Course Syllabus
MIS 7720 – Artificial Intelligence for Business
Spring semester, 2019
3.0 Credit Hours

Instructor Information
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Phone: 901.678.3729
Office: FCBE #321
Office Hours: T 5:00 – 7:00 PM

Course Information
Meeting Times: Tue 7:10 – 10:10 PM
Meeting Location: FCB 121
Meeting Dates: Jan 14 – May 2, 2019

Course Overview
This course introduces you to the fundamentals of Artificial Intelligence (AI) and its various business applications; how AI impacts businesses and jobs, why to invest in AI, and the challenges and opportunities it provides.

Pre-Requisites/Co-Requisites
There are no formal pre-requisites for enrolling in this course. This course does not require programming experience but it could be helpful. High school level math is expected.

Course Objectives
By successfully completing this course, you should be able to:
• Understand basic AI techniques, their pros and cons, and possible applications.
• Identify possible AI solutions for business problems.
• Understand the challenges and opportunities of adopting AI solutions for business applications.
• Formulate business problems as AI problems to effectively collaborate with AI experts and AI technology providers.
• Understand the potential impacts of AI on businesses and jobs.

Required Texts (and Related Materials)
All reading materials and case studies for this course will be available on elearn.
This course requires permanent and unrestricted access to a computer. We will use the following software (instructions on how to install each will be provided on elearn):

- R Studio
- Python with Jupyter notebooks (it is recommended to install the Anaconda platform with Python 3.x).

Textbook (optional – *note that this is not the course textbook*):

- Artificial Intelligence: A Modern Approach (3rd edition), by Stuart Russell and Peter Norvig

**Fogelman College: Learning Outcomes for Your Degree**

This course is designed to help you to meet the overall learning objectives for the BBA degree offered by the Fogelman College. The Fogelman College has established the following learning goals for all students successfully completing the MSIS/MSBA 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**

The instructional methodology of this course will be a combination of PowerPoint presentations, readings, in-class instructor-led activities, and assignments.

**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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<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>
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</table>

Your overall grade for the semester is based on how well you perform on a mixture of formal activities including discussions, quizzes and projects. 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>Item</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Class Activities</td>
<td>20</td>
</tr>
<tr>
<td>Readings</td>
<td>15</td>
</tr>
<tr>
<td>Project</td>
<td>25</td>
</tr>
<tr>
<td>Quizzes</td>
<td>15</td>
</tr>
<tr>
<td>Exam</td>
<td>25</td>
</tr>
</tbody>
</table>

**Readings** (articles, papers, or book chapters) will be posted on elearn (a week in advance). Students are expected to read them and participate in class discussions. A brief summary has to be written for some of the assigned readings (as we will discuss in class), which will be shared on elearn with your classmates.

**Project:** individual (or group) project where you develop a plan for how AI could be used in your organization or business context of choice. Throughout the course we will become familiar with different tools and techniques in AI; you will propose ideas for the application of these techniques in a business context of your choice. You do not have to implement the proposed AI techniques (not required to deliver working code), however, working prototypes would be a bonus. All projects have to be presented at the end the course.

**Quizzes** are on elearn and open book, open notes.

**Class Activities** must be completed in class and include hands-on demos using Python and/or R and case studies.

**Course Schedule (tentative*)**

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
<th>Project</th>
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<tbody>
<tr>
<td>1</td>
<td>What is AI?</td>
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<td></td>
<td>History of AI</td>
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<td></td>
<td>What AI can (and cannot) do today</td>
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<td></td>
<td>Applications of AI</td>
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<td>2</td>
<td><strong>Intelligent agents</strong></td>
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<td></td>
<td>Terminology</td>
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<td></td>
<td>Machines playing games and how it matters for business</td>
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<td>3</td>
<td>AI in business: examples from different industries</td>
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<td></td>
<td>What are the challenges and opportunities?</td>
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<td></td>
<td>Making the business case for AI</td>
<td>Propose topic</td>
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<td>4</td>
<td>Available frameworks and technologies (Implementation)</td>
<td>Consider applications</td>
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<td></td>
<td><strong>Search and planning</strong></td>
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<td></td>
<td><strong>Supervised/semi-supervised learning</strong></td>
<td>Consider applications</td>
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<tr>
<td>5</td>
<td><strong>Unsupervised learning</strong></td>
<td>Consider applications</td>
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<tr>
<td>6</td>
<td><strong>Artificial Neural Networks</strong></td>
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<td>7</td>
<td><strong>Deep Learning</strong></td>
<td>Consider applications</td>
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<td></td>
<td>Case Studies*:</td>
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<td></td>
<td>• Minimizing energy consumption costs</td>
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Final Exam Schedule
The final exam for this course will be on the last day of class on Tuesday, April 23, 2019 (Registrar’s academic calendar website).

Professor’s Expectations
In general, you should assist the instructor and your fellow classmates in creating a positive and supportive environment for learning by staying engaged in the course. You will learn as much from the collective contributions of your classmates as you will from the instructor. As a group, we will create a positive and collaborative environment and share each other’s views, insights, and analysis of assigned scenarios and readings covered in the course.

Student’s Expectations
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 business days, and feedback on all work submitted within 7-10 business days.

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:
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. It is your responsibility to make up any coursework that was missed because of an absence. In-class activities and quizzes should be completed during the designated time in the classroom. Only students who have received permission to miss class in advance will be allowed to make up these activities.

Adding / Dropping:
If you have questions about adding or dropping classes, please refer to this page on the Registrar's website.

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. If you have any questions about academic integrity or plagiarism, you are strongly encouraged to review the Fogelman College's Website on Academic Integrity.

Participation:
To be successful in this course as a participant, you must stay active and involved throughout the entire semester. Students are expected participate in all interactive aspects of the course. You should also regularly communicate with the instructor as part of your overall learning experience, check into the course frequently for announcements (usually on the course home page), and actively participate in discussion events (both formal and informal). You should plan on logging into the course at least three times each week. It is important you actively participate in the classroom discussions as well. Classroom discussions help clarify the readings and lectures and provide additional insights. The quality, not quantity, of the discussion depends heavily on you and your preparation of the assigned problems and suggested readings. You are expected to respond or share information, when asked to do so, and ask intelligent questions to your fellow participants through classroom discussions.

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.

**Late Assignments:**
Assignments that are submitted to the dropbox (activities, and homework projects) should be uploaded by the due date. Late submissions will be accepted only for one week beyond the due date if solutions are not discussed in class earlier, however, 1 point may be deducted for each day that the assignment is late.

**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 email communication and posting both notification and nature of change(s) on the course bulletin board.

**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