# Making Examination Schedule

# Mathematical model formulation

# SETS AND INDICES

# *Sets Description Indices*

***s\_Course*** *Set of courses*

***s\_Student*** *Set of students*

***s\_Day*** *Set of days ({0, 1, . . , })*

***s\_Session*** *Set of sessions ({0, 1, . . , })*

**PARAMETERS**

***Parameter Description***

*is equal to 1 if student ‘s’ has taken the course ‘c’*

*Number of students*

*Number of courses*

*Number of days*

*Number of sessions*

*Number of classrooms*

# DECISION VARIABLES

***Decision variables Description Type Range***

*Is 1 if course ‘c’ has an Binary {0, 1}*

*exam on day ‘d’ session ‘se’*

*Is 1 if on day ‘d’ student ‘s’ Binary {0, 1}*

*is giving more than one exam*

**OBJECTIVE FUNCTION**

**Minimize the total number of penalty (which is number of time students are giving more than 1 exam in a day).**

**Minimize** ***OBJ.***

**CONSTRAINTS**

1. **No student should be asked to take more than 1 examination at the same time.**
2. **The maximum number of examinations that can be scheduled at any one time is limited by the number of class rooms**
3. **As far as possible a student needs to take only one examination per day**

I am adding it as a soft constraint. Adding a penalty if a student is giving more than 1 exam in one day.

1. **Exam for every course should be happened if the course is taken by student**
2. **Maximum time an exam of any course can happen is 1**