ELEC 431 Digital Signal Processing Gang Project

Due: Exam Week, December 1997

An open ended investigation into an application area of DSP in gangs of 4–5 members. Grading will be based on the results of the work (that is, "did it work?"), the degree of innovation, and the quality of the written report and oral presentation.

Deliverables:

1. A composite written report containing the theoretical background, methods employed, practical application results, plus a breakdown of each gang member's role. *The report must be written in HTML and be available on the WWW.* Length: equivalent of 10–15 pages. (70% of grade)
2. A 15 minute oral presentation on your project. (30% of grade)

Milestones:

1. Monday 27 October: Set up gang (exactly 4–5 members); choose topic and gang name
2. Mid December: Reports due
3. Exam week: Oral presentations

Possible Topics:
(Chapters are in CBESP book)

Spectrum analysis (Chapter 3)
Multirate systems and wavelets (Chapter 4+)
Random signals (Chapter 6 — advanced)
Finite wordlength effects (Chapter 7)
FFT algorithms (Chapter 9)
Signal Modeling (Chapter 11)
Application: Radar (Chapter 10)
Application: Speech I, II, III (Chapter 10)
Application: Speech recognition using the cepstrum
Image processing
Other

See the project reports from 1995–6 at http://www-dsp.rice.edu/courses/elec431/Projects95/ and http://www-dsp.rice.edu/courses/elec431/Projects96/