GEOG3417 Health, Wellbeing, Place and GIS

TIMETABLE ARRANGEMENT: Annual; 1st Semester **CREDITS:** 6

COURSE TEACHER: Professor Yanjia CAO

ASSESSMENT:

COURSEWORK 100 %

- Lab assignments
- Lead discussion
- Final project

OBJECTIVES:

To stimulate interests in Geographic Information Systems (GIS) activities applicable for analyzing spatial health and medical data.

COURSE SYNOPSIS:

All aspects of the natural, built, and socioeconomic environment may affect human health and wellbeing both individually and collectively. The idea of applying GIS techniques in health-related studies is not new. Indeed, GIS has been used for decades in the western countries to undertake assessment and control of environmental factors that can potentially affect health. This course explores how GIS is used to address and analyze pressing health problems from the geographical perspective. It covers such topics as theoretical and practical issues, simple disease mapping, disease pattern analysis, and environmental association through spatial modeling techniques. The course will be conducted in a series of lectures and hands-on practices (six computer-based exercises) in a problem-based learning environment. Students will design and implement spatial analysis and statistical approaches on a health outcome topic that is demonstrated during the semester.

LECTURE TOPICS:

- Spatial Databases for Public Health
- Mapping Health information
- Spatial Patterns and Clusters of Health outcomes
- Risk and Spread of Infectious Diseases
- Locating Health Services
- Spatial Access to Health Services
- Social determinants of Health

RECOMMENDED READING LIST:

- Cromley, E.K., McLafferty, S.L. (2012). GIS and Public Health. 2nd Edition. New York: Guilford Press. (Required for lecture)
- Kurland, K.S., Gorr, W.L. (2015). GIS Tutorial for Health Fifth Edition, Esri Press, 2015. (Required for lecture and lab assignments)

	Course Learning Outcomes (CLOs) After completing this course, students would be able to:	**Alignment with Programme** Learning Outcomes (PLOs)*						**Course Assessment Methods**
		1	2	3	4	5	6	
1	Understand the concepts of disease transmission and public health crisis	✔			✔			Discussion and final project
2	Understand the importance of geography in public health science			✔	✔			Labs and final project
3	Be conversant in the current spatial epidemiological methods that are used to test hypothesis about disease outcomes and population-environment interactions				✔	✔	✔	Discussion, labs, and final project
4	Be familiar with a variety of open-source and fee-based software packages			✔		✔		Labs and final project
5	Master in map presentation and spatial statistical approaches		✔				✔	Labs and final project

*Geography Major Programme Learning Outcomes (PLOs)

In order to meet the demands and challenges in this dynamic and ever-changing world, the Department has designed a series of well-structured and contemporary courses to cater to the different interests of students. Its courses are designed to align with the University's educational aims which hope to nurture future generations not only with a critical and intellectual mindset, but also with a passion to contribute to society in general.

After completing the programme, Geography Major students should be able to:

PLO1 **critically analyse the geographical aspects of the relationship between people and the natural environment;**

PLO2 **demonstrate and develop an understanding of how these relationships have changed with space and over time;**

PLO3 **identify, collect and utilize primary and secondary data to investigate and analyse the issues and problems facing people, places and society;**

PLO4 **integrate, evaluate and communicate information from a variety of geographical and other sources;**

PLO5 **participate in promoting social, economic and environmental sustainability at the local, regional and global scales; and**

PLO6 **effectively apply a range of transferable skills in academic, professional and social settings.**