IEEE NORTH JERSEY SECTION LECTURE SERIES—FALL, 1978

**HURRY—Last chance to attend this course. Course will not be repeated for another year.
LATE REGISTRATION IS PERMITTED through the second class on a space-available basis.**

MICROPROCESSORS AND MICROCOMPUTERS

MONDAYS,   7:00 P.M. to 9:00 P.M., Starting September 11, 1978
I.T.T. Avionics Auditorium (at foot of tower)
500 Washington Avenue
Nutley, New Jersey 07110

Group Sponsor: Richard Padget, Westinghouse, (201) 465-2512

Speaker: Mr. Frank Relotto, Hansen Associates
For Whom Intended: The practicing engineer who wants to acquire or increase understanding of micros.
Course Objective: Microprocessor hardware and software will be taught with the aid of working microcomputer development systems for hands on experience. Through the use of working machines the student has the opportunity to observe how hardware and software integrate into a complete system. Laboratory sessions are included to give the student a chance to try his hands at programming a microprocessor. A text is included to supplement lectures. Previous knowledge of micros and programming, although helpful, is not necessary.

(1) Sept. 11 – INTRODUCTION & DEMONSTRATIONS – What is a Microprocessor, history, buzzwords, number systems. We will be disassembling a working system and discussing the hardware parts.
(2) Sept. 18 – COMPUTER ARITHMETIC—Decimal, binary, octal, and hexidecimal number systems. Binary arithmetic and boolean algebra will be discussed.
(3) Sept. 25 – DISCUSSION ON MICROPROCESSOR MEMORY—Memory and memory organization, memory addressing, static and dynamic memory uses, words, bytes, character and instruction codes.
(4)   Oct. 2 – HARDWARE CONSIDERATIONS ON THE MICROPROCESSOR—Interfacing the micro to memory, clocks, power requirements, registers, status flags, ALU operation.
(5) Oct. 9 –LOGIC BEYOND THE CPU—Instruction timing, ROM's, PROMS, RAM's, DMA, Real Time.
(6) Oct. 16 –LOGIC BEYOND THE CPU (cont.)—I/O–Parallel I/O, serial I/O, Synchronous and Asynchronous data transfer, parity, start-stop bits, baud rates, terminals, modems, differences between RS232, TTL, TTY interfacing.
(7) Oct. 23 –PROGRAMMING THE MICROPROCESSOR—Flow charting, object programs, monitors, text editors, assemblers, high level languages for the microcomputer.
(8) Oct. 30 –ADDRESSING THE MICROCOMPUTER—Memory addressing, inplied addressing, direct addressing, the use of the stack.
(9) Nov. 6 – PROGRAMMING-LAB SESSION—Three operating computers will be available—each varying in complexity.
(1) Basic unit with operators panel and 1K of memory; (2) Unit with monitor on ROM and text editor and assembler in RAM. This machine has 16K of usable memory. CRT terminal will be used for programming; (3) Microcomputer with floppy disc operating system. Unit has all the above plus OEM Basic hi-level language at instant call. CRT used for programming.
(10) Nov. 13 –LAB SESSION—With computers as described above.

REGISTRATION FORM

Mail to: *Leonard Gardner, 7 Acorn Place, North Caldwell, N.J. or phone (201) 328-3450/6416
Make checks payable to "North Jersey IEEE"*

Please enroll me in MICROPROCESSORS AND MICROCOMPUTERS

Name:_____   Company:_____

Address:_____   City, State, ZIP:_____

Phone:_____

Fee: $90 IEEE Members $110 Non-IEEE Members

Enrollment is limited. Fee includes copy of instructor's notes.

The IEEE Newsletter

A Night At The Track

The North Jersey Reliability Chapter is sponsoring a night at the track on October 3, 1978. This affair will consist of a dinner at the Meadowlands Race Track, a grandstand reserved seat and an official program. Dinner will consist of individual salads, breast of chicken cordon bleu, served on a bed of rice pilaf, ice cream with cookie, and coffee, tea or milk.

Reservations are required before September 15, 1978. Please send checks or money orders to: R. Hernandez, 324B Hackensack St., Wood Ridge, N. J. 07075.

Price: $15.00.
Date: October 3, 1978.
Place: Meadowlands Race Track, Rt. 3 & N. J. Turnpike, E. Rutherford, N. J. 07073.
Further Information: R. Hernandez, (201) 288-2000, (201) 935-8205 after 5 PM.

Multi-Group Plans Tour

The Multi-Group Society has announced their first tour of the year to be held on Sept. 19th at Electronic Associates, Inc., West Long Branch, N. J.

The tour will be of interest to members of the Computer and Power Societies as well as the Multi-Group.

Electronic Associates manufacturers simulation equipment. As part of the tour we will get to see, and hopefully experience (hands-on) the man/machine interaction power plant control room simulation, and the ATC line of aircraft flight simulators (both fixed and rotating wing).

The seminar/tour will begin at 4PM at EAI and will end with dinner at the Squire's Pub.

For additional information and to sign up for the tour contact either: Alan Ehrlich, (201) 688-2700 or Jerry Uhrig, (201) 386-6845.

AT&T Long Lines Tour

The September meeting of the North Jersey Power Engineering Society will include a tour of the AT&T Long Lines facility in Bedminster Township, N. J. The main feature of the tour is the Network Operations Center at the facility.

Attendance is free and open to all interested parties. Refreshments will be served. Attendees are to park in the Visitor's Garage; use the main entrance and wait in the Visitor's Lobby.

Time: 7:30 PM, September 27, 1978.
Place: AT&T Long Lines, Route 202, Bedminster, N. J.
Further Information: Contact: Seymour Salowe, chairman, at 465-2938; Gerard V. Barton, vice chairman, at 353-7000 ext. 545; John A. Baka, secretary, at 455-8534; or Gene F. Opdyke, program chairman, 688-1300.

Exec Committee Meets

Executive Committee Meetings will be held at Jersey Central Power & Light Co., Rt. 24, Madison, N. J., on the following dates: Sept. 6, Oct. 4, and Nov. 1.
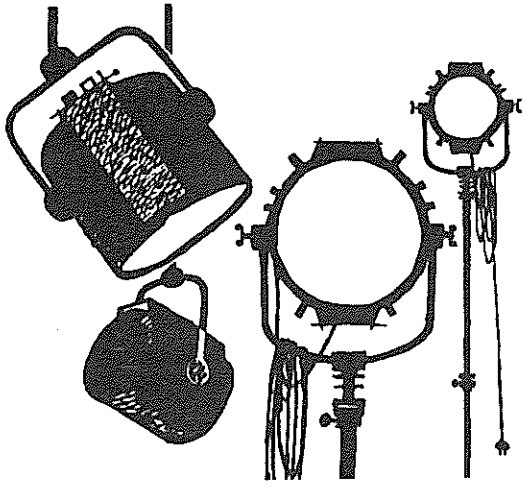
Computerized Traffic Control

The Control Systems Society will feature a talk by Dr. Walter H. Kraft, vice president of Edwards and Kelcey, who will discuss the following three subjects:

1) Surveillance Systems such as that proposed for New York City's CBD to monitor traffic changes resulting from transportation strategy changes.

2) Surveillance and Control Systems such as those proposed for the eight Northeast counties in New Jersey to divert traffic along major routes, and the Newark Airport Interchange System.

3) Urban Traffic Control Systems to control arterial systems such as Bloomfield Avenue in Essex County, and network systems such as the traffic signals in Newark's CBD.

Dr. Kraft will also describe the transition from analog to digital computers to Microprocessors in Distributed Networks for use in traffic control. His experience well qualifies him to make this presentation. One of his major responsibilities was the highway simulation networks and aspects of traffic projection analysis for the Pennsylvania Statewide Origin and Destination Study. Since his association with Edwards and Kelcey in 1962 he was elected vice president and is chief of the Traffic Engineering and Transportation planning Division specializing in transportation and traffic control/surveillance. At present he is responsible for the final design and user training of the Urban Traffic Control System (UTCS) in Essex County and Newark; the Newark Airport Interchange Surveillance System; and the Eight Northeast New Jersey Counties Route Guidance System.

Dr. Kraft was educated at the New Jersey Institute of Technology (previously Newark College of Engineering). He is active and well known in professional societies concerned with transportation and is a registered engineer in New York, New Jersey, and other states.

Time: 8 PM, Thursday, September 21, 1978.
Place: Bell Labs, Whippany Rd., (off of Rt. 10), Whippany.
For Further Information: Contact either Len Gardner, 328-3450/6416 or Jerry Uhrig, 386-6845.

SPOTLITE ON NORTH JERSEY

Let's talk about money. Don't panic! We're not going to ask you for any. On the other hand, we're not going to give you any, either. But you give IEEE forty-five bucks or so every year and I thought you would like to know where some of it goes.

I'm not going to talk about national expenditures. Those guys at headquarters spend a bundle on printing, member services, meetings, etc. and if you want to know about that let me know and we'll publish the information. But this month I'd like to tell you something about our North Jersey money.

The guy who keeps track of these things is Alex Brown, our Section Treasurer. When he's not using his slide rule to add up our finances Alex works on communications systems as an Engineering Section Head at ITT. Before that (long enough before so that he learned how to add with a slide rule) he obtained a BSEE from North Carolina State and a Masters Degree from Stevens.

This year Alex is going to spend about $26K. Yeah, I know. Your wife spends more than that. The difference is that Alex has to account for every buck.

Our major sources of income are member rebates and education course income. Member rebates are money that headquarters returns to the Section after they skim their cut from your $45. There are some complicated formulas that determine how much the Section receives, but it all adds up to about $8-9K per year. Our other major source of income is from our educational courses. This year we are planning on an income about $10K from this source. That's one reason we are so interested in finding out what courses you want to attend. Other income comes from our participation in Electro and from a few other sources.

Where does it go? Our single biggest expense is this newsletter (maybe $14K this year). That's a lot of dough but remember that one of our major tasks is to communicate with you and this is a cost effective way of doing that. We expect to spend about $4K to put together those educational courses. Beyond that, we spread the wealth among the various committees and chapters that put on Technical programs and conduct the other business of our North Jersey Section.

So get your share! Read this Newsletter and attend the programs that it tells you about. IEEE is a little like the government. Everybody pays taxes but some receive more benefits than others. The difference is that in IEEE the benefits are yours for the asking. It's up to you to take them. Don Bathke

P. S. If you want to start getting your money's worth check this Newsletter's announcement about the September 21 program on Computerized Traffic Control. Here's a case where the Control System Society is offering you a change to get first hand, up-to-date information about a current hot topic. Even educational TV doesn't offer that.

Computer Society Plans For The 78/79 Season

We ask all members to send in suggestions for meetings. We try to choose meetings that fall into a unified category for the year; for example, microprocessors have been the major theme for the last two years.

This year, it seems the microcomputer has come to the front, replacing the microprocessor as the device to be exploited in new designs (E.G. the Intel MCS-48 family; T.I.'s TMS 1000; the Panasonic MN 1403 and others soon to be made available from RCA and Intersil).

The trouble, as always, is that the cost of the peripherals swamp the savings in using these ultra-low-cost components in turnkey, stand-along systems. Therefore, our theme for this year will be microcomputer peripherals.

The answer to low-cost peripherals is to design all the interface, drive circuitry and power supplies yourself and only buy the bare bones mechanisms. This will require intimate familiarity with the mechanics of the peripherals which, hopefully, will be the subject of our speakers.

Since I am starting a consulting firm, I am late in getting meetings set up. Please contact me if you can help. One assumption made by the active members is that our interests lean toward hardware rather than software. Anyone disagreeing is invited to chair a software meeting.

Contact, Frank Kinglinski, Logic Engineering, 119 Azalea St., Paramus, N. J. 07652; 447-3663.

Power Group Announces 1978-79 Program Plans

The executive committee for the N. J. Power Engineering Society has blocked out meetings for the coming year using its best judgement. Only the first few meetings have been "cast in concrete" so there is yet an opportunity to incorporate ideas and suggestions you, the members of the PES, have to offer. This is your society and you should get what you desire for your dues.

Please look over the following program and mark the dates on your calendar which will not be changed unless absolutely necessary. Please contact the committee if we missed a topic you would have wanted to hear or would like to have included next year. We also would appreciate knowing if you wish to be a speaker or know of someone you would like to hear.

Sept. 27	Tour of AT&T Long Lines Facilities
Oct. 31	Joint IEEE – ASME Meeting How to Start Your Own Business
Nov. 29	Power From Trash (In Planning)
Jan. 24	Energy Theft (In Planning)
Feb.	Annual Student Night (In Planning)
Mar. 28	Annual PES Dinner (In Planning)
Apr. 25	Solar Power (In Planning)
May	Manufacture of Power Cable and Tour of Manufacturing Facilities (In Planning)

Call or write one of the following:
Seymour Salowe, Chairman, 465-2938, Westinghouse Electric Corp., 95 Orange Street, Newark, N. J. 07101

Gerard V. Barton, Vice-Chairman, 353-7000 Ext. 545.

John A. Barka, Secretary, 455-8534.

Gene F. Opdyke, Pgm. Chairman, 688-1300.

Data Communications For Office Seminar

"DATA COMMUNICATIONS FOR THE OFFICE OF THE FUTURE" is the title of a one-day IEEE Comsoc Seminar relating to future trends in this rapidly expanding field.

The following topics will be discussed, with the speakers to be announced in the near future, at this November 28th seminar:

PERSON TO PERSON COMMUNICATIONS

MACHINE TO MACHINE COMMUNICATIONS AND DATA NETWORKS

MACHINE TO PERSON INTERACTION

THE OFFICE IN THE HOME

USER EXPERIENCE IN OFFICE DATA COMMUNICATIONS

Time: 9 AM to 4:30 PM, Tuesday, November 28, 1978.
Place: United Engineering Center, 345 E. 47th Street, N. Y.
Fee: (includes lunch & coffee breaks) $40 Members, $45 Non-Members, $10 Students. Make payable to "IEEE COMSOC."
Mail To: Roger Coleman, Treasurer, Education Committee, New York Telephone, 210 West 18th Street, N. Y. 10011, 5th Floor.
For Further Information: Roger Coleman, (212) 620-3877.

Shared Clinical Engineering Services

The Metropolitan New York Chapter of the IEEE Engineering in Medicine and Biology Society announces its program for Wednesday, October 4, at 7:30 PM. Dr. Maryon J. Williams, Jr., of Biomedical Engineering Shared Technology, Princeton, N. J., will speak on Shared Clinical Engineering Services.

Time: 7:30 PM, Wednesday, October 4, 1978.
Place: Rockefeller University, Bronk Laboratory, Room 216, 66th St. and York Ave., N.Y.C.
Pre-Meeting Dinner: 6 PM, Tower Cafeteria, 64th St. and York Ave., N.Y.C.
Further Information: Harry Rice, (212) 554-7075 (The Roosevelt Hospital).

Update Your Knowledge

It is still not too late to up-date your technical knowledge. Evening courses will soon begin in the following subjects:

Reliability and Its Applications
Fiber Optics Communication
Design of Circuits Utilizing C-MOS Technology
Design of Modern Power Distribution Systems
National Electric Safety Code and OSHA Regulations
In-Lab Medical Emergencies
Preparing the Technical Presentation

See your August Newsletter for more details or phone Len Gardner at 328-6416.

PAC Sets Meetings

PAC Meetings will be held Sept. 20, Oct. 18, and Nov. 15, at 7:30 PM at ITT Conference Center, Nutley, N. J.

All E.E.'s & Members are invited. Open discussion follows all meetings. Refreshments will be served.