

Introduction to Traffic Flow Theory

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<https://www.GoTrafficGo.com>

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The course is called Traffic Flow Theory (TFT).

What is traffic flow theory?

- **Traffic**: **movement** of vehicles, ships, persons, etc., in an area, along a street, through an air lane, over a water route, etc.
- **Flow**: to move along in a **stream**
 - Study on vehicles moving along in a traffic stream
- **Theory**: a body of principles, theorems
 - To produce a **mathematical** theory

- Due to the individual reactions of **human** drivers, vehicles do not interact simply following the laws of mechanics.
- Thus, traffic phenomena are complex and **nonlinear**, depending on the interactions of a large number of vehicles.

- No satisfactory general theory that can be consistently applied to real-world traffic flow
- Current traffic models use a mixture of empirical and theoretical techniques.
- These models are then developed into understanding phenomena and forecasts,
 - to explain traffic dynamics, mechanism of driving behavior, and human (driver) behavior,
 - to take account of proposed local or major changes, such as increased vehicle use, changes in land use or changes in mode of transport,
 - to identify areas of congestion where the network needs to be adjusted,
 - etc.

The ultimate goal of science is to

uncover the underlying *laws that govern the universe*, allowing for (1) predictions, (2) technological advancements, and (3) a deeper comprehension of our surroundings.

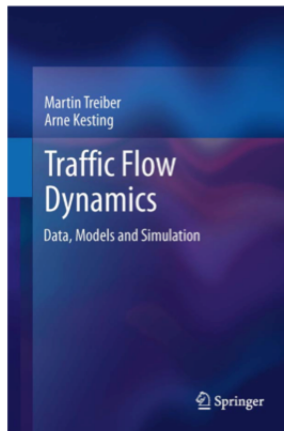
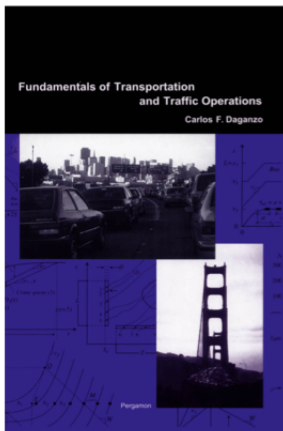
In the discipline of transportation engineering, it is
the ONLY course whose name includes the word “theory”.

HARDEST??

partially because of mathematics and abstraction, but

INTERESTING & USEFUL!

Recommended books



Thank you!