CSE 5347: Telecommunication Networks Design

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Class Hours: MW 3:30 - 4:50 pm (Woolf Hall 402)
Office Hours: MW 1:30 - 2:30 pm
http://www-cse.uta.edu/~das/5347.html

This course will focus on theoretical frameworks and fundamental concepts behind the design and analysis of telecommunication networks (voice and data). Various advanced algorithmic and optimization techniques will be taught which are an integral part of efficient functioning of modern telecommunication networks. Queueing based performance modeling tools will also be introduced. Details of specific protocols or standards are beyond the scope of this course.

Text Books:
• T. S. Ramteke, Networks, Prentice Hall, 2001 (Second Ed) – Optional.

<table>
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<tr>
<th>Topics</th>
<th>Other References</th>
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<tbody>
<tr>
<td>Graph models of networks</td>
<td>Gross &amp; Yellen, West</td>
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<td>Fundamental graph algorithms</td>
<td>Cormen et al., Ahuja et al.</td>
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<td>Network optimization techniques</td>
<td>Ahuja et al., Papadimitrou &amp; Steiglitz</td>
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<td>Concepts of parallel and distributed algorithms</td>
<td>Akl, Horowitz et al., Lynch</td>
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<td>Centralized and distributed network topology design</td>
<td>Kershenbaum, Perlman</td>
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<td>Optical networks design</td>
<td>Stern &amp; Bala</td>
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<td>Flow control, resource management, QoS issues</td>
<td>Peterson &amp; Davie, Spragins</td>
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<td>Routing and multicasting</td>
<td>Paul, Perlman, Stenstrup</td>
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<td>Network reliability</td>
<td>Bhandari</td>
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<td>Performance modeling</td>
<td>Kleinrock, Nelson, Robertazzi</td>
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<td>Wireless mobile networks</td>
<td>Black, Rappaport</td>
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Prerequisites: CSE 5311, CSE 5344, or consent of the instructor.

Grading Policy: Grading will be based on the performance in homework assignments, exams, and term projects. However, the instructor has the discretion to revise the policy.

Guest Speakers: A few talks by telecom industry and academic researchers on current topics are expected.

TA: Mainak Chatterjee, PhD student, WH-411, Office Hours: T, Th 1:30-3:00 pm
(E-mail: mainak@uta.edu).
Reference Books:


