

## **LIS 690 Special Topics Section 204 (2021 Fall)** **Applied Text Analytics for Information Professionals**

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**Preferred method of contact:** Email/ Canvas.  
I usually respond to questions within 24 hours  
(expect a delay during weekends and holidays)

### **Course Description**

This is an asynchronous online course which meets in Canvas. This course is intended as an introduction to the concepts and methods of text mining, with a primary focus on applications of machine learning techniques. Topics covered in this course will include: natural language processing, document representation, text clustering and classification, document summarization, sentiment analysis, probabilistic topic models, artificial neural network, and others. Students will gain extensive hands-on experience of analyzing large-scale unstructured text using Python toolkits. This course will also explore various cases of text mining applications in real-world domains, such as knowledge organization, computational social sciences, business intelligence, and digital humanities. This course will use intermediate level Python programming: Therefore, it is suggested that students will have completed LIS/ICT 661, LIS/ICT 662 or prior experience with Python.

### **Course Learning Outcomes**

- Identify various sources and formats of textual information.
- Apply text processing techniques to collect, extract, clean, transform, and store text format data.
- Explain basic concepts and theories underlying natural language processing.
- Articulate different models and appropriate techniques for textual analysis.
- Implement a variety of textual analysis toolkits to analyze the data.

### **Readings**

- Reading materials will include scholarly articles, lecture slides, blogs, and other online sources. They will be uploaded on the Canvas course site.

### **IT Requirements**

- A personal computer with reliable internet access is essential (with a minimum of 4GB RAM). Students will need to install specific software (e.g., Python, programming editor, etc.) on your computer.
- All class exercises will be tested on Windows OS machines. It should work on Mac OS with minor adjustments, but Chromebook will not work.

## Course Activities and Assignments

The course includes weekly readings, lecture notes (PPT slides), online discussions and exercises, and assignments. We will treat Monday as the first day of class each week. Also, readings should be completed by at least Wednesday in order to participate in online discussions.

Your final grade is determined by your performance on the items in the table below. There are 4 assignments (40%) and a final project (20%). There are three quizzes, 5% for each quiz (15%). You will need to participate in weekly online discussions and class exercises (25%). Participation points come from both quantity and quality of posts to the discussion board. For each week, we are going to have a discussion forum for class discussion. In the forum, you can discuss important issues of each week's topic posted by the instructor as well as any questions, ideas or thoughts you have regarding the topic, slides, readings or exercises for that week. Also, the discussion forums will include class exercises. To get full credits for class participation, you will need to participate in at least twice in each of the forums. The week starts on Monday and ends on Sunday at midnight.

Type	Points
Assignment 1	10
Assignment 2	10
Assignment 3	10
Assignment 4	10
Quiz 1, 2, & 3	15 (each 5 pts)
Final project	20
Online discussion & class exercises	25
	Total: 100

## Course Grading

- 90 - 100% = A
- 80 - 89.9% = B
- 70 - 79.9% = C
- Below 70%= E

### Tentative Course Schedule (subject to change)

Week	Dates	Topic	Quiz/ Assignment
1	8/23- 8/29	• Course overview	
2	8/30- 9/5	• Python programming basics (1)	
3	9/7- 9/12	• Python programming basics (2)	
4	9/13- 9/19	• Python programming basics (3)	Quiz 1
5	9/20- 9/26	• Text data sources	
6	9/27- 10/3	• Information extraction	Assignment 1 (Due: 10/10)
7	10/4- 10/10	• Text processing	
8	10/11- 10/17	• Analyzing words and n-grams	Assignment 2 (Due: 10/24)
9	10/18- 10/24	• Further processing of text	Quiz 2
10	10/25- 10/31	• Topic modeling	Assignment 3 (Due: 11/7)
11	11/1- 11/7	• Document clustering	
12	11/8- 11/14	• Sentiment analysis	Assignment 4 (Due: 11/28)
13	11/15- 11/21	• Text classification	Quiz 3
14	11/22- 11/28	• Thanksgiving week	
15	11/29- 12/5	• Deep learning for textual analysis	
16	12/6- 12/8	• Final project/ conclusion	Final project (Due: 12/8)

### Final Exam Information

There is no final exam.

### Submission of Assignments

All assignments should be submitted online via Canvas. Prepare and submit all assignments on time. A 10% penalty will be exacted every day the assignment is late.

## **Attendance Policy**

This is an online course, which requires asynchronous class discussion via Canvas to facilitate a sense of community. Canvas will also be used for making course announcements, distributing reading materials, submitting assignments and posting grades. Please visit <https://www.uky.edu/canvas> (Canvas) for course homepage. Course related communications will occur mainly on Canvas (online discussions, questions and answers, etc.). In addition, all announcements will be posted in Canvas. Students thus are required to check the course shell in Canvas on a regular basis. Failure to receive such announcements cannot be used as an excuse for not being informed.

I welcome emails sent to my UKY.EDU email account. Please feel free to email me via [soohyung.joo@uky.edu](mailto:soohyung.joo@uky.edu) if you have any questions or concerns. In ordinary circumstances, it is expected that the instructor will respond within 24 hours during weekdays. Please expect a delay during weekends and holidays.

## **Excused Absences**

Senate Rules 5.2.4.2 defines the following as acceptable reasons for excused absences: (a) significant illness, (b) death of a family member, (c) trips for members of student organizations sponsored by an educational unit, trips for University classes, and trips for participation in intercollegiate athletic events, (d) major religious holidays, (e) interviews for graduate/professional school or full-time employment post-graduation, and (f) other circumstances found to fit “reasonable cause for nonattendance” by the instructor of record. Students should notify the professor of absences prior to class when possible.

## **Religious Observances (Senate Rules 5.2.4.2.D)**

Students anticipating an absence for a major religious holiday are responsible for notifying the instructor in writing of anticipated absences due to their observance of such holidays. Senate Rules 5.2.5.2.1(4) requires faculty to include any notification requirements within the syllabus. If no requirement is specified, two weeks prior to the absence is reasonable and should not be given any later. Information regarding major religious holidays may be obtained through [the Ombud's website](#) or calling 859-257-3737.

## **Verification of Absences**

Students may be asked to verify their absences in order for them to be considered excused. Senate Rule 5.2.5.2.1 states that faculty have the right to request appropriate verification when students claim an excused absence due to: significant illness; death in the household, trips for classes, trips sponsored by an educational unit and trips for participation related to intercollegiate athletic events; and interviews for full-time job opportunities after graduation and interviews for graduate and professional school. (Appropriate notification of absences due to University-related trips is required prior to the absence when feasible and in no case more than one week after the absence.)

## **Fall Academic Calendar and Reading Days**

Several modifications to the academic calendar have been made in response to the COVID-19 situation. The current calendar is available [here](#). The calendar features a Reading Day. The current Dead Week restrictions on certain instructional activities would continue to apply to Reading Days. An additional restriction would apply to Reading Days, namely no required class meetings or, more generally, no “required interactions.” Reading Days are not academic holidays.

### **Make-Up Work (Senate Rule 5.2.4.2)**

Students missing any graded work due to an excused absence are responsible: for informing the Instructor of Record about their excused absence within one week following the period of the excused absence (except where prior notification is required); and for making up the missed work. The instructor must give the student an opportunity to make up the work and/or the exams missed due to the excused absence, and shall do so, if feasible, during the semester in which the absence occurred. The instructor shall provide the student with an opportunity to make up the graded work and may not simply calculate the student's grade on the basis of the other course requirements, unless the student agrees in writing. According to SR 5.2.5.2.2, if a student adds a class after the first day of classes and misses graded work, the instructor must provide the student with an opportunity to make up any graded work.

### **Excused Absences for Military Duties**

If a student is required to be absent for one-fifth or less of the required course interactions (e.g., class meetings) due to military duties, the following procedure (per SR 5.2.5.2.3.2) shall apply:

- Once a student is aware of a call to duty, the student shall provide a copy of the military orders to the Director of the Veterans Resource Center. The student shall also provide the Director with a list of his/her courses and instructors.
- The Director will verify the orders with the appropriate military authority, and on behalf of the military student, notify each Instructor of Record via Department Letterhead as to the known extent of the absence.
- The Instructor of Record shall not penalize the student's absence in any way and shall provide accommodations and timeframes so that the student can make up missed assignments, quizzes, and tests in a mutually agreed upon manner.

### **Accommodations Due to Disability**

If you have a documented disability that requires academic accommodations, please see me as soon as possible during scheduled office hours. In order to receive accommodations in this course, you must provide me with a Letter of Accommodation from the Disability Resource Center (DRC). The DRC coordinates campus disability services available to students with disabilities. Visit the [DRC website](#), [email the DRC](#), contact them by phone at (859) 257-2754, or visit their office on the corner of Rose Street and Huguelet Drive in the Multidisciplinary Science Building, Suite 407.

### **Non-Discrimination Statement and Title IX Information**

UK is committed to providing a safe learning, living, and working environment for all members of the University community. The University maintains a comprehensive program which protects all members from discrimination, harassment, and sexual misconduct. For complete information about UK's prohibition on discrimination and harassment on aspects such as race, color, ethnic origin, national origin, creed, religion, political belief, sex, and sexual orientation, please see [the electronic version of UK's Administrative Regulation 6:1 \("Policy on Discrimination and Harassment"\)](#). In accordance with Title IX of the Education Amendments of 1972, the University prohibits discrimination and harassment on the basis of sex in academics, employment, and all of its programs and activities. Sexual misconduct is a form of sexual harassment in which one act is severe enough to create a hostile environment based on sex and is prohibited between members of the University community and shall not be tolerated. For more details, please see [the electronic version of Administrative Regulations 6:2 \("Policy and Procedures for Addressing and Resolving Allegations of Sexual Assault, Stalking, Dating Violence, Domestic Violence, and Sexual Exploitation"\)](#). Complaints regarding violations of University policies on discrimination,

harassment, and sexual misconduct are handled by the Office of Institutional Equity and Equal Opportunity (IEEO), which is located in 13 Main Building and can be reached by phone at (859) 257-8927. You can also visit [the IEEO's website](#).

Faculty members are obligated to forward any report made by a student related to IEEO matters to the Office of Institutional Equity and Equal Opportunity. Students can *confidentially* report alleged incidences through the Violence Intervention and Prevention Center, Counseling Center, or University Health Services.

### **Academic Integrity– Prohibition on Plagiarism (Senate Rules 6.3.1)**

Per University policy, students shall not plagiarize, cheat, or falsify or misuse academic records. Students are expected to adhere to University policy on cheating and plagiarism in all courses. The minimum penalty for a first offense is a zero on the assignment on which the offense occurred. If the offense is considered severe or the student has other academic offenses on their record, more serious penalties, up to suspension from the University may be imposed.

Plagiarism and cheating are serious breaches of academic conduct. Each student is advised to become familiar with the various forms of academic dishonesty as explained in the [Code of Student Rights and Responsibilities](#). Complete information can be found on the [Academic Ombud](#) page. A plea of ignorance is not acceptable as a defense against the charge of academic dishonesty. It is important that you review this information as all ideas borrowed from others need to be properly credited.

*Senate Rule 6.3.1* (see current [Senate Rules](#)) states that all academic work, written or otherwise, submitted by students to their instructors or other academic supervisors, is expected to be the result of their own thought, research, or self-expression. In cases where students feel unsure about a question of plagiarism involving their work, they are obliged to consult their instructors on the matter before submission.

When students submit work purporting to be their own, but which in any way borrows ideas, organization, wording, or content from another source without appropriate acknowledgment of the fact, the students are guilty of plagiarism.

Plagiarism includes reproducing someone else's work (including, but not limited to a published article, a book, a website, computer code, or a paper from a friend) without clear attribution. Plagiarism also includes the practice of employing or allowing another person to alter or revise the work, which a student submits as his/her own, whoever that other person may be. Students may discuss assignments among themselves or with an instructor or tutor, but when the actual work is done, it must be done by the student, and the student alone.

When a student's assignment involves research in outside sources or information, the student must carefully acknowledge exactly what, where and how he/she has employed them. If the words of someone else are used, the student must put quotation marks around the passage in question and add an appropriate indication of its origin. Making simple changes while leaving the organization, content, and phraseology intact is plagiaristic. However, nothing in these Rules shall apply to those ideas, which are so generally and freely circulated as to be a part of the public domain.

Please note: Any assignment you turn in may be submitted to an electronic database to check for plagiarism.

### **Academic Integrity – Prohibition on Cheating (Senate Rules 6.3.2)**

Cheating is defined by its general usage. It includes, but is not limited to, the wrongfully giving, taking, or presenting any information or material by a student with the intent of aiding himself/herself or another on any academic work which is considered in any way in the determination of the final grade. The fact that a student could not have benefited from an action is not by itself proof that the action does not constitute cheating. Any question of definition shall be referred to the University Appeals Board.

### **Academic Integrity – Prohibition on Falsification/Misuse of Academic Records (SR 6.3.3)**

Maintaining the integrity, accuracy, and appropriate privacy of student academic records is an essential administrative function of the University and a basic protection of all students. Accordingly, the actual or attempted falsification, theft, misrepresentation or other alteration or misuse of any official academic record of the University, specifically including knowingly having unauthorized access to such records or the unauthorized disclosure of information contained in such records, is a serious academic offense. As used in this context, "academic record" includes all paper and electronic versions of the partial or complete permanent academic record, all official and unofficial academic transcripts, application documents and admission credentials, and all academic record transaction documents. The minimum sanction for falsification, including the omission of information, or attempted falsification or other misuse of academic records as described in this section is suspension for one semester.

#### **Link to the Academic Policy Statements**

Please read the Academic Policy Statements at: <https://www.uky.edu/universitysenate/acadpolicy>

## **TECHNOLOGY INFORMATION & RESOURCES**

Minimum technical requirements for UK courses and suggested hardware, software, and internet connections are available at [ITS Student Hardware & Software Guidelines](#).

Distance Learning Students are expected to have a minimum level of technological acumen and the availability of technological resources. Students must have regular access a computer with a reliable Internet connection and audio capabilities. Internet Explorer 7 (IE) or Firefox 2.x are the recommended browsers for those using a Windows-based PC. Those using Firefox 3.x may encounter problems with assignment uploads. Those using an Apple computer with MAC OS X (10.5.x) may use Firefox 3.x or Safari 3.x.

Please be certain that your computer and/or browser allow you to view Adobe Reader documents (.pdf). Microsoft Office and other software products are free for students: <http://download.uky.edu/>.

As your instructor, I am your first go-to person for technology problems. If you need more immediate assistance, please contact UKIT.

#### **Information Technology Customer Service Center (UKIT)**

For account help, contact UK's [Information Technology Customer Services online](#), by [email](#), or by phone at 859-218-HELP (4357).

#### **Library Services & Distance Learning Services**

[Distance Learning Library Services](#)

[Carla Cantagallo](#), Distance Learning Librarian, 859-218-1240

The School of Information Science has a page with a comprehensive list of technology resources here: <http://ci.uky.edu/sis/students/techtips>

**Military Members and Veterans**

We recognize the complexities of being a member of the military community and also a student. If you are a member of the military or a military veteran or dependent, please inform your instructor if you are in need of special accommodations. Drill schedules, calls to active duty, mandatory training exercises, complications with GI Bill disbursement, and other unforeseen military and veteran related developments can complicate your academic life. If you are aware of a complication, we will work with you and put you in contact with university staff members who are trained to assist you. Please contact the Coordinator of the University of Kentucky Veterans Resource Center at (859) 257-1148 for additional assistance. Visit <http://www.uky.edu/veterans> for more available resources.