



SYLLABUS
College of Computing and Software Engineering

Department of Information Technology

IT7103: Practical Data Analytics

Fall 2022

# Course Information

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Class meeting time: **5:00pm-6:15pm *Wed***

Modality and Location: ***Lectures in J260 (Atrium building – Marietta Campus)***

*Syllabus is posted in D2L*

# Instructor

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**Name**: Linh Le

**E-mail**: lle13@kennesaw.edu

**Office Location**: J-340 (Atrium building – Marietta campus)

**Office Hours**: 2pm-4pm Tue and 1pm-4pm Wed

**Course Communication**:

# Email is the best way to reach the instructor. Try not to use D2L email if possible. Instructor’s KSU email (lle13@kennesaw.edu) is the best communication way to ensure timely responses.

# Students’ emails will be replied within 24 hours during the weekday. Weekend and holidays don’t apply.

# When email the instructor using accounts other than D2L email, put the course number in the subject line. Emails without proper subject line will not be replied.

# Avoid using personal email. Sensitive information (such as your grades) can only be sent to D2L email or KSU email account.

# Course Description

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**Prerequisites/Corequisites**: None

**Credit Hours:** 3

**Required Texts**: *No textbooks required*

**Recommended Texts***: Materials that are provided on D2L for each module*

**Course Description:** *In this course students will learn concepts and practical skills that are necessary to perform an end-to-end data analytics project. Topics include: understanding business problems, collecting business data, exploring the data, preparing the data for data analytics, selecting and training a model, fine-tuning a model, presenting the solution, launching, monitoring and maintaining the system.*

# Technology Requirements:

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* This class uses D2L as hosting site. Run a system check to ensure your computer work with D2L. Check out UITS D2L training: <http://uits.kennesaw.edu/support/d2ltraining.php> .
* Internet Connection. A high-speed Internet connection such as DSL or cable Internet access is highly recommended. You may also use computer labs on campus to complete the coursework.

# Student Learning Outcomes

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By the end of this course, a student should be able to:

1. Explain the major steps of an end-to-end data analytics project
2. Select proper data analytics models for the given business problems
3. Evaluate the solutions based on experimental results
4. Develop and execute a data analytics solution from end to end

# Evaluation and Grading Policies

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## **Weight Distribution**

| **Grading Item** | **Weight**  |
| --- | --- |
| Online Discussion | **5% (extra credit)** |
| Assignments | 30% |
| Midterm Exam | 20% |
| Final Exam | 20% |
| Course Project | 30% |
| **Total**  | **105%** |

## **Grading Scale:**

90% - 100% A

80% - 89% B

70% - 79% C

60% - 69% D

0% - 59% F

Grades will be rounded up if they are $\geq 0.5$, for example, an 89.6 is an A but 79.2 is a C.

# Course Policies

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# Course Attendance Policy

* For on campus/hybrid section, students are expected to come to each class on time. Stay during the whole class period.
* For both campus/hybrid and online section, students’ attendance is also measured by how often a student login in D2L course website, participation of online discussion, as well as on-time completion of homework.

# Grading Items Turnaround Time

* The grades for the quizzes and exams will be available one week after the due date

# Assignments & Exam Policy

* All assignments **must** be submitted through D2L (<https://kennesaw.view.usg.edu/> ) course website by the deadline specified in course calendar. Email submission will **not** be accepted. Any assignment that is less or equal than 24 hours late is subject to 10% penalty. Any assignment that is less or equal than 48 hours late is subject to 20% penalty. Any assignment that is more than 48 hours late will **not** be accepted.
* All quizzes and exams **must** be completed on D2L website by the deadline. The quizzes and exams can’t be opened/submitted after the deadline.
* Team projects – students will work in groups (3 or 4 person per group) on one team project in the second half of the semester.

**Student Responsibility**

For this class, you are expected to spend seven to eight hours each week on coursework:

* Check KSU email **regularly**;
* Login D2L course website frequently to access the course material (at least every other day);
* Follow the weekly study guide in the learning module;
* Study the assigned material such as virtual lectures, textbook chapters and the PowerPoint slides;
* Complete assigned quiz/assignment/discussion/project on time.

**Tips for Effective Online Learning**

For an online class, students can really enjoy the benefits of learning at you own pace and at the place of your choice. Below are some tips for effective online learning.

* *Check D2L course website frequently*. It’s recommended that students should login D2L course site **at least** every other day. Always be aware of current status of the course. Take advantage of the posted learning material such as recorded lectures.
* *Work with the instructor closely*. If you have any question, contact the instructor immediately. You can either email or text me and your message is guaranteed to be replied within 12 hours.
* *Start your work early*. If you can start a task early, don’t start late. Assuming you spend the same amount of time completing the task, starting later will be much more stressful than starting early. Never start until the last minute! You’ll have no turnaround time if you need help or something happens.
* *Keep up with the work*. Don’t fall behind. If you do, contact the instructor immediately for what you need to do. The instructor may also contact you if he is concerned. Respond to the instructor’s inquiry promptly.

**Class Communication Rules**

In any classroom setting there are communication rules in place that encourage students to respect others and their opinions. In an online environment, the do's and don'ts of online communication are referred to as **Netiquette**. As a student in my course you should:

* Be sensitive and reflective to what others are saying.
* **Avoid typing in all capitals** because it is difficult to read and is considered the electronic version of 'shouting'.
* Don't flame - These are outbursts of extreme emotion or opinion.
* Think before you hit the post (enter/reply) button. You can't take it back! Don't use offensive language.
* Use clear subject lines.
* Don't use abbreviations or acronyms unless the entire class knows them. Be forgiving. Anyone can make a mistake.
* Keep the dialog collegial and professional.
* Always **assume good intent** and **respond accordingly**. If you are unsure of or annoyed by a message, wait 24 hours before responding.

**Course Evaluation**

Course evaluation is an important feedback mechanism to help the instructors improve their teaching. Students are strongly encouraged to complete the evaluation.

* Course evaluation can be completed with two weeks of the last day of a class. Please complete the evaluation before the last day of a class.
* The evaluation link can be found in the Campus Bookmark section of the D2L Homepage (upper right corner). Direct link: <https://kennesaw.bluera.com/kennesaw/>
* Students’ responses are completely confidential. Instructor has no way of linking responses to individual students. Instructors can only see the completion rate before a semester ends and will only have access to evaluation results after the semester ends.
* When filling out a course evaluation, students should make their feedback constructive. For example, a student may comment on an instructor’s good teaching practices, or point out areas of improvement such as a new topic could be added, or a course module/assessment needs to be updated.
* Additional information: <https://courseevals.kennesaw.edu/faqs.php>

# Course Schedule

The course schedule is tentative and is subject to change. Please use D2L course calendar as accurate due dates. Learning modules are available on Wednesday at 12pm of the corresponding week. Assignments are due on the Thursday of the due week by the end of days.

| **Week**  | **Start Date**  | **Course Contents**  | **Due Assignment**  |
| --- | --- | --- | --- |
| 01  | 8/15 | Course introductionIntroduction to data analytics  |  |
| 02  | 8/22 | Python programming review |  |
| 03  | 8/29 |  |
| 04  | 9/6 | End-to-end data analytics project  | Assignment 1 |
| 05  | 9/12 |  |
| 06  | 9/19 | Preliminary data analysis and preparation |  |
| 07  | 9/26 | Classification and performance measurement | Assignment 2 |
| 08  | 10/3 | Regression and performance measurement |  |
| 09  | 10/10 | **Midterm Exam, Launch Course Project** | Midterm exam |
| 10  | 10/17 | Logistic regression and SoftMax regression |  |
| 11  | 10/24 | Linear regression, polynomial regression, and regularized regression |  |
| 12  | 10/31 | Support vector machine |  |
| 13  | 11/7 | Decision tree, random forest, gradient boosting model | Assignment 3 |
| 14  | 11/14 | Neural Network | Assignment 4 |
| 15 | 11/21 | **Thanksgiving break – no classes** |  |
| 16  | 11/28 | Review for final,  | Assignment 5 |
| 17 | 12/5 | **Last day of classes** |  |
|  | 12/6-12/10 |  | Final exam |
|  | 12/10 |  | Final project due |

**Important dates:**

* Add/Drop ends: 8/19 11:45pm
* Last Day to Withdraw Without Academic Penalty: 10/11 11:45 p.m.
* Last Day to Withdraw for the Term With a WF: 11/29.
* Last Day of Class: 12/5.

**Institutional Policies**

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* [Federal, BOR, & KSU Course Syllabus Policies](https://cia.kennesaw.edu/instructional-resources/syllabus-policy.php)
* [Academic Integrity Statement](http://scai.kennesaw.edu/codes.php)
	+ Examples of violation of academic integrity: 1) copy from others or from Internet; 2) allow others to copy your work; 3) use other’s help or help other in completing the quizzes or exams.
	+ The first violation of academic integrity, the student will immediately receive 0 for the associated grading item. For the 2nd violation, the student will receive a fail grade for this course.

**KSU Statements on Course Delivery and COVID-19**

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## **Course Delivery**

KSU may shift the method of course delivery at any time during the semester in compliance with University System of Georgia health and safety guidelines.  In this case, alternate teaching modalities that may be adopted include hyflex, hybrid, synchronous online, or asynchronous online instruction.

## **Face Coverings**

Based on guidance from the University System of Georgia (USG), masks are encouraged based on individual preference and assessment of personal risk. Disposable face coverings can be picked up at the Office of Emergency Management at Chastain Pointe on the Kennesaw campus and Norton Hall Police Precinct on the Marietta campus. Please email oem@kennesaw.eduif you have questions.

# Student Resources

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This link contains information on help and resources available to students: [KSU Student Resources for Course Syllabus](https://cia.kennesaw.edu/instructional-resources/syllabus-policy.php)

## **KSU Academic Integrity Statement**

Every KSU student is responsible for upholding the provisions of the [Student Code of Conduct](https://web.kennesaw.edu/scai/content/ksu-student-code-conduct), as published in the Undergraduate and Graduate Catalogs. Section 5c of the Student Code of Conduct addresses the university’s policy on academic honesty, including provisions regarding plagiarism and cheating, unauthorized access to university materials, misrepresentation/falsification of university records or academic work, malicious removal, retention, or destruction of library materials, malicious/intentional misuse of computer facilities and/or services, and misuse of student identification cards. Incidents of alleged academic misconduct will be handled through the established procedures of the Department of Student Conduct and Academic Integrity (SCAI), which includes either an “informal” resolution by a faculty member, resulting in a grade adjustment, or a formal hearing procedure, which may subject a student to the Code of Conduct’s minimum one semester suspension requirement.