Faculty of Medicine in Rijeka

Curriculum
2026/2027

For course

COVID-19 :New Pathophysiological Noxa

Study program:	**Medical Studies in English (R)** (elective) University integrated undergraduate and graduate study
Department:	**Department of Physiology, Immunology and Pathophysiology**
Course coordinator:	**prof. dr. sc. Mrakovčić-Šutić Ines, dr. med.**
Year of study:	**3**
ECTS:	**1.5**
Incentive ECTS:	**0 (0.00%)**
Foreign language:	**Possibility of teaching in a foreign language**

Course information:

COVID-19 is a new pathophysiological noxa that in a very short time had a huge impact on health care in general and caused the development of a new complex pathophysiological picture of the disease all over the world. We believe that as the Department of Physiology and Immunology, we should offer students an elective course with the latest available knowledge from the relevant literature on the COVID-19 agent, and this is exactly the goal of this elective course. A visit of clinicians with the latest clinical data is planned.

o Virus characteristics
o Pathophysiology of disease
o COVID-19 and the immune system
o Signs and degrees of disease
o Laboratory findings

the Treatment
o Complications of the disease
o The role of comorbidities in disease prognosis
o The role of age in disease prognosis
o COVID-19 and rheumatic diseases
o COVID-19 and diabetes
o COVID-19 and inflammatory bowel disease

o Understand the characteristics of viral infection with COVID 19
o Understand the pathophysiological picture of the disease
o Understand specific laboratory tests
o Understand therapy guidelines

List of assigned reading:

Teaching content presented during class

List of optional reading:

1. King's Critical Care – Evidence Summary Clinical Management of COVID-19
2. Shi Y, Wang Y, Shao C i sur. COVID-19 infection: the perspectives on immune responses. Cell Death Differ. 2020 May;27(5):1451-1454
3. Tufan A, Avanoğlu Güler A, Matucci-Cerinic M. COVID-19, immune system response, hyperinflammation and repurposing antirheumatic drugs. Turk J Med Sci. 2020 Apr 21;50(SI-1):620-632
4. Sarzi-Puttini P, Giorgi V, Sirotti S. i sur. COVID-19, cytokines and immunosuppression: what can we learn from severe acute respiratory syndrome? Clin Exp Rheumatol. 2020 Mar-Apr;38(2):337-342
5. Sohrabi C, Alsafi Z, O'Neill N, Khan M, Kerwan A, Al-Jabir A, Iosifidis C, Agha R. World Health Organization declares global emergency: A review of the 2019 novel coronavirus (COVID-19). Int J Surg. 2020 Apr;76:71-76
6. Khan S, Siddique R, Shereen MA, Ali A, Liu J, Bai Q, Bashir N, Xue M. Emergence of a Novel Coronavirus, Severe Acute Respiratory Syndrome Coronavirus 2: Biology and Therapeutic Options. J Clin Microbiol. 2020 Apr 23;58(5).
7. Guo YR, Cao QD, Hong ZS, Tan YY, Chen SD, Jin HJ, Tan KS, Wang DY, Yan Y[7]. The origin, transmission and clinical therapies on coronavirus disease 2019 (COVID-19) outbreak - an update on the status. Mil Med Res. 2020 Mar 13;7(1):11
8. Singhal T. A Review of Coronavirus Disease-2019 (COVID-19). Indian J Pediatr. 2020 Apr;87(4):281-286.
9. Adhikari SP, Meng S, Wu YJ, Mao YP, Ye RX, Wang QZ, Sun C, Sylvia S, Rozelle S, Raat H, Zhou H. Epidemiology, causes, clinical manifestation and diagnosis, prevention and control of coronavirus disease (COVID-19) during the early outbreak period: a scoping review. Infect Dis Poverty. 2020 Mar 17;9(1):29
10. Yan Y, Shin WI, Pang YX, Meng Y, Lai J, You C, Zhao H, Lester E, Wu T[7], Pang CH[7]. The First 75 Days of Novel Coronavirus (SARS-CoV-2) Outbreak: Recent Advances, Prevention, and Treatment. Int J Environ Res Public Health. 2020 Mar 30;17(7).

Curriculum:

Lectures list (with titles and explanation):

Lecture 1: Introduction ; COVID-19: a history and the activity of WHO

Understanding the initiation of the COVID-19 pandemic. Epidemiological characteristics

Lecture 2: Pathophysiology of COVID-19

Characteristics of pathophysiological changes during COVID-19 infection

Lecture 3: PostCOVID syndrom

Symptoms and therapeutic guidelines during the developed PostCovid-19 sy

Lecture 4: COVID-19 and Blood Coagulation Disorders

To understand and explain clotting disorders during COVID-19 infection and vaccination

Lecture 5: COVID-19 Vaccines

Explain the specifics of individual vaccines

Lecture 6: COVID-19 and Respiratory Problems

Pneumonia during COVID-19 infection; Covid-19 and asthma; Covid-19 and COPD

Lecture 7: COVID-19 and Cardiovascular Disorders

Ischemic heart disease and COVID-19; Arrhythmias and Covid-19; Cardiac decompensation and Covid-19

Seminars list (with titles and explanation):

S1: COVID-19 and sports activity

Return to sport after Covid-19 infection; Complications related to Covid-19 in professional sports

S2: COVID-19 and Metabolic syndrom

Covid-19 and obesity; Covid-19 and diabetes mellitus

S3: : COVID-19 and Vitamin D

The importance of Vitamin D during Covid-19 infection

S4: COVID-19 and pregnancy

Characteristics of Covid-19 infection in pregnant women; Covid-19 and breastfeeding

S5: COVID-19 and IBD

Characteristics of Covid-19 infection in IBD. Changes in gut microbiota during Covid-19

Student obligations:

. Regular class attendance, writing a seminar paper

Exam (exam taking, description of the written/oral/practical part of the exam, point distribution, grading criteria):

The final grade of the student's knowledge is formed on the basis of the grade acquired during the course (70% of the total grade) and on the basis of the knowledge test at the final exam (30% of the total grade). During the classes, the student's work will be evaluated and evaluated on the basis of a seminar paper that students make in small groups and present during the seminar.

Other notes (related to the course) important for students:

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COURSE HOURS 2026/2027

COVID-19 :New Pathophysiological Noxa

Lectures (Place and time or group)	**Seminars** (Place and time or group)
20.10.2026	

Lecture 1: Introduction ; COVID-19: a history and the activity of WHO:
• ONLINE (17:00 - 20:45) [214]
  ○ c19npn
 	
Lecture 2: Pathophysiology of COVID-19:
• ONLINE (17:00 - 20:45) [214]
  ○ c19npn	

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22.10.2026	

Lecture 3: PostCOVID syndrom:
• ONLINE (17:45 - 20:00) [214]
  ○ c19npn
	S1: COVID-19 and sports activity:
	• ONLINE (17:00 - 17:45) [214]
	  ○ c19npn

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04.11.2026	

Lecture 4: COVID-19 and Blood Coagulation Disorders:
• ONLINE (16:30 - 21:00) [214]
  ○ c19npn
 	
Lecture 5: COVID-19 Vaccines:
• ONLINE (16:30 - 21:00) [214]
  ○ c19npn	

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05.11.2026	

	S2: COVID-19 and Metabolic syndrom:
	• ONLINE (17:00 - 20:00) [214]
	  ○ c19npn
	
	S3: : COVID-19 and Vitamin D:
	• ONLINE (17:00 - 20:00) [214]
	  ○ c19npn
	
	S4: COVID-19 and pregnancy:
	• ONLINE (17:00 - 20:00) [214]
	  ○ c19npn
	
	S5: COVID-19 and IBD:
	• ONLINE (17:00 - 20:00) [214]
	  ○ c19npn

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11.11.2026	

Lecture 6: COVID-19 and Respiratory Problems:
• ONLINE (17:00 - 21:30) [214]
  ◦ c19npn
 	
Lecture 7: COVID-19 and Cardiovascular Disorders:
• ONLINE (17:00 - 21:30) [214]
  ◦ c19npn	

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List of lectures, seminars and practicals:

LECTURES (TOPIC)	Number of hours	Location
Lecture 1: Introduction ; COVID-19: a history and the activity of WHO	2	ONLINE
Lecture 2: Pathophysiology of COVID-19	3	ONLINE
Lecture 3: PostCOVID syndrom	3	ONLINE
Lecture 4: COVID-19 and Blood Coagulation Disorders	3	ONLINE
Lecture 5: COVID-19 Vaccines	3	ONLINE
Lecture 6: COVID-19 and Respiratory Problems	3	ONLINE
Lecture 7: COVID-19 and Cardiovascular Disorders	3	ONLINE

SEMINARS (TOPIC)	Number of hours	Location
S1: COVID-19 and sports activity	1	ONLINE
S2: COVID-19 and Metabolic syndrom	1	ONLINE
S3: : COVID-19 and Vitamin D	1	ONLINE
S4: COVID-19 and pregnancy	1	ONLINE
S5: COVID-19 and IBD	1	ONLINE

EXAM DATES (final exam):