1.Objective function

For Ci,j and xi,j where i=(1,2,3,4,5,6,7,8,9,10) j=(1,2,3,4,5,6,7,8)

Ci,j\*xi,j

C1,1\*x1,1+c1,2\*x1,2+c1,3\*x1,3+c1,4\*x1,4…c10,5\*x10,5+c10,6\*x10,6+c10,7\*x10,7+c10,8\*x10,8

2.Constraints:

For each time slot, no more than one course can be taken:

Σ𝑥𝑖𝑗 ≤1 (𝑖=1,,,10)

8𝑗=1

i-timeslot, j=course

x1,1+x1,2+x1,3+x1,4+x1,5+x1,6+x1,7+x1,8<=1

x2,1+x2,2+x2,3+x2,4+x2,5+x2,6+x2,7+x2,8<=1

x3,1+x3,2+x3,3+x3,4+x3,5+x3,6+x3,7+x3,8<=1

x4,1+x4,2+x4,3+x4,4+x4,5+x4,6+x4,7+x4,8<=1

x5,1+x5,2+x5,3+x5,4+x5,5+x5,6+x5,7+x5,8<=1

x8,1+x8,2+x8,3+x8,4+x8,5+x8,6+x8,7+x8,8<=1

x9,1+x9,2+x9,3+x9,4+x9,5+x9,6+x9,7+x9,8<=1

x10,1+x10,2+x10,3+x10,4+x10,5+x10,6+x10,7+x10,8<=1

Note time slots 6 and 7 overlap and 7 and 8 overlap

x6,1+x6,2+x6,3+x6,4+x6,5+x6,6+x6,7+x6,8+x7,1+x7,2+x7,3+x7,4+x7,5+x7,6+x7,7+x7,8<=1

x7,1+x7,2+x7,3+x7,4+x7,5+x7,6+x7,7+x7,8+x8,1+x8,2+x8,3+x8,4+x8,5+x8,6+x8,7+x8,8<=1

For each required course, MGT 490 and FIN 358, exactly one section must be taken (regardless of how much Kelly loves the subject):

Σ𝑥𝑖𝑗=1 (𝑗=1,2)10𝑖=1

x1,1+x2,1+x3,1+x4,1+x5,1+x6,1+x7,1+x8,1+x9,1+x10,1 = 1

x1,2+x2,2+x3,2+x4,2+x5,2+x6,2+x7,2+x8,2+x9,2+x10,2 = 1

For each elective course, at most one section must be taken:

Σ𝑥𝑖𝑗 ≤1 (𝑗=3,4,5,6,7,8)10𝑖=1

x1,3+x2,3+x3,3+x4,3+x5,3+x6,3+x7,3+x8,3+x9,3+x10,3 <=1

x1,4+x2,4+x3,4+x4,4+x5,4+x6,4+x7,4+x8,4+x9,4+x10,4 <=1

x1,5+x2,5+x3,5+x4,5+x5,5+x6,5+x7,5+x8,5+x9,5+x10,5 <=1

x1,6+x2,6+x3,6+x4,6+x5,6+x6,6+x7,6+x8,6+x9,6+x10,6 <=1

x1,7+x2,7+x3,7+x4,7+x5,7+x6,7+x7,7+x8,7+x9,7+x10,7 <=1

x1,8+x2,8+x3,8+x4,8+x5,8+x6,8+x7,8+x8,8+x9,8+x10,8 <=1

Take exactly two courses out of FIN 325, 352, 356, and 359.

x1,5+x2,5+x3,5+x4,5+x5,5+x6,5+x7,5+x8,5+x9,5+x10,5 +

x1,6+x2,6+x3,6+x4,6+x5,6+x6,6+x7,6+x8,6+x9,6+x10,6 +

x1,7+x2,7+x3,7+x4,7+x5,7+x6,7+x7,7+x8,7+x9,7+x10,7 +

x1,8+x2,8+x3,8+x4,8+x5,8+x6,8+x7,8+x8,8+x9,8+x10,8 =2

Take one of CIS 102T and CIS 102W

x1,3+x2,3+x3,3+x4,3+x5,3+x6,3+x7,3+x8,3+x9,3+x10,3 +

x1,4+x2,4+x3,4+x4,4+x5,4+x6,4+x7,4+x8,4+x9,4+x10,4 =1

Take exactly five courses.

x1,1+x2,1+x3,1+x4,1+x5,1+x6,1+x7,1+x8,1+x9,1+x10,1 +

x1,2+x2,2+x3,2+x4,2+x5,2+x6,2+x7,2+x8,2+x9,2+x10,2 +

x1,3+x2,3+x3,3+x4,3+x5,3+x6,3+x7,3+x8,3+x9,3+x10,3 +

x1,4+x2,4+x3,4+x4,4+x5,4+x6,4+x7,4+x8,4+x9,4+x10,4 +

x1,5+x2,5+x3,5+x4,5+x5,5+x6,5+x7,5+x8,5+x9,5+x10,5 +

x1,6+x2,6+x3,6+x4,6+x5,6+x6,6+x7,6+x8,6+x9,6+x10,6 +

x1,7+x2,7+x3,7+x4,7+x5,7+x6,7+x7,7+x8,7+x9,7+x10,7 +

x1,8+x2,8+x3,8+x4,8+x5,8+x6,8+x7,8+x8,8+x9,8+x10,8 =5

3 Linear Program

Maximize

C1,1\*x1,1+c1,2\*x1,2+c1,3\*x1,3+c1,4\*x1,4…c10,5\*x10,5+c10,6\*x10,6+c10,7\*x10,7+c10,8\*x10,8

Subject to

x1,1+x1,2+x1,3+x1,4+x1,5+x1,6+x1,7+x1,8<=1

x2,1+x2,2+x2,3+x2,4+x2,5+x2,6+x2,7+x2,8<=1

x3,1+x3,2+x3,3+x3,4+x3,5+x3,6+x3,7+x3,8<=1

x4,1+x4,2+x4,3+x4,4+x4,5+x4,6+x4,7+x4,8<=1

x5,1+x5,2+x5,3+x5,4+x5,5+x5,6+x5,7+x5,8<=1

x8,1+x8,2+x8,3+x8,4+x8,5+x8,6+x8,7+x8,8<=1

x9,1+x9,2+x9,3+x9,4+x9,5+x9,6+x9,7+x9,8<=1

x10,1+x10,2+x10,3+x10,4+x10,5+x10,6+x10,7+x10,8<=1

x6,1+x6,2+x6,3+x6,4+x6,5+x6,6+x6,7+x6,8+x7,1+x7,2+x7,3+x7,4+x7,5+x7,6+x7,7+x7,8<=1

x7,1+x7,2+x7,3+x7,4+x7,5+x7,6+x7,7+x7,8+x8,1+x8,2+x8,3+x8,4+x8,5+x8,6+x8,7+x8,8<=1

x1,1+x2,1+x3,1+x4,1+x5,1+x6,1+x7,1+x8,1+x9,1+x10,1 = 1

x1,2+x2,2+x3,2+x4,2+x5,2+x6,2+x7,2+x8,2+x9,2+x10,2 = 1

x1,3+x2,3+x3,3+x4,3+x5,3+x6,3+x7,3+x8,3+x9,3+x10,3 <=1

x1,4+x2,4+x3,4+x4,4+x5,4+x6,4+x7,4+x8,4+x9,4+x10,4 <=1

x1,5+x2,5+x3,5+x4,5+x5,5+x6,5+x7,5+x8,5+x9,5+x10,5 <=1

x1,6+x2,6+x3,6+x4,6+x5,6+x6,6+x7,6+x8,6+x9,6+x10,6 <=1

x1,7+x2,7+x3,7+x4,7+x5,7+x6,7+x7,7+x8,7+x9,7+x10,7 <=1

x1,8+x2,8+x3,8+x4,8+x5,8+x6,8+x7,8+x8,8+x9,8+x10,8 <=1

x1,5+x2,5+x3,5+x4,5+x5,5+x6,5+x7,5+x8,5+x9,5+x10,5 +

x1,6+x2,6+x3,6+x4,6+x5,6+x6,6+x7,6+x8,6+x9,6+x10,6 +

x1,7+x2,7+x3,7+x4,7+x5,7+x6,7+x7,7+x8,7+x9,7+x10,7 +

x1,8+x2,8+x3,8+x4,8+x5,8+x6,8+x7,8+x8,8+x9,8+x10,8 =2

x1,3+x2,3+x3,3+x4,3+x5,3+x6,3+x7,3+x8,3+x9,3+x10,3 +

x1,4+x2,4+x3,4+x4,4+x5,4+x6,4+x7,4+x8,4+x9,4+x10,4 =1

x1,1+x2,1+x3,1+x4,1+x5,1+x6,1+x7,1+x8,1+x9,1+x10,1 +

x1,2+x2,2+x3,2+x4,2+x5,2+x6,2+x7,2+x8,2+x9,2+x10,2 +

x1,3+x2,3+x3,3+x4,3+x5,3+x6,3+x7,3+x8,3+x9,3+x10,3 +

x1,4+x2,4+x3,4+x4,4+x5,4+x6,4+x7,4+x8,4+x9,4+x10,4 +

x1,5+x2,5+x3,5+x4,5+x5,5+x6,5+x7,5+x8,5+x9,5+x10,5 +

x1,6+x2,6+x3,6+x4,6+x5,6+x6,6+x7,6+x8,6+x9,6+x10,6 +

x1,7+x2,7+x3,7+x4,7+x5,7+x6,7+x7,7+x8,7+x9,7+x10,7 +

x1,8+x2,8+x3,8+x4,8+x5,8+x6,8+x7,8+x8,8+x9,8+x10,8 =5