I. Course Content/Objectives:
1. Objectives: At the conclusion of this course the student will have an understanding of the technical, business, and regulatory issues affecting third and fourth generation (3G and 4G) wireless telecommunications systems.

2. Tentative Schedule and Outline of Course Content.

   Overview, 1 class
   Review of 1G, 2G (AMPS, TDMA, GSM, CDMA) systems, 3 classes
   Principles of Code Division Multiple Access, 3 classes
   Wideband CDMA physical layer, 5 classes
   Modulation Techniques and Spread Spectrum, 3 classes
   Spreading Codes, 2 classes
   Channel Coding, 2 classes
   Wideband CDMA protocol stack, 3 classes
   Network, 2 classes
   Network planning, 4 classes
   Network management, 3 classes,
   3G services, 3 classes
   3G applications, 3 classes
   The future: 4G, 4 classes
   Case Study Project presentations, 4 classes

3. Textbook or assigned readings

II. Grading and Evaluation Procedures:

Case Project 40%
Homework 25%
Final exam 35%

Grading scale:

<table>
<thead>
<tr>
<th>Score</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>90-100</td>
<td>A</td>
</tr>
<tr>
<td>80-89</td>
<td>B</td>
</tr>
<tr>
<td>70-79</td>
<td>C</td>
</tr>
<tr>
<td>60-69</td>
<td>D</td>
</tr>
<tr>
<td>59 and lower</td>
<td>F</td>
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</tbody>
</table>

III. Statement related to policies on unannounced quizzes and class attendance and participation.

There will be no unannounced quizzes and attendance will not affect the grade.

Accommodation Statement: Students who need special accommodations should make an appointment to discuss the Accommodation Memo during my office hours as soon as possible. If scheduled office hours conflict with classes, please arrange an alternate appointment time. If you do not have an Accommodation Memo, but need special accommodations, contact the Program for Students with Disabilities in 1244 Haley Center (844-2096 V/TTY).

Justification for Graduate Credit: This is an advanced course that builds on earlier (also advanced) courses in second-generation wireless networks as well as advanced undergraduate courses in computer and communication networks.

11/6/01