

Entrepreneurship On Education Based On It Courses



UNIVERSITAS NEGERI YOGYAKARTA
FAKULTAS MATEMATIKA DAN ILMU PENGETAHUAN ALAM
JURUSAN PENDIDIKAN KIMIA / PROGRAM STUDI PENDIDIKAN KIMIA

RENCANA PEMBELAJARAN SEMESTER

MATAKULIAH	KODE	RUMPUN MK	BOBOT (SKS)	SEMESTER	TGL PENYUSUNAN
Wirausaha Pembelajaran Berbasis IT	MPK 6218	Mata Kuliah Kependidikan Kimia	2	Gasal (pilihan)	
OTORISASI	Dosen Pengembang RPS		Koordinator MPK		Ka PRODI
	Jaslin Ikhsan, Ph.D		Dr. Das Salirawati, M.Si.		Sukisman Purtadi, M.Pd.
Capaian Pembelajaran (CP)	CPL- PRODI				
	ELO-1	The graduates of Chemistry Education Study Program can demonstrate the spirit of religiousness, moral, ethics, and Indonesian character in life within the society, the state, and the country			
	S	A.8. embodying academic values, norms, and ethics; A.9. demonstrating accountability on the job of respective expertise independently; and A.10. having the sincerity, commitment, determination to develop the students' attitudes, values, and abilities based on the values of local wisdom, as well as having the motivation to act for the benefit of the students and society in general			
	ELO-2	The graduates of Chemistry Education Study Program can demonstrate outonomy work in indi			
		B.1. master basic knowledge of entrepreneurship B.2. master entrepreneur skill B.3. internalize outonomy, struggling, and entrepreneurship spirit and attitude;			
	ELO-3	The graduates of Bachelor of Education in Chemistry apply the concepts, principles, laws, and theories of chemistry, science, education, and chemistry education that are continuously updated as a part of lifelong			

		learning
P		C.3. Mastering theoretical concepts about educational theory, student development, chemical pedagogical knowledge, learning methodology, curriculum, and learning evaluation;
ELO-4		The graduates of Bachelor of Education in Chemistry adapt scientific work skills and chemical learning skills that are continuously updated as a part of lifelong learning to solve problems related to chemistry and chemistry education
KU		D.1. Able to apply logical, critical, systematic, and innovative thinking in the context of the development or implementation of science and technology that pays attention to and applies the value of humanities in accordance with their fields of expertise;
		D.2. Able to study the implications of the development or implementation of science and technology that pay attention to and apply the value of the humanities in accordance with their expertise based on rules, procedures and scientific ethics in order to produce solutions, ideas, designs or art criticism;
		D.3. Able to compile a scientific description of the results of the study above in the form of a thesis or final project report, and upload it on the college page;
		D.4. Able to make appropriate decisions in the context of problem solving in their areas of expertise, based on the results of information and data analysis
ELO-5		D.5. Able to document, store, secure, and rediscover data to ensure validity and prevent plagiarism.
		The graduates of Bachelor of Education in Chemistry adapt the ability for critical and creative thinking in dealing with problems in their careers or personal lives
		E.1. Able to show independent, quality and measurable performance;
		E.2. Able to maintain and develop networks with mentors, colleagues, colleagues both inside and outside the institution;
		E.3. Able to take responsibility for the achievement of group work and supervise and evaluate the completion of work assigned to workers under their responsibilities;
		E.4. Able to carry out a process of self-evaluation of work groups under its responsibility, and be able to manage learning independently
KK		-
CP – MK		
M1		demonstrate an attitude of responsibility and independence in carrying out the given tasks as prospective chemistry teacher in high school, and understand the principles of entrepreneurship

	M2	describe the characteristics and develop Chemistry learning media for Computer Assisted Instruction (CAI), Web-Based Learning (WBL), and Mobile-Based Learning (MBL) including: CAI 5, CAI 6, CAI 7, MBL 9, MBL 10, MBL 11 , and WBL 8; understand the steps to validate Chemistry learning media 12 and understand the procedures for producing Chemistry learning media 13; and understand the tips for marketing Chemistry learning media
	M3	understand the role of ICT as an alternative solution to the problem of effective Chemistry learning in high school / vocational school based on the results of field observations and studies of relevant research results
Deskripsi Singkat MK	Through this course students are prepared to design and produce IT-based learning media in the form of multimedia applications, games, virtual labs. The learning materials include identification of chemistry learning problems in high school and university, identification of alternative learning solutions through IT-based media, identification of CAI learning support media, website-based learning, and mobile-based learning, development of audio-visual learning media, web 2.0-based learning media and html5, and Android, IOS-based media, media validation, media production, and media marketing.	
Materi Pembelajaran/ Pokok Bahasan	<ol style="list-style-type: none"> 1. include identification of chemistry learning problems in high school and university, 2. identification of alternative learning solutions through IT-based media, 3. identification of CAI learning support media, 4. website-based learning, and mobile-based learning, 5. development of audio-visual learning media, web 2.0-based learning media and html5, and 6. Android, IOS-based media, 7. media validation, 8. media production, 9. media marketing. 	
Pustaka	Utama	
	<p>U.1. Azhar Arsyad. (1997). Media Pengajaran. Jakarta : Grafindo.</p> <p>U.2. Arief S. Sadiman, dkk. (1993). Media Pendidikan. Pengertian, Pengembangan dan Pemanfaatannya. Jakarta: Pustekkom dan PT Raja Grafindo Persada.</p>	
	Pendukung	
	<p>P.1. Jaslin Ikhsan, Herman, dan Dian Susetyaningtyas. (2009). Practices and Lessons Learned from Branding of Indonesian Education Institutions through Open and Distance Learning (ODL), International Conference of Branding in Higher Education, SEAMEO RETRAC, Vietnam.</p> <p>P.2. Jaslin Ikhsan dan Ayu Asih. (2009). Exploring the ideas of Creating Higher Education Common Space in Indonesia, International Pre- conference on Harmonization of Higher Education, SEAMEO RIHED, Bangkok-Thailand.</p> <p>P.3. Jaslin Ikhsan, Herman dan Adie Erar Yusuf, (2009). Students Perception on Written Material (Modules) in PJJ PGSD, International Conference on Open and Distance Learning, PUSTEKKOM, Yogyakarta.</p> <p>P.4. Jaslin Ikhsan (2011). Impelementasi TIK dalam Pembelajaran di Sekolah Seminar Nasional Teknologi Pembelajaran, Universitas Batu Raja, Palembang.</p> <p>P.5. Jaslin Ikhsan dan Hafid Setyo Hadi, (2012). Strategi Penyebaran Konten Pendidikan Berbasis Digital Video Broadcasting over Satellite, Seminar Nasional (ISBN. 978-602-9461-06-0), PPS UNY Yogyakarta.</p>	

- P.6. Jaslin Ikhsan (2012). Peningkatan Kualitas Guru MIPA melalui Pembelajaran Berbasis Komunitas dan Berazas Sharing, Seminar Nasional FMIPA UNY Yogyakarta, (ISBN: 978-979-99314-6-7).
- P.7. Amallia Nugraheni dan Jaslin Ikhsan. (2013). The Development of Java 2 Micro Edition based Mobile Application Chemistclopedia on Hydrocarbon and Petroleum as Learning Media for Senior High School Students, International PostGraduate Conference on Science and Mathematics (IPCSM2013), UPSI, Tanjung Malim, Malaysia.
- P.8. Arini Fadhilah dan Jaslin Ikhsan, (2013). The Development of Java 2 Micro Edition based Mobile Chemistry Encyclopedia 'Chemistclopedia' as Independent Learning Media for Senior High School Students International PostGraduate Conference on Science and Mathematics (IPCSM2013), UPSI. Tanjung Malim, Malaysia.
- P.9. Melita Rachma dan Jaslin Ikhsan, (2013). The Development of Java 2 Micro Edition based Chemistclopedia Application on Chemical Elements for Senior High School Students International PostGraduate Conference on Science and Mathematics (IPCSM2013), UPSI, Tanjung Malim, Malaysia.
- P.10. Septi Riyanningsih dan Jaslin Ikhsan , (2013).The Development and Response of Teachers toward Character-Based Mobile Game 'Robochem' on the Reaction Rate Topic International PostGraduate Conference on Science and Mathematics (IPCSM2013), UPSI, Tanjung Malim, Malaysia.
- P.11. Rr. Lis Permanasari dan Jaslin Ikhsan , (2013).The Development of Mobile Game 'Scientist Academy' as Chemistry Learning Media for Independent Experiments International PostGraduate Conference on Science and Mathematics (IPCSM2013), UPSI, Tanjung Malim, Malaysia.
- P.12. Elsa Yulianingsih, Jaslin Ikhsan, dan AK Prodjosantoso , (2013). The Development of Character-Based Comic as Media in Science Learning International PostGraduate Conference on Science and Mathematics (IPCSM2013), UPSI, Tanjung Malim, Malaysia.
- P.13. Septi Riyanningsih dan Jaslin Ikhsan , (2013). The Development of Character-Based Mobile Game "Robochem" the Reaction Rate Topic and the Response of Grade 11th Students to the Game, Konferensi Internasional LPPM UNY Yogyakarta (ICERI2013) (ISBN. 1978-6027981-04-1).
- P.14. Septi Riyanningsih dan Jaslin Ikhsan , (2013). The Development of Character-Based Mobile Game "Robochem" the Reaction Rate Topic and the Response of Grade 11th Students to the Game, Konferensi Internasional LPPM UNY Yogyakarta (ICERI2013) (ISBN. 1978-6027981-04-1).
- P.15. Amallia Nugraheni dan Jaslin Ikhsan , (2013). The Development and its Impact of Java 2 Micro Edition Based Media for the Mobile Encyclopedia to Senior High School Student Learning Internasional LPPM UNY Yogyakarta, (ICERI2013), (ISBN. 1978-602-7981-041).
- P.16. Jaslin Ikhsan, (2014). The Use of ICT-based Media in Web-Based Collaborative Assistance of Hybrid Learning on Chemical Kinetic to Improve Students' Academic Performance Konferensi Internasional (ICRIEMS2014), ISBN. 978-979-99314-8-1, FMIPA UNY Yogyakarta.
- P.17. Hesty Parbuntari, dan Jaslin Ikhsan , (2014). The Use of Hybrid Multimodal Learning on Chemistry at Senior High School to Improve Students' Motivation Konferensi Internasional (ICRIEMS2014), ISBN. 978-979-99314-8-1, FMIPA UNY Yogyakarta.
- P.18. Nuke Ajeng Prabawati, dan Jaslin Ikhsan (2014). The Use of Web-Based Assistance in Multimodal Chemistry Learning at Senior High School to Improve Students' Motivation Konferensi Internasional (ICRIEMS2014), ISBN. 978-979-99314-8-1,

	<p>FMIPA UNY Yogyakarta.</p> <p>P.19. Yogo Dwi Prasetyo, Jaslin Ikhsan, dan Rr. Lis Permana Sari, (2014). The Development of Android-Based Mobile Learning Media as Chemistry Learning for Senior High School On Acid Base, Buffer Solution, and Salt Hydrolysis Konferensi Internasional (ICRIEMS2014), ISBN. 978-979-99314-8-1, FMIPA UNY Yogyakarta.</p> <p>P.20. Resti Yektyastuti, Jaslin Ikhsan, dan Rr. Lis Permana Sari, (2014). The Development of Android Mobile Game as Senior High School Learning Media on Rate Reaction and Chemical Equilibrium, Konferensi Internasional (ICRIEMS2014), ISBN. 978-979-99314-8-1, FMIPA UNY Yogyakarta.</p> <p>P.21. Jaslin Ikhsan, M. Pranjoto Utomo, Sunarto, Erfan Priyambodo, Susila Kristianingrum, (2014). Upaya Peningkatan Kompetensi TIK Guru Kimia SMA/MA Di Era Digital Melalui Inservice-CT (In-Service Training for Chemistry Teachers) , Seminar Nasional LPPM UNY ISBN. 978-979-562-029-7.</p> <p>P.22. Jaslin Ikhsan, Hafid Setyo Hadi, (2015), Delivering Science-Engineering Virtual Labs Using the New Web Technologies (HTML5), Konferensi Internasional (ICERI2015).</p> <p>P.23. Slamet Harjono, Jaslin Ikhsan, (2015). development of 3-dimension illustrated textbook as enrichment materials for madrasah tsanawiyah students, Konferensi Internasional (ICERI2015).</p> <p>P.24. Paksi Manggala Putra, Jaslin Ikhsan, (2015). Development Of Android Mobile Game “The Professor” As Chemistry Learning Media In Senior High School On Hydrocarbon And Petroleum, Konferensi Internasional (ICERI2015).</p> <p>P.25. Paksi Manggala Putra, Jaslin Ikhsan, (2015). Development Of Android Mobile Game “The Professor” As Chemistry Learning Media In Senior High School On Hydrocarbon And Petroleum, Konferensi Internasional (ICERI2015).</p>	
Media Pembelajaran	Perangkat Lunak	Perangkat Keras
	File PPT, flash CS6, Sigil dan/atau flipper, construct2	LCD, Spidol, <i>White Board</i>
Team-Teaching	-	
Matakuliah Syarat	Kimia Dasar	

Learning Activities

Wee k(s)	Sub-CP-MK (achievement course)	Indicator	Assessment Form and Criteria	Learning Method (Time Allocation)	Learning Materials (References)	Assessm ent' weights (%)
1	L.1. Students understand the overview of lecture content, competencies to be achieved, learning and assessment techniques	-	-	Information Discussion, Brainstorming (TM: 1 x (2 x 50 '))	Course overview covers (1) the objectives of lectures, (2) learning materials, (3) assessment systems, (4) lecture assignments (U.1, U.2, P.1 - P.20)	-
2	L.2. Students are able to understand the principles of entrepreneurial learning (M1)	<ul style="list-style-type: none"> a. Mastered the definition of entrepreneurship b. Identification of entrepreneurial opportunities in the field of chemistry education and learning c. Understanding the principles of entrepreneurship in the field of chemistry learning 	<p>Assessment criteria: Accuracy, depth of analysis</p> <p>Form of Assessment: Non Test and Test (quiz)</p> <p>Assessment Instrument: Evaluation rubric of study results and written questions</p>	<p>Information Discussion, Brainstorming (TM: 1 x (2 x 50 '))</p> <p>Task 1 Reviewing papers in international journals (2 papers) (BT-BM: 2 X (2 X 60 '))</p>	<ul style="list-style-type: none"> a. Definition of entrepreneurship b. Entrepreneurial opportunities in education and learning c. The principle of entrepreneurship in the field of chemistry learning (U.1, U.2, P.1 – P.25) 	5%
3	L.3. Students are able to understand the role of ICT as an alternative solution to learning problems (M3)	<ul style="list-style-type: none"> a. Identification of educational problems by students b. The realization of the idea of alternative ICT-based solutions to educational problems by students c. Understanding of 	<p>Assessment criteria: Accuracy</p> <p>Form of Assessment: Test (quiz)</p> <p>Assessment Instrument: Written question</p>	Expository and Discussion (TM: 1 x (2 x 50 '))	<ul style="list-style-type: none"> a. Identification of education and learning problems b. Utilization of ICT in education at home and abroad 	5%

Wee k(s)	Sub-CP-MK (achievement course)	Indicator	Assessment Form and Criteria	Learning Method (Time Allocation)	Learning Materials (References)	Assessm ent' weights (%)
		government policies related to the role of ICT in education and learning d. Realizing the importance of ICT in chemistry education and learning.			c. Indonesian government policy on the role of ICT in chemistry education and learning (U.1, U.2, P.1, P.5,P.22)	
4	L.4. Students are able to describe the characteristics of chemistry learning media such as Computer Assisted Instruction (CAI), Web-Based Learning (WBL), and Mobile-Based Learning (MBL) (M2).	a. Understanding of several ICT-based unconventional learning models: CAI, WBL, and MBL b. Identifying relevant types of media for ICT-based unconventional learning	Assessment criteria: Accuracy, collaboration skills Form of Assessment: Non-Test and Test (quiz) Assessment Instrument: Rubric assessment for cooperation skills and written questions	Cooperative Learning (TM : 1 x (2 x 50'))	a. ICT-based learning models b. Media supporting the implementation of ICT-based learning models (U.1, U.2)	5%
5	L.5. Students are able to develop Audio Video media for chemistry learning through CAI (M2).	a. Developing chemistry learning video scenarios b. Completing a video development project c. Obtaining a chemistry learning video	Assessment criteria: Product quality (video), process skills Form of Assessment: Non-Test Assessment Instrument: Assessment rubric for product skills and product assessment	<i>Cooperative Project Based Learning</i> (guided practicum, online tutorials, presentation) (TM : 1 x (2 x 50')) Task 1 Develop a chemistry learning video (BT-BM: 1 X (2 X 60'))	a. Preparation of learning video scenarios b. Development of chemistry learning videos (U.1, U.2)	5%
6,7	L.6. Students are able to develop 3-dimensional media	a. Arranging storyboard and flowchart of 3D chemistry media	Assessment criteria: Product quality (3D media), process skills	<i>Cooperative Project Based Learning</i> (guided practicum, online	a. Compilation of 3D media storyboards	7%

Week(s)	Sub-CP-MK (achievement course)	Indicator	Assessment Form and Criteria	Learning Method (Time Allocation)	Learning Materials (References)	Assessment weights (%)
	for chemistry learning through CAI (M2).	<ul style="list-style-type: none"> b. Completing 3D media development project, and c. Acquired 3-D chemical media. 	<p>Form of Assessment: Non Test (observasi)</p> <p>Assessment Instrument: Assessment rubric for product skills and product assessment</p>	<p>tutorials, presentation) (TM : 2 x (2 x 50'))</p> <p>Task 2 Developing 3-dimensional chemistry learning media (BT-BM: 2 X (2 X 60'))</p>	<ul style="list-style-type: none"> b. Development of 3-dimensional chemical media (U.1, U.2, P.23) 	
8	L.7. Students are able to develop animation media for chemistry learning through CAI (M2).	<ul style="list-style-type: none"> a. Compiling story board and flow chart of chemistry animation media b. Completing of animation media development project, and c. Obtaining chemistry animation media 	<p>Assessment Criteria: Product quality (chemistry animation media), process skills</p> <p>Assessment Form: Non Test (observation)</p> <p>Assessment Instrument: Process skills assessment rubric and product assessment</p>	<p><i>Cooperative Project Based Learning</i>(guided practice, online tutorial, presentation) (TM : 1 x (2 x 50'))</p> <p>Task 3 Developing chemistry animation media (BT-BM: 1 X (2 X 60'))</p>	<ul style="list-style-type: none"> a. Compilation of story board and flow chart animation media through CS6 b. Development of animation media through Flash CS6 application 	7%
9	L.8. Students are able to develop HTML5-based chemistry learning media for WBL (M2).	<ul style="list-style-type: none"> a. Compiling story board and flow chart of HTML5-web based chemistry media, b. Completing HTML5-web based chemistry media development project, and c. Obtaining HTML5-web based chemistry media. 	<p>Assessment Criteria: Product quality (HTML5-web based media), process skills</p> <p>Assessment Form: Non Test (observation)</p> <p>Assessment Instrument: Process skills assessment rubric and product assessment</p>	<p><i>Cooperative Project Based Learning</i>(guided practice, online tutorial, presentation) (TM : 1 x (2 x 50'))</p> <p>Task 4 Developing HTML5-web based learning media (BT-BM: 1 X (2 X 60'))</p>	<ul style="list-style-type: none"> a. Definition of HTML5 b. Development of HTML5-based chemistry learning media (U.1, U.2, P.22) 	7%
10	L.9. Students are able	a. Compiling story board	Assessment Criteria:	<i>Cooperative Project Based</i>	a. Compilation of	7%

Wee k(s)	Sub-CP-MK (achievement course)	Indicator	Assessment Form and Criteria	Learning Method (Time Allocation)	Learning Materials (References)	Assessm ent' weights (%)
	to develop e-book media for MBL (M2).	and flow chart of e-book chemistry media, b. Completing e-book media development project, and c. Obtaining e-book chemistry learning media.	Product quality (e-book chemistry media), process skills Assessment Form: Non Test (observation) Assessment Instrument: Process skills assessment rubric and product assessment	<i>Learning</i> (guided practice, online tutorial, presentation) (TM : 1 x (2 x 50')) Task 5 Developing e-book chemistry learning media (BT-BM: 1 X (2 X 60'))	story board and flow chart of e-book media through Sigil application and/or flipper b. Development of e-book media through Sigil application and/or flipper (U.1, U.2)	
11, 12	L.10. Students are able to develop android-based media for MB	a. Compiling the story boards and flow charts of android-based media games with CS6 or construct2 b. Completing an Android-based game media development project with CS6 or construct2, and c. Obtaining android-based game media with CS6 or construct2.	Assessment criteria: Product quality (android-based game media), process skills Form of Assessment: Non Test (observation) Assessment Instrument: Process skills assessment product rubric and product assessment	<i>Cooperative Project Based Learning</i> (guided labs, online tutorials, presentations) (TM : 1 x (2 x 50')) Task 6 Develop android-based game media (BT-BM: 1 X (2 X 60'))	a. Arranging the story board and flow chart of android-based media games with CS6/construct2 b. Developing the android-based media game with CS6/construct2 (P.7-P.11, P.15-20, P.24)	7%
13	L.11. Students are able to understand the steps in the chemistry learning media validation (M2).	The operational steps of validation of one of the mediums that have been developed are described	Assessment criteria: Accuracy Form of Assessment: Test (quiz) Assessment Instrument: Written question	Expository and Brainstorming (TM : 1 x (2 x 50'))	a. Validation principles b. Step validation of chemistry learning media (U.1, U.2, P.1-P.25)	5%

Wee k(s)	Sub-CP-MK (achievement course)	Indicator	Assessment Form and Criteria	Learning Method (Time Allocation)	Learning Materials (References)	Assessm ent' weights (%)
14	L.12. Students are able to understand the chemical learning media production procedures (M2).	The resulting media according to its type	Assessment criteria: Accuracy Form of Assessment: Test (quiz) Assessment Instrument: Written question	Expository and Brainstorming (TM : 1 x (2 x 50'))	Production of ICT-based chemistry learning media (U.1, U.2, P.1-P.25)	5%
15	L.13. Students are able to understand the chemistry learning media marketing tips (M2).	a. Increasing the lobbying capabilities b. Identifying the market potential of chemical learning media products c. Mastering marketing techniques of chemical learning media products	Assessment criteria: Accuracy, communication skills Form of Assessment: Non Test Assessment Instrument: Essay assessment rubric and communication skills	Expository, Brainstorming, Discussion (Presentation) (TM : 1 x (2 x 50')) Task 7 Make an essay about the market potential and marketing techniques of chemical learning media products (BT-BM: 1 X (2 X 60'))	a. Product marketing b. Government policies in the field of small and medium entrepreneurs (U.1, U.2, P.1-P.25)	5%
16	Final Exam			(TM : 1 x (2 x 50'))		30%

ASSESSMENT

No.	Evaluation Component	Percentage
1.	Activity	10%
2.	Task	60%
3.	Final Exam	30%
	Total	100%

$$\text{Students Score} = \frac{(\text{Activity Score} \times 10) + (\text{Task Score} \times 60) + (\text{Final Exam Score} \times 30)}{100}$$