

Traffic Engineering Laboratory

Head of Laboratory: Prof. Nathan Gartner

The Traffic Engineering Laboratory at Ariel University serves the twin missions of education and research. Firstly, it is a companion to the Traffic Engineering course within the Program of Transportation Engineering in the Department of Civil Engineering. Secondly, it serves as a research facility for members of the faculty from all departments in the areas of traffic management and control, traffic simulation and Intelligent Transportation Systems.

The Traffic Engineering Laboratory is equipped presently with the following analysis and design tools:

- AIMSUN – a versatile traffic simulation platform for carrying out a wide range of traffic operations assessments. It combines mesoscopic, microscopic and hybrid simulation – all within a single software application.
- Highway Capacity Software – implements and automates the Highway Capacity Manual procedures, per guidelines of Ministry of Transport. Includes modules to implement animation and simulation using the TransModeler SE microsimulation tool.
- INBAR – signal plan design system developed at the Technion-Israel Institute of Technology. Certified by Ministry of Transport for signal program design in Israel.
- TransModeler SE Traffic Analysis Software – all-in-one traffic analysis tool for microsimulation, traffic impact analysis, and signal optimization.



LEVELS OF SERVICE for Freeways			
Level of Service	Flow Conditions	Operating Speed (mph)	Technical Descriptions
A		70	Highest quality of service. Traffic flows freely with little or no restrictions on speed or maneuverability. No delays
B		70	Traffic is stable and flows freely. The ability to maneuver in traffic is only slightly restricted. No delays
C		67	Few restrictions on speed. Freedom to maneuver is restricted. Drivers must be more careful making lane changes. Minimal delays
D		62	Speeds decline slightly and density increases. Freedom to maneuver is noticeably limited. Minimal delays
E		53	Vehicles are closely spaced, with little room to maneuver. Driver comfort is poor. Significant delays
F		<53	Very congested traffic with traffic jams, especially in areas where vehicles have to merge. Considerable delays

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MEMBERS

Prof. Nathan Gartner

Dr. Michael Ben Chaim

Dr. Sunbola Zاتمeh Kanj