Course Syllabus
MIS 7190 001 – Programming for Business

Fall Semester, 2017

3.0 Credit Hours

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Office Hours: Friday 12:00 pm – 3:00 pm, or by appointment

Course Overview:
Fundamentals of programming for business projects, including Internet-based business applications and object-oriented programming languages. Specifically, you will learn how to write programs in R to explore, visualize, and interpret results derived from business data in a systematic and meaningful way. Emphasis will be placed on how, what, and why certain techniques are useful in solving complex problems in a business setting. Much of the in-class time is spent writing programs in R, and performing a variety of data analytics tasks such as data manipulation, interpretation, and presentation of results.

Pre-Requisites/Co-Requisites
MIS 7060 or permission of instructor

Required Texts (and Related Materials)

Location of Course Materials
All course materials are located on the eCourseware website.
**Course Objectives**

By successfully completing this course, participants will be able to:

- Understand R programing concepts and basic data science techniques and apply them to evaluate various business scenarios and transform problems into actionable items.
- Contribute to business problem solving activities by experiencing first-hand the power of R programing language to reveal unexpected patterns and stimulate new perspective and insights.
- Learn to think creatively about linking data and R programing framework with the subject-matter expertise.
- Appreciate other programing languages such as Python and data science tools to perform basic analytics tasks.
- Work effectively as a member of a team, including demonstrating collaboration and problem-solving skills.

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

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

- **MBA**
- **PhD**

**Course Methodology**

- Instructor presentation of material that teaches fundamentals of Cran R and basic data science concepts. There will be extensive class discussion and note taking is essential.
- In-class interactive activities, discussions, reading assignments and scenario analysis to practice the lecture material, data science, and programing techniques and tools.
- Assigned problems to practice the lecture material.
- Exams and quizzes to test knowledge of the participants on the key data science concepts covered in the class.
- Project to analyze a business problem, develop hypothesis, and propose alternate solutions/strategies that involve a detailed understanding of programing and data science concepts.

**Professor’s Expectations of Students**

In general, you should assist the instructor and your fellow classmates in creating a positive, 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, playful, and collaborative environment and share each other’s views, insights, and analysis of assigned scenarios and readings covered in the course.
**Student's Expectations of the Professor**

In my role as your instructor, there are certain things you can expect from me including: a well-organized and engaging learning experience, response to emails within two business days, and feedback on all work submitted within 7-10 business days. The instructor will be as responsive as possible to requests for phone meetings as well.

**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>
</tr>
</thead>
<tbody>
<tr>
<td>90.00 - 100.00 Points</td>
<td>A</td>
</tr>
<tr>
<td>80.00 - 89.99 Points</td>
<td>B</td>
</tr>
<tr>
<td>70.00 - 79.99 Points</td>
<td>C</td>
</tr>
<tr>
<td>60.00 – 69.99 Points</td>
<td>D</td>
</tr>
<tr>
<td>Under 60.00 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 including exams, discussions, and a project.

**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>Assignments</td>
<td>25</td>
</tr>
<tr>
<td>Instructor and Peer Evaluations</td>
<td>10</td>
</tr>
<tr>
<td>Midterm</td>
<td>10</td>
</tr>
<tr>
<td>Final Exam</td>
<td>25</td>
</tr>
<tr>
<td>Quizzes</td>
<td>5</td>
</tr>
<tr>
<td>Project Proposal (including Project Plan) Presentation</td>
<td>5</td>
</tr>
<tr>
<td>Project Written Report</td>
<td>15</td>
</tr>
<tr>
<td>Project Final Presentation</td>
<td>5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100 pts</strong></td>
</tr>
</tbody>
</table>
**Project**
Specific instructions on the project outlines and expectations will be provided in a separate document. The project report should be at least 1800 words (not counting the title and reference pages, figures or tables, and appendices). You may use references, if any, from the library or online. There is no limit on the number of references used, however, make sure the sources are credible. Blogs, vendor sites, and sites like Wikipedia and Dictionary.com are not credible research sources. Do not use them as references.

You need to use in-text citations and a reference section (no footnotes or endnotes in this paper whatsoever; do not use the automated footnote or endnote function in Word). Full citations of all works should be included in the References section. Take care to properly attribute materials found in literature sources or on the Internet. Direct quotes from references should be kept to a minimum. Although your writing ability is not the primary focus of this course, your ability to communicate is essential to your future business success. Pay close attention to what you're writing. It may be wise to have another person read your work before submitting it for grading.

The paper will be graded according to the following criteria:

- Exhibits convincing range and quality of knowledge, having done appropriate research
- Identifies, thoughtfully analyzes and evaluates major points of view
- Convincing conclusions are drawn and demonstrate an understanding of investigative results as well as how to apply them
- Writing style is understandable and organized in explaining research investigation results and supporting conclusions

**Presentation**
Team members work collaboratively to create PowerPoint presentations to be shown during the team’s presentations for the final project. Please plan on posting the team’s PowerPoint presentation by the day listed on the schedule section. Project presentation should be given in 15-20 minutes. Every presentation will be followed by 5-10 minutes of a question/answer session. Include your team number and members’ names in the file name of the PowerPoint. Team presentations will be preloaded on a computer to save class time. Each team member must participate in the oral presentation.

Team presentations will be graded according to the following criteria:

- Organization and flow
- Completeness
- Length of presentation falls within the specified time range
- Identification and thoughtful analysis of major points of view
- Convincing conclusions are drawn and an understanding of investigative results is demonstrated
Exams
The midterm (10%) and the cumulative final exam (25%) will both be in-class. The objective of exams is to test participants’ grasp on the key concepts covered in the class; understanding of the programing and data science concepts, assignments, readings, and handouts. Absence from any scheduled exam will result in an exam grade of zero unless arrangements have been made with the instructor prior to the exam date.

Instructor and Peer Evaluations
Peer and instructor evaluations of participant participation will be conducted throughout the course. As part of the peer evaluation, each participant will rate the degree to which each member of the team fulfilled his/her responsibilities in completing the project and assignments. These ratings should reflect each individual’s level of participation, effort and sense of responsibility, not his or her academic ability.

Instructor evaluation of participants will be conducted according to the following criteria:

- Is well prepared in advance
- Actively contributes to discussions and asks questions
- Volunteers willingly and carries own share of the group’s responsibilities
- Adheres to the in-class computer/phone usage policy
- Actively participates in synthesizing and presenting the concepts covered in the class

Assignments
Participants will form teams of their own to do the programing and data science assignments. Participants, with complementary skills, will bring dynamic perspective to solve problems in teams. The detailed instructions for each assignment will be provided separately to the participants. The following criteria will be used to grade the assignments:

- Data are explored and analyzed in many different ways
- Good coding practices are followed
  - For example, code are functional, readable, commented, indented, and error free
- Calculations are detailed, accurate, and answers are correct
- Rigorous approach is used to solve a specific problem
- Reasoning of assumptions made in the problem solving is clearly listed
- Convincing conclusions are drawn and demonstrate an understanding of investigation results and how to apply it
- Writing style is understandable and organized in explaining investigation results and supporting conclusions
Quizzes
- Two in-class quizzes (individual level) will be conducted on the dates listed in the schedule. These quizzes will consist of multiple-choice questions and are intended to be taken “closed book.” There are no make-up quizzes. Absence from any scheduled quiz will result in a grade of zero.

Name Card
Please use your name card in every class. Not only does it help your instructor in identifying who you are but it also aids fellow participants and helps make classroom discussions more interactive.

Key Course Topics
- Introduction to Programming
- Introduction to RStudio and R Operations
- Introduction to Basic Data Science Techniques
- Cran R Data Structure
- Data Exploration, Summarization, and Visualization using R
- Introduction to Cran R Functions
- Flow Control and R Scripts
- High Level Introduction to Python and ther Tools for Data Science

In-class Computer and Phone Usage
In-class computer usage should be related to the material being covered in class. The use of a computer or cell phone for general Internet browsing, text-messaging, Facebooking, Twittering, or other social networking during class is extremely distracting to both the instructor and nearby participants. Please be sensitive and respectful of your classmates and instructor. If you must use any of the above communication means during the class session, please feel free to momentarily step out of the room or wait until the next break to do so.

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”.

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 participants 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 participant’s responsibility.

Attendance:

All participants are expected to attend classes regularly and promptly. However, formal attendance will not be taken. When you miss classes, your grades will suffer because you will miss important information and classroom interaction/discussion. Participants who miss classes will be held responsible for all in-class course content. Participants have the responsibility to take all scheduled exams and turn in all assignments by the announced date and time. The instructor reserves the right to deduct up to 50% for late assignments.

Participants who miss in-class sessions are responsible for completing all in-class course work with a 50 percent grade reduction.

An absence from an assignment/in-class/quiz coursework shall be considered “excused” if it occurs because of any of the following situations (valid documentation must be submitted for proof) and the instructor was contacted prior to the due date:

- Hospitalization of the participant or an immediate family member due to illness or accident.
- Death in the participant’s immediate family (ex., spouse, parents, guardians, siblings, children).
- Summons of the participant to appear for Jury Duty or before a court.
- Any other excuse that has been approved by the course coordinator.

The absentee shall submit documents supporting the above claims (hospital admission form, death certificate, or court subpoena, etc.) to the course coordinator. Upon satisfactory verification, the participant shall be allowed to take a make-up assignment or paper/essay in lieu of missed classroom interaction/discussion.

For participants receiving federal participant loans, any lack of engagement in the course may be treated as non-attendance and potentially impact access to participant loans in the future.

Adding / Dropping:

If you have questions about adding or dropping classes, please refer to the Registrar’s website.

Academic Integrity:

Plagiarism is academic misconduct that will result in a grade of zero on the plagiarized assignment. Your work may be reviewed using the online plagiarism monitoring software, Turnitin.com. Also, please note
that all documents submitted to Turnitin.com are added to their database of papers that is used to screen future assignments for plagiarism. 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 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. Participants 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 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 to 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 during classroom discussions.

**Classroom or Online Behavior:**

All participants 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 and projects may be submitted anytime up to and including the date due. Please review all information in this syllabus and the related “Course Activity Summary / Schedule” for all due dates for formally assessed work. If your work is not submitted on time, the instructor reserves right to deduct up to 50% of the grade value for tardiness depending upon the circumstances and appropriate communication between the participant and the instructor. Late work will be accepted only up to five days after the deadline.

**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 the 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. Click here for information on LiveSafe.

**Syllabus Changes:**

The instructor reserves the right to make changes as necessary to this syllabus. If changes are required during the term of the course, the instructor will immediately notify participants of such changes during in-class session and by individual email communication.

**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