MGMT 6381 – Predictive & Prescriptive Analytics

Course Description/Overview

This course includes advanced topics in descriptive, predictive, and prescriptive analytics. Methods include using advanced data cutting and visualization, multiple regression, logistic regression, and optimization. Applications extend to all areas of business including marketing, operations, and finance.

Prerequisite Knowledge
MBA Student

Course Technology
ASU Blackboard, Windows-based MS Office 365, Internet, Jamovi. Note: Macs are not compatible with required software: PowerPivot add-in (weeks 2 and 3).

Class Meeting Times
Tuesday 6:00 to 8:50, RAS 225

Technical Support
The Technology Service Center (TSC) may be contacted by calling (325) 942-2911 or 1-866-942-2911 or by email at helpdesk@angelo.edu

Faculty/Instructor Information

Name: Andrew Tiger, Ph.D.
Title: M&M Interim Dean and Associate Professor
Office: RAS 262
Phone: 325-486-6418
E-Mail: atiger@angelo.edu
Office Hours: By appointment

Course Objectives

Learning Objectives:
Upon completion of this course, students will be able to…

1. Understand the key concepts and issues of descriptive, predictive, and prescriptive analytics.
2. Apply quantitative and computer skills in descriptive, predictive, and prescriptive analytics.
**Assessment Methods**

Homework assignments and Project

**Course Textbook and Required Readings**

None

**Grading Policies**

This course employs the following to measure student learning.

<table>
<thead>
<tr>
<th>Grade Calculations</th>
<th>Percent of Grade</th>
<th>Due</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attendance</td>
<td>10%</td>
<td>Weekly</td>
</tr>
<tr>
<td>Average Homework Grade</td>
<td>65%</td>
<td>Weekly</td>
</tr>
<tr>
<td>Project Models/Report</td>
<td>15%</td>
<td>May 3rd</td>
</tr>
<tr>
<td>Project Presentation</td>
<td>5%</td>
<td>May 7th</td>
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<tr>
<td>Peer Review</td>
<td>5%</td>
<td>May 10th</td>
</tr>
<tr>
<td>Peer Review Project #1</td>
<td>5%</td>
<td>May 12th</td>
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</table>

Angelo State University employs a letter grade system. Grades in this course are determined on a percentage scale:

A = 90 – 100 %  
B = 80 – 89 %  
C = 70 – 79 %  
D = 60 – 69 %  
F = 59 % and below.

**Response Time**

I will respond to email questions within one business day, and homework will be graded and posted within one week after the due date.

**Missed/Late Work**

No late work will be accepted. Assignments are posted early with reasonable deadlines to provide adequate time to complete the homework.
**Participation/Absenteeism**

Your attendance and participation are essential for your learning. Participation includes attending class and peer review of projects.

**Final Exam**

See projects below.

**Project**

Projects will be applying techniques discussed in class on real data. A final paper, your Excel-based data model and presentation will be required. Details will be posted in Blackboard.

Additionally, you will review other students’ projects. I will provide the evaluation rubric.

**Homework**

Homework will be submitted through Blackboard. HW is always be due on the due date before class begins.

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**Course Policies**

**Academic Honesty and Integrity**

Angelo State University expects its students to maintain complete honesty and integrity in their academic pursuits. Students are responsible for understanding and complying with the university Academic Honor Code, which is in both print and web versions of the ASU Student Handbook.

Academic integrity is expected. This includes, but is not limited to, any form of cheating, plagiarism, unauthorized sharing of work, or unauthorized possession of course materials. The professor assumes that all students can be trusted. Please do no violate this trust. Violation of academic integrity will result in a failing grade for the course.

It is the professor’s intention to be as fair and impartial as is humanly possible. Therefore, all students will be asked to adhere to the same set of guidelines and rules UNLESS there are disabilities or documented extenuating circumstances that have been discussed with the professor and the Student Life Office. Please make sure you inform the professor as soon as any situation arises. Do NOT wait until the problem is compounded by poor class performance, poor attendance, etc.

**Code of Ethics**

Students, faculty, administrators and professional staff of the College of Business should always:

- Be forthright and truthful in dealings with all stakeholders
- Take responsibility for one’s actions and decisions
- Serve as an example of ethical decision-making and behavior to others
- Admit errors when they occur, without trying to conceal them
- Respect the basic dignity of others by treating them as one would wish to be treated
**Courtesy and Respect**

Courteous and respect are essential ingredients to this course. We respect each other's opinions and respect others' points of view at all times while in our class sessions. The use of profanity and harassment of any form is strictly prohibited (Zero Tolerance), as are those remarks concerning one's ethnicity, lifestyle, religion, etc., violations of these rules will result in appropriate disciplinary actions.

**Accommodations for Disability**

ASU is committed to the principle that no qualified individual with a disability shall, on the basis of disability, be excluded from participation in or be denied the benefits of the services, programs or activities of the university, or be subjected to discrimination by the university, as provided by the Americans with Disabilities Act of 1990 (ADA), the Americans with Disabilities Act Amendments of 2008 (ADAAA), and subsequent legislation.

Student Affairs is the designated campus department charged with the responsibility of reviewing and authorizing requests for reasonable accommodations based on a disability, and it is the student’s responsibility to initiate such a request by emailing studentservices@angelo.edu, or by contacting:

Mrs. Dallas Swafford  
Director of Student Development  
Office of Student Affairs  
University Center, Suite 112  
325-942-2047 Office  
325-942-2211 FAX  
Dallas.Swafford@angelo.edu

**Student absence for religious holidays**

As stated in the Angelo State University Operating Policy and Procedures (OP 10.19 Student Absence for Observance of Religious Holy Day), a student who intends to miss class to observe a religious holy day should make that intention known in writing to the instructor prior to the absence. A student who is absent from classes for the observance of a religious holy day shall be allowed to take an examination or complete an assignment scheduled for that day within a reasonable time after the absence.

**Course Drop**

To view information about how to drop this course or to calculate important dates relevant to dropping this course, you can visit [http://www.angelo.edu/services/registrars_office/course_drop_provisions.php](http://www.angelo.edu/services/registrars_office/course_drop_provisions.php).

**Incomplete as a Course grade**

As stated in the Angelo State University Operating Policy and Procedure (OP 10.11 Grading Procedures), the grade "I" is given when the student is unable to complete the course because of illness or personal misfortune. For undergraduates, an "I" that is not removed before the end of the next long semester automatically becomes an "F". A graduate student will be allowed one year to remove a grade of "I" before it automatically becomes an "F". To graduate from ASU, a student must complete all "I"s."
Grade Appeal Process

As stated in the Angelo State University Operating Policy and Procedures (OP 10.03 Student Grade Grievances), a student who believes that he or she has not been held to appropriate academic standards as outlined in the class syllabus, has experienced inequitable evaluation procedures, or inappropriate grading practices, may appeal the final grade given in the course. The burden of proof is upon the student to demonstrate the appropriateness of the appeal. A student with a complaint about a grade is encouraged to first discuss the matter with the instructor. For complete details, including the responsibilities of the parties involved in the grade appeal process and the number of days allowed for completing the steps in the process, see Operating Procedure 10.03 at: http://www.angelo.edu/content/files/14196-op-1003-grade-grievance.

Course Outline

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<th>Dates</th>
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<tr>
<td>1</td>
<td>8/24</td>
<td>Descriptive Analytics: PivotTables &amp; Dashboards</td>
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<tr>
<td>2</td>
<td>8/31</td>
<td>Descriptive Analytics: PowerQuery and Data Wrangling</td>
<td>HW 1 Due 9/3</td>
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<td>9/7</td>
<td>Descriptive Analytics: Data Models and PowerPivot (and DAX)</td>
<td>HW 2 Due 9/10</td>
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<td>9/14</td>
<td>Predictive Analytics: Regression - Excel</td>
<td>HW 3 Due 9/17</td>
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<td>9/21</td>
<td>Predictive Analytics: Logistic Regression w/ Jamovi and Spreadsheet Simulation</td>
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<td>Predictive Analytics: Optimization w/ Solver</td>
<td>HW 4 Due 9/28</td>
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<td>HW 5 Due 10/8</td>
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<td>8</td>
<td>10/12</td>
<td>Project Presentations</td>
<td>Project Due 10/12</td>
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