TCSAA OPERATIONS RESEARCH

TCSAA **Operations research**	**Credits : 4 ECTS** **Duration : 30 hours**	**Semester: S7**

Person(s) in charge :

Bernardetta ADDIS, Associate Professor, bernardetta.addis@mines-nancy.univ-lorraine.fr

Keywords : Graphs, linear programming

Prerequisites : none

Objectives: Knowing the main models of operational research

Content :

This course aims to provide the fundamentals of operational research, a science that gives powerful means of modelling as well as practical methods to solve a large panel of industrial issues. Operational research is thus naturally transverse.

The following points will be tackled:

• Introduction to linear programming

• Simplex algorithm

• Post-optimal analysis and stability

• Duality

• Introduction to graphs

• Routing problems – fixed point

• PERT and potential scheduling

Abilities:

Levels	Description and operationnal verbs
Know	The main models in operations research
Understand	The essential algorithms, and the underlying theoretical difficulties
Apply	Applying these models and algorithms
Analyse	Analysing the problems that are written in "natural language", and determine the most appropriate method to obtain the best results
Summarise	
Evaluate	

Evaluations :

Written test	Continuous Control	Oral report	Project	Written Report
☑	☐	☐	☑	☑