SYE3400 – Engineering Optimization I
Spring 2016
Mon/Wed 9:30-10:45 M135

Instructor: Dr. Christina R. Scherrer, Associate Professor
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Office: M 121
Phone: 678-915-5413
Office hours: Mondays 10:45-12:15, Wednesdays 10-2, 3:15-3:45 and by appointment.

Electronic Communications: The best way to reach me between class periods is by the e-mail address above. I will reply as quickly as possible to questions sent over e-mail. If you would like to meet with me on campus, it is best to e-mail me for an appointment to be sure I am available to help you. Those with appointments will be given priority over individuals who do not have appointments. I am also willing to meet students in our on-line Blackboard Collaborate classroom throughout the week, as needed – just e-mail me for an appointment.

It is essential that you check your Kennesaw and D2L e-mails consistently, as that is how I will communicate with you!

Email Response Time: I commit to answering all emails within 24 hours, unless I let you know in advance of travel prohibiting me from doing so (or if I have an emergency). If for some reason you do not hear from me within 24 hours, please verify the e-mail address and re-send the e-mail. I try to reply to e-mail much quicker, but do realize that if you procrastinate or if you are unable to find the time to work on an assessment until just before the assignment is due then I am not responsible for answering your last minute questions just before the submission deadline.

Important Announcements: Important announcements will be made using the “News” tool in D2L Brightspace. If the announcement is urgent (such as canceling a class with short notice), I will also e-mail students at their KSU e-mail address.

Course Prerequisite: MATH 3260 Linear Algebra (can be taken concurrently) grade of “D” or better and Engineering Standing

Course Materials:

D2L Brightspace is the official online learning environment for the course provided by Kennesaw State University through the University System of Georgia. The portal is free, and you can gain access to the course by logging in at http://vista.kennesaw.edu/ using your NetID and password. In Brightspace the course syllabus, course schedule, hand-outs, class notes (occasionally), and class worksheets will be posted. You should either download these files to your computer or print them prior to class so that you will be prepared to participate. You may have to configure your browser to allow pop-ups to view the content.

Course Description
This course provides formulation and solution of deterministic models of operations research including linear, integer, dynamic, and nonlinear programming, transportation, assignment, shortest route, and minimum spanning tree problems to address different types of applications in the areas of engineering design, production planning and scheduling, inventory control, transportation and logistics.
Course Learning Outcomes
Upon successful completion of the course, students will be able to:

1. determine when a particular operations research model is appropriate based on a problem description,
2. identify the stakeholders, decision makers, objectives, variables and constraints of a practical engineering problem,
3. formulate a valid operations research model, solve the model with a computerized optimization package, and interpret the results of the model, and
4. make recommendations to improve system operations based on an operations research analysis and communicate those recommendations in reports and/or presentations.

Participation/Attendance: Attendance is STRONGLY RECOMMENDED for this course. Students who miss class for any reason are NOT exempt from the material covered during the class period(s) the student misses.

GRADING SCHEME
Your final grade in this course will be determined using the following weights for each component of this course:

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight</th>
<th>Grand Total</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXAM I</td>
<td>20%</td>
<td>90-100</td>
<td>A</td>
</tr>
<tr>
<td>EXAM II</td>
<td>20%</td>
<td>80-89.9</td>
<td>B</td>
</tr>
<tr>
<td>FINAL EXAM</td>
<td>20%</td>
<td>70-79.9</td>
<td>C</td>
</tr>
<tr>
<td>HOMEWORK &amp; QUIZZES</td>
<td>15%</td>
<td>60-69.9</td>
<td>D</td>
</tr>
<tr>
<td>MINI-CASE &amp; PROJECT</td>
<td>25%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grand Total</td>
<td>100%</td>
<td>59.9 and below</td>
<td>F</td>
</tr>
</tbody>
</table>

- **Exams:** All exams will be open book/open notes and are not officially cumulative. (Topics in this course do build upon each other, so they are cumulative in that sense.) You may not collaborate with anyone during the exam period.
- **Homework Assignments:** Sets of practice problems will be provided. These will be graded and are intended to help you prepare for the exams and the project. The lowest homework grade will be dropped. You are welcome to work with others on the homework assignments, but you must turn in YOUR OWN work. It is not acceptable to copy someone else’s solutions, or any solutions you have obtained.
- **Mini-case:** In preparation for the project, each team of 2 students will complete a mini-case from the textbook and write the problem and solution in a formal technical support. Details are in the “Mini-case and Project” module in D2L. Both students must contribute to the project and submit their joint original work. Any sources must be cited.
- **Project:** A course project, completed in teams of 2, is required. Generally, successful projects involve application of deterministic operations research principles to some type of “real-world” problems. Your project will be graded on the basis of readability of the report and technical accuracy. These reports should be written as a formal technical report to include executive summary, section headings, proper table and figure headings, references, appropriate appendices, etc; totaling between 8 and 12 pages (see “Technical Report Template” posted on D2L). Details are in the “Mini-case and Project” module in D2L. Both students must contribute to the project and submit their joint original work. Any sources must be cited.
**Turnitin for Plagiarism** By taking this course, you agree that all required papers may be subject to submission for textual similarity review to Turnitin.com. All submitted papers will be included as source documents in the Turnitin.com reference database solely for the purpose of detecting plagiarism in other papers. Use of the Turnitin.com service is subject to the Terms and Conditions of Use posted on the Turnitin.com site (http://www.turnitin.com/static/usage.html).

**Late Assignment Policy** The instructor does NOT accept late assignments or quizzes. Homework is due at the START of class, or submitted prior to class in Dropbox. The Dropbox will close at 9:30AM. Assignments submitted in-class will not be accepted past 9:35AM. Consideration will be given when conflicts arise with official University functions (e.g., travel for athletes, debate team, etc.). You must notify the instructor of such conflicts in advance.

**Technology Skills Needed:** All students are expected to be familiar with:
1. Connecting to the internet.
2. Logging in to the course website (i.e. D2L Brightspace).
3. Using internet browsers (e.g., Internet Explorer, Firefox, Chrome, etc.).

**Withdrawal**

Students who find that they cannot continue in college for the entire semester after being enrolled, because of illness or any other reason, need to complete an online form. To completely or partially withdraw from classes at KSU, a student must withdraw online at www.kennesaw.edu, under Owl Express, Student Services.

The date the withdrawal is submitted online will be considered the official KSU withdrawal date which will be used in the calculation of any tuition refund or refund to Federal student aid and/or HOPE scholarship programs. It is advisable to print the final page of the withdrawal for your records. Withdrawals submitted online prior to midnight on the last day to withdraw without academic penalty will receive a “W” grade. Withdrawals after midnight will receive a “WF”. Failure to complete the online withdrawal process will produce no withdrawal from classes. Call the Registrar’s Office at 770-423-6200 during business hours if assistance is needed.

Students may, by means of the same online withdrawal and with the approval of the university Dean, withdraw from individual courses while retaining other courses on their schedules. This option may be exercised up until the W date on the Academic Calendar (on Registrar’s website). Failure to withdraw by the W date will mean that the student has elected to receive the final grade(s) earned in the course(s). The only exception to those withdrawal regulations will be for those instances that involve unusual and fully documented circumstances. In these rare cases, the policies of the university regarding hardship withdrawals will be strictly followed.

If any remaining coursework cannot be completed by the last class day, the instructor of this course will only consider assigning an incomplete grade to a student with an unusual and fully documented circumstance (must be verified by department chair or college dean), who is passing the course within two weeks of the last class day. If the final exam is among the assignments, the student’s grade will remain an “F” until it is taken, after which a grade change form will be submitted to the registrar if necessary, once the other agreed upon conditions are met.

**KSU Diversity Vision Statement**

It is our vision to create a strong multicultural and diverse educational environment at KSU in order to increase student satisfaction and to promote an understanding and awareness of people
from various backgrounds upon graduation. In this way, KSU students will be educated for, and can effectively compete in the global society.

**Course Enrollment Status Statement**

Students are solely responsible for managing their enrollment status in a class; nonattendance does not constitute a withdrawal.

**Student Support Resources – Strategies for Success**

- Accessibility Statements or VPAT for Technologies: [https://softchalkcloud.com/lesson/serve/jV10GKPfztZwQn/html](https://softchalkcloud.com/lesson/serve/jV10GKPfztZwQn.html)
- Academic and Student Services: [http://www.kennesaw.edu/currentstudents.php](http://www.kennesaw.edu/currentstudents.php)

**Other Technical Resources**

- For D2L Technical Support: [http://uits.kennesaw.edu/](http://uits.kennesaw.edu/)
- Help Desk: studenthelpdesk@kennesaw.edu, phone 470-578-6999
- Walk-in Help: Marietta campus - bottom floor H-building just outside the double doors on the East side.
- Personal Laptop/Smart Phone Help: [http://uits.kennesaw.edu/](http://uits.kennesaw.edu/) or walk-in.

**Academic Honesty/Integrity/Ethics Statement**

*If you are unclear in any way of what is meant by academic misconduct, then you must contact me prior to the exam or assignment. I will be happy to clarify any misconceptions you may have regarding plagiarism and this may prevent you from receiving a “0” on your exam or assignment.*

The high quality of education at Kennesaw State University is reflected in the credits and degrees its students earn. **All assignments that take place in and out of the classroom must be your own work and original for this course.** The protection of these high standards is crucial since the validity and equity of the University's grades and degrees depend upon it. Any student found to have violated any KSU academic honesty regulation after a hearing before a university hearing panel or before the Vice President for Student Success and Enrollment Services (or his/her designee) shall be suspended for at least one semester, unless the student persuades the deciding body that the circumstances of his or her behavior substantially mitigate the gravity of the violation. These regulations are designed to assist students in (1) developing appropriate attitudes about, and (2) understanding and following the university’s standards relating to academic honesty. The regulations protect students by helping them avoid committing infractions that may compromise the completion of their KSU degrees or damage their reputations.
**Student Conduct Pledge/Statement:** As a member of the Kennesaw State University community of scholars, I understand that my actions are not only a reflection on myself, but also a reflection on the University and the larger body of scholars of which it is a part. Acting unethically, no matter how minor the offense, will be detrimental to my academic progress and self-image. It will also adversely affect all students, faculty, staff, the reputation of this University, and the value of the degrees it awards. Whether on campus or online, I understand that it is not only my personal responsibility, but also a duty to the entire KSU community that I act in a manner consistent with the highest level of academic integrity. Therefore, I promise that as a member of the Kennesaw State University community, I will not participate in any form of academic misconduct.

**Types of Academic Misconduct:**

1) **Cheating:** Receiving, attempting to receive, knowingly giving or attempting to give unauthorized assistance in the preparation of any work required to be submitted for credit (including examinations, laboratory reports, essays, themes, term papers, etc.) is considered cheating, as is engaging in any behavior that a professor prohibits as academic misconduct in the syllabus or class discussion. Unless specifically authorized, using and/or having access to electronic devices during an examination, quiz, test or other assessment is automatically considered cheating, regardless of the student’s reason for using/accessing the device;

2) **Plagiarism:** Including direct quotations from other sources into work required to be submitted for credit without indicating them as such by quotation marks, block quotes or other appropriate formatting. Incorporating the work of someone (e.g. ideas, theories, data, figures, graphs, programs, electronic based information, illustrations, etc.) into a paper or project without due acknowledgement;

3) **Self-Plagiarism:** Submitting any work for credit which was not authored specifically and originally for the assignment in question without the prior permission of the professor receiving that assignment. Most commonly, this means submitting the same, or substantially the same, paper or other assignment for credit in more than one class;

4) **Misrepresentation and/or Falsification:** Knowingly providing false information in completing University forms or applications (including admissions forms, scholarship applications, time sheets, false or counterfeit transcripts, etc.) or in any work submitted for credit. This includes providing fabricated/altered documents to substantiate an excused absence (such as to meet attendance requirements or have the chance to make-up a missed exam). Signing in for another student or having another individual sign in on a student’s behalf on an attendance sheet also constitutes a violation of this code section.

5) **Unauthorized Access to University Materials:** Taking, attempting to take, stealing or in any unauthorized manner otherwise procuring, gaining access to, altering or destroying any material pertaining to the conduct of a class (including tests, examinations, grade change forms, grade rolls, roll books, laboratory equipment, University grade records in written or computerized form, etc.).

6) **Malicious/Intentional Misuse of Computer Facilities/Services:** Maliciously or intentionally misusing university-controlled computer facilities and services. This includes violations of state and federal laws (e.g. copyright violations, unauthorized access to systems, alteration/damage/destruction, or attempted alteration/damage/destruction, use for profit, etc.) or a department's rules for computer usage (e.g. account violations, damage, or destruction of the system and/or its performance, unauthorized copying of electronic information, use of threatening or obscene language, etc.).
7) Malicious **Removal, Retention or Destruction of University Resource Materials:** Misplacing, taking, destroying any item or part of an item belonging to or in the protection of the University (or the attempt thereof) with the intention of bringing about an undue disadvantage in the academic pursuits of other Kennesaw State University students.

These examples of academic dishonesty shall not be construed to be comprehensive, and infractions will be dealt with on an individual basis according to university policies and procedures. It is the obligation of each student to assist in the enforcement of academic standards.

*See: The KSU Student Code of Conduct at KSU Codes of Conduct-2015.pdf*

**Enforcement:** This policy is strictly enforced. Please note, *I reserve the right to select any paper and/or assignment that are turned in for a grade for plagiarism review. Plagiarism review consists of running your paper/assignment through various search engines and databases at my disposal in order to check for “borrowed” or “bought” information. Students will be required to use TurnItIn.Com to have their papers reviewed for plagiarism.* If you are found in violation of academic dishonesty, then you will be subject to the enforcement policies and procedures, as outlined by the University and the Department.

**Disruption of the Classroom**
Faculty members are responsible for maintaining discipline in the classroom setting to the extent that all students in that class have an opportunity to participate in the learning process. Free exchange of ideas through appropriate dialogue is a necessary and important part of the learning process. Outside the classroom, other areas of the campus provide support services, which are also important to the total learning process. Sometimes the faculty or staff member may be confronted with a situation where the conduct of a particular student or students is so inappropriate that it impedes the natural and necessary learning process. All incidents of disciplinary violations of the KSU Student Code of Conduct outside of residence hall property shall be reported to the Department of Student Conduct and Academic Integrity (SCAI).

- If the situation is not imminently dangerous, the faculty or staff member may control the immediate situation by requiring the student(s) to meet specific criteria (not speaking during the remainder of the class period, leaving the classroom or office area immediately, etc.), or the faculty member may choose to dismiss the class for the remainder of the period to avoid a confrontation.
- In situations where a student's conduct is both disruptive and poses imminent danger to the health and safety of himself/herself or others, immediately contact the KSU Police at *(470) 578-6666*. The responding officer at the time of notification shall remove the student from the area immediately.
- Immediately report the incident to the SCAI Dept. and/or the Office of the Dean for Students and for possible handling under the "Interim Suspension" policy, described in Section III below.
- The SCAI officer will investigate the incident and will advise as to the appropriate course of action in each situation.
- See [http://scai.kennesaw.edu/students/general-info/conduct-violation.php](http://scai.kennesaw.edu/students/general-info/conduct-violation.php) for more information.
Student Records/FERPA
Kennesaw State University adheres to the Family Educational Rights & Privacy Act of 1974 – FERPA. See the following link for more information:
http://www.usg.edu/information_technology_handbook/section9/tech/9.5_privacy_and_security

Student Rights and Responsibilities
Students of Kennesaw State University are entitled to an environment that is conducive to learning and individual growth. To this end, students enrolling at Kennesaw State University assume a responsibility to abide by the policies and regulations expressed in this section. By doing so, students may fulfill their responsibilities and enjoy the exercise of their own rights while also respecting the rights of others. All rights and responsibilities may be found in the University Catalog at catalog.kennesaw.edu.

Sexual Misconduct Policy
Kennesaw State University adheres to KSU’s policy prohibiting sexual misconduct both in and out of the classroom. Questions about this policy should be directed to the KSU Equal Employment Opportunity (EEO) and Title IX officer by telephone at (470) 578-2614. You may also visit the University’s EEO website http://www.kennesaw.edu/eoo/index.html for more information.

Americans with Disabilities Act (ADA) – Support Services
In compliance with applicable disability law, qualified students with a disability may be entitled to reasonable accommodation. Any student with a documented disability (hidden or visible) needing academic adjustments, including classroom or test accommodations is requested to notify the instructor within the first two weeks of the course. Verification from KSU disAbled Student Support Services is required. All discussions and documentation will remain confidential.

Disabled Student Support Services
James V. Carmichael Student Center Addition – 2nd Floor, Suite 267
470.578.6443
http://www.kennesaw.edu/stu_dev/dsss/prospect.shtml
Please visit the Student Disabilities Services website at www.kennesaw.edu/stu_dev/sds for more information

Copyright Law
Kennesaw State University adheres to USG’s policy to respect the right of copyright. Holders and comply with copyright laws as set forth in the United States Copyright act. For more information, see the following link to USG’s policy: http://www.usg.edu/copyright/

Web Accessibility
Kennesaw State University follows the guidelines of the Universal Design for Learning standard of web accessibility. Faculty use Word, PDF, and HTML formats when communicating electronic information to students whenever possible and appropriate in light of the goals of the course. Faculty are trained to use Web Accessibility Evaluation tools, e.g., WAVE (www.wave.webaim.org), and make adjustments as possible and appropriate in light of the goals of the course. For free resources available to students on web accessibility, please visit the Web Accessibility Resources page at the Distance Learning Center:
http://www.kennesaw.edu/dlc/facultyresources/index.php#