

Foundations of the Data Mind: An Interlocking Modules Approach
Introduction to Data Management (Libraries)

Course Number: ILS 295 (1 credit)

Instructors

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Class Schedule

Wednesday 1:30pm -2:20pm, WALC 3154

Required Texts

No required textbook. All required reading will be provided via Confluence Wiki. [Link: http://bit.ly/2A9Gvhn](http://bit.ly/2A9Gvhn)

Grades

Please refer to BlackBoard for your grades.

Course Description

ILS 295 is one offered as part of three one-credit courses that combine to meet a set of core competencies in data science. The courses, offered through three colleges (Philosophy, Purdue Libraries, and Electrical Engineering), cover principles of data management and organization, data analysis and visualization, and ethical and social implications of data science, providing a strong foundation for subsequent coursework.

This course, ILS 295, provides a foundation in the concepts of data organization, management, preservation, and publication. Students will engage the data management topics through readings, videos, discussion, lectures, guest speakers, and hand-on activities in class. They will develop an ability to locate, access, transform, and evaluate data to answer research questions. Students will communicate the results of their data searches, and format the data for sharing.

Learning Objectives

- Students will be able to understand a data life cycle and identify different types of data.
- Students will be able to identify a variety of data collection techniques and determine the appropriate way to collect data for their questions.
- Students will be able to locate existing data sets for their questions.
- Students will be able to organize data on local storage and in Purdue's PURR.
- Students will apply best practices into data visualization.
- Students will gain tools to preserve and publish data.

Class Schedule

January 9: Data life cycle, syllabus

January 16: International Perspective on Data Management / guest speaker

January 23: Different types and uses of data

January 30: Primary and secondary data collection

February 6: Data exploration, Part I

February 13: Archival data / guest speaker

February 20: Data exploration, Part II

February 27: Big data / guest speaker

March 6: No classes/spring break

March 13: Data quality management, Part I

March 20: Data quality management, Part II

March 27: Ethics of data use (privacy, policy implications)

April 3: Data visualization, Part I

April 10: GIS data visualization / guest speaker

April 17: Data visualization, Part II

April 24: Data sharing & final presentations

April 29: Handling sensitive data & final presentations

Assignments

Please refer to the main page of the course Wiki for your bi-weekly assignments. Each student will have their own page within the course Wiki, please post all assignments to your Wiki page.

Final Project: Final project will be on the topic of every day data of your choosing (topics will have to be approved by the instructors) and presented to the class through your individual Wiki page. Key deliverables include:

1. An overview of your project
2. An explanation of where you found your data and why you chose it
3. An evaluation of the quality of your data
4. A data management plan analysis (this is not a detailed data plan, just an analysis of what you would do)
5. Data visualization(s)
6. A summary of what you learned from the final project and what would you do differently if you were to do it again.

Grades

Activity	Points
Participation/Weekly quizzes(13 classes *2 points/each + random bonus points)	30?
Bi-weekly assignments (7 assignments*5 points/each)	35
Final Project, Stage 1 (1,2,3)	15
Final Project, Stage 2 (4,5,6)	20?
Total	100

Your final grade will be determined by the following:

- A+ (97-100%)
- A (90-96%)
- B+ (86-89%)
- B (80-85%)
- C (70-79%)
- D (60-69%)
- F (less than 60%).

Expectations:

Academic Integrity

Academic integrity is one of the highest values that Purdue University holds. Individuals are encouraged to alert university officials to potential breaches of this value by either emailing integrity@purdue.edu or by calling 765-494-8778. While information may be submitted anonymously, the more information that is submitted provides the greatest opportunity for the university to investigate the concern.

Purdue Students recently created an honor pledge that reinforces the commitment we all have to academic excellence and honesty:

"As a Boilermaker pursuing academic excellence, I pledge to be honest and true in all that I do. Accountable together – We are Purdue."

Purdue prohibits "dishonesty in connection with any University activity. Cheating, plagiarism, or knowingly furnishing false information to the University are examples of dishonesty." [Part 5, Section III-B-2-a, University Regulations] Furthermore, the University Senate has stipulated that "the commitment of acts of cheating, lying, and deceit in any of their diverse forms (such as the use of substitutes for taking examinations, the use of illegal cribs, plagiarism, and copying during examinations) is dishonest and must not be tolerated. Moreover, knowingly to aid and abet, directly or indirectly, other parties in committing

dishonest acts is in itself dishonest." [University Senate Document 72-18, December 15, 1972]

Attendance: Attendance will be taken at each class. Students are expected to be present for at least 13 sessions. After two allowed excused sessions, students have to email your instructors at huber47@purdue.edu and wzakharov@purdue.edu for absence. There will be 5 points deduction per every additional absent session. Ultimately students are responsible for all required coursework and bear full responsibility for any academic consequences that may result due to absence.

Grief Absence Policy: Purdue University recognizes that a time of bereavement is very difficult for a student. The University therefore provides the following rights to students facing the loss of a family member through the Grief Absence Policy for Students (GAPS). GAPS Policy: Students will be excused for funeral leave and given the opportunity to earn equivalent credit and to demonstrate evidence of meeting the learning outcomes for missed assignments or assessments in the event of the death of a member of the student's family. If you face this situation, please contact the instructor as soon as possible at huber47@purdue.edu or wzakhorav@purdue.edu

Distractions: This course takes place in Wang with streaming video capacity. Checking email/phone excessively, using Facebook during class, or other technology-related distractions will negatively affect your grade. Please keep this to a minimum.

Out of Class Communication: We will try to respond to questions or concerns you have outside of class as soon as possible.

Nondiscrimination: Purdue University is committed to maintaining a community which recognizes and values the inherent worth and dignity of every person; fosters tolerance, sensitivity, understanding, and mutual respect among its members; and encourages each individual to strive to reach his or her own potential. In pursuit of its goal of academic excellence, the University seeks to develop and nurture diversity. The University believes that diversity among its many members strengthens the institution, stimulates creativity, promotes the exchange of ideas, and enriches campus life. Purdue University prohibits discrimination against any member of the University community on the basis of race, religion, color, sex, age, national origin or ancestry, genetic information, marital status, parental status, sexual orientation, gender identity and expression, disability, or status as a veteran. The University will conduct its programs, services and activities consistent with applicable federal, state and local laws, regulations and orders and in conformance with the procedures and limitations as set forth in Executive Memorandum No. D-1, which provides specific contractual rights and remedies. Any student who believes they have been discriminated against may visit www.purdue.edu/report-hate to submit a complaint to the Office of Institutional Equity. Information may be reported anonymously.

Students with Disabilities: Purdue University responds to the needs of students with disabilities as outlined in both the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990 through the provision of auxiliary aids and services that allow a student with a disability to fully access and participate in the programs, services, and activities at Purdue University. If you have a disability that requires special academic accommodation for this course, please contact the instructor within the first 3 days of the course to discuss any adjustments. It is important that we talk about this at the very beginning of the semester. It is the student's responsibility to notify the

Disability Resource Center (<http://www.purdue.edu/drc>) of an impairment/condition that may require accommodations.

Emergencies and Disruptions: In the event of a major emergency or other circumstances beyond the instructor's control that disrupts the online course, the instructor may revise the course requirements, deadlines and grading scheme. Any changes to this course will be posted on the course blackboard site.