NEW YORK UNIVERSITY
WAGNER GRADUATE SCHOOL OF PUBLIC SERVICE

PADM-GP 4150 – DATA-DRIVEN PERFORMANCE

Summer 2017

Instructor: Patrick Yurgosky
Email: pyg@nyu.edu
Twitter name: yurgosky

Date & Time: Wednesdays 5:00 – 7:00pm; May 24 – June 28
Location: Tisch Hall, Room: LC19 (40 West 4th Street)
Credits: 2 credits
Prerequisites: A good knowledge of Excel

COURSE DESCRIPTION
This course describes the growing role of IT in nonprofits and how high-impact organizations are using IT platforms to manage and analyze their programs. Included is a discussion on the IT-related problems faced by nonprofits and solutions available to address these problems. Methods for implementing solutions and best practices for data collection and analysis will also be outlined. The course will also be hands-on: teaching techniques for quickly analyzing datasets using MS Excel. The course will also examine how to best recruit and manage consultants and vendors for IT projects.

Optional: after many sessions high-impact organizations will give a 20-minute presentation about their technology, the struggles they face, and how they begin to solve these problems.

LEARNING OBJECTIVES
At the end of this course, you will be able to:

● Articulate the IT-related problems facing nonprofits and how they impact outcomes
● Intelligently develop criteria for selecting an IT product
● Understand the concepts and considerations when implementing an IT solution
● Understand both the front-end and back-end of a database (tables vs. dashboards)
● Use tools in Excel to analyze datasets quickly
● Effectively communicate IT requirements to IT staff and consultants
● Understand how to select, and manage IT consultants and vendors

COURSE STRUCTURE
Sessions 1-4 will require readings and participation in a lecture setting.
Sessions 5 & 6 will include at-home exercises and will take place in a computer lab.
ASSIGNMENTS AND GRADING

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Percent of Grade</th>
<th>Date Distributed</th>
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<tbody>
<tr>
<td>Short-Answer Test</td>
<td>65%</td>
<td>6/14</td>
<td>6/21</td>
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<tr>
<td>Reporting Case (Excel)</td>
<td>35%</td>
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In-Session Reporting Case in Excel
The reporting case will be administered in the computer lab. You will be given a primary dataset from a typical database export and asked a question that will involve multiple steps to achieving the answer. You will be graded on whether you arrive at the correct answer, your justification on how you arrived at the answer, and the speed in which you arrived at the answer.

Short Answer Test
You will be given a series of short-answer questions based on the core concepts discussed and class and the readings. You will be required to answer all questions within the time provided. The questions will each be answered in a short paragraph that will be graded based on the following criteria:

1. Was the correct concept from class/assigned readings identified?
2. Was a proper justification/explanation given to support the concept?
3. Was a creative and accurate example outlined to explain the topic?
4. Does the answer accurately draw from the readings and class lecture?

Extra Credit
This year, a full letter grade will be given for fully completing an extra credit assignment by the end of the final session (6/28). You can submit the extra credit at any time during the course, but late submissions (after the end of the final session) will not be accepted.

You will have two options:
1. Complete the Force.com workbook through page 110 (print version), leaving out the coding on page 89-94 [Reporting REST API]. In this extra credit, you will be guided through a series of step-by-step tutorials to create an online and mobile application to manage inventory (something every nonprofit does). To receive full credit, when you’re complete, make me a user under username: Yurgosky@{your full name}nyu2017.com
   IMPORTANT: Follow the book exactly. Do not create a Salesforce trial to complete the book, you will receive many sales calls and not have the resources available to complete the extra credit. You must create a developer license at https://developer.salesforce.com/ as described on page 3 in the workbook.

2. Complete the CartoDB Map Academy basic courses (3; 1-hour each)
   a. Online Mapping for Beginners
   b. Introduction to Map Design
   c. SQL and PostGIS in CartoDB
   d. Complete a torque map using the concepts learned in the courses using a
publically available dataset from NYC Open Data (https://nycopendata.socrata.com/). Please be creative with your dataset – though not a requirement, visualizing public data in an interesting way is always appreciated.

To receive full credit, you will need to send me the publically available URL to your final torque map. Make sure it is publicly available. If I cannot access it, I cannot give you credit.

**READINGS**

**Required:**
3. Packet of course readings available online in Classes.

**Optional:**

**COURSE OUTLINE AND READING ASSIGNMENTS**

**Session 1**
5/24

**Problems Faced by Nonprofits**

Nonprofits face a suite of IT dilemmas including: (1) an inability to track and report leading indicators and outcomes; (2) fractured data due to information silos; and (3) inefficiency due to data entry.

**Readings:**

**Optional:**
Solutions to Problems
In this session you will learn different ways that data is organized and how relational databases work. We will explore some of the many products available and how each addresses the particular issues faced by nonprofits. We will look at specific applications and platforms, such as Social Solutions' Efforts to Outcomes (ETO), CiviCRM and Salesforce.com, AirTable, Excel, Google Docs. We will identify the positives and negatives to each product and identify how they can solve each of the various problems.

Readings:
1. What is a Database Anyway?
2. AirTable: https://youtu.be/BP3otFMLwm0
7. The Economics of Software as a Service (SaaS) vs. Software as a Product: http://www.pragmaticmarketing.com/publications/magazine/6/5/the-economics-of-software-as-a-service-saas-vs-software-as-a-product
8. Case Studies:
   b. Grants Management @ the Michael & Susan Dell Foundation (ETO): http://www.socialsolutions.com/resources/michael-susan-dell-foundation/?rl=true
   c. Automating the Australian Children Alliance (CiviCRM): https://civicrm.org/case-studies/australian-childcare-alliance-nsw
9. Products & Demos:
   b. ETO Demo: http://www.socialsolutions.com/resources/government-software-demo/
   d. Salesforce Demo: https://www.youtube.com/watch?v=c6h8cc1WleY
Implementing a Solution

Now that you know about the different products, we’ll explore the considerations during implementation. We will focus on security, infrastructure, operating model (i.e. the level of standardization and/or integration appropriate for your nonprofit), licensing and change management considerations. We will also explore various methods of implementation as well as financial, staffing, and training considerations.

Readings:


Optional:

2. Akkermans, H; van Helden, K. *Vicious and Virtuous Cycles in ERP implementation: a Case Study of Interrelations Between Critical Success*
Session 4  
6/14

Collecting & Analyzing Data
At the heart of every solution is a database that houses data for analysis. In this session we will explore how effective nonprofits are leveraging new frameworks better use data to increase outcomes. We will explore how to create dashboards and reports to monitor and manage processes, types of data, types of dashboards, data values and other key tools.

Readings:
2. Yurgosky, Patrick. *Beyond Dashboards: Business Intelligence Tools for Program Management & Reporting*
5. Back Away from the Spreadsheet: Why Excel Isn't a Donor Database.

Optional:

Session 5  
6/21

Excel for Data Analysis
Microsoft Excel is a common denominator in any analysis. In this session you will learn the key formulas and functions to quickly analyze large datasets for reporting and analysis. This session will be hands-on and take place in a computer lab. We will go over a series of common requests that nonprofits receive and you will learn the tools to quickly provide answers from multiple angles. Examples of the tools are: array formulas, pivot tables, text to columns, index, match, sumproduct, etc.

Readings:
1. Brush up on your Excel skills using Excel Help or the Excel Bible.
2. Practice MS Excel problems will be provided.

**Short Answer Test Due Before Class**

Session 6  
6/28

Managing the Project & Vendors
Most IT products will require some customization, adding new contract requirements or new programs also usually require nonprofits to modify their
existing applications. Functional specification documents save nonprofits time and money by making sure that everyone is on the same page with how a program should function. Functional specs are different than technical specification documents, because they solely focus on how an application will work, not on how the code will be written, etc. Nonprofits create these specifications to ensure that the IT consultants or staff are precisely aware of the way an application should function, thus saving time and money compared to not creating specifications. In this session you will learn the best practices in creating these documents as well as when and how to build them.

In this final session, you will also learn how IT consultants and vendors impact the work of nonprofits. You will learn the different types of consultants, how to choose the best consultant, the requirements for a Request for Proposals (RFP) Requests for Information (RFI), how to recruit/identify vendors and consultants, and managing the selection process.

**In-Session Excel Quiz: First 15 minutes of session.**

1. **Complete Excel Practice Problems** (distributed in session 5)

Functional Specification Readings:

Consultants & Vendors Readings:
1. Working with Software Vendors: Helping Them Help You
2. How to Choose and Work with Technology Consultants