INDEPENDENT PROJECTS
CALL FOR PROPOSALS
(Proposal Due: Monday, Feb. 22, 1999)
(Final Report Due: Monday, May 17, 1999)

A) PURPOSE: To provide the student with the opportunity to do a more detailed study of some area of interest in Advanced Data Communications than what is covered in the lectures.

B) POLICIES:

- A report of not more than 20 double-spaced pages long will be required for each project.
- Each report will be presented in a professional manner.
- Paper projects will require oral presentation.
- Programming projects will require demonstrations.

Generally, the topic for each student is expected to be unique since the projects are meant to be independent. However, there are cases where, depending on scope, two or more students may want to collaborate to work on a single project. Implementation/Simulation projects typically have this property because they involve extensive programming. An example is "Implementation of a Data Link Protocol between PCs connected to a LAN".

In such cases the group of students must specify their desire to do so in their preliminary proposal (see item D below). In addition each student must specify which part of the joint project will be their primary responsibility. As is the case of all projects the instructor reserves the right to approve/disapprove joint projects.

Joint Programming Projects are encouraged and recommended. The instructor will be willing to help to divide the work among students who are interested in proposing joint projects.

C) SOME SUGGESTED TOPICS:

- Performance comparison (via simulation, …) of ARQ schemes (stop-and-wait, go-back-N, and Selective Repeat) including time-out mechanisms.
- Simulation and/or analytic modeling of interconnected high speed networks to determine in which regions it is better to do light-weight data link control or end-to-end error control.
- Fibre Channel Overview and Protocols.
- Multimedia Communication and Protocols
- Overview of Fiber Optic Systems and LANs.
- PPP Protocol Details including Multilink Protocol
- IEEE 1394 Universal Serial Bus including Isochronous and Asynchronous Protocols
- Frame Relay protocol Details.
- ISDN/Broadband ISDN and Frame Relay architecture and protocols.
- Personal Communication/Cellular/Packet Radio Networks: multi-access protocols, routing, and examples.
- Forward Error Correction (FEC) schemes and examples.
- Wireless LAN Standards/IEEE 802.11
- FDDI/IEEE 802. 3/4/5/ATM/ISDN Hardware Chipset (one of them).
- Asynchronous Transfer Mode (ATM) switch architectures.
- Token bus implementation on the SNET or Token Ring implementation (interrupt-driven) on IBM PCs.
- Bridge Protocols for IEEE 802.x LANs (ie transparent and source routing details)

- OTHER TOPICS OF YOUR CHOICE (must be approved).

D) PRELIMINARY PROPOSAL:

1. Each student must present an abstract of not more than 2 pages of the project of their choice. It must include at least the following:
   - Student Name
   - Title of Project
   - Goal of the Project
   - Brief discussion of how goal will be achieved

2. The abstract is due not later than Monday, Feb. 22, 1999.

3. Group projects are possible depending on scope. The instructor is solely responsible for approving such projects. Refer to Policies (item B above).

4. The abstract will be read and returned to you. If approved it must be included with the final report.

E) TENTATIVE GRADING POLICY FOR FINAL REPORT

I. Heading (name, title, date)  5%
II. Organization (Intro., Table of Contents, page #s, etc.)  10%
III. Clarity  15%
IV. Content  60%
V. References  10%

F) TENTATIVE GRADING POLICY FOR ORAL PRESENTATION

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<td>Appearance</td>
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<td>Clarity (Intro, title, agenda, transparencies, etc.)</td>
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NOTE: The Oral presentation will be worth 35% of your project grade.