

Course Syllabus
020TRAGS3 – Traffic Engineering

- 1. Course number and name:** 020TRAGS3 – Traffic Engineering
- 2. Credits and contact hours:** 2 credits: 7 sessions per semester x 2 periods x 1.5hrs
- 3. Instructor's or course coordinator's name:** Elias HELOU
- 4. Textbook and other supplemental material:**
 - a. A policy on Geometric Design of Highways and Streets – AASHTO 2001
 - b. Highway Capacity Manual - TRB Washington, D.C. 1998
 - c. Modern Roundabout Practice in USA - TRB Washington, D.C. 1998
 - d. Manual on Uniform Traffic Control Devices - U.S. DOT – FHWA 2009
 - e. Lebanese Norms – Institution of Lebanese Norms - 1996
 - f. Instructor's Class Notes

5. Specific course information

a. Catalog description:

To provide the tools and methodology to collect and analyze traffic flows and its impact on road networks and to perform capacity analysis for various highway and roadway elements depending on its function. Learn how to collect traffic data and perform demand/capacity analysis. Compare various modes of transport including public transport and its economic and environmental impacts.

b. Prerequisites: None.

c. Required/Elective/Selected Elective: Required major course for Public Works and Transportation Major.

6. Specific goals for the course

a. Specific outcomes of instruction:

- To understand traffic flows, classifications and characteristics
- To be able to relate traffic flows to infrastructure capacity and determine Level Of Service (LOS)
- To evaluate various modes of transportation and its impact on economy and the environment
- To become aware of various software used in traffic engineering
- To experience traffic data collection by performing field data collection
- To learn of traffic calming & safety measures in construction zones and urban streets

b. KPIs addressed by the course:

KPI	a1	a2	c3	e3	g1	k1	k3
Covered	x	x	x	x	x	x	x
Assessed							
Give Feedback							

7. Brief list of topics to be covered and approximate number of lectures:

- Overview and Introduction to Highway functions, policy, planning & traffic engineering (2hrs)
- Capacity Analysis for Weaving Areas, Ramps and Junctions ,Freeway Systems, Multilane Rural And Suburban Highways, Two- Lane Highways (8hrs)
- Signalized Intersections and Roundabouts: Warrants & Design Guidelines (3hrs)
- Software overview – HCS2000, Sidra, Syncro, Vissim (2hrs)
- Field Data Collection – Manual Counting and Classification (3hrs)

- Construction Zones, Traffic Calming and Traffic safety measures (3hrs)