INSTRUCTOR: Rex K. Kincaid
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Office Hours—Monday 2-4 p.m. Thursday 1:30-3:30 p.m. or by appointment

PREREQUISITES: CSci 520 and CSci 628—C programming and linear programming or the equivalent.

DESCRIPTION: This particular incarnation of CSci 618 is focused on deterministic scheduling theory and the visual display of quantitative information. The problem of scheduling several tasks over time, including the topics of measures of performance, single-machine sequencing, flow shop scheduling, the job shop problem, and priority dispatching. Integer programming, dynamic programming, and heuristic approaches to various problems are presented.

TOPIC OUTLINE:
week 1: Ch. 1-2 of STAS examples, role, and classification of scheduling problems
week 2: Ch. 3 of STAS single machine: simple dispatching rules
week 3: Ch. 3, App. D,E of STAS single machine: DP and approximations
week 4: Ch. 3, App. B of STAS single machine: DP and approximations
week 5: Ch. 1-2 of TVDOI graphical excellence and integrity
week 6: Ch. 2-3 of TVDOI graphical integrity and sophistication
week 7: Ch. 5 of STAS parallel problems: minimizing schedule length
week 8: Ch. 5 of STAS parallel problems: precedence constraints
Exam
week 9: Ch. 5 of STAS parallel problems: average completion problems
week 10: Ch. 4-5 of TVDOI data ink and chart junk
week 11: Ch. 6 of STAS flow shop scheduling
week 12: Ch. 7 of STAS job shop scheduling
week 13: Ch. 6-7 of TVDOI multifunctioning graphical elements
week 14: Ch. 8-9 of TVDOI data density and graphical design

REFERENCES:
HOMEWORK: Homework emphasizing and extending lecture material will be assigned and graded. Late homeworks are not accepted except in the case of an unanticipatable absence (e.g. serious illness, death in the family, loss of your favorite DVD etc.).

GRADES: There will be a midterm exam (30%) and a final exam (40%). Both exams will be “almost closed book,” i.e. students may use 8.5 by 11 inch sheets of notes. Such notes may be on both sides of the paper, but they must be in orginal pen or pencil, not photo-copies. You may use 2 such pages for the midterm and 4 pages for the final exam. Homework assignments (and perhaps a quiz or two) will be given periodically throughout the semester and together will count 30% of the final course grade. Some homework assignments may involve programming and the use of optimization software. Our final exam is scheduled for Thursday, May 5 from 9-noon.