

**RENCANA PROGRAM DAN
KEGIATAN PEMBELAJARAN SEMESTER
(RPKPS)**



Pengendalian Vektor
Semester 2/2 SKS/KUI-7213
Program Studi S2 Ilmu Kesehatan Masyarakat

Oleh:

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**Universitas Gadjah Mada
Fakultas Kedokteran, Kesehatan Masyarakat dan Keperawatan
2019**



Universitas Gadjah Mada

Fakultas Fakultas Kedokteran, Kesehatan Masyarakat, dan Keperawatan
Departemen/Program Studi S2 Ilmu Kesehatan Masyarakat

RENCANA PROGRAM DAN KEGIATAN PEMBELAJARAN SEMESTER (RPKPS)

Kode Mata Kuliah	Nama Mata Kuliah	Bobot (sks)	Semester	Status Mata Kuliah	Mata Kuliah Prasyarat																														
KUI - 7213	Vector Control	2	2	Compulsory	-																														
Capaian Pembelajaran Lulusan (CPL) yang dibebankan pada MK	<p><i>ELO 2. Able to analyze public health programs from 5 core public health principles</i> <i>ELO 3. Able to conduct and publish research</i> <i>ELO 4. Able to create effective, efficient and sustainable public health programs and health service deliveries</i> <i>Elo 6. Able to apply theories and principles in public health field concentrations or tracts</i></p>																																		
Capaian Pembelajaran Mata Kuliah (CPMK)	CPMK1	Students are able to explain vector control principles and their application in public health																																	
	CPMK2	Students are able to demonstrate techniques that can be used to assess problems and control vector																																	
	CPMK3	Students are able to compare and select methods that can be used to carry out vector control programs																																	
	CPMK4	Students are able to evaluate vector control efforts in Indonesia																																	
Pemetaan CPL dengan CPMK	<table border="1"> <thead> <tr> <th></th> <th>CPMK 1</th> <th>CPMK 2</th> <th>CPMK 3</th> <th>CPMK 4</th> </tr> </thead> <tbody> <tr> <td>ELO 2</td> <td>x</td> <td></td> <td></td> <td>x</td> </tr> <tr> <td>ELO 3</td> <td></td> <td>x</td> <td></td> <td></td> </tr> <tr> <td>ELO 4</td> <td></td> <td>X</td> <td>x</td> <td></td> </tr> <tr> <td>ELO 6</td> <td>x</td> <td></td> <td></td> <td>X</td> </tr> </tbody> </table>						CPMK 1	CPMK 2	CPMK 3	CPMK 4	ELO 2	x			x	ELO 3		x			ELO 4		X	x		ELO 6	x			X					
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ELO 4		X	x																																
ELO 6	x			X																															
Deskripsi Singkat Mata Kuliah	<p>The Vector Control course will be carried out based on the pattern of SCL (Student Centered Learning). This course discusses the science related to vector control chemically, as well as environmental management and vector resistance status to insecticides, dengue vectors, chikungunya, Japanese encephalitis, malaria, filariasis, anthrax. In addition, rats and ectoparasites will be discussed regarding their roles as vectors of bubonic plague and the role of mice as transmissible sources of leptospirosis. The lecture method uses face-to-face lecture models, question and answer sessions between students and lecturers, and group presentations with topics according to lecture material. With this method, the students are actively involved in the learning system, through directed and intensive discussions. The material provided in the lecture is also supported by practicum in the laboratory so that students can better understand what has been obtained in lectures. Students are also required to find new information about the results of research that can support the topics or material to be presented. All library search results or from the internet that can be trusted are then presented at the presentation and followed by discussions between groups and students. Various innovations such as inviting students to discuss, ask questions, review, answer questions from lecturers and other students, are methods that will be applied to open access to increase student creativity and leadership.</p>																																		
Bahan Kajian/Materi Pembelajaran	<ol style="list-style-type: none"> 1. Introduction 2. Rats, Ectoparasites in Rats and their Control 3. Control of Flies as Mechanical and Biological Vectors 4. Control of Dengue, Chikungunya, Zika, and Japanese Encephalitis Vectors 5. Control of Malaria and Filariasis Vectors 6. Effect of Vectors on Humans (1) 7. Effect of Vectors on Humans (2) 8. Leptospirosis and its Control 9. Insecticide Formulation and Dose (Mosquitoes) 10. Dengue Vector Survei in the Field 11. Vector Resistance toward Insecticides 12. Coursework: Environmental Management in Natural Disasters 13. Vector Competence and Vectorial Capacity 14. Practical Session: Testing Vector Resistance toward Insecticides 																																		
Metode Penilaian dan Kaitan dengan CPMK	<table border="1"> <thead> <tr> <th>Komponen Penilaian</th> <th>Persentase</th> <th>CPMK 1</th> <th>CPMK 2</th> <th>CPMK 3</th> <th>CPMK 4</th> </tr> </thead> <tbody> <tr> <td>Exam</td> <td>40%</td> <td>X</td> <td></td> <td></td> <td>x</td> </tr> <tr> <td>Presentation and Discussion</td> <td>20%</td> <td>X</td> <td></td> <td></td> <td>X</td> </tr> <tr> <td>Pretest and Posttest</td> <td>10%</td> <td></td> <td>X</td> <td>X</td> <td></td> </tr> <tr> <td>Report</td> <td>30%</td> <td></td> <td>X</td> <td>x</td> <td></td> </tr> </tbody> </table>					Komponen Penilaian	Persentase	CPMK 1	CPMK 2	CPMK 3	CPMK 4	Exam	40%	X			x	Presentation and Discussion	20%	X			X	Pretest and Posttest	10%		X	X		Report	30%		X	x	
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Daftar Bahan dan Referensi	<ol style="list-style-type: none"> 1. Emden, H., Service, M. <i>Pest and Vector Control</i>. Cambridge: Cambridge University Press; 2004 2. Mohan Rao A. Preventive measures for leptospirosis: Rodent control. <i>Indian J Med Microbiol</i> [serial online] 2006 3. Curtis, C. F. (1994). <i>4. Appropriate technology for vector control: impregnated bed nets, polystyrene beads and fly traps. Transactions of the Royal Society of Tropical Medicine and Hygiene, 88(2), 144-146.</i> doi:10.1016/0035-9203(94)90268-2 4. Fasanella, A., Scasciamacchia, S., Garofolo, G., Giangaspero, A., Tarsitano, E., & Adone, R. (2010). <i>Evaluation of the House Fly Musca domestica as a Mechanical Vector for an Anthrax. PLoS ONE, 5(8), e12219.</i> doi:10.1371/journal.pone.0012219 5. Ooi, E.-E., Goh, K.-T., & Gubler, D. J. (2006). <i>Dengue Prevention and 35 Years of Vector Control in Singapore. Emerging Infectious Diseases, 12(6), 887-893.</i> doi:10.3201/eid1206.051210 6. Benelli, G., & Mehlhorn, H. (2016). <i>Declining malaria, rising of dengue and Zika virus: insights for mosquito vector control. Parasitology Research, 115(5), 1747-1754.</i> doi:10.1007/s00436-016-4971-z 7. Raghavendra, K., Barik, T. K., Reddy, B. P. N., Sharma, P., & Dash, A. P. (2011). <i>Malaria vector control: from past to future. Parasitology Research, 108(4), 757-779.</i> doi:10.1007/s00436-010-2232-0 8. Sheppard PM, Macdonald WW, Tonn RJ. A new method of measuring the relative prevalence of Aedes aegypti. <i>Bull World Health Organ.</i> 1969;40(3):467-468. 9. Hemingway, J., & Ranson, H. (2000). <i>Insecticide Resistance in Insect Vectors of Human Disease. Annual Review of Entomology, 45(1), 371-391.</i> doi:10.1146/annurev.ento.45.1.371 10. Shaw, R. <i>Community-Based Disaster Risk Reduction</i>. Emerald; 2012 11. Calvez, E., Guillaumot, L., Girault, D., Richard, V., O'Connor, O., Paoaafaite, T., Dupont-Rouzeyrol, M. (2017). <i>Dengue-1 virus and vector competence of Aedes aegypti (Diptera: Culicidae) populations from New Caledonia. Parasites & Vectors, 10(1).</i> doi:10.1186/s13071-017-2319-x 			
Nama Dosen Pengampu (Team Teaching)	Dr. drh. Sitti Rahmah Umniyati, SU Dr. R.C. Hidayat Soesilohadi, MS			
Otorisasi	Tanggal Penyusunan	Koordinator Mata Kuliah	Koordinator Bidang Keahlian (Jika Ada)	Ketua Program Studi
		<i>Tanda Tangan Nama Terang</i>	<i>Tanda Tangan Nama Terang</i>	<i>Tanda Tangan Nama Terang</i>

Rencana Kegiatan Pembelajaran Mingguan (RKPM)

Minggu Ke-	Sub-CPMK (Kemampuan Akhir yang Direncanakan)	Metode Penilaian			Bahan Kajian (Materi Pembelajaran)	Metode Pembelajaran	Beban Waktu Pembelajaran	Pengalaman Belajar Mahasiswa	Media Pembelajaran	Pustaka dan Sumber Belajar Eksternal
		Indikator	Komponen	Bobot (%)						
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1	Students are expected to be able to describe vector-borne diseases Students are expected to be able to describe mechanical and biological vectors	Answering exam questions correctly	Exam	3%	Introduction	Face to face lecture and discussion	2 x 50 minutes	Classroom discussion	Powerpoint presentation	Emden, H., Service, M. Pest and Vector Control. Cambridge: Cambridge University Press; 2004
2	Students are expected to be able to explain the role of mice and their ectoparasites as vectors and controls	Answering exam questions correctly	Exam	3%	Rats, Ectoparasites in Rats and their Control	Face to face lecture and discussion	2 x 50 minutes	Classroom discussion	Powerpoint presentation	Mohan Rao A. Preventive measures for leptospirosis: Rodent control. Indian J Med Microbiol [serial online] 2006

3	<p>Students are expected to be able to explain the role of flies as mechanical and biological vectors</p> <p>Students are expected to be able to compare fly control techniques as vectors</p>	Answering exam questions correctly	Exam	3%	Control of Flies as Mechanical and Biological Vectors	Face to face lecture and discussion	2 x 50 minutes	Classroom discussion	Powerpoint presentation	<p>Curtis, C. F. (1994). 4. <i>Appropriate technology for vector control: impregnated bed nets, polystyrene beads and fly traps.</i> <i>Transactions of the Royal Society of Tropical Medicine and Hygiene</i>, 88(2), 144–146. doi:10.1016/0035-9203(94)90268-2</p>
4	<p>Students are expected to be able to explain the role of mosquitoes as a vector of dengue,</p>	Answering exam questions correctly	Exam	3%	Control of Dengue, Chikungunya, Zika, and Japanese Encephalitis Vectors	Face to face lecture and discussion	2 x 50 minutes	Classroom discussion	Powerpoint presentation	<p>Ooi, E.-E., Goh, K.-T., & Gubler, D. J. (2006). <i>Dengue</i></p>

	<p>chikungunya, zika and japanese encephalitis</p> <p>Students are expected to be able to compare surveillance and mosquito control techniques as vectors</p>									<p><i>Prevention and 35 Years of Vector Control in Singapore. Emerging Infectious Diseases, 12(6), 887–893.</i> doi:10.3201/eid1206.051210</p> <p>Benelli, G., & Mehlhorn, H. (2016). <i>Declining malaria, rising of dengue and Zika virus: insights for mosquito vector control. Parasitology Research, 115(5), 1747–1754.</i></p>
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										doi:10.1007/s00436-016-4971-z
5	<p>Students are expected to be able to explain the role of mosquitoes as a vector of malaria and filariasis</p> <p>Students are expected to be able to compare surveillance and mosquito control techniques as vectors</p>	Answering exam questions correctly	Exam	3%	Control of Malaria and Filariasis Vectors	Face to face lecture and discussion	2 x 50 minutes	Classroom discussion	Powerpoint presentation	<p>Raghavendra, K., Barik, T. K., Reddy, B. P. N., Sharma, P., & Dash, A. P. (2011). <i>Malaria vector control: from past to future. Parasitology Research, 108(4), 757–779.</i></p> <p>doi:10.1007/s00436-010-2232-0</p>
6	<p>Students are able to assess and evaluate the effects of vectors and efforts to control malaria and filariasis in Indonesia</p>	<p>Answering exam questions correctly</p> <p>Appropriate analysis in presentation</p>	<p>Exam</p> <p>Presentation</p>	<p>3%</p> <p>5%</p>	Effect of Vectors on Humans (1)	Coursework and group discussion	2 x 50 minutes	Group work and discussion	Powerpoint presentation	<p>Raghavendra, K., Barik, T. K., Reddy, B. P. N., Sharma, P., & Dash, A. P. (2011). <i>Malaria</i></p>

										<i>vector control: from past to future. Parasitology Research, 108(4), 757–779. doi:10.1007/s00436-010-2232-0</i>
7	Students are able to evaluate the impact of vectors and efforts to control dengue, chikungunya and zika in Indonesia	<p>Answering exam questions correctly</p> <p>Appropriate analysis in presentation</p>	<p>Exam</p> <p>Presentation</p>	<p>3%</p> <p>5%</p>	Effect of Vectors on Humans (2)	Coursework and group discussion	2 x 50 minutes	Group work and discussion	Powerpoint presentation	<p>Ooi, E.-E., Goh, K.-T., & Gubler, D. J. (2006). <i>Dengue Prevention and 35 Years of Vector Control in Singapore. Emerging Infectious Diseases, 12(6), 887–893. doi:10.3201/eid1206.051210</i></p>

										Benelli, G., & Mehlhorn, H. (2016). <i>Declining malaria, rising of dengue and Zika virus: insights for mosquito vector control. Parasitology Research, 115(5), 1747–1754. doi:10.1007/s00436-016-4971-z</i>
8	Students are able to evaluate and evaluate the effects of vectors and efforts to control leptospirosis in Indonesia	Answering exam questions correctly Appropriate analysis in presentation	Exam Presentation	3% 5%	Leptospirosis and its Control	Coursework and group discussion	2 x 50 minutes	Group work and discussion	Powerpoint presentation	Mohan Rao A. Preventive measures for leptospirosis: Rodent control. Indian J Med Microbiol [serial

										online] 2006
9	Students are able to explain the role of insecticides in controlling mosquito vectors	Answering exam questions correctly	Exam	3%	Insecticide Formulation and Dose (Mosquitoes)	Face to face lecture and discussion	2 x 50 minutes	Classroom discussion	Powerpoint presentation	CURTIS, C. F., MYAMBA, J., & WILKES, T. J. (1996). <i>Comparison of different insecticides and fabrics for anti-mosquito bednets and curtains. Medical and Veterinary Entomology</i> , 10(1), 1–11. doi:10.1111/j.1365-2915.1996.tb00075.x
10	Students are able to demonstrate dengue vector survey	Answering exam questions correctly	Exam	3%	Dengue Vector Survei in the Field	Coursework (survey) and field work	2 x 50 minutes	Field practice	Gamadotik Examination tools	Sheppard PM, Macdonald WW, Tonn

	techniques	Appropriate results in report	Report	10%						RJ. A new method of measuring the relative prevalence of <i>Aedes aegypti</i> . <i>Bull World Health Organ.</i> 1969;40(3): 467–468.
11	Students are able to demonstrate the method of detecting vector resistance status to insecticides	Answering questions correctly Appropriate results in report	Pretest and Posttest Report	5% 10%	Vector Resistance toward Insecticides	Practical session	2 x 50 minutes	Practice in the laboratory	Laboratory tools	Hemingway, J., & Ranson, H. (2000). <i>Insecticide Resistance in Insect Vectors of Human Disease. Annual Review of Entomology</i> , 45(1), 371–391. doi:10.1146/annurev.ent.45.1.371

12	Students are able to apply the theory of environmental control in dealing with health problems in natural disaster emergencies	Answering exam questions correctly Appropriate analysis in presentation	Exam Presentation	3% 5%	Coursework: Environmental Management in Natural Disasters	Coursework and group discussion	2 x 50 minutes	Group work and discussion Independent reading	Powerpoint presentation	Shaw, R. Community-Based Disaster Risk Reduction. Emerald; 2012
13	Students are expected to be able to explain the competence of dengue vectors and the capacity of malaria vectors	Answering exam questions correctly	Exam	3%	Vector Competence and Vectorial Capacity	Face to face lecture and discussion	2 x 50 minutes	Classroom discussion	Powerpoint presentation	Calvez, E., Guillaumot, L., Girault, D., Richard, V., O'Connor, O., Paoaafaite, T., Dupont-Rouzeyrol, M. (2017). <i>Dengue-1 virus and vector competence of Aedes aegypti (Diptera: Culicidae) populations from New Caledonia. Parasites &</i>

										<i>Vectors</i> , <i>10(1)</i> . doi:10.1186/ s13071- 017-2319-x
14	Students are able to demonstrate vector resistance testing techniques for insecticides	Answering questions correctly Appropriate results in report	Pretest and Posttest Report	5% 10%	Practical Session: Testing Vector Resistance toward Insecticides	Practical session	2 x 50 minutes	Laboratory practice	Laboratory tools	Hemingway, J., & Ranson, H. (2000). <i>Insecticide Resistance in Insect Vectors of Human Disease. Annual Review of Entomology</i> , <i>45(1)</i> , 371–391. doi:10.1146/annurev.ent.45.1.371

Keterangan :

Penilaian pembelajaran (3), (4), (5) dapat berupa:

Metode:

Tatap muka: observasi, tes tertulis, kuis, dsb

Daring: tugas *essay*, *feedback*, penilaian teman sejawat, penyusunan proposal, penyusunan paper, dsb

Instrumen

Tatap muka: soal *essay*, dsb

Daring: pilihan ganda, dsb

Bobot nilai

Bahan kajian (6) dapat berupa:

Sumber belajar yang diberikan oleh pengampu MK, jelaskan substansinya

Sumber belajar yang diperoleh mahasiswa secara online dalam bentuk teks, *slides*, *audio*, *video* dsb, jelaskan substansinya.

Metode pembelajaran (7) dapat berupa:

Metode tatap muka: pemaparan, *collaborative learning*, *problem based learning*, dsb

Metode daring: *self learning*, tugas terstruktur, *essay writing*, dsb

Beban waktu pembelajaran (8):

Tatap muka 2 x 50 menit, atau

Daring 2 x 60 menit belajar mandiri, 2 x 60 menit tugas terstruktur

Pengalaman belajar/aktivitas mahasiswa (9) dapat berupa:

Tatap muka: belajar berkelompok, berdiskusi, berdebat secara konstruktif, pemecahan masalah, dsb

Daring: belajar mandiri, berlatih mengkaji literature, berlatih menulis *essay*, dsb

Media pembelajaran (10) dapat berupa:

Tatap muka: computer, in focus, alat tulis, alat peraga, dsb

Daring: computer, *gadget*, akses internet, dsb