
 Universitas Airlangga	SEMESTER LEARNING PLAN		Prepared by	Examined by	Approved by	Document Registration Number
	SLP		(Person in Charge)	(Head of Bachelor Program / Head of Department)	Vice Dean I	01/S1Kesmas/RPS/2019
			Revision - Date	January 1 st , 2019	Dr. Abdul Rohim Tualeka, Drs., M.Kes	
Faculty of Public Health	Valid on Semester (odd/even) / Academic Year	Odd Semester 2019/2020	(sign)	(sign)	(sign)	

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A. DETAILS OF COURSE


1. Course Name	Occupational Toxicology II
2. Course Code	FAT305
3. Credits (SKS)	2 (two) SKS
4. Semester / Term	VII (seventh)
5. Study Program	Bachelor of Public Health
6. Student Learning Achievement	1. Able to carry out a study and analysis of the situation 2. Able to develop program policies and planning
7. Course Learning Achievement	1. Define the problem correctly 2. Evaluate data integrity and comparability 3. State the policy choices and formulate them clearly and concisely 4. Decide the appropriate action with the problem at hand
8. Course Description	This course discusses the toxic effects of several groups including 1) The toxic effects of the metal group, 2) The toxic effects of the organic solvent group, 3) The toxic effects of the pesticide group, 4) Fibrogenic dust, 5) Asphyxian gas, 6) Alcohol and aldehydes, and 7) Carcinogens, mutagenic and teratogenic toxic effects
9. Course Prerequisites (if any)	Passed Occupational Toxicology I course
10. Instructor	Dr. Abdul Rohim Tualeka, Drs., M.Kes
11. Teaching Assistants	1. dr. Sho'im Hidayat, MS 2. Dr. Noeroel Widajati, S.KM., M.Sc 3. Dani Nasirul Haqi, S.KM., M.KKK 4. Putri Ayuni Alayyannur, S.KM., M.KKK

B. TEACHING PROGRAM

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Week	Skills expected at the end of each learning phase (Sub-Course Achievement) (C, A, P)	Study Materials	Teaching Methods	Additional Materials for Learning	Meeting Time	Course Objectives	Criteria and Indicator of Evaluation / Measurable Learning Outcome (hard and soft skills)	Mark / Grade / Percentage (%)	Reference Number Ref. (number)
1	2	3	4	5	6	7	8	9	10
1	Students can explain and analyze the toxicological processes of Lead, Arsenic, Mercury and Chrome	General description of metal toxicology (Lead, Arsenic, Mercury and Chrome). 1. Learning Contract 2. The chemical and physical properties of metals 3. Toxicokinetics metal group 4. Toxicodynamics of the metal group 5. Dosage and response from metal groups 5. 6. Biological and environmental	Lecture Discussion Simulation	Teaching Material LCD	2x50 minutes	1. Introduction 2. Pay attention and discussion 3. Take notes and provide responses	Practice analyzing, thinking complex and cooperation	7,14%	1-5

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1	2	3	4	5	6	7	8	9	10
		monitoring of metal groups							
2	Students can explain and analyze the toxicological processes of Lead, Arsenic, Mercury and Chrome	General description of metal toxicology (Lead, Arsenic, Mercury and Chrome). 1. Learning Contract 2. The chemical and physical properties of metals 3. Toxicokinetics metal group 4. Toxicodynamics of the metal group 5. Dosage and response from metal groups	Lecture Discussion Simulation	Teaching Material LCD	2x50 minutes	1. Introduction 2. Pay attention and discussion 3. Take notes and provide responses	Practice analyzing, thinking complex and cooperation	7,14%	1-5

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1	2	3	4	5	6	7	8	9	10
		6. Biological and environmental monitoring of metal groups							
3	Students are able to explain and analyze the toxicological processes of Benzene, Toluene, Xylen, and Halogen Hydrocarbons	General description of toxicology class of organic solvents (Benzene, Toluene, Xylen, and Halogen Hydrocarbons). 1. Chemical and physical properties of organic solvents 2. Toxicokinetics of the organic solvent class 3. Toxicodynamics of the organic solvent class	Lecture Discussion Simulation	Teaching Material LCD	2x50 minutes	1. Asking questions and discussing 2. Pay attention and discussion 3. Take notes and provide responses	Practice analyzing, thinking complex and cooperation	7,14%	1-5

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1	2	3	4	5	6	7	8	9	10
		4. Dosage and response of the organic solvent class 5. Biological and environmental monitoring of the organic solvent class							
4	Students are able to explain and analyze the toxicological processes of Benzene, Toluene, Xylen, and Halogen Hydrocarbons	General description of toxicology class of organic solvents (Benzene, Toluene, Xylen, and Halogen Hydrocarbons). 1. Chemical and physical properties of organic solvents	Lecture Discussion Simulation	Teaching Material LCD	2x50 minutes	1. Asking questions and discussing 2. Pay attention and discussion 3. Take notes and provide responses	Practice analyzing, thinking complex and cooperation	7,14%	1-5

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1	2	3	4	5	6	7	8	9	10
		2. Toxicokinetics of the organic solvent class 3. Toxicodynamics of the organic solvent class 4. Dosage and response of the organic solvent class 5. Biological and environmental monitoring of the organic solvent class							
5	Students are able to explain and analyze the toxicological processes of the pesticide group	General description of the toxicology of pesticides. 1. Chemical and physical	Lecture Discussion Simulation	Teaching Material LCD	2x50 minutes	1. Asking questions and discussing 2. Pay attention and discussion	Practice analyzing, thinking complex and cooperation	7,14%	1-5

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1	2	3	4	5	6	7	8	9	10
		characteristics of pesticides 2. Toxicokinetics of pesticides 3. Toxicodynamics of pesticides 4. Dose and response of pesticides a. 5. Biological and environmental monitoring of the pesticide group				3. Take notes and provide responses			
6	Students are able to explain and analyze the toxicological processes of the pesticide group	General description of the toxicology of pesticides. 1. Chemical and physical characteristics of pesticides	Lecture Discussion Simulation	Teaching Material LCD	2x50 minutes	1. Asking questions and discussing 2. Pay attention and discussion	Practice analyzing, thinking complex and cooperation	7,14%	1-5

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1	2	3	4	5	6	7	8	9	10
		2. Toxicokinetics of pesticides 3. Toxicodynamics of pesticides 4. Dose and response of pesticides 5. Biological and environmental monitoring of the pesticide group				3. Take notes and provide responses			
7	Students are able to explain and analyze the toxicological processes of the pesticide group	General description of the toxicology of pesticides. 1. Chemical and physical characteristics of pesticides 2. Toxicokinetics of pesticides	Lecture Discussion Simulation	Teaching Material LCD	2x50 minutes	1. Asking questions and discussing 2. Pay attention and discussion 3. Take notes and provide responses	Practice analyzing, thinking complex and cooperation	7,14%	1-5

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1	2	3	4	5	6	7	8	9	10
		3. Toxicodynamics of pesticides 4. Dose and response of pesticides 5. Biological and environmental monitoring of the pesticide group							
8	Students are able to explain and analyze the toxicological processes of pneumoconiotic dust and inert dust	General toxicological description of pneumoconiotic dust and inert dust. 1. Chemical and physical properties of pneumoconiotic dust and inert dust	Lecture Discussion Simulation	Teaching Material LCD	2x50 minutes	1. Asking questions and discussing 2. Pay attention and discussion 3. Take notes and provide responses	Practice analyzing, thinking complex and cooperation	7,14%	1-5

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1	2	3	4	5	6	7	8	9	10
		2. Toxicokinetics of pneumoconiotic dust and moist dust 3. Toxicodynamics from pneumoconiotic dust and inert dust 4. Doses and responses of pneumoconiotic dust and inert dust 5. Biological and environmental monitoring of pneumoconiotic dust and inert dust							
9	Students are able to explain and analyze the toxicological processes of	General toxicological description of	Lecture Discussion Simulation	Teaching Material LCD	2x50 minutes Simulation	1. Asking questions and discussing	Practice analyzing, thinking complex and cooperation	7,14%	1-5

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1	2	3	4	5	6	7	8	9	10
	pneumoconiotic dust and inert dust	pneumoconiotic dust and inert dust. 1. Chemical and physical properties of pneumoconiotic dust and inert dust 2. Toxicokinetics of pneumoconiotic dust and moist dust 3. Toxicodynamics from pneumoconiotic dust and inert dust 4. Doses and responses of pneumoconiotic dust and inert dust 5. Biological and environmental monitoring of				2. Pay attention and discussion 3. Take notes and provide responses			

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1	2	3	4	5	6	7	8	9	10
		pneumoconiotic dust and inert dust							
10	Students are able to explain and analyze the toxicological processes of the asphyxia group	General toxicological description of asphyxia. 1. Class asphyxia and physical properties 2. Toxicokinetics of the asphyxia group 3. Toxicodynamics of the asphyxia group 4. Dosage and asphyxia response 5. Biological and environmental monitoring of the asphyxia group	Lecture Discussion Simulation	Teaching Material LCD	2x50 minutes	1. Asking questions and discussing 2. Pay attention and discussion 3. Take notes and provide responses	Practice analyzing, thinking complex and cooperation	7,14%	1-5

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1	2	3	4	5	6	7	8	9	10
11	Students are able to explain and analyze the toxicological processes of alcohol and aldehydes	General toxicological description of alcohol and aldehydes group. 1. The chemical and physical properties of clams and aldehydes 2. Toxicokinetics from alcohol and aldehydes 3. Toxicodynamics of alcohol and aldehydes 4. Dosage and response of alcohol and aldehydes 5. Biological and environmental	Lecture Discussion Simulation	Teaching Material LCD	2x50 minutes	1. Asking questions and discussing 2. Pay attention and discussion 3. Take notes and provide responses	Practice analyzing, thinking complex and cooperation	7,14%	1-5

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1	2	3	4	5	6	7	8	9	10
		monitoring of alcohol and aldehydes							
12	Students are able to explain and analyze the toxicological processes of the carcinogenic, mutagenic and teratogenic group at workplace	General toxicological description of the carcinogenic, mutagenic, and teratogenic classes. 1. Chemistry and physics of carcinogenic, mutagenic, and teratogenic classes 2. Toxicokinetics of the carcinogenic, mutagenic and teratogenic classes 3. Toxicodynamics of the carcinogenic,	Lecture Discussion Simulation	Teaching Material LCD	2x50 minutes	1. Asking questions and discussing 2. Pay attention and discussion 3. Take notes and provide responses	Practice analyzing, thinking complex and cooperation	7,14%	1-5

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1	2	3	4	5	6	7	8	9	10
		mutagenic, and teratogenic classes 4. Doses and responses of the carcinogenic, mutagenic, and teratogenic classes 5. Biological and environmental monitoring of the carcinogenic, mutagenic and teratogenic classes							
13	Students are able to explain and analyze the toxicological processes of the carcinogenic, mutagenic and teratogenic group at workplace	General toxicological description of the carcinogenic, mutagenic, and teratogenic classes.	Lecture Discussion Simulation	Teaching Material LCD	2x50 minutes	1. Asking questions and discussing 2. Pay attention and discussion	Practice analyzing, thinking complex and cooperation	7,14%	1-5

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1	2	3	4	5	6	7	8	9	10
		1. Chemistry and physics of carcinogenic, mutagenic, and teratogenic classes 2. Toxicokinetics of the carcinogenic, mutagenic and teratogenic classes 3. Toxicodynamics of the carcinogenic, mutagenic, and teratogenic classes 4. Doses and responses of the carcinogenic, mutagenic, and teratogenic classes 5. Biological and environmental				3. Take notes and provide responses			

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1	2	3	4	5	6	7	8	9	10
		monitoring of the carcinogenic, mutagenic and teratogenic classes							
14	Students are able to explain and analyze the toxicological processes of the carcinogenic, mutagenic and teratogenic group at workplace	General toxicological description of the carcinogenic, mutagenic, and teratogenic classes. 1. Chemistry and physics of carcinogenic, mutagenic, and teratogenic classes 2. Toxicokinetics of the carcinogenic, mutagenic and teratogenic classes	Lecture Discussion Simulation	Teaching Material LCD	2x50 minutes	1. Asking questions and discussing 2. Pay attention and discussion 3. Take notes and provide responses	Practice analyzing, thinking complex and cooperation	7,14%	1-5

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1	2	3	4	5	6	7	8	9	10
		3. Toxicodynamics of the carcinogenic, mutagenic, and teratogenic classes 4. Doses and responses of the carcinogenic, mutagenic, and teratogenic classes 5. Biological and environmental monitoring of the carcinogenic, mutagenic and teratogenic classes							

C. REQUIRED TEXTS / REFERENCES / ESSENTIAL READINGS

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1. U.S. Department Of Health Services Public Health Service Agency for Toxic Substance and Disease Registry
2. Ullman's Encyclopedia : Toxicology in Occupational & Environmental Setting
3. Toxicology tutor I-III, US Department of Health & Human Services, 2002
4. Toxicology in Occupational & Environmental Setting, WILEY-VCH Verlag GmbH & Co. KGaA, Weinheim
5. Dasar-dasar Toksikologi Industri, Kim Anderson & Ronald Scott, (Penterjemah: Sho'im Hidayat), unpublished