

REVIEW
for syllabus of “Traffic modelling and simulation”
by prof. Kyandoghene Kyamakya and
Prof. Jean Chamberlain Chedjou

The syllabus which developed by prof. Kyandoghene Kyamakya and Prof. Jean Chamberlain Chedjou is well-created. The syllabus of this lecture familiarizes students with the development of models corresponding to specific systems, scenarios, phenomena or events in transportation. The main focus is on road transportation, railway transportation, supply chain networks and logistics. For a given system, scenario, or phenomenon under investigation, mathematical models are obtained. Simulation algorithms (using MATLAB and SIMULINK) are further developed solving the mathematical models which are obtained. The numerical solutions obtained are used to analyze the systems, scenarios and phenomena. This analysis helps to understand and control/optimize the complex dynamical behavior undergone by the systems, scenarios and phenomena at stake.

The syllabus of the lecture also provide some basic knowledge of Neural Networks and the use of neural networks to analyze some selected systems, scenarios, and phenomena in transportation. Students also acquire some basic knowledge in optimization. The knowledge acquired is further used to solve some selected case studies related to the optimization of some scenarios at stake in the field of transportation (railway, road transportation, and supply chain networks, etc.).

In view of the above, we would like to suggest the following:

1. The name of the master program in Djizzakh polytechnical institute is “ITS for Ground Transport, Logistics, and Automotive”, therefore advisable to pay attention to the ground transports instead of railway and increase hours for traffic modeling and simulation of vehicles. This is why it is expedient to remove following chapter and paragraphs from the content:

- 7. Optimization in railway transportation;
- 2.2.3- Description and illustration of the aforementioned states in rail traffic;
- 2.4.5- Special tools for RAILWAY traffic simulation;
- 9.4-Railway scheduling by network optimization problem;
- 9.5-Modeling of the railway scheduling problem and time-tables optimization;
- 9.6-Modeling and optimization of the Crew scheduling problem in Railway transportation.

In general, created syllabus by prof. Kyandoghere Kyamakya and Prof. Jean Chamberlain Chedjou meets all the requirements for the master's courses and I recommend this syllabus for the implementation of the “ITS for Ground Transport, Logistics and Automotive” master course.

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