Traffic Signal Operations

***Provided by:* Consortium for Innovative Transportation Education (CITE)**

Instructor-led Online Course Syllabus

May - June, 2019

Instructor:

Kevin Lee, Kittleson & Associates

Kevin has participated in a variety of transportation and traffic engineering projects across the nation. These include traffic signal system designs, traffic management plans, and ITS design. Kevin has led the development of WMATA's regional transit signal priority concept of operations and is assisting WMATA with various transit preferential treatment implementations as part of the TIGER Grant. In addition, Kevin was a major contributor to the FHWA Traffic Signal Timing Manual (TSTM) and is a lead researcher in the update to the TSTM.

Course Description:

This course provides students with an understanding of both the theory and practice of traffic signal timing and its impact on traffic operations. It gives students an overview of the terms associated with signal timing; discusses the concepts of cycle length, split, offset, midblock friction, phase sequences, the signal timing process, and signal timing optimization; and looks at the types of actuated controllers, passage time, extension, and the coordination of actuated and pre-timed controllers. It also discusses the development of timing plans, explores types of signal control (first generation control and advanced techniques, including Rhodes, RT-TRACS, SCAT, and SCOOT) and investigates the relationship of signal timing to ITS: regional and system/design considerations.

Course Material Review

Friday, May 17 – Thursday, June 6, 2019

Students are recommended to review Lessons 1-3 of the course material found in Moodle.

Friday, June 7 – Thursday, June 20, 2019

Students are recommended to review Lessons 4-6 of the course material found in Moodle.

Conference Calls

Thursday, May 23, 2019, 2:00 – 2:30 PM (ET)

The instructor will introduce the course and let students know what will be expected from them. Students will be able to ask questions about upcoming course workshops and any course material reviewed to date. Dial-in information will be posted in Moodle.

Tuesday, June 18, 2019, 2:00 – 3:00 PM (ET)
Conference call with the instructor – If students have any questions about the course material reviewed to date or the course workshop, they should submit them to the instructor via e-mail by 9:00 AM (ET) the day of the call. The instructor will answer them during the conference call and will also discuss Course Workshop # 1. Dial-in information will be posted in Moodle.

Thursday, June 27, 2019, 2:00 – 3:00 PM (ET)
Conference call with the instructor – If students have any questions about the course material reviewed to date or the course workshop, they should submit them to the instructor via e-mail by 9:00 AM (ET) the day of the call. The instructor will answer them during the conference call and will also discuss Course Workshop # 2. Dial-in information will be posted in Moodle.

Course Workshops
Course Workshop #1
By 11:55 PM (ET) on Saturday, Jun 8, 2019, students will post their answer to this workshop in the "Forums" section.
By 11:55 PM (ET) on Tuesday, June 11, 2019, students will review other student submittals and comments on at least three of them. Answers to this workshop will be discussed during the conference call on June 18, 2019.
Course Workshop #2
By 11:55 PM (ET) on Saturday, June 22, 2019, students will post their answer to this workshop in the "Forums" section.
By 11:55 PM (ET) on Tuesday, June 25, 2019, students will review other student submittals and comments on at least three of them. Answers to this workshop will be discussed during the conference call on June 27, 2019.

Final Exam
Thursday, June 27 – Sunday, July 7, 2019
The final exam will be available in Moodle from 2:30 PM (ET) on Thursday, June 27, 2019 through 11:55 PM (ET) on Sunday, July 7, 2019. Students will complete the final exam online. In order to receive Continuing Education Units (CEUs), students must also complete the online course evaluation.

Course Grades
Grades for the course will be determined by student participation in the following items and will be weighted as shown below. Students need to receive a 70% or better to pass the course and receive Continuing Education Units (CEUs).

65% Final Exam
15% Course Workshop #1
15% Course Workshop #2

5% Completed Survey
100%