Course Syllabus
MIS 7620 001 – Business Machine Learning I
Spring Semester, 2020
3.0 Credit Hours
(Last updated: 1/15/2020)

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Office Hours: Monday 4pm – 5:30pm, Wednesday 7pm – 8:30pm, and by appointment.

Course Overview:
Business Intelligence is the study of computerized support for management decision making. Topics include data mining, artificial neural networks, text and web mining, data warehousing, expert systems, and knowledge management.

Pre-Requisites/Co-Requisites:
There are no course pre-requisites to enrolling in this course. However, basic knowledge of statistics is helpful but not required. In general, it is assumed that all students who are registering for Fogelman College classes have successfully completed any pre-requisites or are enrolled currently in any co-requisites associated with this course.

Required Texts (and Related Materials):
- Lecture notes posted on the eCourseware website.

Software:
- This course makes extensive use of tools including Tableau and SAS Enterprise Miner.
• Instructions on how to access Tableau and SAS Enterprise Miner are posted on eCourseware.

Location of Course Materials:
Course materials are available online at elearn.memphis.edu. They include lecture slides, handouts, data sets, assignments, grades and other course-related information. Course materials are organized into modules based on topics.

Course Objectives:
After successfully completing this course, students will be able to:

• Understand the basic concepts and techniques of business analytics
• Evaluate real-world business problems and identify appropriate analytical methods to solve these problems
• Perform data preparation and visualization
• Implement various analytical techniques
• Compare and assess model performance
• Develop data analytic thinking and problem solving skills
• Develop proficiency in tools such as Tableau and SAS Enterprise Miner

Fogelman College: Learning Outcomes for Your Degree
This course is designed to help you to meet the overall learning objectives for the MSIS degree offered by the Fogelman College. You should take the time to become familiar with the overall learning objectives as a student in the MSIS degree program.

• Graduates will possess knowledge and skills related to data management for organizations
• Graduates will possess knowledge and skills in the area of business analytics
• Graduates will possess knowledge and skills in the analysis and design of information systems
• Graduates will possess knowledge and skills associated with being an Information Systems leader

Course Methodology
This is an online course and much of the learning will be self-managed and self-paced. This has the benefit of accommodating each student’s unique schedule and learning style. Everything will be done fully online and asynchronously (meaning the class will not meet at specific times).

To facilitate your active learning experience and to accommodate students with various educational backgrounds and different levels of analytical experience, this class adopts a hybrid learning approach by incorporating traditional in-class lectures and discussions on key concepts and methods as well as self-paced learning of analytical tools using a flipped learning
methodology. Learning materials for analytical tools will be posted on eCourseware in advance and it is your responsibility to study these materials and be well prepared before coming to the lab session.

**Professor’s Expectations of Students:**

Students are expected to attend classes, actively participate in discussions and hands-on activities, review the course content after class, and complete assignments on time. Students are strongly encouraged to contact me to discuss any concerns about this course or seek any additional help with course materials if needed. It is critical that students have access to computers with the installed software tools or broadband Internet connection that will allow access to UMware throughout the semester.

**Student’s Expectations of the Professor:**

In my role as your instructor, there are certain things you can expect from me including: well-organized and engaging learning experience, response to emails within two (2) business days, and feedback on all work submitted within 7-10 calendar days.

**Grading and Evaluation Criteria**

Over the semester, you will have a variety of opportunities to earn points towards your final (overall) letter grade in this course. This section of the syllabus describes the assessed work you will be doing and how overall (final) letter grades will be computed.

**Final Course Grades**

Final course grades are earned according to the following table:

<table>
<thead>
<tr>
<th>Point Range</th>
<th>Assigned Grade</th>
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</thead>
<tbody>
<tr>
<td>90-100 Points</td>
<td>A</td>
</tr>
<tr>
<td>80-89 Points</td>
<td>B</td>
</tr>
<tr>
<td>70-79 Points</td>
<td>C</td>
</tr>
<tr>
<td>60-69 Points</td>
<td>D</td>
</tr>
<tr>
<td>Under 60 Points</td>
<td>F</td>
</tr>
</tbody>
</table>

Your overall grade for the semester is based on how well you perform on a mixture of formal activities. A detailed description of each of the assessed activities can be found after the scoring summary table below.
Summary of Graded Activities

Points earned on the assessed activities will be distributed as follows:

<table>
<thead>
<tr>
<th>Deliverable</th>
<th>Total Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attendance and Participation</td>
<td>10</td>
</tr>
<tr>
<td>Assignments</td>
<td>25</td>
</tr>
<tr>
<td>Exam</td>
<td>40</td>
</tr>
<tr>
<td>Group Project</td>
<td>25</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100 pts</strong></td>
</tr>
</tbody>
</table>

Major Course Topics:

- Supervised and Unsupervised Machine Learning Methods
- Data Mining Process
- Data visualization
- Decision Tree and its Business Applications
- Regression and its Business Applications
- Artificial Neural network and its Business Applications
- Model Assessment and Deployment
- Cluster Analysis and its Business Applications

List of Formal Assessed Activities

For a complete description of the assessed activities for the semester, please refer to the “List of Assessed Activities” page that can be found in the online course area under “Getting Started”.

Attendance and Participation:

You are expected to attend all classes, contribute to discussions, and participate in hands-on activities in class. You are responsible for the material we cover in class if you miss a class. Lecture slides and/or handouts will be posted on the course website in advance. Please note that office hours are not a substitute for class attendance and participation.
Assignments

Students will complete each assignment individually. Each assignment carries the same weight and your final assignment score will be based on the average of your assignment scores after dropping your lowest score. Assignments will be submitted on eCourseware unless specified otherwise. Due dates for all assignments will be strictly observed and no late submission will be accepted without the instructor’s approval. Plagiarisms are strictly prohibited.

Exams

There will be one midterm exam and one optional final exam for this course. Both are in-class and closed-book exams. It will cover lecture material, class discussion, and additional reading materials assigned by the instructor. The exam consists of multiple choice questions and short answer questions. Please see the schedule for the exam dates.

If you know in advance that you will be absent the day of the scheduled exam, you need to make arrangements with me prior to the exam date. If you miss an exam because of illness or other unforeseeable emergency (proper documentation required), you must contact me by email or phone within three days of the scheduled exam date to make arrangement for a makeup exam. Failure to do so will result in a grade of zero for the exam.

Group Project

Project groups will consist of 3 to 4 students. Each group will select a business problem and the associated dataset(s) from current or completed data challenges (e.g., Kaggle, Yelp, Teradata university network, Alexion Analytics Challenge) or other sources with instructor’s approval. Students will then apply the techniques and methods learned in this class to explore, prepare, and analyze data, interpret findings, and complete a written report. Project deliverables include Tableau visualization, SAS Enterprise Miner project, a presentation, and a written-report at the end of the semester. Detailed requirements will be posted on eCourseware. Datasets used in projects of other courses may not be used in this course without the instructor’s approval. Project score will be based on project proposal, progress reports, Tableau and SAS Enterprise Miner deliverables, presentation, written-report, and peer-evaluation.

Schedule of Activities

For a complete semester schedule of readings, activities, and due dates for assignments, please refer to the “Tentative Schedule” that can be found in the online course area under “Course Introduction”.

Final Exam Schedule

The final exam for this class will be scheduled according to the Registrar’s academic calendar website (opens in new window).
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. Any inability to receive incoming mail in a timely fashion (e.g., not regularly checking your email, having a “full mailbox” condition, etc.) is the student’s responsibility.

Attendance

This is a standard classroom course. It is important that you consistently attend classes throughout the semester and stay active and engaged in the classroom. Your full engagement in the class begins on the first day of the semester and should be maintained until the end of the semester. For students receiving federal student loans, any lack of engagement in the course may be treated as non-attendance and potentially impact access to student loans in the future.

Students are expected to participate in all interactive aspects of the course. You should also regularly communicate with the instructor as part of your overall learning experience, check the course website and email frequently for announcements, and actively participate in classroom discussions (both formal and informal).

Note that class attendance and participation will contribute to your overall grade in the semester as noted earlier in this syllabus.

Adding / Dropping:

If you have questions about adding or dropping classes, please refer to this page on the Registrar’s website (opens in new window).

Academic Integrity:

The University of Memphis has clear codes regarding cheating and classroom misconduct. If interested, you may refer to the Student Handbook in the section on Code of Student Rights & Responsibilities for information. 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 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).
Extra Credit:
There is no extra credit offered in this course. Your final grade will be computed based on your work on the formal/assessed activities previously described in this syllabus.

Reporting Illness or Absence:
Due dates and deadlines have been established for each graded assignment. In this course, deadlines are taken very seriously. Please do not wait until the last day to submit assignments or to take exams. If an emergency should arise, it is the student’s responsibility to contact the instructor prior to the deadline to discuss the matter. A deadline extension will be considered only if both of the following conditions are met:
(1) Extreme emergency and (2) Instructor contacted prior to the due date.

Inclement Weather:
In the event that inclement weather requires the cancellation of classes at The University of Memphis, local radio and television media will be immediately notified. Additionally, The University of Memphis has established an Inclement Weather Hotline at 678-0888 as well as TigerText (opens in new window), an emergency alert text messaging service to students, faculty and staff. This optional service is used in the event of an on-campus emergency, an unscheduled university closing, or a delay or cancellation of classes due to, for instance, inclement weather. Additional information on TigerText (opens in new window).

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 new window) page for information about:

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