

# INF 627: *Data Analytics Practicum* (3 cr) Fall 2018

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*I tell my students, 'When you get these jobs that you have been so brilliantly trained for, just remember that your real job is that if you are free, you need to free somebody else. If you have some power, then your job is to empower somebody else. This is not just a grab bag candy game.'* – Toni Morrison

## Course Staff

Instructor: George Berg

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- Office Hours:  
Tuesdays and Thursdays: 2:50 – 3:50 in the Campus Center. Ground floor near the rear grand staircase.
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- Office: UAB 413
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## Course Description

### **INF 627 Data Analytics Practicum (3)**

Hands-on exercises and projects using the latest techniques and tools that prepare students to put all the knowledge learned in previous course into practice. Commercial and open-source tools are used to conduct analyses and build prototypes using real-world case students and data sets. Case studies cover building analytical and predictive models in selected areas (e.g. emergency preparedness, homeland security, cybersecurity, healthcare, defense, finance, energy).

**Prerequisite(s):** INF 624.

## Expected Student Outcomes

This is a culminating graduate course in data analytics Team of students will complete several smaller projects and one larger, term project that apply the concepts and tools of data analytics to analyze data and draw conclusions in real-world DA problems.

The goals of this course are to help students learn

- How to apply DA concepts to real world problems.
- How to apply DA tools to real world problems.
- How to work in teams on the above.
- How to present results in a meaningful fashion to indicate solutions to DA problems..

## Class Meetings

### Lecture

The lecture meets twice week: Tuesdays and Thursdays, 1:15 - 2:35 PM in (Lecture Center) LC 25.

### Required Texts

There is no required text for this class.

### Recommended Text

There is no recommended text for this class.

### Additional Readings

There will be readings that will be available to the students online or via Blackboard. When these readings are assigned, the class will be told where they can be found.

## Grading

Category	Assignment Type	Weight Within Category	Category Weight in the Course
<b>Individual Grades</b>			30%
	Individual Assignments	100%	
<b>Team Grades</b>			50%
	Team Exercises	35%	
	Term Projects	65%	
<b>Class Participation and Peer Evaluation</b>			20%
	Peer Evaluation	75%	
	Class Participation (Instructor Determined)	25%	
<b>Total</b>			<b>100%</b>

### Grade Determination:

Although philosophically I would prefer not to “grade”, grades for this course are based on the total number of points a student, completing all assignments successfully, would earn. Each assignment will carry a fixed number of points. At the end of the semester your final grade will be based upon the number of points you’ve attained divided by the maximum number of points that could possibly be attained. For example, if the maximum amount of possible points possible is 125 and you have accrued 100 points your final grade will be 100 divided by 125 or 80% (a B-); if you accrued 110 out of 125 it will be 88 (or a B+), etc. The University at Albany uses a letter-based grading system and utilizes pluses and minuses (+/-) to allow for variations of the assigned grades. Acceptable grades are **A, A-, B+, B, B-, C+, C, C-, D+, D, D-, E (“E” being the designation for failure)**. **The University does not use grades of A+ or F.**

- 95-100=A

- 94-90 = A-
- 86-89 = B+
- 83-85 = B
- 82-80 = B-
- 76-79 = C+
- 73-75 = C
- 72-70 = C-
- 66-69 = D+
- 63-65 = D
- 62-60 = D-
- 59 and below = E (Designation for failure or E)

#### Policies

**Attendance:** Your in-class performance is key to your success in this course. Attendance, itself, is not explicitly graded (but it does factor into class participation). Instead, graded in-class activities and assignments constitute an important part of the course grade. Keeping a passing average on these is not possible without consistent attendance. Missing class means the student earns an automatic zero for all individual and team activities or assignments missed. No make-up opportunities will be available.

**Tardiness:** Missing an assignment or activity that happens before a student arrives or after a student leaves also earns a zero. No make-up opportunities will be available. Tardiness also factors into class participation.

If you know that it will be difficult for you to consistently get to class on time and stay for the entire period, you should take this course at a time that better fits your schedule. Missing or being late frequently will guarantee a low grade for the course.

**Make-up Policy:** There are generally no make-up opportunities for missed assignments except in extenuating circumstances. Instead of asking to make up missed work, please use the course 'safety valves' described below.

Since there will be situations in your life when missing a class meeting is simply unavoidable, this course has 2 no-fault safety valves.

**Safety Valve 1:** The lowest iRAT and gRAT is dropped (Peer Evaluations, individual Assignments, and Exams are *not* dropped). A missed assignment will count against this (*i.e.* a zero from a miss would be your low score; you don't get a miss and a drop).

**Safety Valve 2:** If you become seriously ill during the semester, or become derailed by unforeseeable life problems, and have to miss so many assignments that it will ruin your grade, schedule a meeting with the instructor in order to make arrangements for you to drop the course to save your grade point average. Don't wait until it's too late to do this when you get in trouble.

**Late Assignments:** Out of class assignments are due on the due date, by the assigned time. Late individual assignments will be accepted, but at the cost of a full letter grade for missing the deadline, and an additional letter grade for each additional 24 hours late. In-class assignments may be done only on the days they are scheduled.

**Withdrawal from the Course:** The **drop date** for the Fall 2018 semester is **Monday, November 9, 2018 for graduate students in full semester courses**. That is the last

date you can drop a course and receive a 'W'. It is your responsibility to take action by this date if you wish to drop the course. In particular, grades of "incomplete" will not be awarded to students because they missed the drop deadline. Given that dropping a course can have financial aid implications, please see your advisor or the Financial Aid office before dropping a course so you understand the implications that action can have on your aid.

**Electronic Devices:** For some team activities, you will need to use a phone/tablet/laptop. Other than that, make sure your devices are put away during class unless we are using them in a team exercise. *Non-class device use will count negatively against the entire class's participation grade.*

**Students with Disabilities:** Students who feel that they have disabilities that require special arrangements for them to take the course *must* register with the Disability Resource Center. Students are eligible for special services to which both the Center and the professor agree. In general, *it is the student's responsibility* to contact the professors at least one week before the relevant assignment to make arrangements. You can contact the Disability Resource Center in Campus Center 137, or at 442-5490, if needed.

**Incompletes:** As per both the Graduate and Undergraduate Bulletins, the grade of Incomplete (I) will be given "only when the student has nearly completed the course requirements but because of circumstances beyond the student's control the work is not completed." A student granted an incomplete will make an agreement specifying what material must be made up, and a date for its completion. The incomplete will be converted to a normal grade on the agreed upon completion date based upon whatever material is submitted by that time.

**Important:** Incompletes will *not* be given to students who have not fulfilled their classwork obligations, and who, at the end of the semester, are looking to avoid failing the course. This is asking for special treatment.

**Responsible Use of Information Technology:** Students are required to read the University at Albany Policy for the Responsible Use of Information Technology available at the ITS website:  
<https://wiki.albany.edu/display/public/askit/Responsible+Use+of+Information+Technology+Policy>

## Academic Integrity

**In this class, some course work and examinations are *individual exercises*.** The individual work that you do must be *yours* - not that of other students, friends, tutors, *etc.* While it may seem like the easy way out of doing the assignments to copy them from others, this strategy will backfire on the tests, when you will not know the material you would have learned from doing the assignments. You may of course form study groups, discuss assignments and techniques in general terms, *etc.*, but the assignments themselves *must* be your own work. In particular, two or more people may not create an individual assignment together and submit it for credit. *Please ask if you have any questions about academic integrity.*

I am also personally offended by cheating, in part because it hurts the honest students in the class. We will try our hardest to catch cheaters. If we catch a student cheating, we will not go easy on him or her. Given that, is it really worth it?

The Graduate and Undergraduate Bulletins state the university's policies on academic integrity. You will be held to these policies. You are expected to be familiar with them.

A (non-exhaustive) list of unacceptable activities is:

- Allowing other students to see or copy your assignments.
- Examining or copying another student's assignments.
- Allowing other students to see or copy your work during an exam.
- Examining or copying another student's work during an exam.
- Getting answers or help from people, or other sources (e.g. research papers, web sites) without acknowledging them.
- Defacing or deleting class shared documents.
- Lying to the Professor about issues of academic integrity.

Any incident of academic dishonesty in this course, no matter how "minor" will result in

- No credit for the affected assignment.
- A written report will be sent to the appropriate University authorities.
- One of -
  - o A final mark reduction by *at least* one-half letter grade (e.g. B → B-, C- → D+),
  - o A Failing mark (E) in the course, and referral of the matter to the University Judicial System for disposition.

Policies from Graduate Bulletin: [http://www.albany.edu/graduate\\_bulletin/regulations.html](http://www.albany.edu/graduate_bulletin/regulations.html)

## Timeline

Week	Topics
1	Introduction
2	Review of DA Concepts
3	Case Study I
4	Case Study I Post Mortem
5	Review of DA Tools
6	Case Study II
7	Case Study II Post Mortem
8	Project Management Principles and Tools
9	Semester Project Introduction
10	Work on Semester Projects
11	Work on Semester Projects
12	Work on Semester Projects
13	Work on Semester Projects
14	Semester Project Presentations

## Miscellaneous

### Extra credit opportunities

During the semester the university and others hold events that may be of interest to students in this course. If you attend an event and write a summary and reflection piece on the event (specified in individual assignments) you may receive extra credit worth up to 1% of the course value. A maximum of 5% of extra credit can be accrued this way. There are no other extra credit mechanisms available in this course.