Syllabus

Instructor: Jorg Liebeherr, BA 4126, (416) 946-3403, jorg@comm.utoronto.ca

Office hours: Monday, 12:00-13:00, or by appointment (via email).

Prerequisites: ECE361 (must be completed before taking this course)

Content:
- Review of networking concepts
- Deterministic network analysis
- Traffic Shaping
- Fairness and scheduling
- Bandwidth Estimation
- Statistical multiplexing and stochastic analysis

Textbook: There is no required textbook for this course. There are typed class notes (in draft form) available from Blackboard.

Lectures: Monday, Wednesday, Thursday, 11:00-12:00, RS 208.
- Attendance of lectures is mandatory.

Labs: Tuesdays, 12:00-15:00, GB243 (alternate weeks, see web page for schedule)
- There are 5 labs. Each lab requires programming in Matlab (Lab 1) or Java (all other labs). Each lab requires the preparation of a lab report.
- Dates of lab sessions and due dates are posted on the course website.
- Lab instructions and supplemental material can be downloaded from the course website.
- Labs and lab reports are prepared individually (addendum Jan. 8, -->) or done in groups of two. Submissions from groups with more than two students are not permitted.
- Lab reports are submitted via Blackboard. Instructions are posted on the course website.
- Late submissions of lab reports are penalized by 20% of the total grade per day.

Tutorials: Weekly tutorial sessions: Friday, 16:00-17:00,
SF3202.

- **First tutorial: Jan 9.**
- The dates and the problem sets will be listed on the course web page.
- Tutorials discuss problems, similar to those appearing in the quizzes and final exam.

**Evaluation:**

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<tbody>
<tr>
<td>Final Exam (Type D)</td>
<td>45%</td>
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<tr>
<td>Quiz 1</td>
<td>15%</td>
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<td>Quiz 2</td>
<td>15%</td>
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<tr>
<td>Labs</td>
<td>20%</td>
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<td>Class Participation</td>
<td>5%</td>
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- Quiz 1 and Quiz 2 are closed book, closed notes exams. They are given during a lecture and are 50 minutes long.
- Type 2 Calculators are allowed in quizzes and final exam.
- 1 (single-sided) handwritten sheet is permitted for Quiz 1. 2 (single-sided) or 1 (double-sided) handwritten sheet(s) are allowed in Quiz 2 and final exam.

**Remarking Policy**
The remarking policy is detailed on the course website.

**Academic Integrity**
Academic misconduct will be handled according to university guidelines. Software may be used to verify integrity of electronically submitted materials.

**Course Outcomes:**

- Knowledge of characteristics of network traffic.
- Ability to conduct deterministic network analysis (delay, throughput, backlog).
- Ability to provision buffer and delay requirements for network traffic.
- Understanding of network control algorithms: shaping, scheduling, bandwidth estimation.
- Exposure to fair scheduling and statistical multiplexing in packet networks.
- Design of traffic regulators, link scheduling, and bandwidth estimation methods.