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Case

Kelly's Class Scheduling

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Kelly is a senior majoring in finance at Smith University with one more semester left to go. After a graduation audit, she was told she has five more courses she needs to take: Business Strategy (MGT 490), International Finance (FIN 358), one service-learning course, and any two finance elective courses. A service-learning course is a requirement at the university that has a community service component. Many of the service-learning courses are offered by the Computer Information Systems Department, and Kelly would like to take one of those. In particular, two courses she finds interesting are Intergenerational Computing (CIS 102T), which involves teaching senior citizens how to use the computer, and Web Design for Nonprofit Organizations (CIS 102W). After looking at the finance course offerings, she noticed four potential finance elective courses: Data Analysis in Finance (FIN 325); Risk Management (FIN 352); Options, Futures, and Swaps (FIN 356); and Fixed Instruments and Markets (FIN 359). Kelly would like to avoid morning classes because her internship requires her to work a few hours most weekday mornings.

As she makes up her schedule, Kelly would like to keep in mind her priorities. Her priorities are first, the content of the course, second, the reputation of the instructor, and third, the timing of the course. She decided she will assign a rating between 1 and 5 to each course section under consideration. From the online class schedule, she has made a list of course sections offered, as shown in Table 1. All of the courses have at least two sections. Some sections meet once a week for three hours, and some meet twice a week alternating between one-hour and two-hour periods. An "hour" at Smith University is 55 minutes long. Rating the course sections, Kelly took into account three factors: content, instructor, and timing. The rating is the weighted average of the three factor ratings. She rated the content of the course based on her interest in it, using a scale from 1 (poor) to 5 (extremely interested). The reputation of the instructor is also a value from 1 to 5, coming from published student comments (http://www.ratemyprofessors.com) and word of mouth from classmates. The timing of the course is also a number from 1 to 5, and takes into account things such as the times that most of the senior class gets together in the common rooms to watch shows such as *Glee*, *The Walking Dead*, and *The Big Bang Theory*.

Kelly wonders how to use this information to obtain a good schedule.

Follow-Up Assignment: Make Your Own Schedule

The purpose of this assignment is to create a good schedule for your next semester. If you will not be taking classes next semester, you can create a hypothetical schedule with the courses you are taking now as if you were going to repeat your current semester during the upcoming semester.

Part 1. Formulate the problem and collect data.

- What is important to you as you make up your schedule? If there is more than one important consideration, see if you can rank them. (For example, quality of instructor, time of the day, course content, etc.) What are the constraints? For example, no class on a certain day of the week, at least one day off from classes, work schedule, time of day, etc.
- What are the courses you need to take next semester?

Table 1 Available Courses Data

Course	Title	Meeting time (s)	Rating
MGT 490	Business Strategy	M 6–8:45 P.M.	4.3
MGT 490	Business Strategy	T 6–8:45 P.M.	3.8
MGT 490	Business Strategy	W 6–8:45 P.M.	3.5
MGT 490	Business Strategy	F 6–8:45 P.M.	3.5
MGT 490	Business Strategy	M 1:25–2:20 P.M. W 1:25–3:15 P.M.	4.6
MGT 490	Business Strategy	T 1:25–3:15 P.M. Th 1:25–2:20 P.M.	2.7
FIN 358	International Finance	W 6–8:45 P.M.	3.5
FIN 358	International Finance	T 1:25–3:15 P.M. Th 1:25–2:20 P.M.	3.3
CIS 102T	Intergenerational Computing	W 2:30–5:15 P.M.	4.4
CIS 102T	Intergenerational Computing	Th 2:30–5:15 P.M.	3.1
CIS 102W	Web Design for Nonprofit Organizations	T 6–8:45 P.M.	3.7
CIS 102W	Web Design for Nonprofit Organizations	W 2:30–5:15 P.M.	3.5
FIN 325	Data Analysis in Finance	Th 6–8:45 P.M.	3.0
FIN 325	Data Analysis in Finance	M 1:25–2:20 P.M. W 1:25–3:15 P.M.	3.7
FIN 352	Risk Management	M 6–8:45 P.M.	3.6
FIN 352	Risk Management	M 1:25–3:15 P.M. W 1:25–2:20 P.M.	3.9
FIN 356	Options, Futures and Swaps	T 6–8:45 P.M.	3.2
FIN 356	Options, Futures and Swaps	T 1:25–3:15 P.M. Th 1:25–2:20 P.M.	3.4
FIN 359	Fixed Instruments and Markets	M 6–8:45 P.M.	3.0
FIN 359	Fixed Instruments and Markets	W 6–8:45 P.M.	3.5

- What are the courses you might take next semester if they fit in your schedule, but could take later?
- List all the possible course sections that you could take from the online class schedule.
- Assign a rating to each of these sections. The rating would depend on the factor(s) that are important to you. If you are indifferent, you can assign the same rating (say, 1) to each section.

Part 2. Formulate the model and solve.

- Determine your optimal class schedule by following the method used in the case analysis. Specifically, using your own data from part 1, build a model in Excel and solve with Excel Solver.

Part 3. Summarize the solution.

- What is the optimal schedule? Make a list of the courses with the meeting times.
- Make an alternate schedule that you might use if one of the course sections in your optimal schedule is closed.

Part 4. Evaluation.

- Do you plan to use the schedule you came up with from this method? Why or why not?