting site searches for online media presentation 2 X 50	Learning materials: ICT-based chemistry simulation, animation, video applications. Bibliography: PhET Interactive Simulations. (2023). University of Colorado Boulder.	5

						Diakses dari https://phet.colorado.edu	
4	Students are able to design ICT-based chemistry learning scenarios	Can compile teaching modules/RPP/lesson plans.	<p>Assessment criteria: Completeness, pedagogical integration & ICT.</p> <p>▪ Assessment form : Participatory Activities, Project Result Assessment / Product Assessment</p>	Workshop on preparing ICT-based lesson plans	Discussion and practice Conducting site searches for online media presentation 2 X 50	<p>Learning materials: Lesson planning (RPP/lesson plan) with ICT integration. Bibliography: Roblyer, M. D., & Hughes, J. E. (2018). Integrating Educational Technology into Teaching: Transforming Learning Across Disciplines. Boston: Pearson Education. Learning materials: Device setup Bibliography: Dwiningsih, K. dkk. 2022. Penduan Penyusunan Perangkat Perkuliahan Microteaching</p>	5

						Kimia. Surabaya: University Press	
5	Students are able to design storyboards or learning media frameworks	Able to design a storyboard or learning media framework that is appropriate to the characteristics of chemical material presented offline.	Assesmet criteria: Product assessment report as an assignment Assessment form : Project Result Assessment / Product Assessment	Interactive discussion Team based Project: Developing learning tools for learning using ICT media which	Discussion and practice Conducting site searches for online media presentation 2 X 50	Learning materials: Educational technology that can be applied across various disciplines, including chemistry, with an interactive and technology-based approach	5
6	Students are able to design storyboards or learning media frameworks	Can choose the procedure correctly	Assesmet criteria: Accuracy and depth of analysis Assessment form : Practical Assessment, Practice / Performance	ICT Practicum (PhET,	Discussion and practice Conducting site searches for online media presentation 2 X 50	Learning materials: Analysis of selected ICT	5
7	Students can evaluate the chemical pedagogical	Can assess the strengths &	Assesmet criteria: Quality of	Panel discussion, presentation of evaluation	Discussion and practice Conducting site	Learning materials: Evaluation of	5

	approach to the application ICT	weaknesses of the approach	arguments and depth of analysis. Assessment form : Participatory Activities, Project Result Assessment / Product Assessment, Portfolio Assessment		searches for online media presentation 2 X 50	pedagogical approaches in the context of ICT-	
8	USS: Students are able to analyze and evaluate real cases of ICT implementation.	Can analyze and solve solutions.	Assessment criteria: Accuracy of analysis, and originality. Assessment form : Project Result Assessment / Product Assessment, Test	Team based Project: Learning Device Product	Discussion and practice Conducting site searches for online media presentation 2 X 50	Learning materials: Integration of learning using technology	10
9	USS: Students are able to analyze and evaluate real cases of ICT implementation.	Can analyze and solve solutions.	Assessment criteria: Accuracy of analysis, and originality.	Team based Project: Learning Device Product	Discussion and practice Conducting site searches for	Learning materials: Integration of learning using technology	10

			Assessment form : Project Result Assessment / Product Assessment, Test		online media presentation 2 X 50		
10	Students are able to implement ICT-based chemistry learning through online microteaching by displaying communication skills and digital media integration effectively.	Presenting ICT- based microteaching; utilizing at least 2 digital media.	Assesmet criteria: Interactive , communic ative, according to lesson plans Assessment form : Participatory Activities, Practice / Performance	Microteaching via Zoom, direct peer feedback. 2 X 50	Upload microteaching recordings to your LMS for peer review. 2 X 50	Learning materials: Learning using social media	7
11	Students are able to evaluate the effectiveness of ICT-based chemical pedagogical approaches through critical reflection the LMS forum by submitting at least two problem solutions	Write critical reflections and respond to friends' reflections.	Assesmet criteria: Argumentative, critical, solution-oriented	A short reflective discussion on Zoom. 2 X 50	Reflection & feedback forum in LMS. 2 X 50	Learning materials: The role of social media and technology in education, providing	5

			Assessment form : Portfolio Assessment				
12	Students are able to develop ICT-based learning evaluation instruments through online workshops by producing valid instrument items	Develop digital evaluation instruments (Google Form, Quizizz).	Assesmet criteria: Validity, integration, suitability of indicators Assessment form : Project Result Assessment / Product Assessment	Instrument making workshop via Zoom.	Students upload instruments on the LMS for peer review. 2 X 50	Learning materials: Learning techniques in the digital era Bibliography: <i>Bates, A.</i>	6
13	Students are able to design a final project in the form of ICT- based chemistry learning media along with evaluation strategies through online guidance with a suitable design.	Drafting learning media evaluation instruments.	Assesmet criteria: Complete draft, on target, innovative ▪ Assesment form : Project Result Assessment / Product Assessment, Portfolio Assessment	Group consultation via Zoom with	Upload the project draft in the LMS. 2 X 50	Learning materials: Digital learning design Bibliography: <i>Bates, A.</i>	6

14	Students are able to demonstrate and evaluate the implementation of ICT-based final learning projects through virtual presentations with achievements	Providing learning media and evaluation instruments	<p>Assesmet criteria: Product quality, innovation, pedagogical–ICT integration</p> <p>Assessment form : Project Result Assessment / Product Assessment, Practice / Performance</p>	Project presentation via Zoom, Q&A discussion	Upload product presentation recordings to the LMS. 2X 50	<p>Learning materials: Digital learning design</p> <p>Bibliography: <i>Bates, A. W. (Tony). (2019). Teaching in a Digital Age: Guidelines for Designing Teaching and Learning. Vancouver:</i></p>	8
15	Students are able to revise and perfect their final project products based on input from lecturers and colleagues, producing a final product that is suitable for use.	Conduct product revisions based on feedback	<p>Assesmet criteria: Quality final product and on-target revisions</p> <p>Assessment form : Project Result Assessment / Product Assessment</p>	Group consultation via Zoom	Upload revised products in LMS 2 X 50	<p>Learning materials: Making learning media</p> <p>Bibliography: <i>Canva.</i></p>	8
16	Students are able to analyze, evaluate, and reflect on the application of ICT in chemistry	1.UAS: Able to compose reflective essays 2.can collect a	<p>Assesmet criteria: Depth of synthesis,</p>	UAS reflective essay online (Zoom proctoring)	Upload digital portfolio in LMS 2 X 50	<p>Learning materials: Evaluation of learning using</p>	12

	learning through reflective essay tests and digital portfolios by fulfilling the assessment rubric criteria.	complete portfolio	originality, completeness of portfolio Assessment form : Project Result Assessmet / Product Assessmet, Portfolio Assessmet	2 X 50		interactive multimedia based on blended learning Bibliography: <i>Anderson, T., & Garrison, D. R. (2016). E-Learning in the 21st Century: A Framework for Research and Practice. New York: Routledge.</i>	
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A.4. MAPPING OF LEARNING OUTCOMES – COURSE OUTCOMES

A.4.1. The Expected Program Learning Outcomes (PLO) of Undergraduate Program of Education Chemistry (UPCE)

Competency SSC-ASIIN	Aspect	PLO	DESCRIPTION
Social competences	Attitudes 1 (AT-1)	PLO 1	Demonstrates religious, national, and cultural values, as well as academic ethics, in carrying out their duties
	Attitudes 2 (AT-2)	PLO 2	Demonstrates a resilient, collaborative, adaptive, innovative, inclusive, lifelong learning, and entrepreneurial character
	General Skills 1 (GS-1)	PLO 3	Develops logical, critical, systematic, and creative thinking in carrying out specific work in the field of expertise and in accordance with the work competency standards in the relevant field.
	General Skills 2 (GS-2)	PLO 4	Develops self-sustainably and collaborates.
	General Skills 3 (GS-3)	PLO 5	Makes decisions based on data/information to complete tasks that are their responsibility and evaluate the performance carried out both individually and in groups, and have an environmentally conscious edu-ecopreneurship spirit.
Specialist competences	Knowledge 1 (KN-1)	PLO 6	Demonstrates knowledge related to theoretical concepts of structure, dynamics, and energy, as well as the basic principles of separation, analysis, synthesis, and characterization of chemicals
	Knowledge 2 (KN-2)	PLO 7	Demonstrates pedagogical knowledge of chemistry and applies it in designing, implementing, and evaluating learning.
	Knowledge 3 (KN-3)	PLO 8	Masters laboratory management based on the principles of Occupational Safety and Security (K3), managing the laboratory and using its equipment, and how to operate chemical instruments
	Knowledge 4 (KN-4)	PLO 9	Design, implement, evaluate learning, and develop chemistry learning media by utilizing Information and Communication Technology.
	Special Skills 1 (SS-1)	PLO 10	Develops or implements science, technology, and art that pay attention to and apply humanities values that are appropriate to the field of chemistry education in solving problems.
	Special Skills 2 (SS-2)	PLO 11	Masters the basics of scientific methods, designing and implementing research, compiling

Competency SSC-ASIIN	Aspect	PLO	DESCRIPTION
			scientific reports, and communicating them both orally and in writing by utilizing information and communication technology in the field of education

A4.2. The Program Education Objectives (PEOs) of ICT-based Learning Chemistry.

- PEO 1. Mastering in the concepts of chemistry, chemistry learning, laboratory management, scientific methods, and ICT, and is able to apply them to problem solving in their work.
- PEO 2. A high-level thinking ability to communicate ideas verbally and in writing, ability to take the right initiatives and decisions, and lead working groups in relevant fields.
- PEO-5 Ability to develop and apply chemical competencies along with advances in science and technology, and humanities values

A4.3. Mapping of Program Learning Outcomes (PLO) – Program Education Objectives (PEOs)

	PLO 7 (KN-2)	PLO 9 (KN-4)
PEO 1	√	√
PEO 2		√
PEO 5	√	√

B. COURSE ASSESSMENT

B.1. Assessment Rubric

Cognitive Criteria

1. The ability to explain concepts of ICT-based chemistry learning correctly.
2. The ability to provide argumentation based on learning theories and ICT integration principles.
3. The ability to present systematic explanations of ICT-based learning models and their implementation.
4. The ability to analyze and solve instructional problems comprehensively using appropriate ICT-based learning strategies.

B.2. Assessment System

Final Assessment Course

Participation	: 20%
Assignment	: 20%
Midterm examination	: 30%
Final examination	: 30%

Distribution of the weight of the ability of the test item

	PLO 1 (KNO-1)	PLO 5 (COM-1)	Total

Participation	40%	60%	100%
Assignment	45%	55%	100%
Midterm examination	65%	35%	100%
Final examination	50%	50%	100%

Success Criteria of Program Learning Outcomes (PLO)

Excellence	≥ 80
Good	≥ 70
Satisfy	≥ 50
Failed	< 0

Final index for undergraduate program defined as follow:

Final Index	Range
A	4 (85 \leq \geq 100)
A ⁻	3,75 (80 \leq $<$ 85)
B ⁺	3,5 (75 \leq $<$ 80)
B	3 (70 \leq $<$ 75)
B ⁻	2,75 (65 \leq $<$ 75)
C ⁺	2,5 (60 \leq $<$ 65)
C	2 (55 \leq $<$ 60)
D	1 (40 \leq $<$ 55)
E	0 (0 \leq $<$ 40)

C. COURSE DEVELOPMENT

C.1. Academic Year 2022/2023 odd semester

Parameter	Σ of person	Percentage
Number of students taking this subject	77	100%
Number of students who pass at first attempt ($>C^+$)	77	100%
Number of students who must take remedial	0	0%
Number of failed students after remedial (D & E)	0	0%

C.2. Problems Analysis

In the 2022/2023 odd semester, all students (100%) successfully passed the ICT-Based Chemistry Learning course on their first attempt, and no students were required to take remedial examinations. Despite this achievement, several learning issues were identified. Students showed different characteristics in terms of digital literacy and collaboration skills. Some students experienced difficulties in working effectively in groups and showed low seriousness in completing ICT-based tasks, which resulted in lower average final scores compared to previous academic years. These findings indicate that improvements in learning strategies and instructional methods are necessary to enhance student engagement and learning quality in the future.

C.3. Solutive Strategy

To improve learning outcomes in future academic years, the following strategies are proposed:

1. Updating course materials to be more interactive and ICT-oriented.

2. Providing online pre-class learning activities to increase student readiness.
3. Enhancing critical thinking and collaboration through varied ICT-based learning models.

D. APPENDIX

D.1. DOCUMENT OF COURSE ACTIVITY

D.1.1. Lecture's journal and student's attendance form siakadu.uneca.ac.id

12/11/25, 10:30 AM

SIAKAD : Absen



UNIVERSITAS NEGERI SURABAYA

Kampus Unesa 2
Jl. Kampus Unesa Lidah Wetan, Surabaya, 60213
T. 6231-99421834/99421835
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E. info@unesa.ac.id/www.unesa.ac.id

PRESENSI KULIAH
Periode 2022/2023 Genap

Mata Kuliah : Pembelajaran Kimia Berbasis ICT
Kelas : 2021A
Prodi : S1 Pendidikan Kimia

Dosen : Dr. Sukarmin, M.Pd.
Dr. Kusumawati Dwiningsih, S.Pd., M.Pd.

No	NIM	Nama Mahasiswa	Pertemuan Ke																%
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
			08 Feb 23	15 Feb 23	22 Feb 23	01 Mar 23	08 Mar 23	15 Mar 23	22 Mar 23	29 Mar 23	05 Apr 23	12 Apr 23	19 Apr 23	03 May 23	10 May 23	17 May 23	24 May 23		
1.	21030194001	NURIL AULYAH SYAHIDAH	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	93,8%	
2.	21030194003	DIVA DWI PRATWI	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	93,8%	
3.	21030194005	ALFINA NORMA AZIZAH	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	93,8%	
4.	21030194007	AFRIJIA DWI ADELJANI	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	93,8%	
5.	21030194013	FAMIAN AGUNG DIFA SASKARA	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	93,8%	
6.	21030194014	ALIVIA PUTRI RYNI	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	93,8%	
7.	21030194015	ANGGIK FEBRIANA	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	93,8%	
8.	21030194017	SRI RENATA MAHARDHIKA	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	93,8%	
9.	21030194018	FADILAH MUTIARA	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	93,8%	
10.	21030194019	KHOLIFATUL NAIMAH	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	93,8%	
11.	21030194023	KARINA RIKE PRATWI	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	93,8%	
12.	21030194024	TUTUT SUGIARTI	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	93,8%	
13.	21030194025	RATNA DWI SETYORINI	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	93,8%	
14.	21030194026	NILA ZULFA IZZATI	H	S	H	H	H	H	H	H	H	H	H	H	H	H	H	93,8%	
15.	21030194029	ADELIA FITRI SYAHARANI	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	93,8%	
16.	21030194030	CITRA DIA FADILAH	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	93,8%	
17.	21030194040	CINTANA HANJUN JANUARIZA	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	93,8%	
18.	21030194047	MUHAMMAD HUSEIN ASHARI	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	93,8%	
19.	21030194050	SAIFATUN NUR HAFIDZAH Z	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	93,8%	
20.	21030194053	MUHAMMAD SYAHRUL ABIDIN	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	93,8%	
21.	21030194054	ANA SAFIRA	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	93,8%	
22.	21030194056	SELFI NOVIA ARDANI	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	93,8%	
23.	21030194057	AMILATUS SHOLIHAH	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	93,8%	
24.	21030194058	YASINTA SALSABILAH RAMADANI	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	93,8%	
25.	21030194073	ASYA FIROSUL MA'WA	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	93,8%	
26.	21030194074	ADAM AL HALWI	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	93,8%	
27.	21030194075	MENI FERONIKA TAINMETA	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	93,8%	
28.	21030194086	FADIA MUMINATUS SOLEKHA	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	93,8%	
Tanda Tangan Dosen / Asisten																			


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No	NIM	Nama Mahasiswa	Pertemuan Ke																%
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
			09 Feb 23	16 Feb 23	23 Feb 23	02 Mar 23	09 Mar 23	16 Mar 23	23 Mar 23	30 Mar 23	06 Apr 23	13 Apr 23	20 Apr 23	04 May 23	11 May 23	18 May 23	25 May 23		
1.	21030194008	SAYYIDA ALIFIA PUTRI KARIMA	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	93,8 %	
2.	21030194010	AUFAR FATHONI	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	93,8 %	
3.	21030194011	PUTRI EGALITA SALSABILAH	H	H	S	H	H	H	H	H	H	H	H	H	H	H	H	93,8 %	
4.	21030194012	FIRDA NURRAMDANI PUTRI	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	93,8 %	
5.	21030194022	YUYUN MULYASARI	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	93,8 %	
6.	21030194031	RIZA APRILIANE	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	93,8 %	
7.	21030194032	SALSABILA AMELIA AS-SAHRA	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	93,8 %	
8.	21030194033	DESI DIKA SARI	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	93,8 %	
9.	21030194035	GALANG FIRMAN SYAH	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	93,8 %	
10.	21030194036	SAFIRA ADDURIYAH AULIYA	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	93,8 %	
11.	21030194037	MAYLAFAIZA IFFADA	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	93,8 %	
12.	21030194041	MUHAMAD NUZUL ROMADON	H	A	H	H	H	H	H	H	H	H	H	H	H	H	H	87,5 %	
13.	21030194045	DEWI AISYAH RAMADHANI	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	93,8 %	
14.	21030194046	MUHAMMAD SYAHRUL RAMADHANI	H	H	H	H	A	H	H	H	H	H	H	H	H	H	H	87,5 %	
15.	21030194049	ANISA NABILAH	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	93,8 %	
16.	21030194062	RIZKY FIRDAUS WIJAYA	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	93,8 %	
17.	21030194063	ADELLIA NUR KHASANAH	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	93,8 %	
18.	21030194064	DWI IRMAYANTI	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	93,8 %	
19.	21030194071	SURASTRI	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	93,8 %	
20.	21030194072	GHINA SALIMATUL FAJRRIYAH	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	93,8 %	
21.	21030194078	FANIA FASYA REWANDA	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	93,8 %	
22.	21030194080	MUHAMMAD ADIB AL - AISY	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	93,8 %	
23.	21030194082	SHOFIA ANITA KARLINA	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	93,8 %	
24.	21030194083	SALVIA SALSABILLA	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	93,8 %	
25.	21030194084	SITI ZAHRA SALSABILAH	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	93,8 %	
Tanda Tangan Dosen / Asisten																			


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Kelas : 2021U
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No	NIM	Nama Mahasiswa	Pertemuan Ke																%
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			09 Feb 23	16 Feb 23	23 Feb 23	02 Mar 23	09 Mar 23	16 Mar 23	23 Mar 23	30 Mar 23	06 Apr 23	13 Apr 23	20 Apr 23	04 May 23	11 May 23	18 May 23	25 May 23		
1.	21030194002	REVANI PUTRI ISWAJI	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	93,8%	
2.	21030194004	MERYNKE AYU NAWA TIANA	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	93,8%	
3.	21030194006	LILY WIDYA SARI	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	93,8%	
4.	21030194009	SABRINA ANGELI ALMIRA	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	93,8%	
5.	21030194016	DHEA MUTIARA FERNANDA WIBOWO	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	93,8%	
6.	21030194020	KHOLFINA FITROTIS SHOBAKHAN	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	93,8%	
7.	21030194021	ALYA AQILAH ZAHRA	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	93,8%	
8.	21030194027	SITI ANDINI AJENG PRAMESTI	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	93,8%	
9.	21030194028	REVANDIKA A.JI HIDAYATULLOH	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	93,8%	
10.	21030194034	RAHMANIA FITRAH SARI	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	93,8%	
11.	21030194039	PINGKY NIRMALA PRADITA	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	93,8%	
12.	21030194043	SALSA SABRINA FAJAR MAJLUDIAH	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	93,8%	
13.	21030194044	JIHAN SAFITRI	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	93,8%	
14.	21030194052	AUDY VIA RAHMAWATI	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	93,8%	
15.	21030194055	KHALJA ROSSIE	H	H	H	H	S	H	H	H	H	H	H	H	H	H	H	93,8%	
16.	21030194059	DIA AYU PERMATASARI	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	93,8%	
17.	21030194060	SHAFNA NOR JANAH	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	93,8%	
18.	21030194061	ANDINI PUTRI TANIA	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	93,8%	
19.	21030194065	LIZA NURRAHMA DWI AGUSTIN	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	93,8%	
20.	21030194066	YUNITA ANGGRAENI	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	93,8%	
21.	21030194067	BERLIANA AFSOHIN NABILA	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	93,8%	
22.	21030194068	MAHARANI DYAH ARUMSARI	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	93,8%	
23.	21030194076	ADINDA NURISKA RAGIL KUNANTHI	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	93,8%	
24.	21030194079	PUTRI NURJAHAN NAJLA	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	93,8%	
Tanda Tangan Dosen / Asisten																			

D.1.2. Sample of statement of examination official report

(Scan Berita Acara Pembelajaran Kimia Berbasis ICT)

D.2. SAMPLE OF STUDENT WORK

D.2.1. Sample of Test Paper



KEMENTERIAN PENDIDIKAN, KEBUDAYAAN,
RISET, DAN TEKNOLOGI
UNIVERSITAS NEGERI SURABAYA
FAKULTAS MATEMATIKA DAN ILMU PENGETAHUAN ALAM
JURUSAN KIMIA

Kampus Ketintang, Jalan Ketintang, Surabaya 60231

Telepon : +6231- 8298761, email: kimia@unesa.ac.id, Laman : <http://kimia.fmipa.unesa.ac.id>

SOAL UJIAN TENGAH SEMESTER GENAP 2022/2023

Mata Ujian : Pembelajaran Kimia Berbasis ICT
Jurusan/Fakultas : Kimia / MIPA
Program/Angkatan : PK /2020
Dosen : TIM
Sifat Ujian : Open books/Open sources

Petunjuk:

1. Selesaikan proyek berikut
 2. Selamat mengerjakan, kami menghargai kejujuran dan semoga sehat selalu
-

1. Berdasarkan pembagian materi yang telah dilakukan, lakukan analisis materi untuk mengembangkan media ICT secara offline (**NILAI 30**)
2. Buatlah diagram alur media yang akan dikembangkan (**NILAI 30**)
3. Kembangkan perangkat pembelajaran berbasis media ICT secara offline (**NILAI 40**)

==GOOD LUCK==

D.2.2. Sample of Student's Work

Date: / /

1. The material is analyzed by identifying core and basic competencies, breaking down the content into clear concepts and subconcepts, and aligning them with measurable learning objectives. Learner characteristics (prior knowledge digital skills, and offline access) are considered to ensure the media is easy to use without the internet.

2.) define learning objectives



Analyze content and learner needs



design media structure



Create interface and navigation



Insert material (text, images, animation)



Add interactive element (quiz, buttons)



Review and revise



Export offline media

Date: / /

3.) The media is created using an offline platform such as Powerpoint, designed with a simple interface and clear navigation. Key content is presented using brief explanation and supporting visuals. Interactive elements like clickable menus and offline quizzes are included to improve engagement. After reviewing its accuracy and function the media is exported as a ppsx.

D.3. RECAPITULATION OF ASSESSMENT

D.3.1. Validate Test Item

The end-of-semester evaluation questions consist of essay items that are reviewed and analyzed by experts in the field of Chemistry Education and ICT-based learning. The essay questions are validated through expert judgment by members of the course team. The analysis is conducted by considering several aspects, namely the alignment of the questions with the course learning outcomes, the clarity and appropriateness of language, the relevance and accuracy of content related to ICT-based chemistry learning, and the construct validity of each question.

D.3.2 Evaluation Results of ICT-based Learning Chemistry

PROGRAM STUDI S1 Pendidikan Kimia
DAFTAR NILAI MAHASISWA
Mata Kuliah : Pembelajaran Kimia Berbasis ICT
Kelas : 2021A
Tahun Ajaran : 2022/2023 Genap

Original data :



Keterangan :

1. Komponen nilai yang diisi hanya : Part,Tugas,UTS dan UAS
2. Nilai UAS mahasiswa dengan kehadiran dibawah 73.3% (kolom dg warna merah) tidak akan disimpan
3. Jangan merubah apapun di dokumen ini kecuali pada point nomer satu di atas.
4. PPTI / BAAK tidak menerima file nilai untuk diupload. Proses upload nilai dilakukan oleh dosen pengampu yang bersangkutan.

No	NIM	Nama Mahasiswa	Angkatan	Kehadiran	Part	Tugas	UTS	UAS	NA	Huruf	Pakai
1	21030194001	NURIL AULIYAH SYAHIDAH	2021	93.75%	80	87	85	88	85.5	A	1
2	21030194003	DIVA DWI PRATIWI	2021	93.75%	80	90	85	90	87	A	1
3	21030194005	ALFINA NORMA AZIZAH	2021	93.75%	80	85	87	88	85.3	A	1
4	21030194007	AFRILIA DWI ADELIANI	2021	93.75%	80	90	85	90	87	A	1
5	21030194013	FAVIAN AGUNG DIFA' SASKARA	2021	93.75%	85	85	88	88	86.5	A	1
6	21030194014	ALIVIA PUTRI RYNI	2021	93.75%	80	85	90	87	85.6	A	1
7	21030194015	ANGGK FEBRIANA	2021	93.75%	80	90	85	93	87.9	A	1
8	21030194017	SRI RENATA MAHARDHIKA	2021	93.75%	80	85	85	89	85.2	A	1
9	21030194018	FADILAH MUTIARA	2021	93.75%	80	86	87	86	85	A	1
10	21030194019	KHOLIFATUL NAIMAH	2021	93.75%	80	90	85	90	87	A	1
11	21030194023	KARINA RIKE PRATIWI	2021	93.75%	82	90	85	90	87.4	A	1
12	21030194024	TUTUT SUGIARTI	2021	93.75%	80	85	87	88	85.3	A	1
13	21030194025	RATNA DWI SETYORINI	2021	93.75%	80	90	85	92	87.6	A	1
14	21030194026	NILA ZULFA IZZATI	2021	93.75%	80	90	85	90	87	A	1
15	21030194029	ADELIA FITRI SYAHARANI	2021	93.75%	80	85	85	91	85.8	A	1
16	21030194030	CITRA DIA FADILAH	2021	93.75%	80	85	87	88	85.3	A	1
17	21030194040	CINTANA HANUUN JANUARIZA	2021	93.75%	80	90	85	90	87	A	1
18	21030194047	MUHAMMAD HUSEIN ASHARI	2021	93.75%	80	85	85	89	85.2	A	1
19	21030194050	SAIFATUN NUR HAFIDZAH Z	2021	93.75%	80	90	85	90	87	A	1
20	21030194053	MUHAMMAD SYAHRUL ABIDIN	2021	93.75%	85	90	85	91	88.3	A	1
21	21030194054	ANA SAFIRA	2021	93.75%	80	90	85	90	87	A	1
22	21030194056	SELFI NOVIA ARDANI	2021	93.75%	80	85	86	88	85.1	A	1
23	21030194057	AMILATUS SHOLIHAH	2021	93.75%	80	86	86	87	85.1	A	1
24	21030194058	YASINTA SALSABILAH RAMADANI	2021	93.75%	80	90	85	90	87	A	1
25	21030194073	ASYA FIROSUL MA'WA	2021	93.75%	80	90	85	93	87.9	A	1
26	21030194074	ADAM AL HALWI	2021	93.75%	82	90	85	90	87.4	A	1
27	21030194075	MENI FERONIKA TAINMETA	2021	93.75%	80	86	87	86	85	A	1
28	21030194086	FADIA MU'MINATUS SOLEKHA	2021	93.75%	80	90	85	92	87.6	A	1

PROGRAM STUDI S1 Pendidikan Kimia
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Original data :



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2. Nilai UAS mahasiswa dengan kehadiran dibawah 73.3% (kolom dg warna merah) tidak akan disimpan
3. Jangan merubah apapun di dokumen ini kecuali pada point nomer satu di atas.
4. PPTI / BAAK tidak menerima file nilai untuk diupload. Proses upload nilai dilakukan oleh dosen pengampu yang bersangkutan.

No	NIM	Nama Mahasiswa	Angkatan	Kehadiran	Part	Tugas	UTS	UAS	NA	Huruf	Pakai
1	21030194008	SAYYIDA ALIFIA PUTRI KARIMA	2021	93.75%	80	88	86	88	86	A	1
2	21030194010	AUFAR FATHONI	2021	93.75%	80	90	86	90	87.2	A	1
3	21030194011	PUTRI EGALITA SALSABILAH	2021	93.75%	80	90	86	92	87.8	A	1
4	21030194012	FIRDA NURRAMDANI PUTRI	2021	93.75%	80	88	90	87	86.5	A	1
5	21030194022	YUYUN MULYASARI	2021	93.75%	80	88	86	89	86.3	A	1
6	21030194031	RIZA APRILIANE	2021	93.75%	80	90	86	91	87.5	A	1
7	21030194032	SALSABILA AMELIA AS-SAHRA	2021	93.75%	80	90	90	90	88	A	1
8	21030194033	DESI DIKA SARI	2021	93.75%	80	88	86	88	86	A	1
9	21030194035	GALANG FIRMAN SYAH	2021	93.75%	80	90	86	90	87.2	A	1
10	21030194036	SAFIRA ADDURIYAH AULIYA	2021	93.75%	80	88	86	89	86.3	A	1
11	21030194037	MAYLAFAIZA IFFADA	2021	93.75%	80	90	86	91	87.5	A	1
12	21030194041	MUHAMAD NUZUL ROMADON	2021	87.5%	80	88	88	89	86.7	A	1
13	21030194045	DEWI AISYAH RAMADHANI	2021	93.75%	80	88	86	89	86.3	A	1
14	21030194046	MUHAMMAD SYAHRUL RAMADHANI	2021	87.5%	80	90	90	91	88.3	A	1
15	21030194049	ANISA NABILAH	2021	93.75%	80	90	87	90	87.4	A	1
16	21030194062	RIZKY FIRDAUS WIJAYA	2021	93.75%	80	90	88	91	87.9	A	1
17	21030194063	ADELLIA NUR KHASANAH	2021	93.75%	80	90	88	92	88.2	A	1
18	21030194064	DWI IRMAYANTI	2021	93.75%	80	88	86	89	86.3	A	1
19	21030194071	SURASTRI	2021	93.75%	80	90	88	93	88.5	A	1
20	21030194072	GHINA SALIMATUL FAJRIYAH	2021	93.75%	80	88	86	89	86.3	A	1
21	21030194078	FANIA FASYA REWANDA	2021	93.75%	80	88	86	87	85.7	A	1
22	21030194080	MUHAMMAD ADIB AL - AISY	2021	93.75%	80	90	90	92	88.6	A	1
23	21030194082	SHOFIA ANITA KARLINA	2021	93.75%	80	90	90	92	88.6	A	1
24	21030194083	SALVIA SALSABILLA	2021	93.75%	80	90	90	93	88.9	A	1
25	21030194084	SITI ZAHRA SALSABILAH	2021	93.75%	80	90	88	90	87.6	A	1

PROGRAM STUDI S1 Pendidikan Kimia
 DAFTAR NILAI MAHASISWA
 Mata Kuliah : Pembelajaran Kimia Berbasis ICT
 Kelas : 2021U
 Tahun Ajaran : 2022/2023 Genap

Original data :



Keterangan :

1. Komponen nilai yang diisi hanya : Part,Tugas,UTS dan UAS
2. Nilai UAS mahasiswa dengan kehadiran dibawah 73.3% (kolom dg warna merah) tidak akan disimpan
3. Jangan merubah apapun di dokumen ini kecuali pada point nomer satu di atas.
4. PPTI / BAAK tidak menerima file nilai untuk diupload. Proses upload nilai dilakukan oleh dosen pengampu yang bersangkutan.

No	NIM	Nama Mahasiswa	Angkatan	Kehadiran	Part	Tugas	UTS	UAS	NA	Huruf	Pakai
1	21030194002	REVANI PUTRI ISWAJI	2021	93.75%	80	85	88	88	85.5	A	1
2	21030194004	MERYNKE AYU NAVA TIANA	2021	93.75%	80	85	92	90	86.9	A	1
3	21030194006	LILY WIDYA SARI	2021	93.75%	80	85	88	89	85.8	A	1
4	21030194009	SABRINA ANGELI ALMIRA	2021	93.75%	80	88	88	90	87	A	1
5	21030194016	DHEA MUTIARA FERNANDA WIBOWO	2021	93.75%	80	85	88	89	85.8	A	1
6	21030194020	KHOLFINA FITROTIS SHOBAKHAH	2021	93.75%	80	87	90	91	87.4	A	1
7	21030194021	ALYA AQLILAH ZAHRA	2021	93.75%	80	85	88	89	85.8	A	1
8	21030194027	SITI ANDINI AJENG PRAMESTI	2021	93.75%	80	85	88	88	85.5	A	1
9	21030194028	REVANDIKA AJI HIDAYATULLOH	2021	93.75%	80	85	88	89	85.8	A	1
10	21030194034	RAHMANIA FITRAH SARI	2021	93.75%	80	85	88	89	85.8	A	1
11	21030194039	PINGKY NIRMALA PRADITA	2021	93.75%	80	85	88	88	85.5	A	1
12	21030194043	SALSA SABRINA FAJAR MAULIDIAH	2021	93.75%	80	85	88	89	85.8	A	1
13	21030194044	JIHAN SAFITRI	2021	93.75%	80	85	88	87	85.2	A	1
14	21030194052	AUDY VIA RAHMAWATI	2021	93.75%	80	85	88	87	85.2	A	1
15	21030194055	KHALIA ROSSIE	2021	93.75%	80	85	88	88	85.5	A	1
16	21030194059	DIA AYU PERMATASARI	2021	93.75%	80	85	92	90	86.9	A	1
17	21030194060	SHAFNA NOR JANAH	2021	93.75%	80	90	88	90	87.6	A	1
18	21030194061	ANDINI PUTRI TANIA	2021	93.75%	80	85	88	88	85.5	A	1
19	21030194065	LIZA NURRAHMA DWI AGUSTIN	2021	93.75%	80	90	88	90	87.6	A	1
20	21030194066	YUNITA ANGGRAENI	2021	93.75%	80	88	90	86	86.2	A	1
21	21030194067	BERLIANA AFSOHIN NABILA	2021	93.75%	80	85	86	90	85.7	A	1
22	21030194068	MAHARANI DYAH ARUMSARI	2021	93.75%	80	85	88	88	85.5	A	1
23	21030194076	ADINDA NURISKA RAGIL KINANTHI	2021	93.75%	80	85	87	91	86.2	A	1
24	21030194079	PUTRI NURJIHAN NAJLA	2021	93.75%	80	86	87	86	85	A	1

D.3.3 Percentage of PLO achievements of ICT-based Learning Chemistry at Academic Year 2022/2023

PLO ASSESMENT

Lecture : ICT-based Learning Chemistry
 Code : 8420402215
 Department : S1 PENDIDIKAN KIMIA
 Total of Student : 77

	CPL07	CPL09						
EXELENCE	100%	100%						
GOOD	0%	0%						
SATISFY	0%	0%						
FAILED	0%	0%						
Rata-rata skor	86.9	86.4						

