

The University of Texas at El Paso
Department of Civil Engineering

CE5361 Traffic Flow & Simulation Modeling

Course Syllabus, Spring 2020 (CRN 28687)

Also cross listed as CE4375 (CRN 24286), CE4376 (CRN 24291), CE4377 (CRN 26268)

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| Time & venue | Class times: MW, 3:00 p.m. to 4:20 p.m., CRBL204 |
| Instructor | Dr. Ruey (Kelvin) Cheu Office: Engineering Annex Room A208 Email: rlcheu@utep.edu Phone: (915)747-5717 Office hours: TBD |
| Teaching assistant | None |
| Course website | Blackboard |
| Course objective | In UTEP course catalog: "This is a comprehensive course to traffic flow and simulation modeling. Topics include: basic microscopic; mesoscopic and macroscopic traffic flow theories; advanced traffic flow theories such as high order traffic flow theories; analytical and simulation based traffic flow modeling; traffic simulation models and their applications." |
| Topics: | 1. Cell transmission model. 2. Traffic simulation fundamentals. 3. SIMIO 4. SYNCHYO/SIMTRAFFIC 5. VISSIM 6. Others (Dynus-T, AIMSUN, PARAMICS) Note: CORSIM is already taught in CE4340. |
| Pre-requisite | CE4340 or equivalent. Microsoft Excel (intermediate level) Own a Windows laptop with i3 CPU or faster, min. 4GB RAM |
| Textbook | No required textbook. Materials will be distributed via Blackboard. We may refer to software manuals (free downloaded or provided). |
| Grading | Contributions towards final mark (out of 100%) 10% Class attendance 30% Homework 1 (fundamentals + cell transmission models) 20% SIMIO project |

| | <p>20% SYNCHRO/SIMTRAFFIC project 20% VISSIM project</p> <p>Grading criteria:</p> <table border="0"> <thead> <tr> <th><u>Final course mark (out of 100)</u></th> <th><u>Grade</u></th> </tr> </thead> <tbody> <tr> <td>90 or more</td> <td>A</td> </tr> <tr> <td>80-89.99</td> <td>B</td> </tr> <tr> <td>70-79.99</td> <td>C</td> </tr> <tr> <td>60-69.99</td> <td>D</td> </tr> <tr> <td>Less than 60</td> <td>F (please also see # below)</td> </tr> </tbody> </table> | <u>Final course mark (out of 100)</u> | <u>Grade</u> | 90 or more | A | 80-89.99 | B | 70-79.99 | C | 60-69.99 | D | Less than 60 | F (please also see # below) |
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| 60-69.99 | D | | | | | | | | | | | | |
| Less than 60 | F (please also see # below) | | | | | | | | | | | | |
| Exams | There is no exam for this course. | | | | | | | | | | | | |
| Homework | Up to 7 homeworks will be given for cell transmission model and fundamentals of traffic simulation. The questions typically require the use of your personal laptop and solve the problems by EXCEL or MATLAB. All homework questions will be graded. | | | | | | | | | | | | |
| Projects | There will be 3 projects: SIMIO, SYNCHRO/SIMTRAFFIC and VISSIM. Each project requires you to work in teams of 2 to code a simulation model. | | | | | | | | | | | | |
| Late homework/assignment policy | <p>Late submission is normally accepted with the following penalties:</p> <p>Late by ≤ 24 hours: 70% credit Late by > 24 hours but ≤ 48 hours: 50% credit Late by > 48 hours: 0% credit.</p> | | | | | | | | | | | | |
| Collaboration | Discussions between classmates on homework are strongly encouraged. However, the written work submitted must be your own effort (in your own words and your own style). Directly copying someone else's work is cheating. | | | | | | | | | | | | |
| Disability | If you have any disability and you need special assistance in taking this course, please contact the Center of Accommodations and Support Services (CASS), formerly known as Disable Student Service at Union East. Your identity will be kept confidential. | | | | | | | | | | | | |