FAMU-FSU College of Engineering
Department of Civil & Environmental Engineering
Statistical Applications for Engineers (EGN 5458)
Course Syllabus
Fall 2020

Course Number	Course Section	Course Title:	EGN 5458: Statistical Applications for Engineers
Credit Hours: 3.0			Prerequisites:
Semester: Fall 2020			
Time: ONLINE	Days: ONLINE		
Location: ONLINE			
Instructor Name: Eren Erman Ozguven			
Office Location: Room B313			
Office Hours: Tuesday – Thursday 11:00 AM – 12:30 PM or by appointment			
Office Phone Number(s): (850) 410-6146			
E-mail Address: eozguven@eng.famu.fsu.edu			
Teaching Assistant: Mohammadreza Koloushani, mk18h@my.fsu.edu, A 219			
Textbook: Applied Statistics and Probability for Engineers, Montgomery and Runger, 2018.			
Additional References:	Introduction to Mathematical Statistics and its Applications, Larsen and Marx, 2011. Probability and Statistics for Engineers and Scientists, Walpole, Myers and Myers, 1997. MATLAB for Engineers, Moore, 2014.		

Class Description – This class provides rigorous introduction to fundamentals of data analysis and statistics motivated by engineering applications with the use of modern software. Emphasis will be placed on real-world applications to engineering problems.

Class Objectives:

1. To grasp the complex probability, uncertainty and statistics concepts.
2. To demonstrate the ability to use this knowledge of probability and statistics while solving real-life engineering problems.
3. To become proficient in using modern software while analyzing data, regression analysis, estimation of distribution parameters, reliability analysis, and hypothesis testing for the engineering applications.
4. To demonstrate practical skill in the use of analysis and design methods.
5. Specific lecture objectives are presented before the presentation for each lecture as well as a summary providing important terms and concepts learned in the lecture at the end of the presentation.

Course Grading Policy	1. Homework Assignments: %30 2. Midterm 1: %15 3. Midterm 2: %15 4. Project: %15 5. Final Exam: %15 6. Discussion & Participation: %10
Topic Outline Plan	1. Introduction & Basic Concepts: 1 class 2. Mathematics and Probability: 2 classes 3. MATLAB (Environment & Functions & Matrices): 2 classes 4. Discrete Probability Distributions: 2 classes Midterm Exam 1 5. Continuous Probability Distributions: 2 classes 6. MATLAB (Plotting & Matrix Algebra): 2 classes 7. Descriptive Statistics: 1 class 8. MATLAB (Data Analysis): 1 class 9. Joint Probability Distributions: 2 classes 10. MATLAB (Interpolation & Simple Linear Regression & Fitting Toolboxes & Symbolic Mathematics): 2 classes Midterm Exam 2 11. Sampling Distributions and Estimation: 1 class 12. Statistical Intervals: 1 class 13. Hypothesis Testing & MATLAB Distribution Fitting and Curve Fitting Toolboxes: 2 classes 14. Goodness of Fit Tests: 1 class 15. MATLAB (Functions & Coding & Logical Functions & Selection, Sequence and Repetition Structures): 2 classes 16. Reliability: 1 class 17. Multiple Linear Regression: 1 class 18. Network Optimization: 2 classes Final Exam

Honor Codes and Policy of Cheating	Students are required to follow the code of their university. The relationship between students and instructors is based upon trust, and the continued maintenance of this trust is necessary for education to be successful. Students need to trust that the instructor has made appropriate judgments as to the content and structure of the course. Instructors need to trust that the work turned in by students represents their own effort. Violation of this trust undermines the educational process. Cheating is dishonest and it will not help anybody toward his/her final goal, which is to become a competent engineer. Cheating implies taking credit for somebody else's work. Cheating on exams and other acts of academic dishonesty will not be tolerated and will be dealt with at the instructor's discretion. Severe violations may (and will) be punished with a failing grade in the course. Please refer to student handbook of each university for more information. **FSU Academic Honor Policy:** The Florida State University Academic Honor Policy outlines the University's expectations for the integrity of students' academic work, the procedures for resolving alleged violations of those expectations, and the rights and responsibilities of students and faculty members throughout the process. Students are responsible for reading the Academic Honor Policy and for living up to their pledge to ". . . be honest and truthful and . . . [to] strive for personal and institutional integrity at Florida State University." (Florida State University Academic Honor Policy, found at http://fda.fsu.edu/academic-resources/academic-integrity-and- grievances/academic-honor- policy.) **FAMU Academic Honor Policy:** Please refer to FAMU General Catalog and university web site (http://www.famu.edu) for more information.
Students with Disabilities	The instructor will accommodate any student with a qualifying disability as defined in Section 504 of the Rehabilitation Act of 1973 and the Americans with Disability Act of 1990, and supported by a confirmation statement. FSU students with disabilities needing academic accommodation should: (1) register with and provide documentation to the Student Disability Resource Center; and (2) bring a letter to the instructor indicating the need for accommodation and what type. Please note that instructors are not allowed to provide classroom accommodation to a student until appropriate verification from the Student Disability Resource Center has been provided. This syllabus and other class materials are available in alternative format upon request. For more information about services available to FSU students with disabilities, contact the: Student Disability Resource Center 874 Traditions Way 108 Student Services Building Florida State University Tallahassee, FL 32306-4167 (850) 644-9566 (voice) (850) 644-8504 (TDD) sdrc@admin.fsu.edu http://www.disabilitycenter.fsu.edu. FAMU students with disabilities needing academic accommodations should: (1) register with and provide documentation to the FAMU Office of Special Programs: and (2) bring a letter to the instructor from OSP/SDRC indicating a need for academic accommodations. This should be done within first week of class. For more information about services available to FAMU students with disabilities, contact the: Center for Disability Access and Resources 667 Ardelia Court Florida A & M University Tallahassee,

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<tr><td></td><td>FL 32307, (850) 599-3180 (voice), (850) 561-2783 (TDD) CEDAR@famu.edu
http://www.famu.edu/index.cfm?cedar&OURSERVICES.</td></tr>
<tr><td>University Attendance Policy</td><td>Excused absences include documented illness, deaths in the family and other documented crises, call to active military duty or jury duty, religious holy days, and official University activities. These absences will be accommodated in a way that does not arbitrarily penalize students who have a valid excuse. Consideration will also be given to students whose dependent children experience serious illness.</td></tr>
<tr><td>General Course Policy</td><td>1. The due date for each exam, homework, and project reports will be announced in advance.
2. Scanned clear copies are required for any assignment, including homeworks, exams and projects. Please do not use your cellphone or tablet to take pictures of your work, and send it as part of your assignment. These assignments will not be accepted.
3. Each assignment (homework, exam or project) should be sent in a single PDF- or WORD-format document, please do not send each page, picture or any write-up separately.
4. Late assignments and project reports will not be accepted.
5. All the exams will be open book, open notes.
6. Homeworks, exams and projects will be individual efforts.
7. Final grading criteria:
<table><tr><th>Final grade scale**, %</th><th>Final grade</th></tr><tr><td>90-100</td><td>A</td></tr><tr><td>80-89</td><td>B</td></tr><tr><td>70-79</td><td>C</td></tr><tr><td>60-69</td><td>D</td></tr><tr><td><60</td><td>F</td></tr></table>**The course instructor reserves the right to relax or adjust the final grading scale.</td></tr>
<tr><td>Syllabus Change Policy</td><td>Except for changes that substantially affect implementation of the evaluation (grading) statement, this syllabus is a guide for the course and is subject to change with advance notice. Any revisions will be posted in the form of a revised syllabus on Blackboard.</td></tr>
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