

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



Public Health Biology
Semester 2 / 2 SKS/ KUI-6231
Master of Public Health

By:

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**Universitas Gadjah Mada
Faculty of Medicine, Public Health and Nursing
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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-6231	Public Health Biology	2	2	Core																				
Capaian Pembelajaran Lulusan (CPL) yang dibebankan pada MK	<p>ELO 2. Able to analyze public health programs from 5 core public health principles</p> <p>ELO 6. Able to apply theories and principles in public health field concentrations or tracts</p>																								
Capaian Pembelajaran Mata Kuliah (CPMK)	CPMK1	Describe the relationship between biological factors and public health																							
	CPMK2	Apply principles of biology in analyzing public health issues																							
	CPMK3	Analyze a public health intervention based on biological approaches																							
Pemetaan CPL dengan CPMK	<table border="1"> <thead> <tr> <th></th> <th>CPMK 1</th> <th>CPMK 2</th> <th>CPMK 3</th> </tr> </thead> <tbody> <tr> <td>ELO 2</td> <td>X</td> <td></td> <td>X</td> </tr> <tr> <td>ELO 6</td> <td></td> <td>X</td> <td></td> </tr> </tbody> </table>						CPMK 1	CPMK 2	CPMK 3	ELO 2	X		X	ELO 6		X									
	CPMK 1	CPMK 2	CPMK 3																						
ELO 2	X		X																						
ELO 6		X																							
Deskripsi Singkat Mata Kuliah	<p>The Public Health Biology course will discuss aspects of biology in the context of public health such as infectious and non-communicable diseases, pathogen development and transmission of disease, and the immune response of the human body. Biological aspects have a strong role and are the basis for identifying, transmitting and controlling diseases. This course will discuss population dynamics, disease ecology, disease control modeling methods, degenerative disease pathogens, bioinformatics, pathogens in infectious diseases, immunity and disease resistance, the genetic basis of a disease, micronutrients, toxicology, and ecology in health promotion. This course will also raise the MDR-TB case as a material for student discussion.</p> <p>Through this course, students are expected to have a strong knowledge of various biological factors for public health, be able to apply biological principles in analyzing public health problems, and develop health interventions based on biological principles.</p>																								
Bahan Kajian/Materi Pembelajaran	<ol style="list-style-type: none"> 1. Population Dynamics and Interaction 2. Disease Ecology 3. Modeling Disease Control Measures 4. Degenerative Disease Pathogens 5. Bioinformatics 6. Infectious Disease Pathogens 7. Immunity and Disease Resistance 8. Genetic Basis of Disease 9. Drug Resistance as a Public Health Issue: The Case of MDR-TB 10. Toxicology and Public Health 11. Biology of Cancers 12. Ecology and Health Promotion 																								
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> </tr> </thead> <tbody> <tr> <td>Final Exam</td> <td>70%</td> <td>X</td> <td>X</td> <td>X</td> </tr> <tr> <td>Discussion</td> <td>20%</td> <td>X</td> <td>X</td> <td>X</td> </tr> <tr> <td>Attendance</td> <td>10%</td> <td>-</td> <td>-</td> <td>-</td> </tr> </tbody> </table>					Komponen Penilaian	Persentase	CPMK 1	CPMK 2	CPMK 3	Final Exam	70%	X	X	X	Discussion	20%	X	X	X	Attendance	10%	-	-	-
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Final Exam	70%	X	X	X																					
Discussion	20%	X	X	X																					
Attendance	10%	-	-	-																					
Daftar Bahan dan Referensi	<ol style="list-style-type: none"> 1. Macbeth, H., Collinson, P. Human Population Dynamics. New York: Cambridge University Press; 2002 2. Schneider, Mary-Jane 2011. Introduction to Public Health Third Edition, Philippine Edition, Jones & Bartlett, Philippine. 3. Keesing, Felicia 2008. Infectious Disease Ecology, Princeton University Press, USA 4. Ostfeld, RS; Keesing, F & Eviner, Valerie 2008. Infectious Disease Ecology Effects of Ecosystems on Disease and of Disease on Ecosystems, Princeton University Press, USA 																								

	<ol style="list-style-type: none"> 5. Heesterbeek H, Anderson RM, Andreasen V, Bansel S, De Angelis D, Dye C, et al. Modeling infectious disease dynamics in the complex landscape of global health. <i>Science</i> (2015) 6. Nicolson, G. L. (2008). <i>Chronic Bacterial and Viral Infections in Neurodegenerative and Neurobehavioral Diseases. Laboratory Medicine</i>, 39(5), 291–299. doi:10.1309/96m3bwyp42l11bfu 7. Polanski, A., Kimmel, M. <i>Bioinformatics</i>. New York: Springer; 2007 8. Shetty, N., Tang, J., Andrews, J. <i>Infectious Disease: Pathogenesis, Prevention and Case Studies</i>. Wiley-Blackwell; 2007 9. Friedland, J., Lightstone, L. <i>Infection and Immunity</i>. Taylor & Francis Group; 2003 10. Maulik, N., Maulik, G., <i>Nutrition, Epigenetic Mechanisms, and Human Disease</i>. Taylor & Francis Group; 2011 11. Nachegea, J. B., & Chaisson, R. E. (2003). <i>Tuberculosis Drug Resistance: A Global Threat. Clinical Infectious Diseases</i>, 36(Supplement_1), S24–S30. doi:10.1086/344657 12. Zimmermann, M. <i>Burgerstein's Handbook of Nutrition: Micronutrients in the Prevention and Therapy of Disease</i>. Germany: Thieme Publishing Group; 2001 13. J. Casarett, Louis & Doull, John & D. Klaassen, Curtis. <i>Toxicology : the basic science of poisons 7th Edition</i>. New York: McGraw-Hill; 2008 14. Maxwell. N. <i>Understanding Environmental Health: How We Live in the World</i>. Jonas & Bartlett Publishers; 2009 15. Ruddon, R. <i>Cancer Biology 4th Ed</i>. Oxford: Oxford University Press; 2007 16. McLeroy, K., Bibeau D., Steckler, A., Glanz, K. <i>An Ecological Perspective on Health Promotion Programs</i> (1988) 			
<p>Nama Dosen Pengampu (<i>Team Teaching</i>)</p>	<p>Prof. dr. Hari Kusnanto, DrPH Prof. Dr. dr. Adi Heru Sutomo, M.Sc Dr. Eko Sugiarto, DEA Dr. Siti Helmiyati, DCN, M.Kes Dr. Lutfan Lazuardi, Ph.D Prof. Tri Wibawa, MD, Ph.D Prof. dr. Sofia Mubarika, Ph.D Prof. dr. Marsetyawan, HNE, M.Sc, Ph.D dr. Riris Andono Ahmad, MPH, Ph.D</p>			
<p>Otorisasi</p>	<p>Tanggal Penyesuaian</p>	<p>Koordinator Mata Kuliah</p>	<p>Koordinator Bidang Keahlian (Jika Ada)</p>	<p>Ketua Program Studi</p>
		<p><i>Tanda Tangan Nama Terang</i></p>	<p><i>Tanda Tangan Nama Terang</i></p>	<p><i>Tanda Tangan Nama Terang</i></p>

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	Describe the principles of population growth dynamics and the supporting/inhibiting factors	Answering exam questions correctly Active in discussion	Final Exam Discussion	5% 1.5%	Population dynamics and Interaction	Face-to-face discussion	2 x 50 minutes	Classroom discussion	Powerpoint slide	Macbeth, H., Collinson, P. Human Population Dynamics. New York: Cambridge University Press; 2002
2	Describe the function of the ecosystem toward disease dynamics	Answering exam questions correctly Active in discussion	Final Exam Discussion	5% 1.5%	Disease Ecology	Face-to-face discussion	2 x 50 minutes	Classroom discussion	Powerpoint slide	Schneider, Mary-Jane 2011. Introduction to Public Health Third Edition, Philippine Edition, Jones & Bartlett, Philippine. Keesing, Felicia 2008. Infectious Disease Ecology,

										Princeton University Press, USA Ostfeld, RS; Keesing, F & Eviner, Valerie 2008. Infectious Disease Ecology Effects of Ecosystems on Disease and of Disease on Ecosystems, Princeton University Press, USA
3	Describe the basic principles in disease modeling and its application in public health	Answering exam questions correctly Active in discussion	Final Exam Discussion	5% 1.5%	Modeling Disease Control Measures	Face-to-face discussion	2 x 50 minutes	Classroom discussion	Powerpoint slide	Heesterbeek H, Anderson RM, Andreasen V, Bansel S, De Angelis D, Dye C, et al. Modeling infectious disease dynamics in the complex

										landscape of global health. Science (2015)
4	Describe the pathogenesis of degenerative diseases	Answering exam questions correctly Active in discussion	Final Exam Discussion	5% 1.5%	Degenerative Disease Pathogens	Face-to-face discussion	2 x 50 minutes	Classroom discussion	Powerpoint slide	Nicolson, G. L. (2008). <i>Chronic Bacterial and Viral Infections in Neurodegenerative and Neurobehavioral Diseases. Laboratory Medicine, 39(5), 291–299.</i> doi:10.1309/96m3bwyp42l11bfu
5	Describe the use of bioinformatics in public health	Answering exam questions correctly Active in discussion	Final Exam Discussion	5% 1.5%	Bioinformatics	Face-to-face discussion	2 x 50 minutes	Classroom discussion	Powerpoint slide	Polanski, A., Kimmel, M. Bioinformatics. New York: Springer; 2007

6	Describe the concept of pathogens in infectious diseases	Answering exam questions correctly Active in discussion	Final Exam Discussion	5% 1.5%	Infectious Disease Pathogens	Face-to-face discussion	2 x 50 minutes	Classroom discussion	Powerpoint slide	Shetty, N., Tang, J., Andrews, J. Infectious Disease: Pathogenesis, Prevention and Case Studies. Wiley-Blackwell; 2007
7	Describe the role of disease immunity and resistance	Answering exam questions correctly Active in discussion	Final Exam Discussion	5% 1.5%	Immunity and Disease Resistance	Face-to-face discussion	2 x 50 minutes	Classroom discussion	Powerpoint slide	Friedland, J., Lightstone, L. Infection and Immunity. Taylor & Francis Group; 2003
8	Describe the role of genetics toward disease growth	Answering exam questions correctly Active in discussion	Final Exam Discussion	5% 1.5%	Genetic Basis of Disease	Face-to-face discussion	2 x 50 minutes	Classroom discussion	Powerpoint slide	Maulik, N., Maulik, G., Nutrition, Epigenetic Mechanisms, and Human Disease. Taylor & Francis Group; 2011
9	Evaluate the factors behind	Answering exam	Final Exam	5%	Drug Resistance as a Public Health Issue:	Face-to-face discussion	2 x 50 minutes	Classroom discussion	Powerpoint slide	Nachega, J. B., & Chaisson, R.

	TB drug resistance	questions correctly Active in discussion	Discussion	1.5%	The Case of MDR-TB			Case study		E. (2003). <i>Tuberculosis Drug Resistance: A Global Threat. Clinical Infectious Diseases, 36(Supplement_1), S24–S30.</i> doi:10.1086/344657
10	Describe the effect of micronutrient deficiency toward health	Answering exam questions correctly Active in discussion	Final Exam Discussion	5% 1.5%	Micronutrients	Face-to-face discussion	2 x 50 minutes	Classroom discussion	Powerpoint slide	Zimmerman, M. <i>Burgerstein's Handbook of Nutrition: Micronutrients in the Prevention and Therapy of Disease.</i> Germany: Thieme Publishing Group; 2001

11	Describe the role of toxicology in public health	Answering exam questions correctly Active in discussion	Final Exam Discussion	5% 1.5%	Toxicology and Public Health	Face-to-face discussion	2 x 50 minutes	Classroom discussion	Powerpoint slide	J. Casarett, Louis & Doull, John & D. Klaassen, Curtis. Toxicology : the basic science of poisons 7 th Edition. New York: McGraw-Hill; 2008 Maxwell. N. Understanding Environmental Health: How We Live in the World. Jonas & Bartlett Publishers; 2009
12	Describe the biological aspects of cancer	Answering exam questions correctly Active in discussion	Final Exam Discussion	5% 1.5%	Biology of Cancers	Face-to-face discussion	2 x 50 minutes	Classroom discussion	Powerpoint slide	Ruddon, R. Cancer Biology 4 th Ed. Oxford: Oxford University Press; 2007

13	Describe the ecological aspects in health promotion	Answering exam questions correctly Active in discussion		5% 1.5%	Ecology and Health Promotion	Face-to-face discussion	2 x 50 minutes	Classroom discussion	Powerpoint slide	McLeroy, K., Bibeau D., Steckler, A., Glanz, K. An Ecological Perspective on Health Promotion Programs (1988)
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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