



Table 2

3.2. Course description

Basic description		
Course coordinator	Prof. dr. sc. Ines Mrakovčić-Šutić	
Course title	Physical activity and immune system	
Study programme	Physiotherapy graduated study	
Course status	elective	
Year	1	
ECTS credits and teaching	ECTS student 's workload coefficient	2,5
	Number of hours (L+E+S)	25(15+0+10)

1. COURSE DESCRIPTION

1.1. Course objectives

Physical activity and adequate nutrition lead to a healthier life, while sedental lifestyle reduces the quality of life. Reduce mental and physical health, followed by physical inactivity leads to increase obesity. Complex understanding of the causes of occurrence of obesity involves coupling of social, cultural, economic, psychological and metabolic factors associated with genetic factors. Obesity is defined as a situation in which the body mass index (BMI) greater than 30 kg / m. Weight loss with intense exercise directly affects the innate immune response by reducing the production of proinflammatory cytokines, and direct action on adipose tissue also reducing proinflammatory mediators and increased production of inflammatory mediators. This indirectly affects the liver where it reduces the production of fibrinogen and C-reactive protein (CRP), which reduces the concentration of inflammatory markers in the blood and prevents inflammation

1.2. Course enrolment requirements

- None

1.3. Expected course learning outcomes

General competencies :

Knowing the general principles of physical activity effects on cellular and humoral immune response.

Specific competencies

At the end of the course is expected that the student will be able to: Independently analyze the impact of exercise on general immune response of an individual, identify the meaning of physical activity in modern society, and noted the problem of obesity as a common global problem. To develop students' self-expanding knowledge through a database search (PubMed and Ovid) and the other addresses on the Internet, and for transferring new knowledge to other members of the group (presentation of the treated area). Encourage students to group work, discussion about the given topic and to draw conclusions based on presented facts.

1.4. Course content

- Physiology of active and passive exercise
- Training
- Sports nutrition
- Obesity
- Changes in innate immunity induced by exercise
- Changes in innate immunity induced by obesity



- Changes in acquired immunity induced by exercise
- Changes in acquired immunity induced obesity
- Problem of Overtraining

Possible effects of excessive exercise on the immune system

1.5. *Teaching methods*

- X lectures
 X seminars and workshops
 exercises
 long distance education
 fieldwork

- individual assignment
 multimedia and network
 laboratories
 mentorship
 other

1.6. *Comments*

1.7. *Student's obligations*

Regular attendance to lectures and seminars and exercises. Preparation of course material to be discussed during seminars.

1.8. *Evaluation of student's work*

Course attendance	10%	Activity/Participation	30%	Seminar paper		Experimental work	
Written exam	15%	Oral exam	15%	Essay		Research	
Project		Sustained knowledge check	30%	Report		Practice	
Portfolio							

1.9. *Assessment and evaluation of student's work during classes and on final exam*

Evaluation will be performed according to the Legal act of evaluation of University of Rijeka and of School of medicine
 Students' performance will be evaluated thorough entire duration of the course (70% of the evaluation) as well as on the final exam (30% of the evaluation).

1.10. *Assigned reading (at the time of the submission of study programme proposal)*

Matković B. Ružić L.: Fiziologija sporta i vježbanja, Odjel za izobrazbu trenera Društvenog veleučilišta u Zagrebu, Kineziološki fakultet Sveučilišta u Zagrebu, Zagreb 2009. Study programs, which are outside of recommended books, will be presented as additional literature on web pages or share portal of the Department.

1.11. *Optional / additional reading (at the time of proposing study programme)*

Neil P.Walsh, Michael Gleeson, Roy J. Shephard, Maree Gleeson, Jeffrey A.Woods, Nicolette C. Bishop, Monika Fleshner, Charlotte Green, Bente K. Pedersen, Laurie Hoffman-Goetz, Connie J. Rogers, Hinnak Northoff, Asghar Abbasi, Perikles Simon: *Immune function and exercise, EIR 17 2011 - position statement part 1*
 Pećina M.: Športska medicina, Medicinska naklada, Zagreb, 2003.

1.12. *Number of assigned reading copies with regard to the number of students currently attending the course*

Title	Number of copies	Number of students

1.13. *Quality monitoring methods which ensure acquirement of output knowledge, skills and competences*

Anonymous evaluation questionnaire is given to the students at the end of the course. The rate of the course completion and grading is evaluated.