

MIS 532 – Advanced Business Program Development

INSTRUCTOR	Cheng Nie
OFFICE	3374 Gerdin Business Building
CLASS TIMES	Thursday 6:40 pm - 10:00pm, Gerdin 1117
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PHONE	(515) 294-2476
OFFICE HOURS	M 10:00 – 11:00 AM or by appointment
WEBSITE	Iowa State Canvas course page

This syllabus is not a contract between instructor and student, but a guide to course procedures on attendance, participation, requirements, grading, and goals and objectives. The instructor reserves the right to amend the syllabus when circumstances dictate. Students will be duly notified.

TEXT:

1. Data Science from Scratch: First Principles with Python. Joel Grus, O'REILLY.
2. Web Scraping with Python: Collecting More Data from the Modern Web. Ryan Mitchell, O'REILLY.
3. Python for Data Analysis: Data Wrangling with Pandas, NumPy, and IPython. Wes McKinney, O'REILLY

All these books are accessible online through the library.

COURSE DESCRIPTION: This course is for students who are interested in working in the rapidly growing fields of business analytics and data science. It will provide a basic introduction to programming and cover topics related to the collection, processing, and analysis of data. Students will have extensive hands-on experience on mastering the techniques to transform data to knowledge and creating value for organizations.

COURSE OBJECTIVES: At the completion of this course, students will be able to:

1. Have good programming skills in Python programming language.
2. Have an in-depth understanding of business analytics.
3. Apply business analytics skills to derive knowledge from real-world data.

COMMUNICATION: Face-to-face communication is typically the best way to communicate, either class time or during office hours. Beyond a face-to-face discussion, the preferred method of communication with the instructor is email (using your ISU email account). Although I try

to respond quickly, anticipate a 24-hour turnaround on email requests during weekdays. During weekends and holidays, the responding time is probably longer. In other words, don't wait until the last minute to ask questions.

GRADING:

Mid-Term Project Report	150 points
Final Project Report	200 points
Final Project Presentation	150 points
Two Projects	300 points
Class Attendance	200 points
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Total	1000 points

ASSIGNING GRADES:

The following point breaks will be used to assign grades. Do not expect a curve.

Course Grade Cutoffs	
Course Grade	Overall Performance
A	$\geq 90\%$
A-	$\geq 85\%$
B+	$\geq 77\%$
B	$\geq 73\%$
B-	$\geq 70\%$
C+	$\geq 67\%$
C	$\geq 63\%$
C-	$\geq 60\%$
D+	$\geq 57\%$
D	$\geq 53\%$
D-	$\geq 50\%$
F	$< 50\%$

All required submissions are due before the class starts. There is penalty for late submissions. 25% of the corresponding points will be deducted per calendar day (not business day).

Schedule

Note: This schedule is tentative; changes will be announced in class and posted in Canvas.

Week (Date)	Topic/Reading	Assignment
1 (8/30)	Introduction to programming using Python	
2 (9/06)	Collecting data online I (basic)	
3 (9/13)	Collecting data online II (scrapy)	
4 (9/20)	Preprocessing data (pandas)	Project 1 Due
5 (9/27)	Linear Regression, Logistic Regression, Basic visualization	
6 (10/04)	Decision Tree, Clustering	Project 2 Due
7 (10/11)	Other Machine Learning topics using scikit-learn	
8 (10/18)	Text Mining I	Mid-term Report Due
9 (10/25)	Text Mining II	
10 (11/01)	Neural Networks and Deep Learning I	
11 (11/08)	Neural Networks and Deep Learning II	
12 (11/15)	Project presentation	Final Report Due

POLICIES:

Attendance Policy:

I strongly encourage attendance, and we will be covering a lot of materials in each class, therefore it is essential that you attend and come prepared. If you miss a class, make sure you get any announcements/assignments/materials. I only excuse missed classes for reasons acceptable to the university and the college of business. This does not include job interviews, family reunions, amazing vacation opportunities, etc. Attendance will be taken and used for class attendance points.

Extra Credit:

There is no extra credit or extra project.

Canvas:

It will be used for class content (e.g., class slides and assignment descriptions). Slides will be posted before class. Class announcements (e.g., change in assignment dates) will also be posted. It is the students' responsibility to keep up with the changes that are posted on Canvas.

Academic misconduct:

Academic misconduct is a violation of the behavior expected of a student in an academic setting as well as a student conduct violation. A student found responsible for academic misconduct is subject to the appropriate academic penalty, determined by the instructor of the course, as well as sanctions under the university [Student Disciplinary Regulations](#). Depending on the act, a student could receive an F grade on the test/assignment, F grade for the course, and could face suspension from the University. See the Student Disciplinary Regulations at <http://www.policy.iastate.edu/policy/SDR> for more details and a full explanation of the policy on Academic and Research Misconduct by students.

Accessibility Statement:

Iowa State University is committed to assuring that all educational activities are free from discrimination and harassment based on disability status. Students requesting accommodations for a documented disability are required to meet with staff in Student Accessibility Services (SAS) to establish eligibility and learn about related processes. Eligible students will be provided with a Notification Letter for each course and reasonable accommodations will be arranged after timely delivery of the Notification Letter to the instructor. Students are encouraged to deliver Notification Letters as early in the semester as possible. SAS, a unit in the Dean of Students Office, is located in room 1076, Student Services Building or online at www.sas.dso.iastate.edu. Contact SAS by email at accessibility@iastate.edu or by phone at 515-294-7220 for additional information.

Statement on Dead Week:

This class follows the Iowa State University Dead Week policy as noted the ISU Policy Library; as well as section 10.6.4 of the Faculty Handbook. Visit the ISU Policy Library website (<http://www.policy.iastate.edu/>) for policy wording.

Discrimination and Harassment:

Iowa State University does not discriminate on the basis of race, color, age, ethnicity, religion, national origin, pregnancy, sexual orientation, gender identity, genetic information, sex, marital status, disability, or status as a U.S. Veteran. Inquiries regarding nondiscrimination policies may be directed to Office of Equal Opportunity, 3410 Beardshear Hall, 515 Morrill Road, Ames, Iowa 50011, Tel. 515 294-7612, Hotline 515-294-1222, email eooffice@iastate.edu

Religious Accommodations:

Iowa State University welcomes diversity of religious beliefs and practices, recognizing the contributions differing experiences and viewpoints can bring to the community. There may be times when an academic requirement conflicts with religious observances and practices. If that happens, students may request reasonable accommodation for religious practices. In all cases, you must put your request in writing. The instructor will review the situation in an effort to provide a reasonable accommodation when possible to do so without fundamentally altering a course. For students, you should first discuss the conflict and your requested accommodation with your professor at the earliest possible time. You or your instructor may also seek assistance from the Dean of Students Office (<http://dso.iastate.edu>) at 515-294-1020 or the Office of Equal Opportunity (<https://www.eoc.iastate.edu>) at 515- 294-7612.

Related to ISU's Principles of Community:

Students are responsible for living the tenets established in ISU's Principles of Community: Respect, Purpose, Cooperation, Richness of Diversity, Freedom from discrimination, and the Honest and respectful expression of ideas. Visit ISU's Principles of Community website (<http://www.diversity.iastate.edu/principles-ofcommunity>)

Regarding name, gender identity and/or gender expression:

Class rosters are provided to the instructor with the student's legal name. I will gladly honor your request to address you by an alternate name or gender pronoun. Please advise me of this preference early in the semester so that I may make appropriate changes to my records.

Promoting student health and wellness:

Iowa State University is committed to proactively facilitating the well-being of all students. We welcome and encourage students to contact the following on-campus services for assistance regarding their physical, intellectual, occupational, spiritual, environmental, financial, social, and/or emotional needs:

- Student Wellness call (515) 294-1099 or via website (<http://studentwellness.iastate.edu>);
- Thielen Student Health Center call (515) 294-5801 (24/7 Medical Advice) or via website (<http://www.cyclonehealth.org>);
- Student Counseling Services call (515) 294-5056 or via website (<https://counseling.iastate.edu>);
- Recreation Services call (515) 294-4980 or via website (<http://recservices.iastate.edu>).

- Students dealing with heightened feelings of sadness or hopelessness, thoughts of harm or suicide, or increased anxiety may contact the ISU Crisis Text Line (Text ISU to 741-741) or contact the ISU Police Department (515) 294-4428.

Fostering a safe community:

Green Dot Project: A green dot is any choice, behavior, word or attitude that promotes safety for everyone and communicates utter intolerance for power-based personal violence in our Iowa State University community. A green dot is anything you do to make our community safer. What is your Green Dot? Visit the Green Dot - Student Wellness website (<http://www.studentwellness.iastate.edu/greendot/>).

About mutual respect and professionalism:

You are expected to treat your instructor and all other participants in the course with courtesy and respect. Your comments to others should be factual, constructive, and free from harassing statements. You are encouraged to disagree with other students, but such disagreements need to be based upon facts and documentation (rather than prejudices and personalities). It is the instructor's goal to promote an atmosphere of mutual respect in the classroom. Please contact the instructor if you have suggestions for improving the classroom environment. It is preferable if students discuss issues directly with the instructor, however, students may also leave a note in the instructor's mailbox.

Related to University policies:

Students in this course are responsible for being familiar with the University's student rules and policies. Visit the ISU Policy Library website (<http://www.policy.iastate.edu/>).

Usability, disability and design:

I am committed to creating a course that is inclusive in its design. If you encounter barriers, please let me know immediately so that we can determine if there is a design adjustment that can be made or if an accommodation might be needed to overcome the limitations of the design. I am always happy to consider creative solutions as long as they do not compromise the intent of the assessment or learning activity. You are also welcome to contact the Student Accessibility Services (515-294-7220) to begin this conversation or to establish accommodations for this or other courses. I welcome feedback that will assist me in improving the usability and experience for all students.