SOC 370 Regional Information Systems

3rd and 4th quarters, Junior

Instructor	INOUE HIROYUKI
Style of Class	Lecture
Number of Credits	2
Day and Period	To be advised

Course Description

Information systems, such as public administration systems or disaster prevention systems, support local communities. The information systems which provide electronic access to information on local cultural assets and tourist resources or enable their effective utilization also contribute to the vitalization of communities. In addition, with various statistical data including government statistics being available on the internet, it is effective to analyze and utilize them for local people's life. This course will familiarize students with these regional information systems and how to analyze locally generated data through hands-on practice on a PC. They will also learn about applied uses of Web technologies and use of diverse web systems, with a view also to disseminating and collecting local information.

Course Objectives

Students will:
(1) learn about regional information systems
(2) understand computer-aided decision making systems
(3) become able to use statistical data on the internet
(4) become able to analyze data using statistical methods and machine learning techniques
(5) become able to analyze data using a text mining approach
(6) experience creating a web page with a map

Prerequisites

Fundamentals of Information Technology, Data Science I, Data Science II and Analysis of Quantitative Data

Class Materials

Class materials will be provided as handouts.

Course Method

Each class will comprise a lecture part and a practice part using a PC. The instructor will lecture on the topic, and students will understand the topic through practicing on a PC. Practice assignments will be given to students, which should be completed either within or outside class.

Evaluation/Assessment

Students will be required to submit assignments.

Grading

40% Assignments
60% Final assignment and paper on the subject

Course Schedule

Week 1: Information systems

Guidance on the topics to be covered by the course and basic introduction to information systems.

Weeks 2 & 3: Regional information systems and their use

Go through social information systems, municipal or regional information systems and systems using networks. Try using service systems of such sectors as public government and public transportation.

Weeks 4 & 5: Application to decision support systems and policy making

Learn about approaches to decision support with a focus on AHP. Consider applying that to a simulated policy making process or consensus building.

Week 6: Analysis of reginal data using statistical methods

Try analyzing regional data using multivariable analysis methods such as cluster analysis.

Weeks 7 & 8: Analysis of regional data using machine learning tools

Tools used in machine learning such as k-means clustering, decision tree analysis and self-organizing map are explained and used for analyzing regional data.

Weeks 9 & 10: Analysis of regional data using text mining

The text mining technique is explained and applied to the analysis of government texts, governor/mayor policies, interview data etc.

Weeks 11 & 12: Using maps on the web

Learn how to create a web page containing a map using an online map service such as Google Maps

Weeks 13 & 14: Utilization of regional content

Students will be shown sample cases of information systems incorporating and utilizing regional content for tourist information etc., think about information services in their own regions or communities, and produce their own proposals.

Week 15: Summary, review and term-end assignment

Review classes and work on the final assignment.

Preparation and Follow-up

Preparation: Look over and check the key words shown for each class. Read through the class material provided in advance.

Follow-up: Review the class and repeat practicing the techniques with the data used in class or other relevant data. Assignments given in class should be completed outside class.