Course Overview

This course prepares you to think analytically about data to meet the demands of the new big data world. Specifically, the course examines statistical methods (regression, causal inference strategies, classification algorithms), and utilizes programming with Python to turn data into relevant and actionable managerial insights. While the nature of data analytics is highly mathematical, this course focuses on practical applications of various data science and machine learning techniques you can use in marketing.

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

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.)

Intro to Marketing Analytics

Course No.
MKT3330 (19073-001)

Prerequisite
MKT3300

Course Website
https://blackboardlearn.utep.edu/

Class Times
3:00 PM to 4:20 PM
Tuesday / Thursday

Course Location
COBA 304

Instructor
Dr. Yoonsun Jeong

Email
yjeong@utep.edu

Office Location
COBA 222

Office Hours
Tue/Thur 1:30 PM to 2:50 PM – COBA 222;
Tue/Thur (virtual) 4:25 PM to 5:15 PM via Microsoft Teams
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

In-Class Coding Assignments
- There will be 12 in-class coding assignments. The 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 assignment.
- All coding assignments are due at the end of each class unless informed otherwise. Late submissions will not be accepted. A missed assignment cannot be made up.
- You may miss a maximum of 4 assignments, additional missed assignments result in automatic F for the course. If you must miss an assignment for a required university activity such as participation in athletic competitions, the appropriate department must inform me 7 days in advance in writing and you will submit the assignment within one week from the scheduled due date.
- You must follow the class programming standards on every assignment. You will lose points if you fail to follow instructions carefully. Small details matter in programming, and therefore matter in your assignment.

In-Class Coding Assignment Turn in Format
1. You are required to submit your assignment electronically through Blackboard by 4:20 PM (MT) on the due date. After that, no assignment will be accepted.
2. Only assignments submitted through Blackboard will be graded. Assignments 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 assignment is returned or feedback is posted on Blackboard. After the one-week window, your grade for that assignment is permanent.

Exams
- There will be two mid-term exams and a final. All exams will take place in the regular class meeting place unless other arrangements are made. The chapters to be covered in the exams are specified in the Schedule (p.6) and in case we need to make any changes, will be posted via Blackboard announcement.
- You have to do exams on your own. No cheating, sharing, emailing, posting or collaborating during exams. This is very easy to detect online through your digital footprints, so don’t try anything of the sort. Any such activity on your part will result in an F in the course or worse (see p.4, Scholastic Integrity).
There will be NO makeup exams under any circumstances. If you miss an exam and have a valid, legitimate, documented, non-academic reason, you must contact me by email BEFORE the exam starts. If you contact me AFTER the exam, it is considered missing the exam.

Exams include coding problems and possibly some short questions, multiple-choice questions, or case studies.

Exam grades will be posted on Blackboard. All regrade requests must be submitted within one week of the day the exam grade is posted on blackboard. After the one-week window, your grade for that exam is permanent.

**Final Exam**
The final exam will be comprehensive covering all chapters covered for the course, but with an emphasis on recent material. It can be a combination of coding problems, short questions, multiple-choice questions, and case studies.

**Grading Policy**
All the total points you earn will get converted to percent, using the weights: in-class coding assignments: 20%, mid-term exams: 40%, and final exam 40%. Course grading scale is shown below. All exams 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 exams 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

<table>
<thead>
<tr>
<th></th>
<th>MKT3330</th>
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</thead>
<tbody>
<tr>
<td>In-class coding assignments</td>
<td>20%</td>
</tr>
<tr>
<td>Mid-term exams</td>
<td>40%</td>
</tr>
<tr>
<td>Final exam</td>
<td>40%</td>
</tr>
</tbody>
</table>

### Grading Scale

<table>
<thead>
<tr>
<th>Course Grade</th>
<th>% Earned</th>
</tr>
</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

- Please email me ASAP if you’re having any difficulty that hampers your progress in the course. If you have doubts or questions pertaining to the course, you can always email me.
- Lateness is disrespectful and disruptive. Chronic lateness will not be tolerated. Please be punctual for class.
- No makeup will be allowed for any student who does not show up in class for a scheduled exam or other assigned activity without prior notification to and approval of the Instructor. In such a case, the student will receive a grade of 0 for that assignment.
- 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 one's 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.
COVID-19 Precautions

- If you have tested positive for COVID-19, you are encouraged to report your results to covidaction@utep.edu, so that the Dean of Students Office can provide you with support and help with communication with your professors. It is important to follow all instructions that you receive as part of the diagnosis, including isolation and staying at home until a negative test is produced.

- If you experience COVID-19 symptoms, please follow the isolation protocol by staying at home and getting tested as soon as possible. If the test is negative but you are still seeking accommodations, please contact the Dean of Students Office for guidance in a timely manner. Your instructor will work with the Dean of Students Office to determine the extent of any such accommodations.

- We strongly encourage you to think and act proactively in all matters related to COVID-19 and your academic endeavors. The Center for Disease Control and Prevention recommends that people in areas of substantial or high COVID-19 transmission wear face masks when indoors in groups of people. The best way that Miners can take care of miners is to get the vaccine. If you still need the vaccine, it is widely available in the El Paso area, and will be available at no charge on campus during the first week of classes. For more information about the current rates, testing, and vaccinations, please visit epstrong.org.
<table>
<thead>
<tr>
<th>Week</th>
<th>Beginning</th>
<th>Lecture Topics</th>
<th>Readings / In-Class Coding Assignments / Exams</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Aug. 23rd (Tue)</td>
<td>Syllabus Overview Introduction to Course</td>
<td>Chapter 1 Install Jupyter Notebook Coding Assignment 1 (Deadline: 4:20 PM, Thursday, Aug. 25th)</td>
</tr>
<tr>
<td>2</td>
<td>Aug. 29th (Mon)</td>
<td>Overview of the Data Mining Process (Part I)</td>
<td>Chapter 2 Coding Assignment 2 (Deadline: 4:20 PM, Thursday, Sept. 1st)</td>
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<tr>
<td>3</td>
<td>Sept. 5th</td>
<td>Overview of the Data Mining Process (Part II) Data Visualization (Part I)</td>
<td>Chapters 2 and 3 Coding Assignment 3 (Deadline: 4:20 PM, Thursday, Sept. 8th)</td>
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<tr>
<td>4</td>
<td>Sept. 12th</td>
<td>Data Visualization (Part II)</td>
<td>Chapter 3 Coding Assignment 4 (Deadline: 4:20 PM, Thursday, Sept. 15th)</td>
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<td>5</td>
<td>Sept. 19th</td>
<td>Dimension Reduction</td>
<td>Chapter 4 Coding Assignment 5 (Deadline: 4:20 PM, Thursday, Sept. 22nd)</td>
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<td>6</td>
<td>Sept. 26th</td>
<td>Exam Revision</td>
<td>Mid-Term Exam 1 (Chapters 1, 2, 3, and 4) Begins: 3:00 PM, Thursday Sept. 29th Ends: 4:20 PM, Thursday Sept. 29th</td>
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<tr>
<td>7</td>
<td>Oct. 3rd</td>
<td>Evaluating Predictive Performance</td>
<td>Chapter 5 Coding Assignment 6 (Deadline: 4:20 PM, Thursday, Oct. 6th)</td>
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<td>8</td>
<td>Oct. 10th</td>
<td>Multiple Linear Regression</td>
<td>Chapter 6 Coding Assignment 7 (Deadline: 4:20 PM, Thursday, Oct. 13th)</td>
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<td>9</td>
<td>Oct. 17th</td>
<td>k-Nearest Neighbors (k-NN)</td>
<td>Chapter 7 Coding Assignment 8 (Deadline: 4:20 PM, Thursday, Oct. 20th)</td>
</tr>
<tr>
<td>10</td>
<td>Oct. 24th</td>
<td>Exam Revision</td>
<td>Mid-Term Exam 2 (Chapters 5, 6, and 7) Begins: 3:00 PM, Thursday Oct. 27th Ends: 4:20 PM, Thursday Oct. 27th</td>
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<tr>
<td>11</td>
<td>Oct. 31st</td>
<td>The Naïve Bayes Classifier</td>
<td>Chapter 8 Coding Assignment 9 (Deadline: 4:20 PM, Thursday, Nov. 3rd)</td>
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<td>12</td>
<td>Nov. 7th</td>
<td>Classification and Regression Trees (Part I)</td>
<td>Chapter 9 Coding Assignment 10 (Deadline: 4:20 PM, Thursday, Nov. 10th)</td>
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<tr>
<td>13</td>
<td>Nov. 14th</td>
<td>Classification and Regression Trees (Part II)</td>
<td>Chapter 9 Coding Assignment 11 (Deadline: 4:20 PM, Thursday, Nov. 17th)</td>
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<td>14</td>
<td>Nov. 21st</td>
<td>Logistic Regression Thanksgiving Recess (No class on Nov. 24th)</td>
<td>Chapter 10</td>
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<tr>
<td>15</td>
<td>Nov. 28th</td>
<td>Course Revision</td>
<td>Coding Assignment 12 (Deadline: 4:20 PM, Thursday, Dec. 1st)</td>
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<td>16</td>
<td>Dec. 5th</td>
<td>Final Exam (All chapters)</td>
<td>*Begins: 4:00 PM, Thursday Dec. 8th</td>
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* All times are Mountain Time.