Course Overview
The importance and application of data science in marketing industry have been rising significantly over the past few years. The goal of this lab is to help you gain more confidence in applying data science techniques for developing more intelligent and efficient marketing strategies.

Learning Objectives
- Explain the terminology and tools of data analytics
- Understand the processes and techniques of data mining, analysis, and visualization
- Apply the practical tools and techniques of data analytics
- Evaluate the output of data mining for decisions and practical applications
- Build a foundation for learning programming for data analytics using Python

Co-Requisite
MKT3330, the companion course for this lab, must be taken concurrently.

Required Textbook
Data Mining for Business Analytics: Concepts, Techniques and Applications in Python
by Galit Shmueli, Peter C. Bruce, Peter Gedeck, and Nitin R. Patel (ISBN: 978-1-119-54984-0)

Required Software
- Microsoft Excel
- Jupyter Notebook (Installation instructions will be given in the first week of class.)
**Required Material**
1. Access to email – make sure that the email listed in Blackboard is one you actually check. All announcements will be posted on Blackboard and sent via email. You are responsible for checking for updates and your emails for announcements.
2. Access to computer to develop and test Python programs.

**Course Requirements / Graded Items**

**Homework**
- There will be seven homework assignments. Each homework will be posted on Wednesday and will be due Sunday at 11:59 PM (MT) the following week.
- The homework assignments will require you to write programs by applying course concepts learned during the semester. More specific instructions about the assignments will be mentioned on each homework.
- You can work on these assignments together, but you must submit your own answers and code (no copy and paste with minor changes). Furthermore, all collaborations must be explicitly acknowledged in your submissions. I suggest starting to work on the assignment questions as soon as you receive them and spending at least a day or two on your own before asking for help from others.
- You must follow the class programming standards on every homework assignment. You will lose points if you fail to follow instructions carefully. Small details matter in programming, and therefore matter in your homework.
- There will be no makeup homework or homework for extra credit. Late homework will not be accepted.

**Homework Turn in Format**
1. You are required to submit your assignments electronically through Blackboard by 11:59 PM (MT) on the due date. After that, no homework will be accepted.
2. Only homework submitted through Blackboard will be graded. Homework submitted via email will not be accepted.
3. Do not upload compressed files (such as .zip or .rar files).
4. All .ipynb files must display as a complete notebook document with spacing and formatting as our standards indicate.
5. Make sure to write your full name as a comment at the very beginning of each .ipynb file submitted for grading.

**Feedback on Assignments**
Assignment feedback will be reported on Blackboard. It is your responsibility to check the site to confirm that your assignment feedback is correct. However, you must do so within one week of the day the homework is returned or feedback is posted on Blackboard. After the one-week window, your grade for that assignment is permanent.

**Grading**

**Grading Policy**
All the total points you earn will get converted to percent. Course grading scale is shown below. All assignments should be completed and submitted as required to be eligible for a final passing grade. Incompletes will be dealt as per university polices attached. A grade of ‘F’ will be given when the university police on incompletes is not satisfied.

Decimal points for all assignments are carried over and cumulated. To calculate final grades, 0.49 and under are rounded down, and 0.50 above are rounded up.
Course Breakdown

| MKT3331A | 
|---|---|
| Homework assignments | 100% |

Grading Scale

<table>
<thead>
<tr>
<th>Course Grade</th>
<th>% Earned</th>
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</thead>
<tbody>
<tr>
<td>A</td>
<td>&gt;=90%</td>
</tr>
<tr>
<td>B</td>
<td>&gt;=80% but &lt;90%</td>
</tr>
<tr>
<td>C</td>
<td>&gt;=70% but &lt;80%</td>
</tr>
<tr>
<td>D</td>
<td>&gt;=60% but &lt;70%</td>
</tr>
<tr>
<td>F</td>
<td>&lt;60%</td>
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Expectations

- An online course requires a great deal of organization and discipline on your part. The students who do well are those who are self-motivated, organized, and consistent in their daily work.
- Please email me ASAP if you’re having any difficulty that hampers your progress in the course. Since I don’t meet you face-to-face, I have no way of knowing about these, unless you reach out. If you have doubts or questions pertaining to the course, you can always email me.
- If you encounter technical difficulties beyond your scope of troubleshooting, please contact the UTEP Help Desk as they are trained specifically in assisting with technological needs of students. Please do not contact me for this type of assistance. The Help Desk is much better equipped than I am to assist you!
- Academic dishonesty (e.g., plagiarism, cheating on exams) will be dealt with very harshly. You will automatically get an F in the class, at the least.

Scholastic Integrity

Academic dishonesty is prohibited and is considered a violation of the UTEP Handbook of Operating Procedures. It includes, but is not limited to, cheating, plagiarism, and collusion. Cheating may involve copying from or providing information to another student or possessing unauthorized materials during a test. Plagiarism occurs when someone intentionally or knowingly represents the words or ideas of another as ones' own. Collusion involves collaborating with another person to commit any academically dishonest act. Any act of academic dishonesty attempted by a UTEP student is unacceptable and will not be tolerated. All suspected violations of academic integrity at The University of Texas at El Paso must be reported to the Office of Student Conduct and Conflict Resolution (OSCCR) for possible disciplinary action. To learn more, please visit HOOP: Student Conduct and Discipline.

Statement on Disability

If you feel that you may have a disability that requires accommodations, contact the Center for Accommodations and Support Services office at 915-747-5148, or email them at cass@utep.edu, or apply for accommodations online via the CASS portal.

Incomplete Grade Policy

Incomplete grades may be requested only in exceptional circumstances after you have completed at least half of the course requirements. Please email me immediately if you believe an incomplete is warranted. If granted, we will establish a contract of work to be completed with deadlines.
Copyright Statement for Course Materials
All materials used in this course are protected by copyright law. The course materials are only for the use of students currently enrolled in this course and only for the purpose of this course. They may not be further disseminated.

Combined Course Schedule (subject to change at the discretion of the Instructor)

<table>
<thead>
<tr>
<th>Week</th>
<th>Beginning</th>
<th>Lecture Topics</th>
<th>Reading / Homework</th>
</tr>
</thead>
</table>
| 1    | Aug. 24th | Syllabus Overview
Introduction to Course                               | Chapter 1
Install Jupyter Notebook                                   |
| 2    | Aug. 31st | Overview of the Data Mining Process (Part I)        | Chapter 2
Homework 1 (Deadline: 11:59 PM, Sunday, Sept. 6th)       |
| 3    | Sept. 7th | Overview of the Data Mining Process (Part II)
Data Visualization (Part I)                                 | Chapters 2 and 3
Homework 2 (Deadline: 11:59 PM, Sunday, Sept. 13th)      |
| 4    | Sept. 14th| Data Visualization (Part II)                        | Chapter 3                                               |
| 5    | Sept. 21st| Dimension Reduction                                  | Chapter 4
Homework 3 (Deadline: 11:59 PM, Sunday, Sept. 27th)      |
| 6    | Sept. 28th|                                                     | Mid-Term Exam 1 (Chapters 1, 2, 3, and 4)
Begins: 12:00 AM, Monday Sept. 28th
Ends: 11:59 PM, Sunday Oct. 4th                          |
| 7    | Oct. 5th  | Evaluating Predictive Performance                    | Chapter 5                                               |
| 8    | Oct. 12th | Multiple Linear Regression                           | Chapter 6
Homework 4 (Deadline: 11:59 PM, Sunday, Oct. 18th)      |
| 9    | Oct. 19th | k-Nearest Neighbors (k-NN)                           | Chapter 7
Homework 5 (Deadline: 11:59 PM, Sunday, Oct. 25th)      |
| 10   | Oct. 26th |                                                     | Mid-Term Exam 2 (Chapters 5, 6, and 7)
Begins: 12:00 AM, Monday Oct. 26th
Ends: 11:59 PM, Sunday Nov. 1st                           |
| 11   | Nov. 2nd  | The Naï ve Bayes Classifier                          | Chapter 8                                               |
| 12   | Nov. 9th  | Classification and Regression Trees (Part I)         | Chapter 9
Homework 6 (Deadline: 11:59 PM, Sunday, Nov. 15th)      |
| 13   | Nov. 16th | Classification and Regression Trees (Part II)        | Chapter 9                                               |
| 14   | Nov. 23rd | Logistic Regression                                  | Chapter 10                                              |
| 15   | Nov. 30th | Course Revision                                      | Homework 7 (Deadline: 11:59 PM, Sunday, Dec. 6th)      |
| 16   | Dec. 7th  |                                                     | Final Exam (All chapters)
Begins: 12:00 AM, Saturday Dec. 5th
Ends: 11:59 PM, Friday Dec. 11th                          |

* All times are Mountain Time.