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# Simulation laboratory overview

Riccardo Scarinci

Transport and Mobility Laboratory TRANSP-OR  
École Polytechnique Fédérale de Lausanne EPFL

Optimization and Simulation course

25 March 2014

Exercise based on Bilal Farooq material



## Overview

### Aim

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Develop a traffic simulation software in MATLAB

The program will consists of function implementations based on the simulation lectures

ATTENTION: to make the program work, the functions must fit together. Consistent interfaces

# Overview

## Laboratories organization

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Group work

7 laboratories

2 projects

2 presentations

|                 |   |
|-----------------|---|
| March 25        | Introduction to MATLAB<br>Random Number Generation  |
| April 01        | Discrete Event Simulation<br>Statistical Analysis and Bootstrapping<br>Introduction of Simulation Project |
| April 08        | Preparation of Simulation Project I   |
| <b>April 15</b> | <b>Presentation of Simulation Project I</b>   |
| April 22        | No lecture - Spring break   |
| April 29        | Variance Reduction Techniques   |
| May 06          | Markov Chain Monte Carlo Method<br>Introduction of Simulation Project II                                  |
| May 13          | Preparation of Simulation Project II  |
| May 20          | Preparation of Simulation Project II  |
| <b>May 27</b>   | <b>Presentation of Simulation Project II</b>  |

# Overview

## Group organization

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| Group 1               | Group 2                     | Group 3                  | Group 4               |
|-----------------------|-----------------------------|--------------------------|-----------------------|
| Milosavljevic Predrag | Stepanova Lidia             | Saeedmanesh Mohammadreze | Wallerand Anna Sophia |
| Martand Singhal       | Markov Iliya Dimitrov       | Kyriaki Goulouti         | Stephane bungener     |
| Almeida Samora Irene  | Perez Saez Francisco Javier | Pisaroni Michele         | Stefano Moret         |
| Chiappino Pepe Anush  | Fernandez Antolin Anna      | Cuendet Gabriel Louis    | Rujeerapaiboon Napat  |

Need reorganization

# Overview

## Group (re)organization

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Overview

## Evaluation

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Oral presentation in the two projects

Quality of the code, it should:

- Work
- Be clean
- Be commented

Overview

# Material

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Sheldon M. Ross, 2013. *Simulation*. Academic Press

