

**MSAN-603-01**  
**Product Analytics**  
SPRING 2020

**Instructor:** Nicholas Ross  
Diane Woodbridge

**Contact Information:** ncross@usfca.edu and dwoodbridge@usfca.edu

**Time and Location:** Tuesday 3:15 PM - 5:05 PM. Friday 10 AM - 11:55 AM.  
101 Howard 154, 155 and 156

**Office Hours:**

Nick : Tuesday 5:05 - 6:05 pm  
Diane : Thursday 3:00 - 4:00 pm  
Also, by Appointment

**Teaching Assistant:** Technical TA : Yun Jin Kang (yjkang@usfca.edu)

## 1 Class Objectives and Overview

The course is an entrepreneurial class which includes designing, developing and understanding the economics behind a data science web application. Students will work in groups and come up with an idea that can be built in the seven weeks of this course. At the end of this course you will have successfully built a product.

In conjunction with the building of the product, students will also learn a bit of business strategy as it applies to data focused companies. Information about company formation, stock, equity, and accounting will be interspersed with critical lessons about how products are understood with analytics.

On the technical side, this course will cover the following:

- Python - Coding conventions, Documentation, Testing, etc.
- Basic front and back-end development.
- Apply analytics tools for tracking website traffic and user activities.
- Design and develop a web application and deploy on AWS.

## 2 Program Learning Outcomes

This course meets two of three Program Learning Outcomes (PLOs) of the MS in Data Science program.

- Effectively use modern programming languages (e.g., R, Python, SQL, etc.) and technologies (AWS, Spark etc.) to scrape, clean, organize, query, summarize, visualize, and model large volumes and varieties of data.
- Apply machine learning algorithms (e.g., random forests, neural networks, naive Bayes, k-means, etc.) techniques effectively.
- Be prepared for careers as data scientists by solving real-world data-driven business problems with other data scientists.
- Develop professional communication skills (e.g., presentations, interviews, email etiquette, etc.), and begin integrating with the Bay Area data science community.

## 3 Grading

This course has a large number of small assignments, all of which are outlined below. A few important notes:

1. **No late submissions are allowed.**
2. All code must run in Python 3.6
3. All assignments will be graded for grammar, clarity and overall communication skill.

Table 1: Grading Breakdown

<b>Date</b>	<b>Assignment Type</b>	<b>Name</b>	<b>Pct</b>
3/20/2020	Group	Biz Plan / Choose Groups	5
3/27/2020	Group	Presentation #1	5
3/27/2020	Group	Biz Plan Update #2	3
3/27/2020	Group	Deploy Code/Sphinx	5
3/27/2020	Individual	Reflection Exercise #1	1
3/31/2020	Individual	Presentation Review (Grp 1)	1
4/3/2020	Group	Biz Plan update #3	3
4/10/2020	Individual	HW #1	2
4/10/2020	Group	Application Update #2	5
4/10/2020	Group	Presentation #2	5
4/10/2020	Group	Biz Plan Update #4	3
4/10/2020	Individual	Reflection Exercise #2	1
4/14/2020	Individual	Presentation Review (Grp 2)	1
4/17/2020	Individual	Backend Test	3
4/17/2020	Group	Biz Plan Update #5	3
4/24/2020	Group	Application Update #3	5
4/24/2020	Group	Presentation #3	5
4/24/2020	Group	Biz Plan Update #6	3
4/24/2020	Individual	Reflection Exercise #3	1
4/28/2020	Individual	Presentation Review (Grp 3)	1
4/28/2020	Individual	Frontend HW	2
5/1/2020	Individual	Frontend Test	3
Last Week	Group	Final App, In-class & Public Presentations, Final Reflection	20
Entire Module		Professionalism	14
<b>Total</b>			<b>100</b>



## 4 Class Schedule

Week	Monday/Tuesday	Tuesday	Friday (class)	Friday (Assignments)
#1: 3/16	Video #1: Deployment(EB), Auto Documentation	LIVE: Intro + Strat. #1	Watch Video #1 before 10AM and LIVE: Discussion	4PM: Biz Plan uploaded and Choose Groups on Canvas
#2: 3/23	Video #2: Flask and Backend, Git Branch	LIVE: Strat. # 2 (READINGS)	Watch Video #2 before 10AM and LIVE: Discussion	4PM: Presentation #1 uploaded, Group Deploy Code and Sphinx, Biz Plan update #2 & Reflection exercise #1
#3: 3/30	Video #3: Backend Data Processing, Unit Tests	LIVE: Strat. #3 (READINGS) and GRP #1 Review Due	Watch Video #3 before 10AM, LIVE: Discussion	4PM: Biz Plan update #3
#4: 4/6	Video #4: Backend + Frontend Intro	LIVE: Strat. #4 (READINGS)	10AM: Watch Video #4 and Backend HW (No Discussion – Good Friday)	4PM: Application Update #2, Presentation #2 uploaded, Biz Plan update #4 and & Reflection exercise #2
#5: 4/13	Video #5: Frontend I	LIVE: Strat. #5 (READINGS) and GRP #2 Review Due	10 AM : Backend Test, Watch Video #5, LIVE: Discussion	4PM: Biz Plan update #5
#6: 4/20	Video #6: Frontend II	LIVE: Strat. #6 (READINGS)	Watch Video #6 before 10AM, LIVE Discussion	4PM: Application Update #3, Presentation #3, Biz Plan update #6 and & Reflection exercise #3
#7: 4/27	Video #7: Google Analytics	LIVE: Strat. #7 (READINGS) and GRP #2 Review Due & Frontend HW	10AM: Watch Video #7, Frontend Test, LIVE: Discussion	
#8: 5/4		4PM: Final Pres.		
May 13	VC Presentation / Day of Data			

## 5 Netiquette & Communication

### 5.1 What is Netiquette?

Simply stated, it's network etiquette – that is, the etiquette of cyberspace. And “etiquette” means “the forms required by good breeding or prescribed by authority to be required in social or official life.” In other words, Netiquette is a set of rules for behaving properly online.

### 5.2 Netiquette General Policy

When communicating and participating online, please remember that others cannot hear your voice or see your face. Please keep the following behaviors in mind:

- Be respectful of other participants, their time (be brief), their bandwidth (few attachments/signatures), and their opinions
- Avoid using all caps, may be read as SHOUTING
- Keep your comments constructive
- Keep subject lines clear
- Spelling and grammar do count; proofread your writing
- Be coherent and succinct
- Acronyms may not be understood: “aok”
- Check the most recent comment/email before replying to an earlier one

### 5.3 Communication

This course is joint-taught. Interestingly, students will try to approach only Diane or I to try to get us to agree to something or try to extract extra points, etc. This doesn't work. Unsurprisingly, Diane and I communicate, which means we both learn of things. Please keep this in mind and try to use the Main slack channel for any questions on the class.

## 6 University Policy

All students at the University of San Francisco are subject to several university policies. Some of these are highlighted below. Visit [usfca.edu/catalog/policies](http://usfca.edu/catalog/policies) for a full list of these policies.

## 6.1 Academic Integrity

As a Jesuit institution committed to *cura personalis*-the care and education of the whole person-USF has an obligation to embody and foster the values of honesty and integrity. USF upholds the standards of honesty and integrity from all members of the academic community. All students are expected to know and adhere to the University's Honor Code. You can find the full text of the code online at [www.usfca.edu/academic\\_integrity](http://www.usfca.edu/academic_integrity). The policy covers:

- Plagiarism - intentionally or unintentionally representing the words or ideas of another person as your own; failure to properly cite references; manufacturing references.
- Working with another person when independent work is required.
- Submission of the same paper in more than one course without the specific permission of each instructor.
- Submitting a paper written by another person or obtained from the internet.
- The penalties for violation of the policy may include a failing grade on the assignment, a failing grade in the course, and/or a referral to the Academic Integrity Committee.

## 6.2 Behavioral Expectations

All students are expected to behave in accordance with the Student Conduct Code and other University policies (see <http://www.usfca.edu/fogcutter/>). Open discussion and disagreement is encouraged when done respectfully and in the spirit of academic discourse. There are also a variety of behaviors that, while not against a specific University policy, may create disruption in this course. Students whose behavior is disruptive or who fail to comply with the instructor may be dismissed from the class for the remainder of the class period and may need to meet with the instructor or Dean prior to returning to the next class period. If necessary, referrals may also be made to the Student Conduct process for violations of the Student Conduct Code.

## 6.3 Confidentiality, Mandatory Reporting, and Sexual Assault

As an instructor, one of my responsibilities is to help create a safe learning environment on our campus. I also have a mandatory reporting responsibility related to my role as a faculty member. I am required to share information regarding sexual misconduct or information about a crime that may have occurred on USF's campus with the University. Here are other resources:

- To report any sexual misconduct, students may visit Anna Bartkowski (UC 5th floor) or see many other options by visiting our website: [www.usfca.edu/student\\_life/safer](http://www.usfca.edu/student_life/safer).
- Students may speak to someone confidentially, or report a sexual assault confidentially by contacting Counseling and Psychological Services at 415-422-6352.

- To find out more about reporting a sexual assault at USF, visit USFs Callisto website at: [www.usfca.callistocampus.org](http://www.usfca.callistocampus.org).
- For an off-campus resource, contact San Francisco Women Against Rape (SFWAR) (415) 647-7273 ([www.sfwar.org](http://www.sfwar.org)).

## 7 Student Resources

The following are general resources available to students at the University of San Francisco. For more information, please contact the relevant office.

### 7.1 Students with Disabilities

If you are a student with a disability or disabling condition, or if you think you may have a disability, please contact USF Student Disability Services (SDS) at 415 422-2613 within the first week of class, or immediately upon onset of disability, to speak with a disability specialist.

If you are determined eligible for reasonable accommodations, please meet with your disability specialist so they can arrange to have your accommodation letter sent to me, and we will discuss your needs for this course. For more information, please visit: <http://www.usfca.edu/sds> or call (415) 422-2613.

### 7.2 Learning and Writing Center

The Learning & Writing Center provides assistance to all USF students in pursuit of academic success. Peer tutors provide regular review and practice of course materials in the subjects of Math, Science, Business, Economics, Nursing and Languages. Other content areas can be made available by student request. To schedule an appointment, log on to TutorTrac at <https://tutortrac.usfca.edu>. Students may also take advantage of writing support provided by Rhetoric and Language Department instructors and academic study skills support provided by Learning Center professional staff. For more information about these services contact the Learning & Writing Center at (415) 422-6713, email: [lwc@usfca.edu](mailto:lwc@usfca.edu) or stop by our office in Cowell 215. Information can also be found on our website at [www.usfca.edu/lwc](http://www.usfca.edu/lwc).

### 7.3 Counseling and Psychological Services

Our diverse staff offers brief individual, couple, and group counseling to student members of our community. CAPS services are confidential and free of charge. Call 415-422-6352 for an initial consultation appointment. Having a crisis at 3 AM? We are still here for you. Telephone consultation through CAPS After Hours is available between the hours of 5:00 PM to 8:30 AM; call the above number and press 2.



## **8 Student Accounts - Last day to withdraw with tuition reversal**

Students who wish to have the tuition charges reversed on their student account should withdraw from the course(s) by the end of the business day on the last day to withdraw with tuition credit (census date) for the applicable course(s) in which the student is enrolled. Please note that the last day to withdraw with tuition credit may vary by course. The last day to withdraw with tuition credit (census date) listed in the Academic Calendar is applicable only to courses which meet for the standard 15-week semester. To find what the last day to withdraw with tuition credit is for a specific course, please visit the Online Class Schedule at [www.usfca.edu/schedules](http://www.usfca.edu/schedules).