Class Schedule - Spring 2019

Industrial Engineering

IE 598  **Special Topics**  credit: 0 TO 4 hours.

Subject offerings of new and developing areas of knowledge in industrial engineering intended to augment the existing curriculum. See Class Schedule or departmental course information for topics and prerequisites. Approved for letter and S/U grading. May be repeated in the same or separate terms if topics vary.

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<th>CRN</th>
<th>Type</th>
<th>Section</th>
<th>Time</th>
<th>Days</th>
<th>Location</th>
<th>Instructor</th>
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<tr>
<td>66173</td>
<td>Lecture</td>
<td>ET</td>
<td>06:00 PM - 09:00 PM</td>
<td>R</td>
<td>A - Illini Center</td>
<td>Lariviere, D</td>
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Credit Hours: 4 hours
Electronic Trading
Restricted to MS: Financial Engineering.
Prerequisites: IE 522 and IE 523. The purpose of this course is to investigate the exact nature of order matching and routing at the compute-packet level in most exchanges. Not knowing the nature the interfaces has led to many "good fit" predictive models. However, they are often, predicting the past! Analyses need to adjust for speed and time-stamps. The course will address these issues. However, it should be stressed that the course does not purport nor intend to examine nor propose "trading strategies."

| 69688 | Lecture       | ODL     | 03:30 PM - 04:50 PM | TR   | 204 - Transportation Building | Sun, R         |

Credit Hours: 2 hours
Optim Theory for Deep Learning
Restricted to Graduate - Urbana-Champaign.
Prerequisites: IE 510, ECE 490, or equivalent courses on introductory optimization. Mathematical optimization is a crucial component of modern machine learning. This course gives an overview of optimization theory and methods in deep learning, including algorithms, modeling and geometry. The goal is to demystify common optimization methods/tricks in deep learning. For algorithms, we discuss various popular methods such as initialization, BatchNorm, Adam, etc. For geometry, we discuss the optimization landscape of neural-network problems, which is closely related to the quality of the local minima. We also discuss how to formulate GANs, adversarial attacks, etc. from an optimization perspective.

| 69147 | Lecture-Discussion | XCL | 05:00 PM - 06:20 PM | TR   | 203 - Transportation Building | Chen, X        |

Credit Hours: 4 hours
Logistics & Supply Chain Mgmt
Restricted to Graduate - Urbana-Champaign.
Prerequisites: IE 410 and IE 411. In this course, we will explore the state-of-the-art logistics strategies, models, algorithms and tools for integrating the supply chain in ways that reduce system-wide costs, and improve system-wide service. Our main focus is on building mathematical models, developing efficient algorithms and performing rigorous analysis. For this purpose, we will cover theoretical foundations such as dynamic programming, convex analysis and lattice programming essential to analyze these models. Some recent related research will also be covered.