# Modeling, Simulation and Optimization

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*Abstract*—**This preview of an article displays the mathematical model that will describe out problem. We want to optimize the number of semesters a student with double major at Universidad de los Andes (Colombia) needs to pay in order to graduate.**

*Keywords—mathematical model, semester planning optimization*

## I. INTRODUCTION

ACA TOCA DESCRIBIR CORTICO EL PROBLEMA: QUE ES LO QUE QUEREMOS OPTIMIZAR?

## II. PARAMETERS

In the following table we describe the conventions we will use during the article.

TABLE I.    TABLE OF CONVENTIONS

| Symbol | Meaning |
|--------|---------|
| $S$ | Number of semesters |
| $C$ | Number of courses |

## III. DECISION VARIABLE

The decision variable we will use is:

$$x_{ij} = \text{Take course i on semester j} \tag{1}$$

Where:

$$i \in [1, C] \tag{2}$$

$$j \in [1, S] \tag{3}$$

## IV. OBJECTIVE FUNCTION

$$n = \sum_j max(x_{ij}) \tag{4}$$

## V. CONSTRAINTS

$$\forall i, \sum_{j=1}^{s} x_{ij} = 1 \tag{5}$$

$$\forall j, \sum_{i=1}^{m} x_{ij} * \text{credits}(i) \leq 25 \tag{6}$$

## VI. CONCLUSION

There are still no conclusions for this project.

## ACKNOWLEDGMENT

## REFERENCES

[1]  H. Kopka and P. W. Daly, *A Guide to LaTeX*, 3rd ed.  Harlow, England: Addison-Wesley, 1999.