Assignment (4)
Applications of Linear and Integer Programming Models

The Timetabling Problem

Suppose there are four professors x_1, x_2, x_3, x_4 and five subjects y_1, y_2, y_3, y_4, y_5 to be taught. The teaching requirement matrix $\boldsymbol{p}$ is given below.

- Construct the line graph $L(G)$ and the adjacency matrix of $L(G)$.
- Model the problem as a classic Minimum Vertex Coloring problem, and use JuMP to find a minimum proper 4-coloring of the vertices of $L(G)$.

$\boldsymbol{p}$	y_1	y_2	y_3	y_4	y_5
x_1	2	0	1	1	0
x_2	0	1	0	1	0
x_3	0	1	1	1	0
x_4	0	0	0	1	1

Teaching requirement matrix