Course Syllabus

MIS 7620 001 – Business Machine Learning I

Spring 2019

3 Credit Hours

Instructor: Chen Zhang, Associate Professor
Time and Room: 7:10 PM - 10:10 PM Wednesday, FCB 373
Phone: 901.678.5671
E-mail: czhang12@memphis.edu
Office: FAB 301
Office Hours: Monday 2pm – 3:30pm
Wednesday 5pm – 6:30pm
or 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.

Main Course Topics

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

Pre-Requisites/Co-Requisites

Knowledge of statistics is helpful but not required.
Required Texts and Related Materials

- Textbooks
- 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

The Fogelman College has established the following learning goals for all students successfully completing the MSIS degree:

- Graduates will be competent in the use of technology.
- Graduates will be effective communicators.
- Graduates will be knowledgeable about threats and opportunities in a global society.
- Graduates will be problem solvers.

Course Methodology

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
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
Course materials will be well-organized and posted on eCourseware in advance. You will be engaged in an active and supportive learning environment. I will respond to your emails within 2 days if not sooner. Submissions will be graded within 7 business days and your up-to-date grade will be posted on eCourseware throughout the semester.

Grading and Evaluation Criteria
Over the semester, you will have a variety of opportunities to earn points towards your final letter grade in this course. This section of the syllabus describes the grading components and how the final letter grade will be computed.

Final Course Grades
Final course grades are computed as follows:

<table>
<thead>
<tr>
<th>Point Range</th>
<th>Letter Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>90.0 and above</td>
<td>A</td>
</tr>
<tr>
<td>80.0 - 89.9</td>
<td>B</td>
</tr>
<tr>
<td>70.0 - 79.9</td>
<td>C</td>
</tr>
<tr>
<td>60.0 – 69.9</td>
<td>D</td>
</tr>
<tr>
<td>Under 60.0</td>
<td>F</td>
</tr>
</tbody>
</table>

Your overall points will be based on attendance and participation, assignments, exams, and group project according to the following scheme.

<table>
<thead>
<tr>
<th>Component</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>Midterm</td>
<td>20</td>
</tr>
<tr>
<td>Final Exam</td>
<td>25</td>
</tr>
<tr>
<td>Group Project</td>
<td>20</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>
**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 (20%) and one final exam (25%) 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, true/false 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 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, SAS Enterprise Miner deliverable, presentation, written-report, and peer-evaluation.

**Schedule of Activities**
For a schedule of readings, activities, and due dates for assignments, please refer to the “Tentative Schedule” under “Course Introduction” module on the course website.

**Final Exam Schedule**
The final exam for this class will be scheduled according to the Registrar’s academic calendar website.
Course Policies

E-MAIL

All students are required to maintain and access their University of Memphis (@memphis.edu) email Account on a regular basis. You will receive all official course correspondence at this email account. It is your responsibility to make sure you are able to receive incoming mail in a timely fashion. If you prefer using your alternate email address (gmail, yahoo, etc.), you should inform me in an email during the first week of class.

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 the Registrar’s website.

Academic Integrity

The University of Memphis has clear codes regarding cheating and classroom misconduct. Please refer to the Student Handbook section on academic misconduct for a discussion of these codes. Note that using a “Solutions Manual” IS considered cheating. If you have any questions about academic integrity or plagiarism, you are strongly encouraged to review the Fogelman College’s Website on Academic Integrity. Note that Turnitin will be used extensively on submitted work, especially research and associated writing. Strong evidence of plagiarism will result in a zero on the submitted assignment.

Classroom Behavior

All participants in the course should be considerate of the other participants and treat them and their opinions with respect. Use of cell phones or engaging in activities unrelated to class is not allowed in class.

Extra Credit

There is no extra credit offered in this course. Your final grade will be computed based on your work on the assessed activities previously described in this syllabus.
Reporting Illness or Absence

Due dates and deadlines have been established and will be followed for each graded course component. 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 and unforeseeable 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 LiveSafe app, an emergency alert app for participants, 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.

Syllabus Changes

The instructor reserves the right to make changes as necessary to this syllabus. If changes are necessitated during the semester, the instructor will immediately notify students of such changes both by class email communication and posting both notification and nature of change(s) on the course website.

Student Services

Please access the FCBE Student Services page for information about:

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