**Networking Algorithms and Analysis**
**Syllabus (Fall 2017)**

Instructor: Carlos Fernando Gamboa
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Office Hours: Thursdays 5:00 PM to 5:45 PM or by appointment.
Office Location: Room 258a, Light Engineering building

Objective: To introduce students to networking technology, algorithms and common techniques of statistically analyzing networks.

Grading:
Test 1 (35 pts), Test 2 (35 pts), Test 3 (30 pts).

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| **Algorithms**<br><br>Search<br>Error Codes<br>Data Compression<br>Digital Signatures<br>Public Key Cryptography | **Queueing Theory**<br><br>Continuous Time Queues<br>Discrete Time Queues |
| **Network Planning**<br><br>Mathematical Programming for Planning<br>Network Algorithms for Planning<br>Routing<br>Flow and Congestion Control<br>Related topics as time permits. | **Network Technology**<br><br>Multiple Access Performance<br>Teletraffic Modeling<br>Switching Elements and Fabrics |

Required books:
T. Robertazzi, Networks and Grids: Technology and Theory, 1st edition. Springer, 2007.
J. MacCormick, 9 Algorithms that Changed the Future, Princeton University Press, 2012.
T. Robertazzi, Planning Telecommunication Networks, 1st edition, Wiley, 1999.

Optional book:
T. Robertazzi, Computer Networks and Systems: Queueing Theory and Performance Evaluation, 3rd edition, Springer, 2000.

***Note:*** *If you have a physical, psychological, medical or learning disability that may impact on your ability to carry out assigned course work, I would urge you to contact the staff in the Disabled Student Services office (DSS) 631-632-6748. DSS will review your concerns and determine with you what accommodations are necessary and appropriate. All information and documentation of disability are confidential.*