STAT/INSY 5330/6330/6336 Course Syllabus

Course Title: Data Based Decision Making Using Six Sigma
Credit Hours: 3
Prerequisites: STAT 3610 or 3010 and INSY 4330 or equivalent


Instructor: Victoria Jordan
Office Hours: Dunstan #301A, T, Th 8:00-9:00 or by appt (444-8984)
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TA: Ozge Sumer
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1. Course Objective / Relationship to professional component and outcomes:
The "Six Sigma" course is designed to provide students with an overview of Six Sigma, Lean Six Sigma, and Design for Six Sigma as well as give them the tools and training necessary to pass ASQ's Green Belt Exam. Students will learn the background of Six Sigma, its applications in business, and why and how they will encounter Six Sigma after graduation.

The course covers the DMAIC elements of Six Sigma:
In the "Design" phase, students learn project definition and the roles of team members.
- The "Measure" phase covers process mapping, cause and effect tools, measurement system analysis, and capability analysis.
- For the "Analyze" phase, students review graphical techniques, FMEA's, confidence intervals, and hypothesis testing as they relate to Six Sigma.
- In the "Improve" phase, students are introduced to correlation and regression and DOE, specifically using a "Statapult" example.
- In the "Control" phase, students are introduced to the concept of control, review SPC, and learn the relationship between these tools and the Six Sigma process improvement effort. Also covered in this phase are mistake proofing, and project closure.

Course notes (to be completed in class) will be available each week on Web-CT. Throughout the entire course, examples from manufacturing and service businesses are used.
2. Attendance and Grading Policy:
Class meets Tuesdays and Thursdays 9:30-10:45 am from January 10 until April 26. There will be no class the week of March 27. Class notes will be posted on the web by Sunday night prior to each week of class and should be brought to class. Homework will be assigned once a week as a guide to help you prepare for the exams, but will not be graded.

There will be two tests and a comprehensive final exam. You will receive at least one week notice before exams, but tentative schedule is Exam 1 – Feb 9 and Exam 2 – Mar 21. The final exam is scheduled for Friday, May 5, 2:00-4:30 pm. Permission for any make-up exam may be granted in only unusual situations such as (1) death in family and (2) hospitalization which requires a doctor’s note. (A special make-up exam (if allowed) will be given during the final examination period.) Emergencies need to be addressed with the instructor as soon as possible.

Grading Scale:
Grades will be weighted as follows:

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<th>For 5330:</th>
<th>For 6330/6336:</th>
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<tbody>
<tr>
<td>Exam 1</td>
<td>30%</td>
<td>25%</td>
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<td>Exam 2</td>
<td>30%</td>
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<tr>
<td>Final Exam</td>
<td>40%</td>
<td>30% Final Project: 20%</td>
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Grades will be calculated using the above weights and a 10-point grading scale:

90-100 = A  
80-89.99 = B  
70-79.99 = C  
60-69.99 = D  
<60 = F

There will be no curve, no rounding, and no exceptions.

3. Etiquette Policy:

- Please respect your instructor and fellow students by turning your cell phone off during class. If your phone rings in class, you will be asked to take the call outside and not return to class.
- Please make every effort to be on time to class.
- Please do not wear hats or ball caps in class unless you have medically related hair loss.
- Please do not wear pajamas to class.
- Class participation is encouraged - ask questions, provide examples that you are familiar with, show some interest!
4. Special Accommodations for Students with Disabilities:
Students requiring special accommodations should make an appointment to discuss the accommodation memo during my office hours as soon as possible. If scheduled office hours conflict with classes, please arrange an alternate appointment time. If you do not have an accommodation memo, but need special accommodations, please contact the Program for Students with Disabilities, 1244 Haley Center, 334-844-5943 (Voice T/O)

5. Academic Honesty:
All portions of the Auburn University student academic honesty code (Title XI1) found in the Tiger Cub will apply to this class. All academic honesty violations or alleged violations of the SGA Code of Laws will be reported to the Office of the Provost, which will then refer the case to the Academic Honesty Committee. Violations include, but are not limited to:

- **Cheating on an examination.** This includes such things as copying from another’s paper, using unauthorized notes, calculators, etc., or giving or receiving unauthorized aid, such as trading examinations, whispering answers, passing notes, or using electronic devices to transmit or receive information.

- **Plagiarism.** This is using someone else's work without giving credit. It is, for example, using ideas, phrases, papers, laboratory reports, computer programs, data - copied directly or paraphrased - that you did not arrive at on your own. Sources include published works such as book, movies, web sites, and unpublished works such as other students' papers or material from a research service. In brief, representing someone else's work as your own is academically dishonest. *The risk of plagiarism can be avoided in written work by clearly indicating, either in footnotes or in the paper itself, the source of any major or unique idea or wording that you did not arrive at on your own. Sources must be given regardless of whether the material is quoted directly or paraphrased. Copying another student's assignment and putting your name on it is plagiarism.*

- **Unauthorized collaboration.** This is working with or receiving help from others on graded assignments without the specific approval of the instructor. *If in doubt, seek permission from the instructor before working with others.* Students are encouraged to learn from one another: Form study groups and discuss assignments, but each assignment must be individual work unless specifically stated and turned in as a group assignment.

  *You are encouraged to talk to one another about your assignments, however, all assignments must be done by the student(s) whose name is (are) on it!*

- **Multiple submission.** This means using the same work to fulfill the academic requirements in more than one course. *Prior permission of the instructors is essential.*
6. Justification for Graduate Credit
Students learn advanced concepts in statistical analysis using statistical software, Minitab. They also must complete a Six Sigma project using the DMAIC process and statistical analysis tools learned in class. This is a comprehensive project that is to be worked on throughout the semester and demonstrates a level of understanding beyond the basic applications in class and an ability to apply the tools properly in their work and/or research.

7. Special Considerations for COE Distance Education Courses
**Methods of Delivery:** The AU College of Engineering (COE), through its Graduate Outreach Program (GOP), offers selected graduate-level course work to off-campus students by various means, primarily streaming video delivered via the Internet or DVDs. Standard VHS video tape can also be produced. On-campus classes are held in specialized classrooms and are recorded each class day. Streaming video is available within a few minutes. DVDs (or tapes) are shipped the same day. Handout material made available to on-campus students is posted on the Internet or sent to off-campus students along with the tapes or DVDs.

**Instructor/Student Communication:** Typically, students and professors communicate via telephone and e-mail, and by exchanging documents via various means. Internet sites and discussion groups may be used to facilitate communication among the students as well as with the instructor.

**Exam/Test Security:** All off-campus students are required to have test proctors. These proctors serve on behalf of the instructors to maintain the integrity of the program. Proctors must be approved at the departmental level and by the Director of the GOP. Ideally, the proctor is someone in the human resources, personnel, or training and development section of the company, or agency, where the student is employed. On occasion, other personnel ranking at least one administrative level above the student serve as the proctor. In special cases, local librarians, or college testing services personnel may serve as the proctor. Responsibilities of proctors are clearly defined and, prior to approval, all proctors must agree to abide by rigorous rules related to the receipt, handling, administration, and return of tests and examinations.