COURSE TITLE

INSTRUCTOR   Kang-Pyo Lee, Ph.D.
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N503 College of Public Health Building (CPHB)

**CLASS
MEETING
TIMES**   Mondays, Aug 26, 2019 – Nov 11, 2019, 6:00 PM - 9:40 PM
302 CBCR Tippie College of Business Cedar Rapids Center

**OFFICE
HOURS**   As this is an off-campus course, office hours will be held before or after
class, although I will also be available via e-mail or using Zoom.

**COURSE
SITE**   To access the course site, log into Iowa Courses Online (ICON)
https://icon.uiowa.edu/ using your Hawk ID and password.

Program Goals
The Tippie MSBA has learning goals that drive decisions about curriculum and
assignments within courses:

Program Goal 1: Graduates will exhibit knowledge and skills relevant to data and its
application in business

Program Goal 2: Graduates will create and communicate solutions to data-related
business problems that impact their organizations and communities

Program Goal 3: Graduates will understand and contemplate ethical and privacy issues
arising in their own work

Program Goal 4: Graduates will demonstrate the ability to be effective team members in
a diverse and complex world.

Course Description and Goals
This course introduces the principles and practices of handling, cleaning, processing,
and visualizing data using the Python programming language, but the course places a
special emphasis on techniques and tools useful for data scientists. Accordingly, the
main programming environment for the course will be the open-source Python

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environment using Jupyter Notebook. The main topics include:

- Introduction to Python and Jupyter Notebook/Hub
- Python Basics
- Data Manipulation and Analysis
- Files and External Data Sources
- Text Processing
- Data Visualization
- A glimpse of Machine Learning and Deep Learning

Course activities will include formal and active-learning lectures, individual in-class exercises, individual homeworks, individual tests, and a group project.

Media/System Requirements
Please check the ICON course website frequently for announcements, assignments, etc. Each student should have access to a laptop computer which they can bring to each class and on which they are allowed to install the open-source software Anaconda and Python packages from the Internet.

Textbook/Materials
There are no required textbooks for the course. The Internet is also a rich resource for the course. In addition, the course website will be hosted on the university ICON server (listed above). Please check the website frequently for announcements, assignments, etc.

Grading Criteria and Course Work
The coursework breakdown is as follows:

- 30% homeworks (due each week, see calendar)
- 50% tests (two in-class exams, equally weighted, see calendar)
- 20% group project (presented during last week of semester)

Final grades will be assigned according to the following planned curve, which has been approved by the Business Analytics Graduate Program (however, the instructor reserves the right to deviate from this curve if deemed necessary):

- A range: ≈ 50% of students
- B range: ≈ 50% of students
- C, D, F: as needed

In addition, the A range and B range will be equally divided into +/- designations. While

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an A+ is possible, it will be reserved only for times when clear mastery has been exhibited across all topics, and when the grade ranks allow for a clear break between an A and A+.

Course Calendar (Subject to Change)

Week	Topic	Due
1 (Aug 26)	Introduction to Python and Jupyter Notebook Group Project Announcement	
2 (Sep 2)	No class (Labor Day)	
3 (Sep 9)	Python Basics Part 1: Data Types, Built-in Functions, and Operators	
4 (Sep 16)	Python Basics Part 2: Flow Control, Functions, Modules and Packages, and Exceptions	HW 1
5 (Sep 23)	Handling Numbers with NumPy Introduction to JupyterHub and UI Interactive Data Analytics Service (IDAS)	HW 2
6 (Sep 30)	Test 1	HW 3 (Sep 29)
7 (Oct 7)	Data Manipulation and Analysis with Pandas	Project Proposal
8 (Oct 14)	Files and External Data Sources Text Processing with NLTK and TextBlob	HW 4
9 (Oct 21)	Midterm Mingle Week Data Visualization with Matplotlib and Ipywidgets	HW 5
10 (Oct 28)	A Glimpse of Advanced Data Analytics: Machine Learning with Scikit-Learn and Deep Learning with TensorFlow	HW 6
11 (Nov 4)	Test 2	HW 7 (Nov 3)
12 (Nov 11)	Group Project Presentations	Project (Nov 10)

Course-Specific Policies and Guidelines

Late Assignments and Make-Up Exams:

All assignments are expected on time. You may turn in an assignment late, but you will receive a 20% deduction for each day that it is late, including the first/same day. For example, if Assignment X is due at 6:00 PM on Monday, and you submit the assignment at 6:01 PM on Monday, then you will lose 20%; if you submit Assignment X anytime on Tuesday, then you will lose 40%; etc.

Regarding tests, all students are expected to take tests during the scheduled testing period. In the event that you must miss a test for an approved reason, you will be allowed to make the test up as long as you make arrangements with the instructor at least 1 week prior to the day of the test. (So if the test falls on a Tuesday, then arrangements must have been made prior to the end of class on the Tuesday before the exam.) In the event that there is a conflict or illness that arises within the 1 week period prior to the test date that will cause you to miss the test, approved documentation will need to be provided to show cause for a make-up.

If students have specific accommodations that have been approved by the university, they must inform the instructor of these accommodations at least 1 week prior to the day of the test so as to give the instructor appropriate time to honor these approved accommodations.

Expectations of Student Academic Integrity:

Because I regard this class as any job responsibility, it seems prudent to clarify in advance the policy on academic integrity. Given the professional nature of the Business Analytics program, it is unlikely that a student in this class would turn in work which is not his or her own. However, if I determine that any assignment, project, paper or test was not written solely by the student(s) whose name(s) appears on the project, or material taken from other sources is not appropriately cited, the student(s) involved may be subject to program-level discipline.

Inclement Weather/Class Cancellation: Although it is our intent to offer every class at its assigned time, on rare occasion there are weather or other emergency events that require that alternative arrangements are made for class delivery. If that happens, please stay alert for an announcement on ICON indicating how the class will be handled. This may include: 1) Cancelling the class completely – all reading and work that was due is expected to be completed and turned in on time through ICON; 2); Holding an online version of the class via Zoom during the regularly scheduled class time – you will receive an invitation to join the session remotely from a computer with an internet connection – headphones are recommended; 3) using recorded videos and

presenting other materials to you through ICON so we can cover the course materials asynchronously. Unless the bad weather occurs suddenly, a decision whether or not to cancel class will be made by about 3:00 PM on that day.

Collegiate Policies and Guidelines

The administrative home of this course is the Tippie College of Business, which governs academic matters relating to the course such as the add/drop deadlines, the second-grade-only option, issues concerning academic misconduct, and how credits are applied for various graduation requirements. Different colleges might have different policies. As a registered student in a course in the Tippie College of Business, you are responsible for the collegiate policies posted below.

Please note that students of this program are subject to the policies, procedures, and requirements of the Graduate College and The University of Iowa as well. For additional details, students should consult: the Manual of Rules and Regulations of the Graduate College (http://www.grad.uiowa.edu/graduate-college-manual), applicable sections of The University of Iowa Catalog (http://www.registrar.uiowa.edu/registrar/catalog/) and Policies and Regulations Affecting Students (http://dos.uiowa.edu/policy-list/current/).

Tippie Honor Code: The Tippie College of Business has an Honor Code, and you must abide by it in completion of all assignments. Integrity is a reflection of your character and is critical for creating meaningful and lasting relationships. One part of integrity is abstaining from acts like cheating, so cheating on any assignment in this class will result in an appropriate consequence, usually a zero for the grade in question and, if that penalty does not reduce the grade, a penalty of a full letter grade reduction. In addition, all incidents of cheating will be reported to the appropriate academic offices, and the student may be placed on disciplinary probation, be suspended, or even permanently expelled, depending on the severity of the offense.

If a student has been found in violation of this policy, they will first be notified directly, then I will report to the appropriate program office. Faculty and students can report Academic Misconduct via the college website. (https://cm.maxient.com/reportingform.php?UnivofIowa&layout_id=6)

Privacy: As part of this course, your name will be revealed to other students in the class. If you have concerns, please contact the instructor immediately.

Lecture Capture Policy: As a service to students, the program offers Lecture Capture of most of its courses. This allows students to access video and audio recordings of the class, after the class has been recorded. As a student, you can opt out of being visible in the recording. Unless otherwise noted, this course is being recorded, and will be

available to all enrolled members of the class under a password protected website (the ICON course site). The instructor may choose at various points (i.e. during exams or guest speakers) to not record the class. ** Note: It is the instructor's responsibility to expressly inform any guest speakers that their session is being recorded, and provide the ability for the speaker to opt-out of the recording.

Fairness and Freedom of Expression: Every student is entitled to the same intellectual freedom I have. I will respect that freedom, and I am obliged to protect your freedom to learn, regardless of your religion, race, sex, sexual orientation, gender identity, or political views, or on your agreement or disagreement with my positions pertaining to matters of controversy within the discipline. I will do my best to provide you with a fair and impartial evaluation of your work, consistent with articulated standards for this course.

Complaint Procedures: If at any time you have concerns about this class or your performance in it, please contact me directly. If you do not feel that your concern has been resolved satisfactorily, you should contact the Department Executive Officer (DEO) who oversees the department offering this course (barrett-thomas@uiowa.edu). If that does not resolve the complaint, you may contact the Associate Dean of Graduate Programs, David Frasier, david-frasier@uiowa.edu.

University Policies and Guidelines

As a registered student in a course through The University of Iowa, the following University policies apply to you.

Accommodations for Disabilities: The University is committed to provide an educational experience that is accessible to all students. If you have a diagnosed disability or any other condition that would impair your ability to complete the course requirements as stated above, please inform me as early in the semester as possible, but no later than two weeks prior to the scheduled activity. Students needing accommodations must register with [Student Disability Services](#), (SDS): https://sds.studentlife.uiowa.edu/students/apply to obtain a Student Academic Accommodation Request (SAAR) form. The form will specify what course accommodations are reasonable for that student. The office is located at 3100 Burge Hall, (319) 335.1462.

Mental Health: Students are encouraged to be mindful of their mental health and seek help if they are feeling overwhelmed or incapable of meeting course expectations. For assistance with the class, students are encouraged to talk to the faculty member. For additional advice or support, students are encouraged to contact [University Counseling Services (https://counseling.uiowa.edu/) at University Capital Centre Suite 1950 or 3223 Westlawn South (319-335-7294)](https://counseling.uiowa.edu/) for same day appointments (Mon-Fri. 8AM-4:30PM). After hours, we encourage you to call the Johnson County Crisis Line at

319.351.0140 or 911 if you are in immediate danger.

Sexual Harassment: Sexual harassment subverts the mission of the University and threatens the well-being of students, faculty, and staff. The University will not tolerate sexual harassment, nor will it tolerate unwelcomed behavior of a sexual nature toward members of the University community when that behavior creates an intimidating or hostile environment for employment, education, on-campus living, or participation in a University activity. As a member of the university community you have a responsibility to report concerns of sexual harassment immediately at the Office of the Sexual Misconduct Response Coordinator: https://osmrc.uiowa.edu/.
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Multicultural Holidays: Students compelled by their religious convictions to refrain from attending class on specific days must request instructor permission during the first few days of the session. If this request is denied, a student may address concerns according to University Procedures. https://dos.uiowa.edu/policies/student-complaints-concerning-faculty-action.

Sustainability: The University is committed to demonstrating sustainability practices within all facets of the institution. Student support is critical to our campus wide efforts to reduce waste by consuming as few natural resources as possible and purchasing recycled materials when feasible. Recycling and reuse of all materials is encouraged. Together, let's ensure a better world for us and future generations. Learn more at the Office of Sustainability: https://sustainability.uiowa.edu/.