Course Information for Math 308

Instructor: Tamon Stephen
Meeting Time: Tuesday 2:30–3:20 and Thursday 2:30–4:20 in SUR 5320
Tutorial Time: Tuesday 3:30–4:20 in SUR 5320
Office: 14-265 Central City Tower
Office Phone: 778–782–7429
E-mail: tamon@sfu.ca
Web page: `http://www.math.sfu.ca/~tstephen/Teaching/1081_Math308/`
Office Hours: Wednesday 1:30–2:20 and Thursday 10:30–11:20 (tentative)
Text: Linear Programming and its Applications by J. Strayer
Grading: 15% Homework, 35% Midterm, 50% Final.

1. **Syllabus.** We will cover the first five chapters of the text.
   Topics that we plan to cover include:

   Linear Programming: Examples - formulation of optimization problems as linear programming. Problems. Canonical forms for linear programming problems. Polyhedral problems. Convex sets.

   The Simplex Algorithm: Tucker Tableaus. The simplex algorithm for maximum tableaus. Minimum tableaus. Cycling.

   Noncanonical Linear Programming Problems: Unconstrained variables. Equations as constraints.

   Duality Theory: The dual simplex algorithm. Complementary slackness. The duality theorem.

   Application: Matrix Games: Linear Programming formulation of matrix games. The von Neumann minimax theorem.

2. **Homework.** There will be six homework assignments during the term. Late homework will not be accepted.
   You are encouraged to talk with each other, the teaching assistants and the instructor about the homework, but you must write up the solutions yourself, using your own words.

3. **Exams.** Books, notes and calculators cannot be used on these tests. Students **must** plan to take the tests at their scheduled times.
   The tentative dates and times for the tests are:

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   Midterm: Thursday, February 7th, 2:30-4:20 AM  (in class)
   Final: Friday, April 17th 3:30-6:30 PM
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4. **Reading.** There will be assigned reading. Please do it.

5. **Tutorials.** Following Tuesday classes, there will be one hour tutorials conducted by a Teaching Assistant. They will focus on the weekly homework. The tutorial will not meet the first week of classes (and may not meet certain other weeks).

6. **Materials on the Web.** Course information will be posted on the Math 308 WebCT page, to which you should have access during the term. See: `http://webct.sfu.ca`. Some basic course information will also be available on a public Web page: `http://www.math.sfu.ca/~tstephen/Teaching/1081_Math308/`

7. **Drop Dates.** The drop date for students to avoid getting a WD on their transcript is **Friday, January 25th**. The final drop date for students is **Friday, February 8th**. SFU maintains a list of important deadlines for students at: `http://students.sfu.ca/deadlines/`.

8. **Reserve Books.** There is a copy of the course text on reserve at the SFU Surrey library. There are also two text books that cover similar material in their own way - *Linear Programming* by Chvátal and *Linear Programming and Network Flows* by Bazaraa, Jarvis and Sherali.

   There are also three books that develop linear programming in the context of applications. These are *Introduction to the Mathematics of Operations Research* by Hastings, *Operations Research Methods* by Bose, and *Optimization in Operations Research* by Rardin. These books give nice examples of how mathematics is used.

9. **Industrial Mathematics and Operations Research.** Linear Programming is a powerful tool that is used in many applications in business and industry. As such, it is a key course in the Industrial Mathematics program offered at SFU, and is particularly central to the Operations Research option. Please see the instructor if you are interested in finding out more about this program.

10. **Questions.** Questions are encouraged in class and out.

Have a great term!