



School of Information Sciences

Course Profile: Data Analytics

Course Number: INF 7491

Credits: 3

MLIS Prerequisite(s): INF 6080

MSIM Co-requisite(s): INF 6000

Rationale for Inclusion in Curriculum:

LIS students will be employed by organizations competing in an information environment which is characterized by rapid change, voluminous data, and complex dynamics. The student utilizes leading-edge management techniques such as data analytics (the applied use of statistical techniques to gain understanding and value from structured and unstructured information) to generate insights into competitive management decisions in library and information science organizations.

The focus of this course is to provide the student with skills in network analysis and qualitative methods. These leading-edge skills are to provide the student with the ability to generate insights. Initially, the student focuses on the topic areas of analyzing social media networks, developing and completing analysis tutorials and completing case studies associated with network analysis. Then the student integrates quantitative analysis tools and techniques into insight generation actions. The quantitative analysis tools focus on the basics of data description, sampling for decision making, regression analysis for forecasting, and decision analysis in uncertainty. This course does not require any technical knowledge beyond the content covered in INF 6080.

Learning Outcomes::

By the end of the course, students will be able to:

1. apply the principles of decision analysis to make more informed decisions in the face of uncertainty;
2. articulate the fundamentals of distributions and random sampling requirements for survey generation;
3. create new insights using social networking algorithms, pattern detection, and analytic models;
4. generalize concepts through visualization and decision making structures;
5. apply knowledge of competitive resources to research in a specific area of library and information science;
6. apply quantitative statistic concepts to library situations resulting in data-based decisions;
7. apply competitive intelligence tools and models to solving problems in library and information science organizations;
8. conduct effective presentations of data analysis and risk analysis;

9. conduct research focusing on generating insights in uncertainty and making strategic recommendations based on comparing outcomes;

Content:

Data analytics, competitive intelligence, and social networking analysis tools and their application will be explored in library and information science settings. The following topics will be covered in this course:

1. Algorithms: Data analytic algorithms are investigated.
2. Social network analysis: Facilitating understanding of the contribution of the organizational website to the World Wide Web are researched and presented.
3. Insight Generation: Data insight generation tools and techniques are detailed.
4. Hypotheses: Hypothesis development and testing are studied.
5. Sampling: Sampling analysis models for survey usage are studied.
6. Goodness of Fit: Pattern detections and goodness of fit measures are studied.
7. Quantitative Statistics: Concepts in quantitative statistics including linear regression, seasonality, forecasting, correlation, confidence intervals, variability, and decision analysis are studied.
8. Inferential Statistics: Descriptive and inferential statistics as well as conditional probability and proportion measures are studied.
9. Value of Information: Tools for multidimensional presentations incorporating the value of information are studied.
10. Decision Analysis: Decision analysis involving decision trees and sensitivity analysis are reviewed.

Course Methodology:

The course delivery methodology will include:

1. Lectures
2. Discussion boards
3. Demonstrations
4. Supplemental Material
5. Additional Readings
6. Projects

Evaluation of Student Performance:

The student's performance will be evaluated using:

1. Creation of social networking models
2. Data and networking consulting report
3. Completion of class assignments
4. Quizzes and exams

Students will have access to various software productivity tools to complete assignments.

Text: To be determined

Approved: 1/12

Updated: 8/13