

## Universitas Negeri Surabaya Faculty of Sports and Health Sciences, Physical Education, Health & Recreation Undergraduate Study Program

Document Code

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Courses		CODE			c	Course	e Fami	ily			Cre	dit Wei	ght		SEME	STER		ompilat ate	tion
Exercise Phy	/siology	852010204	15				Isory S	Study F	Progra	m	T=2	2 P=0	ECTS	5=3.18		2		ily 16, 2	2024
AUTHORIZA	TION	SP Develo	per			Subject	t <del>s</del>		Cour	rse Clu	uster C	Coordin	nator		Study	Progra	m Coo	ordinat	tor
		Arifah Kaha	arina, S	.Pd., M	l.Kes				Dr. d	lr. Enda	ang Sri	i Wahju	ini, M.K	es.	Dr. M	lochama N	ad Ridv M.Pd.	van, S.I	.Pd.,
Learning model	Case Studies	I							<u> </u>						<u> </u>				
Program	PLO study pro	gram that is charg	ged to	the co	ourse	е													
Learning Outcomes	Program Object	tives (PO)																	
(PLO)	PO - 1	Able to demonstrat	te a res	ponsibl	le atti	itude t	owards	s work	in the	ir field	of expe	ertise in	idepend	dently					
	PO - 2	Able to make appropriate decisions in the context of solving problems in their field of expertise, based on the results of informat and data analysis							ation										
	PO - 3	Able to solve sport	s educa	ation pr	obler	ns and	1 make	e decis	ions b	ased o	n sciei	nce							
	PO - 4		ster theoretical concepts in the field of knowledge and theoretical concepts of physical education in depth, and be able ulate procedural problem solving							le to									
	PLO-PO Matrix	· ·																	
		P.0																	
		PO-1																	
		PO-2																	
		PO-3																	
		PO-4	PO-4																
	DO Matrix at th	e end of each lea	mina (	ctore (	(Sub	PO													
	F O Mutily ut	e enu or east rea	111119 -	stage i	Jun														
		P.0	1								Week	(							٦
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	1
		PO-1																1	1
		PO-2													1				1
		PO-3																	1
		PO-4																	]
Short Course Description	cooling down phy The material is o	ides understanding ysiology, cardiorespi delivered using a pi rformance, written te	ratory sy roblem	ystem, based	VO2 learn	2max, a	aś well	l as wo	orking s	smart,	collabo	orating i	in grou	ps and	being re	esponsib	ble for t	their du	uties.
References	Main :																		
	<ol> <li>Hasiane, Juanita Dolores dan Wahjuni, Endang Sri. 2017. Fisiologi Olahraga, buku ajar. Surabaya : Unesa University Press.</li> <li>Enoka, R.M. and Duchateau, J. 2019. Chapter 7 - Muscle Function: Strength, Speed, and Fatigability. Elsevier. pp. 129–157. https://doi.org/10.1016/B978-0-12-814593-7.00007-4.</li> <li>Hammond, K.M. et al. 2019. Chapter 11 - Carbohydrate Metabolism During Exercise. Elsevier. pp. 251–270. https://doi.org/10.1016/B978-0-12-814593-7.00001-6.</li> <li>Kilarski, W. 2018. Functional Morphology of the Striated Muscle, Muscle and Exercise Physiology. Elsevier. pp. 27-38. https://doi.org/10.1016/B978-0-12-814593-7.00002-5.</li> <li>Sherwood, L. 2019. Human Physiology: From cells to systems, 9th revised ed. The Neuroscientist.</li> </ol>																		
	Supporters:																		
Supporting lecturer	Irma Febriyanti, S dr. Tri Putra Rah dr. Nur Shanti Re	mad Ramadani, Sp. etno Pembayun, M.C tanto, S.Kep.,Ns., M S.Pd., M.Kes.	Dr.																

Week-	Final abilities of each learning stage	Evalu	ation	Learning Student As	earning, methods, ssignments, tted time]	Learning materials [ References ]	Assessment Weight (%)
	(Sub-PO)	Indicator	Criteria & Form	Offline ( offline )	Online ( online )		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Able to explain cell physiology, physiological principles of exercise, and its scope	<ol> <li>Explain cell physiology</li> <li>Explain the meaning of exercise physiology</li> <li>Explain the scope of exercise physiology</li> </ol>	Criteria: Full marks are obtained if you do all the questions correctly. Form of Assessment : Participatory Activities	Learning Form: Face-to-face lecture Learning Method: Lecture, discussion and question and answer [TM : 1 (2x50')] Student assignment: Independent task to search for literature and summarize the mechanism of muscle contraction [PT BM : (1 1) x (2X60')] 2 X 50	Learning Form: Virtual face-to-face lecture via vilearning and zoom Learning Method: Lecture, discussion and question and answer [TM : 1 (2x50')] Student assignment: Independent assignment via assignment on vilearning searching for literature and summarizing the mechanism of muscle contraction [PT BM : (1 1) x (2X60')] 2 x 50	Material: Cell physiology, understanding of exercise physiology and its scope. <b>References:</b> Hasiane, Juanita Dolores and Wahjuni, Endang Sri. 2017. Sports Physiology, textbook. Surabaya: Unesa University Press.	10%

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2	Able to understand and explain the	1.Explain the	Criteria:	Learning Form:	Learning Form:	Material:	5%
	structure and	structure of	Full marks are obtained if you do	Face-to-face lecture	Virtual face-to-face lecture via vilearning and	Structure and function of cell	
	organelles of cells and their functions	cells and their organelles.	all the questions	Learning Method:	zoom	organelles	
		2.Explain the	correctly.	Lecture,		Reference:	
		function of cell	Forms of	Problem based	Learning Method:	Sherwood, L.	
		organelles.	Assessment :	learning/case study [TM : 1 (2x50')]	Lecture, Problem based	2019. Human Physiology:	
			Participatory	. 1 (2×30)]	learning/case study [TM	From cells to	
			Activities, Project Results	Phase 1: Learner	: 1 (2x50')]	systems, 9th	
			Assessment /	orientation to the	Dhase 1. Orientation of	revised ed. The	
			Product	problem; The lecturer conveys the	<ul> <li>Phase 1: Orientation of students on the problem;</li> </ul>	Neuroscientist.	
			Assessment, Tests	problem that will be	The lecturer conveys the		
				solved as a group.	problem that will be		
				Students observe and understand the problem	solved as a group. Students observe and		
				presented by the lecturer	understand the problem		
				or obtained from the	presented by the lecturer		
				recommended reading	or obtained from the		
				<ul><li>material.</li><li>Phase 2: Organize</li></ul>	recommended reading material.		
				students to learn;	Phase 2: Organize		
				The lecturer ensures that			
				each member understands their	The lecturer ensures that each member		
				respective assignments.	understands their		
				Students discuss and	respective assignments.		
				divide assignments to	Students discuss and		
				find the data/materials/tools	divide assignments to find the		
				needed to solve the	data/materials/tools		
				problem	needed to solve the		
				<ul> <li>Phase 3: Guiding individual and group</li> </ul>	problem • Phase 3: Guiding		
				investigations;	individual and group		
				Lecturers monitor	investigations;		
				students' involvement in collecting data/materials	Lecturers monitor students' involvement in		
				during the investigation	collecting data/materials		
				process.	during the investigation		
				Students conduct	process.		
				investigations (search for	Students conduct investigations (search		
				data/references/sources)	for		
				for group discussion	data/references/sources)		
				<ul><li>Materials</li><li>Phase 4: Develop and</li></ul>	for group discussion materials		
				present assignment	Phase 4: Develop and		
				results; and	present assignment		
				the lecturer monitors the discussion and guides	results; and the lecturer monitors the		
				the creation of each	discussion and guides		
				group's assignments	the creation of each		
				ready to be presented. Students hold	group's assignments ready to be presented.		
				discussions to produce	Students hold		
				problem-solving	discussions to produce		
				solutions and the results are presented	problem-solving solutions and the results		
				Phase 5: Analyze and	are presented		
				evaluate the problem-	<ul> <li>Phase 5: Analyze and</li> </ul>		
				solving process. Lecturer: guides the	evaluate the problem- solving process.		
				presentation and	Lecturer: guides the		
				encourages groups to	presentation and		
				give awards and input to	encourages groups to		
				other groups. Students. Each group	give awards and input to other groups.		
				makes a presentation,	Students. Each group		
				the other groups give	makes a presentation,		
				appreciation. The activity continues by	the other groups give appreciation. The activity		
				summarizing/making	continues by		
				conclusions based on	summarizing/making		
				input obtained from other	conclusions based on		
				groups. 2 X 50	input obtained from other groups.		
					2 x 50		
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3	Able to conclude	1.Explain muscle	Criteria:	Learning Form:	Learning Form:	Material:	5%
	muscle function and work and	types	Full marks are obtained if you do	Face-to-face lecture	Virtual face-to-face	Muscle types	
	fatigue	2.Explain the	all the questions	Learning Method:	lecture via vilearning and zoom	References: Hasiane, Juanita	
	-	mechanism of	correctly.	Lecture,	20011	Dolores and	
		skeletal muscle		Problem based	Learning Method:	Wahjuni,	
		contraction 3.Explain the	Forms of Assessment :	learning/case study [TM	Lecture,	Endang Sri.	
		function of	Participatory	: 1 (2x50')]	Problem based	2017. Sports	
		skeletal	Activities, Project		learning/case study [TM	Physiology,	
		muscles.	Results	Phase 1: Learner     orientation to the	: 1 (2x50')]	textbook.	
			Assessment /	problem;	Phase 1: Orientation of	Surabaya: Unesa	
			Product	The lecturer conveys the	students on the problem;	University Press.	
			Assessment, Tests	problem that will be	The lecturer conveys the		
				solved as a group.	problem that will be	Material:	
				Students observe and	solved as a group.	Mechanism of	
				understand the problem presented by the lecturer	Students observe and understand the problem	muscle	
				or obtained from the	presented by the lecturer	contraction Reference:	
				recommended reading	or obtained from the	Kilarski, W.	
				material.	recommended reading	2018. Functional	
				Phase 2: Organize	material.	Morphology of	
				students to learn;	Phase 2: Organize	the Striated	
				The lecturer ensures that each member	students to learn; The lecturer ensures that	Muscle, Muscle	
				understands their	each member	and Exercise Physiology.	
				respective assignments.	understands their	Elsevier. pp. 27-	
				Students discuss and	respective assignments.	38.	
				divide assignments to	Students discuss and	https://doi.org/	
				find the data/materials/tools	divide assignments to find the		
				needed to solve the	data/materials/tools		
				problem	needed to solve the		
				Phase 3: Guiding	problem		
				individual and group	Phase 3: Guiding		
				investigations; Lecturers monitor	individual and group investigations;		
				students' involvement in	Lecturers monitor		
				collecting data/materials	students' involvement in		
				during the investigation	collecting data/materials		
				process.	during the investigation		
				Students conduct	process. Studente conduct		
				investigations (search for	Students conduct investigations (search		
				data/references/sources)	for		
				for group discussion	data/references/sources)		
				materials	for group discussion		
				Phase 4: Develop and	materials		
				present assignment results: and	<ul> <li>Phase 4: Develop and present assignment</li> </ul>		
				the lecturer monitors the	results; and		
				discussion and guides	the lecturer monitors the		
				the creation of each	discussion and guides		
				group's assignments	the creation of each		
				ready to be presented. Students hold	group's assignments ready to be presented.		
				discussions to produce	Students hold		
				problem-solving	discussions to produce		
				solutions and the results	problem-solving		
				are presented	solutions and the results are presented		
				<ul> <li>Phase 5: Analyze and evaluate the problem-</li> </ul>	Phase 5: Analyze and		
				solving process.	evaluate the problem-		
				Lecturer: guides the	solving process.		
				presentation and	Lecturer: guides the		
				encourages groups to	presentation and		
				give awards and input to other groups.	encourages groups to give awards and input to		
				Students. Each group	other groups.		
				makes a presentation,	Students. Each group		
				the other groups give	makes a presentation,		
				appreciation. The activity	the other groups give		
				continues by	appreciation. The activity		
				summarizing/making conclusions based on	continues by summarizing/making		
	1			input obtained from other	conclusions based on		
1							
				groups.	input obtained from other		

4	Understand the energy supply	1.Explain the process of	Criteria: Full marks are	for Learning: Face-to-face lecture	for Learning: Virtual face-to-face	Material: Energy systems	5%
	system	anaerobic	obtained if you do all the questions		lectures via vilearning	in sports	
		metabolism	correctly.	Learning Method: Lecture,	and zoom	References: Hasiane, Juanita	
		and the energy it produces.	Forms of	Problem based	Learning Methods:	Dolores and	
		2.Explain the	Assessment :	learning/case study [TM	Lecture,	Wahjuni, Endona Cri	
		aerobic	Participatory	: 2 (2x50')]	Problem based learning/case study [TM	Endang Sri. 2017. Sports	
		metabolic process and	Activities, Project Results		: 2 (2x50')]	Physiology,	
		the energy it	Assessment /	<ul> <li>Phase 1: Orientation of students to the problem;</li> </ul>	Phase 1: Orientation of	textbook. Surabaya:	
		produces.	Product Assessment,	The lecturer conveys the	students on problems;	Unesa	
		3.Distinguish between	Portfolio	problem that will be solved as a group.	The lecturer conveys the problem that will be	University Press.	
		metabolic	Assessment	Students observe and	solved as a group.		
		systems that		understand the problem presented by the lecturer	Students observe and understand the problem		
		work in various types of		or obtained from the	presented by the lecturer		
		physical		recommended reading	or obtained from the		
		activity.		<ul><li>material.</li><li>Phase 2: Organize</li></ul>	recommended reading material.		
				students to learn;	Phase 2: Organize		
				The lecturer ensures that each member	students to learn; The lecturer ensures that		
				understands their	each member		
				respective assignments. Students discuss and	understands their respective assignments.		
				divide assignments to	Students discuss and		
				find the data/materials/tools	divide assignments to find the		
				needed to solve the	data/materials/tools		
				problem	needed to solve the		
				Phase 3: Guiding     individual and group	<ul><li>Problem</li><li>Phase 3: Guiding</li></ul>		
				investigations;	individual and group		
				Lecturers monitor students' involvement in	investigations; Lecturers monitor		
				collecting data/materials	students' involvement in		
				during the investigation process.	collecting data/materials during the investigation		
				Students conduct	process.		
				investigations (search for	Students conduct investigations (search		
				data/references/sources)	for		
				for group discussion materials	data/references/sources)		
				Phase 4: Develop and	for group discussion materials		
				present assignment	Phase 4: Develop and		
				results; and the lecturer monitors the	present assignment results; and		
				discussion and guides	the lecturer monitors the		
				the creation of each group's assignments	discussion and guides the creation of each		
				ready to be presented.	group's assignments		
				Students hold discussions to produce	ready to be presented. Students hold		
				problem-solving	discussions to produce		
				solutions and the results are presented	problem-solving solutions and the results		
				<ul> <li>Phase 5: Analyze and</li> </ul>	are presented		
				evaluate the problem- solving process.	Phase 5: Analyze and evaluate the problem-		
				Lecturer: guides the	solving process.		
				presentation and encourages groups to	Lecturer: guides the presentation and		
				give awards and input to	encourages groups to		
				other groups. Students. Each group	give awards and input to		
				makes a presentation,	other groups. Students. Each group		
				the other groups give	makes a presentation,		
				appreciation. The activity continues by	the other groups give appreciation. The activity		
				summarizing/making	continues by		
				conclusions based on input obtained from other	summarizing/drawing conclusions based on		
				groups.	input obtained from other		
					groups.		
				Student assignment:			
				Independent task to	Student assignment:		
				differentiate metabolic systems that work in	Independent assignments through		
				various types of physical	assignments in		
				activity. [PT BM : (1 1) x (2X60')]	vilearning distinguish metabolic systems that		
				2 X 50	work in various types of		
					physical activity. [PT BM : (1 1) x (2X60')]		
					2 x 50		
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5	Understand the energy supply	1.Explain the process of	Criteria: Full marks are	for Learning: Face-to-face lecture	for Learning: Virtual face-to-face	Material: Energy systems	10%
	system	anaerobic	obtained if you do		lectures via vilearning	in sports	
		metabolism	all the questions correctly.	Learning Method:	and zoom	References:	
		and the energy		Lecture, Problem based	Learning Methods:	Hasiane, Juanita Dolores and	
		it produces. 2.Explain the	Forms of Assessment :	learning/case study [TM	Lecture,	Wahjuni,	
		aerobic	Participatory	: 2 (2x50')]	Problem based learning/case study [TM	Endang Sri.	
		metabolic	Activities, Project		: 2 (2x50')]	2017. Sports Physiology,	
		process and	Results Assessment /	Phase 1: Orientation of		textbook.	
		the energy it produces.	Product	students to the problem; The lecturer conveys the	<ul> <li>Phase 1: Orientation of students on problems;</li> </ul>	Surabaya: Unesa	
		3.Distinguish	Assessment, Portfolio	problem that will be	The lecturer conveys the	University Press.	
		between	Assessment	solved as a group.	problem that will be		
		metabolic systems that		Students observe and understand the problem	solved as a group. Students observe and		
		work in various		presented by the lecturer	understand the problem		
		types of		or obtained from the recommended reading	presented by the lecturer or obtained from the		
		physical activity.		material.	recommended reading		
		douvity.		Phase 2: Organize	material.		
				students to learn; The lecturer ensures that	<ul> <li>Phase 2: Organize students to learn;</li> </ul>		
				each member	The lecturer ensures that		
				understands their respective assignments.	each member understands their		
				Students discuss and	respective assignments.		
				divide assignments to	Students discuss and		
				find the data/materials/tools	divide assignments to find the		
				needed to solve the	data/materials/tools		
				<ul><li>problem</li><li>Phase 3: Guiding</li></ul>	needed to solve the problem		
				individual and group	Phase 3: Guiding		
				investigations; Lecturers monitor	individual and group investigations;		
				students' involvement in	Lecturers monitor		
				collecting data/materials	students' involvement in		
				during the investigation process.	collecting data/materials during the investigation		
				Students conduct	process.		
				investigations (search for	Students conduct investigations (search		
				data/references/sources)	for		
				for group discussion	data/references/sources)		
				<ul><li>Materials</li><li>Phase 4: Develop and</li></ul>	for group discussion materials		
				present assignment	Phase 4: Develop and		
				results; and the lecturer monitors the	present assignment results; and		
				discussion and guides	the lecturer monitors the		
				the creation of each	discussion and guides the creation of each		
				group's assignments ready to be presented.	group's assignments		
				Students hold	ready to be presented.		
				discussions to produce problem-solving	Students hold discussions to produce		
				solutions and the results	problem-solving		
				<ul><li>are presented</li><li>Phase 5: Analyze and</li></ul>	solutions and the results are presented		
				evaluate the problem-	Phase 5: Analyze and		
				solving process. Lecturer: guides the	evaluate the problem-		
				presentation and	solving process. Lecturer: guides the		
				encourages groups to	presentation and		
				give awards and input to other groups.	encourages groups to give awards and input to		
				Students. Each group	other groups.		
				makes a presentation, the other groups give	Students. Each group makes a presentation,		
				appreciation. The activity	the other groups give		
				continues by	appreciation. The activity		
				summarizing/making conclusions based on	continues by summarizing/drawing		
				input obtained from other	conclusions based on		
				groups.	input obtained from other groups.		
					5		
				Student assignment: Independent task to	Student assignment:		
				differentiate metabolic	Independent		
				systems that work in	assignments through		
				various types of physical activity.	assignments in vilearning distinguish		
				[PT BM : (1 1) x (2X60')]	metabolic systems that		
				2 X 50	work in various types of physical activity.		
					[PT BM : (1 1) x (2X60')]		
			<u> </u>		2 x 50		
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6	Able to compare the cardiorespiratory system at rest, physical activity, and recovery	<ol> <li>Explain the anatomy and physiology of the cardiovascular system.</li> <li>Explain changes in the cardiovascular system during rest and exercise.</li> <li>Explain the physiology of blood pressure.</li> <li>Explain how to measure resting HR and HR max</li> </ol>	Criteria: Full marks are obtained if you do all the questions correctly. Forms of Assessment : Participatory Activities, Project Results Assessment / Product Assessment, Portfolio Assessment	Learning Form: Face-to-face lecture Learning Method: Lecture, discussion and question and answer [TM : 1 (2x50')] 2 X 50	Learning Form: Virtual face-to-face lecture via vilearning and zoom Learning Method: Lecture, discussion and question and answer [TM : 1 (2x50')] 2 x 50	Material: Cardiovascular system Reference: Sherwood, L. 2019. Human Physiology: From cells to systems, 9th revised ed. The Neuroscientist.	10%
7	Able to compare the cardiorespiratory system at rest, physical activity, and recovery	<ol> <li>Explain the anatomy and physiology of the cardiovascular system.</li> <li>Explain changes in the cardiovascular system during rest and exercise.</li> <li>Explain the physiology of blood pressure.</li> <li>Explain how to measure resting HR and HR max</li> </ol>	Criteria: Full marks are obtained if you do all the questions correctly. Forms of Assessment : Participatory Activities, Project Results Assessment / Product Assessment, Tests	Learning Form: Face-to-face lecture Learning Method: Lecture, discussion and question and answer [TM : 1 (2x50')] 2 X 50	Learning Form: Virtual face-to-face lecture via vilearning and zoom Learning Method: Lecture, discussion and question and answer [TM : 1 (2x50')] 2 x 50	Material: Cardiovascular system Reference: Sherwood, L. 2019. Human Physiology: From cells to systems, 9th revised ed. The Neuroscientist.	10%
8	Sub Summative Exam	Mastering face-to- face material 1 to 7	Criteria: Full marks are obtained if you do all the questions correctly. Form of Assessment : Project Results Assessment / Product Assessment, Test	Test 2 X 50	Test 2 x 50	Material: Meeting materials 1-7 References: Sherwood, L. 2019. Human Physiology: From cells to systems, 9th revised ed. The Neuroscientist.	0%
9	Analyze VO2max, influencing factors and how to increase it	<ol> <li>Explain what VO2max is</li> <li>Explain the factors that influence VO2max</li> <li>Explains how to increase VO2Max</li> <li>Practicing the VO2Max measurement test</li> </ol>	Criteria: Full marks are obtained if you do all the questions correctly. Form of Assessment : Participatory Activities	Learning Form: Face-to-face lecture Learning Method: Lecture, discussion and question and answer [TM : 1 (2x50')] 2 X 50	Learning Form: Virtual face-to-face lecture via vilearning and zoom Learning Method: Lecture, discussion and question and answer [TM : 1 (2x50')] 2 x 50	Material: Respiratory System References: Hasiane, Juanita Dolores and Wahjuni, Endang Sri. 2017. Sports Physiology, textbook. Surabaya: Unesa University Press.	5%
10	Analyze VO2max, influencing factors and how to increase it	<ol> <li>Explain what VO2max is</li> <li>Explain the factors that influence VO2max</li> <li>Explains how to increase VO2Max</li> <li>Practicing the VO2Max measurement test</li> </ol>	Criteria: Full marks are obtained if you do all the questions correctly. Forms of Assessment : Participatory Activities, Project Results Assessment / Product Assessment, Practices / Performance	Learning Form: Face-to-face lecture Lecture, discussion and question and answer [TM : 1 (2x50')] 2 X 50	Learning Form: Virtual face-to-face lecture via vilearning and zoom Learning Method: Lecture, discussion and question and answer [TM : 1 (2x50')] 2 x 50	Material: Respiratory System References: Hasiane, Juanita Dolores and Wahjuni, Endang Sri. 2017. Sports Physiology, textbook. Surabaya: Unesa University Press. Material: Respiratory System References: Sherwood, L. 2019. Human Physiology: From cells to Systems, 9th revised ed. The Neuroscientist.	5%

11	Understand the physiology of warming up and cooling down.	<ol> <li>Explain the purpose and function of warming up and the consequences if it is not done</li> <li>Explain the purpose and function of cooling down and the consequences if it is not done</li> </ol>	Criteria: Full marks are obtained if you do all the questions correctly. Forms of Assessment : Participatory Activities, Project Results Assessment / Product Assessment	Learning Form: Face-to-face lecture Learning Method: Lecture, discussion and question and answer [TM : 1 (2x50')] 2 X 50	Learning Form: Virtual face-to-face lecture via vilearning and zoom Learning Method: Lecture, discussion and question and answer [TM : 1 (2x50')] 2 x 50	Material: Respiratory System References: Hasiane, Juanita Dolores and Wahjuni, Endang Sri. 2017. Sports Physiology, textbook. Surabaya: Unesa University Press.	10%
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12	Able to analyze the physiology of recovery and energy replenishment	<ol> <li>I.Identify the original recovery process after exercise.</li> <li>Comparing the recovery process from anaerobic and aerobic exercise re- energization.</li> </ol>	Criteria: Full marks are obtained if you do your assignment well. Forms of Assessment : Participatory Activities, Project Results Assessment / Product Assessment, Tests	Learning Form: Face-to-face lecture Face-to-face lecture Learning/case study [TM : 2 (2x50')] • Phase 1: Learner orientation to the problem; The lecturer conveys the problem that will be solved as a group. Students observe and understand the problem presented by the lecturer or obtained from the recommended reading material. • Phase 2: Organizing students to learn; The lecturer ensures that each member understands their respective assignments. Students discuss and divide assignments to find the data/materials/tools needed to solve the problem • Phase 3: Guiding individual and group investigations; Lecturers monitor students' involvement in collecting data/materials during the investigation process. Students conduct investigations (search for data/references/sources) for group discussion materials • Phase 4: Develop and present assignment results; and the lecturer monitors the discussion and guides the creation of each group's assignments ready to be presented. Students hold discussions to produce problem-solving solutions and the results are presented • Phase 5: Analyze and evaluate the problem- solving process. Lecturer: guides the presentation, and encourages groups to give awards and input to other groups. Student assignment: Group assignment to conclusions based on input obtained from other groups.	students to learn; The lecturer ensures that each member understands their respective assignments. Students discuss and divide assignments to find the data/materials/tools needed to solve the problem • Phase 3: Guiding individual and group investigations; Lecturers monitor students' involvement in collecting data/materials during the investigation process. Students conduct investigations (search for data/references/sources) for group discussion materials • Phase 4: Develop and present assignment results; and the lecturer monitors the discussion and guides the creation of each group's assignments ready to be presented. Students hold discussions to produce problem-solving solutions and the results are presented • Phase 5: Analyze and evaluate the problem- solving process. Students. Each group makes a presentation, the other groups give appreciation. The activity continues by summarizing/drawing conclusions based on input obtained from other groups.	Material: Recovery process / recovery from Readers: Hasiane, Juanita Dolores and Wahjuni, Endang Sri. 2017. Sports Physiology, textbook. Surabaya: Unesa University Press.	5%
				process from anaerobic and aerobic exercise [PT BM: (1 1) x (2X60')]	Assignment group assignments in vilearning compare the		

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13	Able to analyze the physiology of	1.Identify the original	Criteria: Full marks are	Learning Form: Face-to-face lecture	Learning Form: Virtual face-to-face	Material: Recovery	5%
	recovery and energy	recovery	obtained if you do your assignment		lecture via vilearning and	process /	
	replenishment	process after	well.	Learning Method: Problem based	zoom	recovery from Readers:	
		exercise. 2.Comparing the	Form of	learning/case study [TM	Learning Method:	Hasiane, Juanita	
		recovery	Assessment :	: 2 (2x50')]	Problem based	Dolores and	
		process from	Participatory	Phase 1: Learner	learning/case study [TM : 2 (2x50')]	Wahjuni, Endang Sri.	
		anaerobic and aerobic	Activities	orientation to the		2017. Sports	
		exercise.		problem; The lecturer conveys the	Phase 1: Learner     orientation to the	Physiology, textbook.	
		3.Comparing		problem that will be	problem;	Surabaya:	
		anaerobic and aerobic		solved as a group. Students observe and	The lecturer conveys the problem that will be	Unesa University Press.	
		exercise re-		understand the problem	solved as a group.	University Fless.	
		energization.		presented by the lecturer	Students observe and		
				or obtained from the recommended reading	understand the problem presented by the lecturer		
				material.	or obtained from the		
				<ul> <li>Phase 2: Organizing students to learn;</li> </ul>	recommended reading material.		
				The lecturer ensures that	Phase 2: Organize		
				each member understands their	students to learn; The lecturer ensures that		
				respective assignments.	each member		
				Students discuss and	understands their		
				divide assignments to find the	respective assignments. Students discuss and		
				data/materials/tools	divide assignments to		
				needed to solve the problem	find the data/materials/tools		
				Phase 3: Guiding	needed to solve the		
				individual and group investigations;	problem <ul> <li>Phase 3: Guiding</li> </ul>		
				Lecturers monitor	individual and group		
				students' involvement in collecting data/materials	investigations; Lecturers monitor		
				during the investigation	students' involvement in		
				process.	collecting data/materials		
				Students conduct investigations (search	during the investigation process.		
				for	Students conduct		
				data/references/sources) for group discussion	investigations (search for		
				materials	data/references/sources)		
				<ul> <li>Phase 4: Develop and present assignment</li> </ul>	for group discussion materials		
				results; and	Phase 4: Develop and		
				the lecturer monitors the discussion and guides	present assignment results; and		
				the creation of each	the lecturer monitors the		
				group's assignments ready to be presented.	discussion and guides the creation of each		
				Students hold	group's assignments		
				discussions to produce	ready to be presented.		
				problem-solving solutions and the results	Students hold discussions to produce		
				are presented	problem-solving		
				<ul> <li>Phase 5: Analyze and evaluate the problem-</li> </ul>	solutions and the results are presented		
				solving process.	Phase 5: Analyze and		
				Lecturer: guides the presentation and	evaluate the problem- solving process.		
				encourages groups to	Lecturer: guides the		
				give awards and input to other groups.	presentation and encourages groups to		
				Students. Each group	give awards and input to		
				makes a presentation, the other groups give	other groups. Students. Each group		
				appreciation. The activity	makes a presentation,		
				continues by	the other groups give		
				summarizing/making conclusions based on	appreciation. The activity continues by		
				input obtained from other	summarizing/drawing		
				groups.	conclusions based on input obtained from other		
					groups.		
				Student assignment: Group assignment to			
				compare the recovery	Student assignment:		
				process from anaerobic	Assignment group		
				and aerobic exercise [PT BM: (1 1) x (2X60')]	assignments in vilearning compare the		
				2 X 50	recovery process from		
					anaerobic and aerobic exercise		
					[PT BM: (1 1) x (2X60')]		
					2 x 50		

14	Able to analyze the influence of the environment on the body's physiology, understand the safe zone in exercising, anticipate the impacts.	<ol> <li>Explain the role of the environment (weather and altitude differences) in sports.</li> <li>Explain how to anticipate bad environmental impacts.</li> <li>Explain the differences in air composition at low and high places.</li> <li>Explain how to overcome acclimatization.</li> </ol>	Criteria: Full marks are obtained if you do all the questions correctly. Forms of Assessment : Participatory Activities, Project Results Assessment / Product Assessment	Learning Form: Face-to-face lecture Learning Method: Lecture, discussion and question and answer [TM : 1 (2x50')] 2 X 50	Learning Form: Virtual face-to-face lecture via vilearning and zoom Learning Method: Lecture, discussion and question and answer [TM : 1 (2x50')] 2 x 50	Material: Sports and the environment (hot environment and altitude) References: Sherwood, L. 2019. Human Physiology: From cells to systems, 9th revised ed. The Neuroscientist.	5%
15	Able to analyze the influence of the environment on the body's physiology, understand the safe zone in exercising, anticipate the impacts.	<ol> <li>Explain the role of the environment (weather and altitude differences) in sports.</li> <li>Explain how to anticipate bad environmental impacts.</li> <li>Explain the differences in air composition at low and high places.</li> <li>Explain how to overcome acclimatization.</li> </ol>	Criteria: Full marks are obtained if you do all the questions correctly. Form of Assessment : Participatory Activities	Learning Form: Face-to-face lecture Learning Method: Lecture, discussion and question and answer [TM : 1 (2x50')] 2 X 50	Learning Form: Virtual face-to-face lecture via vilearning and zoom Learning Method: Lecture, discussion and question and answer [TM : 1 (2x50')] 2 x 50	Material: Sports and the environment (hot environment and altitude) References: Sherwood, L. 2019. Human Physiology: From cells to systems, 9th revised ed. The Neuroscientist.	9%
16	Able to analyze the influence of the environment on the body's physiology, understand the safe zone in exercising, anticipate the impacts.	Explain how to overcome acclimatization.	Criteria: Full marks are obtained if you do all the questions correctly. Forms of Assessment : Participatory Activities, Project Results Assessment / Product Assessment	Test 2 x 50	Test 2 x 50	Material: UAS Literature: Hasiane, Juanita Dolores and Wahjuni, Endang Sri. 2017. Sports Physiology, textbook. Surabaya: Unesa University Press.	0%

**Evaluation Percentage Recap: Case Study** 

No	Evaluation	Percentage
		9
1.	Participatory Activities	54.84%
2.	Project Results Assessment / Product Assessment	25.84%
3.	Portfolio Assessment	8.33%
4.	Practice / Performance	1.67%
5.	Test	8.34%
		99.02%

Notes

- Learning Outcomes of Study Program Graduates (PLO Study Program) are the abilities possessed by each Study Program graduate which are the internalization of attitudes, mastery of knowledge and skills according to the level of their study program obtained through the learning process.
- 2. The PLO imposed on courses are several learning outcomes of study program graduates (CPL-Study Program) which are used for the formation/development of a course consisting of aspects of attitude, general skills, special skills and knowledge.
- 3. Program Objectives (PO) are abilities that are specifically described from the PLO assigned to a course, and are specific to the study material or learning materials for that course.
- 4. **Subject Sub-PO (Sub-PO)** is a capability that is specifically described from the PO that can be measured or observed and is the final ability that is planned at each learning stage, and is specific to the learning material of the course.

 Indicators for assessing ability in the process and student learning outcomes are specific and measurable statements that identify the ability or performance of student learning outcomes accompanied by evidence.

- Assessment Criteria are benchmarks used as a measure or measure of learning achievement in assessments based on predetermined indicators. Assessment criteria are guidelines for assessors so that assessments are consistent and unbiased. Criteria can be quantitative or qualitative.
- 7. Forms of assessment: test and non-test.
- 8. Forms of learning: Lecture, Response, Tutorial, Seminar or equivalent, Practicum, Studio Practice, Workshop Practice, Field Practice, Research, Community Service and/or other equivalent forms of learning.
- 9. Learning Methods: Small Group Discussion, Role-Play & Simulation, Discovery Learning, Self-Directed Learning, Cooperative Learning, Collaborative Learning, Contextual Learning, Project Based Learning, and other equivalent methods.
- Learning materials are details or descriptions of study materials which can be presented in the form of several main points and subtopics.
- 11. The assessment weight is the percentage of assessment of each sub-PO achievement whose size is proportional to the level of difficulty of achieving that sub-PO, and the total is 100%.

12. TM=Face to face, PT=Structured assignments, BM=Independent study.