



## Course Regime

Course: **SPATIAL EPIDEMIOLOGY WITH BASICS IN GEOGRAPHICAL INFORMATION SYSTEM (GIS)**

Study Programme:  
**Medicine** Dental Medicine

Year of the Course: 1 2 3 4 5 6

Semester:  
Winter **Summer**

Course type:  
Compulsory **Elective**

Number of ECTS credits: 3

Lecturer(s): **doc. dr. Andreja Kukec**

Participating Organisational Units (Departments and Institutes): /

Parts (Modules) of the Course

- 1: Lectures - introduction in to spatial epidemiology; theoretical basis of the GIS; geographical analysis; presentation and communication in spatial analysis; geographic distribution of cancer burden in Slovenia
- 2: Seminar - independent work in groups
- 3: Seminar - group presentation of seminar work

Date of Issue: **15. 9. 2020**

## **A. General part** (*applies to compulsory and elective courses*)

### **1. Course objectives**

Goals:

- acquaintance and use of spatial analysis in public health.

Competences:

- students get acquainted with use of geographical information tools used in spatial epidemiology.
- students know the basics of spatial epidemiology, Geographical Information System and geographical analysis.
- students understand the importance of spatial analysis usage, they know how to present and interpret results.
- students know how to use GIS for making maps of diseases (burden of cancer, respiratory diseases), maps of environmental and social determinants (air, water pollution).

### **2. Comprehensive outline of the course organisation**

The subject SPATIAL EPIDEMIOLOGY WITH BASICS IN GEOGRAPHICAL INFORMATION SYSTEM (GIS) is carried out in the form of lectures (20 hours), preparation of seminar protocol and presentation of the seminar (30 hours).

All notices about the lectures is published in the UL MF online classroom and website.

### **3. Description of on-going assessment of knowledge and skills**

There are no on-going examinations of knowledge and skills in the course.

### **4. Required conditions for the final examination (Course Exam)**

- Module Informatics of the course Introduction in to the medicine
- Health and environment
- Public health methods

### **5. Final assessment and examination of knowledge and skills (Course Exam)**

The final examination consists of preparation of a seminar on selected topic from the field spatial epidemiology. Students prepare the seminar in groups and submit it in the written form. Students also prepare oral presentation of the seminar and present it in front of the class (students participating in the course).

The subject holder grade assignments (seminars) with the following rating scale: 5 - insufficient, 6 - sufficient. 7 - good, 8 - very good, 9 - very good and 10 - great. Students can improve their grade at the oral examination. Applications and check-outs take place through the VIS Information System.

### **6. Other provisions**

Articles 30 and 34 of the Rules on the Evaluation of Knowledge and Skills for Study Program Medicine and Study Program Dental Medicine apply.

### **7. Fundamental study material and Supplement reading**

- Zadnik, V. All except for NMSC = Tutte le sedi, esclusi tumori cutanei non melanotici e prostata = Alle Lokalisationen außer NMSC = Vsi raki razen nemelanomskega kožnega raka. V: OBERAIGNER, Willi (ur.), VITTADELLO, Fabio (ur.). Cancer mapping in Alpine regions: Austria, Italy, Slovenia, Switzerland = Atlante del cancro nelle regioni Alpine: Austria, Italia, Slovenia, Svizzera = Krebsatlas Alpenraum: Österreich, Italien,

Slowenien, Schweiz = Zemljevidi bremena raka v alpski regiji: Avstrija, Italija, Slovenija, Švica: 2001-2005. Innsbruck: Department of Clinical Epidemiology of TILAK, 2010: 57-67.

- Žagar T, Zadnik V, Primic-Žakelj M. Local standardized incidence ratio estimates and comparison with other mapping methods for small geographical areas using Slovenian breast cancer data. *Journal of applied statistics*, 2011, 38 (12): 2751-2761.
- Zadnik V, Žagar T, Drobne S, Primic-Žakelj M. Estimation of cancer burden in Brežice municipality, a community neighboring Krško nuclear power plant in Slovenia. *Croatian medical journal*, 2008, 49 (2): 257-266.
- Kukec A, Božnar M, Mlakar P, Grašič B, Herakovič A, Zadnik V, Zaletel-Kragelj L, Farkaš-Lainščak J, Eržen I. Methodological approach in determination of small spatial units in a highly complex terrain in atmospheric pollution research : the case of Zasavje region in Slovenia. *Geospatial Health*, 2014, 8 (2): 527-535.
- Kukec A, Zaletel-Kragelj L, Farkaš-Lainščak J, Eržen I, Herakovič A, Božnar MZ, Mlakar P, Grašič B, Zadnik V. Health geography in case of Zasavje: Linking of air pollution and respiratory diseases data. *Acta Geogr Slov*, 2014, 54 (2), 2014: 345-362.

## 8. Exam topics, clinical presentations and skills

1. Spatial epidemiology
2. GIS and geographical analysis

## 9. Other information

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## B. Elective Courses *(considered as Elective Course Announcement)*

### 1. Participating main and guest lecturers

Assist. Prof. Andreja Kukec

Prof. Vesna Zadnik

Assist. Tanja Rejc

### 2. Estimated time period in the semester

Summer Semester: (implementation is planned in period from April to May 2021)

### 3. Maximum number of students for the elective course (if the number of students able to attend the course is limited)

No limit

4. Please specify if the elective course is available in English for incoming international students (Erasmus + and others). Please specify any additional conditions in the case that the elective course is available for visiting students.

The elective course is not available in English.