Transportation Track – TRN

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<th>Fall</th>
<th>Spring</th>
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<tr>
<td>CE 5400 Traffic Operations</td>
<td>CE 5410 Intro. to Transportation Planning</td>
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<td>TRN Elective (1)</td>
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<td>TRN Elective (1)</td>
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1) TRN Electives – students take three courses from the following list:

   - CE 5020 Introduction to Geographic Information Systems
   - CE 6015 Project Management
   - CE 6420 Public Transportation
   - CE 6430 Intermodal Transportation*  
   - CE 6440 Intelligent/Advanced Transportation Systems*  
   - CE 6450 Transportation Safety*  
   - CE 6470 Engineering Transportation Economics  
   - CE 6490 Transportation Data Analysis and Modeling  
   - CE 7400 Traffic Flow Theory  
   - PLAC 5720 Transportation and Land Use  
   - PLAN 5740 Transportation Planning and Policy  

* Currently not offered regularly

2) Systems, Sustainability, Resilience, and Risk (SSRR) electives – students must complete two courses from the following list:

   - CE 6009 The Art and Science of Systems Modeling  
   - ECON 7710 Econometrics I  
   - PPOL 7035 Cost-Benefit Analysis (does not count as SSRR if CE 6470 is also taken)  
   - STAT 6440 Introduction to Bayesian Methods  
   - SYS 6001 Introduction to Systems Analysis & Design  
   - SYS 6003 Optimization Models and Methods I  
   - SYS 6007 Human Factors I  
   - SYS 6021 Linear Statistical Models  
   - SYS 6034 Discrete Event Stochastic Simulation (Agent-based Simulation Modeling)  
   - SYS 6050 Risk Analysis

3) Technical electives may include any technical course at or above the 5xxx level approved by the academic adviser. One elective may constitute research or a professional internship (i.e., CE 6995 - refer to the CE website for details)

4) Pre-requisites for the TRN track includes college calculus and calculus-based probability and statistics, engineering economics (CE 2020 or equivalent), and a course in Transportation Infrastructure Design (CE 3400 or equivalent).

5) Students may be permitted to modify this framework, pending the approval of their academic advisor and the CE Director of Graduate Studies. Additionally, online courses from Virginia’s VEO program may be suitable to meet the requirements for this degree. See https://engineering.virginia.edu/online for current course offerings.

Updated: December 2022