Kanbar College of Design, Engineering and Commerce

Bachelor of Science in Interactive Design + Media

DSGN-371-1 Data Visualization with JavaScript Syllabus
Credits: # 3 LECTURE
Term: Spring 2014
Class Schedule: Tuesdays
6 to 9:15 PM
Class Location: Search 307

Instructor Information
Name: Tom Barker
E-mail: barker@philau.edu
Phone:

Course Descriptions
Students will learn how to gather and analyze their data, and use the R language and JavaScript libraries to format and display that data in an elegant, informative, and interactive way. Not only will they learn how to gather data effectively, and also how to understand the philosophy and implementation of each type of chart, so as to be able to represent the results visually.

With the popularity of the R language, the art and practice of creating data visualizations is no longer the preserve of mathematicians, statisticians, or cartographers. As technology leaders, we can gather metrics around what we do and use data visualizations to communicate that information. Pro Data Visualization using R and JavaScript combines the power of the R language with the simplicity and familiarity of JavaScript to display clear and informative data visualizations.

Gathering and analyzing empirical data is the key to truly understanding anything. We can track operational metrics to quantify the health of our products in production. We can track quality metrics of our projects, and even use our data to identify bad code. Visualizing this data allows anyone to read our analysis and easily get a deep understanding of the story the data tells.

Course Objectives
- A rich understanding of how to gather, and analyze empirical data
- How to tell a story with data using data visualizations
- What types of data visualizations are best to use for the story that you want to tell with your data
- A comprehensive introduction to the R language, covering all the essentials
- Exploration of how to construct interactive data visualizations using JavaScript and JavaScript libraries

Prerequisites
N/A

Grades

Click here to enter text.

The following definitions are applied to appropriate letter grades:

A = excellent performance, well above expected achievement
B = good performance above expected achievement
C = expected achievement
D = poor or below expected achievement
F = failure

Following is a list of letter grades and their equivalent percent grade:

Superior	Above Average	Average	Below Average	Failing
A = 4.00	B = 3.00	C = 2.00	D = 1.00	F = 0.00
A- = 3.67	B- = 2.67	C- = 1.67		
B+ = 3.33	C+ = 2.33	D+ = 1.33		

Course Content

Week	Topic or Readings	Projects Due
1	History of Data Visualization	
2	Basics of R	
3	Deeper Dive into R	
4	JavaScript Primer	
5	Introduction to D3	
6	Visualizing Spatial Data	Create Data Map from sample access logs
7	MidTerm	
8	Visualizing Time-based Data	Create Time Series
9	Bar Charts	Create Interactive Bar Charts
10	Correlation Analysis	Create Scatterplot and bubble charts
11	Introduction to Web Performance	
12	Visualizing Web Performance	
13	Review	
14	Final	

Text and Resources
Pro Data Visualization using R and JavaScript
ISBN-10: 1430258063
ISBN-13: 978-1430258063

Pro JavaScript Performance: Monitoring and Visualization
ISBN-10: 1430247495
ISBN-13: 978-1430247494

Academic Integrity
Academic integrity is a policy about ethical behavior at Philadelphia University regarding one's intentions, decisions, and actions while conducting academic work. It includes values such as avoidance of the following: cheating; plagiarism; copying; the fabrication of information; and facilitating, or denying others access to information. It expects honesty and rigor in research, course work, writing and publishing. Academic Integrity is taken seriously in this course. Any student violating the University's academic integrity policy will be subject to appropriate sanctions. The University's complete academic integrity policy is available in the 2013-14 Academic Catalog and University's Student Handbook.

Academic resources, including information on citation and documentation for all written work, projects, and presentations, are also available on the Learning and Advising Center's website: http://www.philau.edu/learning/writingguidelines.html.

Classroom Rules & Personal Conduct
Click here to enter text.

Attendance/Lateness
In accordance with University policy, students are expected to attend class every day with all relevant required course materials and work. If you are absent from class, contact your faculty as soon as possible, preferably before the next class meeting. Students remain responsible for any missed work, for work completed in class, and for work due and must arrange for that work to be delivered to the faculty on time. **If you miss three classes, your grade will be dropped a full letter grade. More than four unexcused absences will result in a final grade of FAIL and a recommendation to drop the course.**

Serious illness, family emergencies, or other crises mean that students should contact the Dean of Students Office as soon as possible (215-951-2740) and follow up with a direct explanation to the faculty. Students are responsible for all work related to this class; however, faculty may (but are not required to) make some accommodation in terms of time of delivery and/or make-up exams for major tests. Please consult with your faculty and your academic advisor to determine whether you should withdraw from the course or request an incomplete grade in the case of serious illness or crises.

Electronic Resources
Click here to enter text.

Gutman Library (www.philau.edu/library)
Gutman Library is a gateway to a variety of information resources. The homepage of the library provides 24/7 access to online databases of articles, e-journal collections, e-books, and specialized information to support your coursework. See a list of Research Guides for specific programs and courses at http://libguides.philau.edu/start. The library building is wireless, has 80 available workstations (PCs and Macs), printers, scanners, and copiers; as well as individual and group study spaces.

The Learning and Advising Center
The Learning and Advising Center provides one-on-one tutoring assistance for writing, study strategies, test taking, and specific Philadelphia University courses*. To make a tutoring appointment, students should stop by the Learning and Advising Center in Haggar Hall or call (215) 951-2799. Academic resources, including information on citation and documentation, note taking, and study strategies are available on the Center's website.

Technology Resources (http://www.philau.edu/OIT/)
The campus is wireless. If you need a computer, Gutman Library and Search Hall have open access computers. For assistance with technology issues, students should contact the Technology Help Desk at (215) 951-4648 or send an email to helpdesk@philau.edu.

Collection of Student Work
Philadelphia University is committed to providing excellent and innovative educational opportunities to its students. To help us maintain quality academic offerings and to conform to professional accreditation requirements where relevant, the University and its programs regularly examine the effectiveness of the curricula, teaching, services, and programs the University provides. As Philadelphia University sees appropriate, it may retain representative examples or copies of student work from all courses. This might include papers, exams, creative works, or portfolios developed and submitted in courses or to satisfy the requirements for degree programs as well as surveys, focus group information, and reflective exercises.

Program Director
If for any reason you need advisement from the program director, feel free to e-mail Neil Harner at harnern@philau.edu or call his office at (215) 951-2913

Emergency
In the event of an emergency call Phila U. Security at 2999.