Course Syllabus
MIS 3210 - 002

Critical Thinking using Analytics
Spring Semester, 2019
MWF 9:10 am - 10:05 am, FCB 373
3.0 Credit Hours
Last updated 1/11/2019

Instructor: Vladimir G Ambartsoumian, Ph.D.
Phone: 901.678.4511
E-mail: vgmbrtsm@memphis.edu
Office: FCBE #340
Office Hours: MW 12:30pm - 2:00pm

Course Overview:

This is a general introduction to the tools and methods used in business analytics. We focus on development of critical thinking skills through use of in-depth assignments that utilize data analysis tools and require data analysis and interpretation.

Course Objectives:

Once you have completed this course, you should be able to demonstrate the following knowledge, skills, & abilities:

• Use critical thinking and other higher-order thinking skills to identify areas of inquiry that have the highest potential to derive new knowledge and actionable insights for a business organization.

• Explain the role of big data analytics in the inquiry process.

• Provide a basic explanation of specific big data analytics techniques such as trend analysis, association analysis, and prediction.

• Conduct specific types of data analyses using computer-based tools such as Excel, Access, Tableau and WEKA.

Basis for course objectives:

The objectives for this course were formulated by a team of faculty in the BIT department and are based upon a significant amount of input from business executives, industry experts, other FCBE faculty, and business school accreditation guidelines (AACSB). The specific topics covered in this course are based upon the current and projected demand for job skills that employers will need to achieve the strategic goals of their organizations.
Pre-Requisites/Co-Requisites:
This is an upper-division required course for all FCBE majors. Lower division core courses must be completed before enrollment in this course is permitted.

Fogelman College: Learning Outcomes for Your Degree
The Fogelman College has established the following learning goals for all students successfully completing the BBA degree:

• Graduates will be effective communicators.
• Graduates will demonstrate critical thinking skills.
• Graduates will be knowledgeable about ethical factors in the business environment.
• Graduates will be knowledgeable about the global business environment.
• Graduates will be proficient users of business presentation and analysis technology.

Course Methodology
The instructional methodology of this course will be a combination of PowerPoint and video presentations and hands-on activities using Microsoft Excel, and Access, Tableau, and other apps (open source data analytic tools).

Grading and Evaluation Criteria:
Final Course Grades:
Your final letter grade is based on your overall average. Your overall average is calculated as the sum of all the points you earned on graded assignments divided by the total number of points possible. The letter grade is based on the following schedule:

<table>
<thead>
<tr>
<th>Percentage Range</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Above 90%</td>
<td>A</td>
</tr>
<tr>
<td>Above 80% but below 90%</td>
<td>B</td>
</tr>
<tr>
<td>Above 70% but below 80%</td>
<td>C</td>
</tr>
<tr>
<td>Above 60% but below 70%</td>
<td>D</td>
</tr>
<tr>
<td>Below 60%</td>
<td>F</td>
</tr>
</tbody>
</table>

Scoring Methodology Used to Determine Course Grade:
Points earned on the assessed activities will be distributed as follows:

<table>
<thead>
<tr>
<th>Activity Type</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 Homework Project Assignments (4 * 20)</td>
<td>80 points</td>
</tr>
<tr>
<td>10 Quizzes (10 * 10)</td>
<td>100 points</td>
</tr>
<tr>
<td>11 Class Activities (11 * 5)</td>
<td>55 points</td>
</tr>
<tr>
<td>1 Final Exam (1 * 50)</td>
<td>50 points</td>
</tr>
</tbody>
</table>

Total Possible for Semester: 285 points

Final Exam Information
The final exam will be posted online (eLearn) during the final exam week. The final exam is 50 multiple choice questions over the content in the PowerPoint slides. To prepare for the final exam, you may take quiz #10 an unlimited number of times. Once an attempt is submitted, you will be able to view the correct answers. If you make multiple attempts, only your highest score will be recorded in the grade book.
All quizzes and the final exam are open book / open notes!

**Extra Credit Opportunities:**

You may earn five points of extra credit (with a maximum of 10 points) by attending official academic events such as:

- A professional-development event sponsored by the Fogelman Complete Professional Program through the Fogelman Professional Development Center (See [professional@memphis.edu](mailto:professional@memphis.edu) for more information)
- A registered student organization (RSO) event (such as an AMIS or SCRM meeting) as long as the RSO is affiliated with the Fogelman College of Business and Economics (FCBE).
- Other professional-development events such as a Toastmaster’s meeting or professional development seminars. Please check with your instructor as to what events are approved for extra credit.

**Please note** that not all CPP events are open to all students - some are major-specific, and some require business attire to be worn. In addition, all CPP events require pre-registration. Please check with the CPP events calendar for dates of events and restrictions on attendance. Please be sure that you pre-register for CPP events. Also, job fairs are NOT considered professional development events worthy of extra credit.

How to get the extra credit points:
If you attend an event that qualifies for extra credit, please **take a selfie** at the event, preferably standing next to the person in charge of the event or by a sign or banner at the event. Upload the selfie picture to the extra credit Dropbox.

**Required Texts (and Related Materials):**

**COMPUTER & SOFTWARE:**
This course requires the use of a computer and specific software programs. To complete some of the assignments, you will need access to a computer that can access specific software programs such as Microsoft Excel, Microsoft Access, Tableau, and WEKA. Please see the eLearn course home page for links to these applications.

**READING ASSIGNMENTS:**
All the outside reading material for this course is available online. The elearn [Content] page has links to all the weekly reading assignments.

- The business analytics readings may be either journal articles or eBook chapters. Book chapters are assigned from this text: *Behind Every Good Decision: How Anyone Can Use Business Analytics to Turn Data into Profitable Insight*, By Piyanka Jain and Lakshmi Jayaraman. Published by AMACOM, 2015. Links to the eBook chapters are available at: [Data Analysis eBook](#)

**Professor’s Expectations of Students:**

- **All** homework assignments are individual assignments and each person is expected to create their own files and do their own work. **Collaboration** on homework assignments is **cheating**. If you turn in another student’s work as your own, you will receive a 0 on that assignment. If this occurs more than once, you will receive a failing grade for this course. Students who shared their work with others will receive a 0 on those assignments as well.
Due Dates on assignments
• Unless otherwise noted, in-class activities and quizzes are due on Fridays after class (12:25pm). HomeworKs are due on Sundays at 11:59pm. HomeworKs must be turned in to their dropboxes. No assignments are accepted as email attachments.

Late Assignments:
• You are expected to turn in your assignments on time. The due dates for assignments are provided on the weekly schedule (above) and are posted on eLearn. One point will be deducted for each day that an assignment is late. Dropboxes accept files for up to one week past their due dates. Assignments may not be accepted for grading if they are turned in more than one week late.
  • Do not turn in assignments as email attachments, please! No assignments turned in as an email attachment will be graded.
  • Quizzes will be deactivated on the date and time they are due. Quizzes will not be re-opened for any student unless (1) the student has a valid reason why they could not submit their quiz on time and (2) the student makes a request in person to the instructor to re-open the quiz. (No requests will be approved via email.)

Course Policies
E-mail:
All students are required to maintain and access their University of Memphis (@memphis.edu) email account. You will receive all official course correspondence at this email account. It is your responsibility to check your inbox frequently and read all email messages from the course instructor.

Attendance:
You are required to attend all class meetings and stay for the entire duration of the meeting time. All absences are considered unexcused unless you have PRIOR approval from the instructor and/or you are attending a university-sponsored event. It is your responsibility to make up any coursework that was missed because of an absence. In-class activities and quizzes must be completed in the classroom during the designated class time. Only those students who have received permission to miss class IN ADVANCE will be permitted to make up an assignment.

Academic Integrity:
The University of Memphis has clear codes regarding cheating and classroom misconduct. If interested, you may refer to the Student Handbook section on academic misconduct for a discussion of these codes. Note that using a “Solutions Manual” is considered cheating. Should your professor have evidence that using a “Solutions Manual” has occurred, he/she may take steps as described on the campus’ Office of Student Conduct website (opens in new window). If you have any questions about academic integrity or plagiarism, you are strongly encouraged to review the Fogelman College’s Website on Academic Integrity (opens in new window).

Classroom or Online Behavior:
All participants in the course should be considerate of the other course participants and treat them (as well as their opinions) with respect. The class will operate under the assumption that any and all feedback offered is positive in nature and that the intentions of the person(s) providing feedback are strictly honorable. Insensitivity in this area will not be tolerated. If you have any questions about online communication, you should review the Fogelman College’s Netiquette website (opens in new window).
**Course Schedule:**

<table>
<thead>
<tr>
<th>Course by Week</th>
<th>Topic</th>
<th>Reading Assignments</th>
<th>Homework Project (HW) In-Class Activity (ICA) or QUIZ</th>
</tr>
</thead>
</table>
| Week 1: Jan 14 to Jan 20 | ● Review Syllabus  
  ● PPT #1A: Making Good Business Decisions | Readings #1-3 Links on eLearn | ● Quiz #1 (over syllabus & PPT #1A) |
| Jan 21st – MLK day – University is closed! |                                                                      |                                     |                                                       |
| Week 2: Jan 22 to Jan 27th | ● PPT #1B: Introduction to Big Data Analytics  
  ● PPT #2: Initiating Analytics Projects / ICA #1 | Readings #4-5 Links on eLearn | ● Quiz #2 (over PPT #1B)  
  ● ICA #1: BADIR steps 1 & 2 |
| Week 3: Jan 28th – Feb 3rd | ● BA #3: Excel Review / ICA #2  
  ● BA #4: Database Concepts |                                      | ● ICA #2: Excel review  
  ● Quiz #3 (over BA #4) |
| Week 4: Feb 4th – Feb 10th | ● BA #5: Create a database / ICA #3  
  ● BA #6: PivotTables / ICA #4 |                                      | ● ICA #3: Create a database  
  ● ICA #4: Create Excel PivotTables |
| Week 5: Feb 11th – Feb 17th | ● BA #7: Instructions for HW #1  
  ● BA #8: Excel Charts & Dashboards / ICA #5 | Reading #6 link on eLearn | ● HW #1: Create PivotTables  
  ● ICA #5: Create Excel Charts |
| Week 6: Feb 18th – Feb 24th | ● BA #9: Instructions for HW #2  
  ● BA #10: Data Visualization Concepts |                                      | ● HW #2 - Create Excel dashboard  
  ● Quiz #4 (over BA #10 & reading) |
| Week 7: Feb 25th – Mar 3rd | ● BA #11: Data Viz with Tableau / ICA #6  
  ● BA #12: Instructions for homework #3 |                                      | ● ICA #6: Tableau for Data Viz  
  ● HW #3: Storyboard with Tableau |
| March 4th – March 10th - Spring Break Week – University is closed! |                                                                      |                                     |                                                       |
| Week 9: Mar 11th – Mar 17th | ● BA #13: Big Data Technologies  
  ● BA #14: Data Mining-Pt 1 (Regression)/ICA #7 |                                      | ● Quiz #5 (Over BA #13)  
  ● ICA #7: Regression with Excel |
| Week 10: Mar 18th – Mar 24th | ● BA #15: Data Mining – Pt 2 (Classification) /ICA #8  
  ● BA #16: Data Mining - Pt 3 (Cluster Analysis) |                                      | ● Quiz #6 (Over BA #14)  
  ● ICA #8: Classification with WEKA |
| Week 11: Mar 24th – Mar 31st | ● BA #17: Data Mining – Pt 4 Cluster with WEKA) / ICA #9  
  ● BA #18: Data Mining – Pt 5 (Mkt Basket) / ICA #10 |                                      | ● Quiz #7 (Over BA #15 & 16)  
  ● ICA #9: Clustering with WEKA  
  ● ICA #10: Market Basket Analysis |
| Week 12: Apr 1st – Apr 7th | ● BA #19: Data Mining – Pt 6 (Sentiment Analysis) / ICA #11  
  ● BA #20: Instructions for HW #4 |                                      | ● Quiz #8 (over BA #17 & 18)  
  ● ICA #11: Sentiment Analysis  
  ● HW #4: Company Analysis Report |
| Week 13: Apr 8th – Apr 14th | ● BA #21: Google Analytics  
  ● BA #22: Web Analytics |                                      | ● Quiz #9 (over BA #19, 21 & 22) |
| Week 14: Apr 15th – Apr 21st | ● Finish up Homework #4 |                                      | ● Quiz #10: Review for Final Exam |
| ½ Week 15: Apr 22nd – Apr 24th | ● Review |                                      |                                                       |

*Quizzes are open-book, open notes.*  
**In-Class Activities and quizzes are due on Fridays after class; Homeworks are due on Sundays at 11:59pm*
Syllabus Changes:
The instructor reserves the right to make changes as necessary to this syllabus. If changes are necessitated during the term of the course, the instructor will immediately notify students of such changes both by individual email communication and posting both notification and nature of change(s) on the course bulletin board.

Student Services
Please access the [FCBE Student Services (opens in browser window)] page for information about:

- Students with Disabilities
- Tutoring and other Academic Assistance
- Advising Services for Fogelman Students
- Technical Assistance