



The IEEE

# News

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Published monthly except June and July by the North Jersey Section of the Institute of Electrical & Electronics Engineers, Inc. Office of Publications: 399 Howard Boulevard, Mount Arlington, N. J. 07856

Volume 19 February 1973 No. 6

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## Newsletter Deadline

Deadline for receipt of material is the 20th of the second month preceding month of publication. All communications concerning the Newsletter including editorial matter, advertising, and mailing, should be addressed to: The NEWSLETTER, c/o Girard Associates, Inc., P. O. Box 111, Mt. Arlington, N. J. 07856, Phone: 398-5524.

Subscription: \$0.75 per year through dues for members; \$1.50 per year for non-members.

Second Class Postage Paid  
at Mount Arlington, N. J.

## REPORT ALL ADDRESS CHANGES TO:

Institute of Electrical and Electronics  
Engineers, Inc., 345 East 47th Street  
New York, N. Y. 10017

It is not necessary to inform the North Jersey Section when you change your mailing address. The NEWSLETTER and other section mailings use a list provided by IEEE's national headquarters in New York. This means the Section has no need to maintain a mailing list or addressing plates. Section membership records are changed when Headquarters notifies us.

## SECTION OFFICERS 1972-1973

Chairman..... Carl C. Torell  
Vice Chairman..... Harlan J. Perlis  
Treasurer..... John Gerth  
Secretary..... James F. Kampschoer  
Member-at-Large..... Max J. Schindler  
Member-at-Large..... Peter F.B. Jackson  
Jr. Past Chairman..... Robert G. Sokalski

## NEWLY ELECTED FELLOWS from The North Jersey Section

*Robert C. Fletcher* For research on microwave beam devices and spin and cyclotron resonances in silicon, and for technical leadership in the development of solid-state devices.

*John K. Galt* For pioneering research on domain wall motion in ferrites and on cyclotron resonance in metals, and for technical leadership in the application of physics to communications devices.

*Hermann K. Gummel* For contributions to mathematical modeling of electronic devices.

*John E. Iwersen* For contributions and leadership in the development of semiconductor devices.

*James F. Kaiser* For contributions in digital signal processing, and the synthesis of digital filters.

*Irwin W. Sandberg* For contributions to circuit and system theory, including the functional analysis of non-linear and time-varying circuits and systems.

*Harold Seidel* For contributions to the field of active and passive microwave networks.

*Joseph J. Suozzi* For contributions to power magnetics and computer magnetics, and for educational programs.

# Annual Section Dinner & Recognition Of New Fellows; Zambuto To Cover Camera Tricks & Special Effects



In this non-technical talk Dr. Zambuto discusses how a camera can be used to modify the visual qualities of a scene to express the artistic intentions of the photographer.

A set of color slides illustrates these techniques by showing some "how to" and some "how not to" of photography. Some more sophisticated camera tricks are also explained and illustrated drawing from experiences and recollections of over 25 years in the motion picture industry.

Dr. Zambuto holds Ph.D. degrees from the Universities of Rome and Padua, Italy. He has been technical director and

studio manager of several major motion picture companies in Europe and the U.S., designing, building and managing film installations and directing the technical aspects of the production of motion picture spectacles all over the world.

Academically he has been a professor of physics and of engineering at the University of Rome, CCNY, Manhattan College and finally NCE, where he is at present a professor of Electrical Engineering.

His research interests range from nuclear physics to communications, from visual and acoustic recording to aids to navigation and controls, from psychophysical phenomena to quantum electronics, lasers and holography. He holds 26 patents.

He is president of the International Committee for Audio and Visual Techniques of the Future. As a consultant to UNESCO and president of their committee on Technical Education he has helped organize the education systems of several developing countries, founding Universities in Africa, Asia and South America. He is fluent in nine languages.

## FELLOWS NIGHT, DINNER-DANCE

North Jersey Section IEEE

Saturday, February 24, 1973

7:00 P.M. (cocktail hour 6:00-7:00) Dancing 9:00 P.M.-1:00 A.M.

Governor Morris Inn

Morristown, N.J.

*Dr. Mauro H. Zambuto; Dinner Speaker*

Use the form below for reservations enclosing a stamped, self-addressed envelope. Reservations received after February 17 or without an enclosed envelope will be held at the door along with telephoned reservations by calling (201) 833-1787 or (201) 645-5492/ 5472.

Harlan J. Perlis, Dinner Chairman  
791 Hartwell St., Teaneck, N.J. 07666

Please forward \_\_\_\_\_ tickets at \$10.00 each (make checks payable to North Jersey Section IEEE) to:

Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_

State \_\_\_\_\_ ZIP \_\_\_\_\_



FLETCHER



GALT

## ROBERT C. FLETCHER

Dr. Robert C. Fletcher is executive director of the Solid State Components Division at Bell Laboratories, Murray Hill, New Jersey. He is in charge of the Solid State Device Laboratory, the Electron Device Laboratory, the MOS Technology and Memory Laboratory - Allentown, and the Film and Hybrid Technology Laboratory - Allentown.

Dr. Fletcher began his Bell System career in 1949 when he joined Bell Laboratories. His early work included research on traveling wave tubes, crossed field devices and semiconductors. He later headed the Solid State Device Development Department. In 1958 he became director of the Solid State Device Laboratory and in 1962 director of the Electron Device Laboratory.

In 1964 he was elected Vice President, Research of the Sandia Corporation, a subsidiary of the Western Electric Company. He returned to Bell Laboratories in November, 1967, as executive director of the Military Systems Research Division (changed to Ocean Systems Division 2/ 1/ 70), and assumed his present position March 15, 1971.

Dr. Fletcher received B.S. and Ph.D. degrees in physics from the Massachusetts Institute of Technology in 1943 and 1949, respectively.

He is a Fellow of the American Physical Society, a senior member of the Institute of Electrical and Electronics Engineers, and a member of Sigma Xi.

## JOHN K. GALT

Dr. John K. Galt is Director of the Solid State Electronics Research Laboratory of Bell Telephone Laboratories. His organization is concerned with research on those aspects of solids which are relevant to technological applications.





**GUMMEL**



**IWERSEN**



**KAISER**



**SANDBERG**



**SEIDEL**



**SUOZZI**

Dr. Galt joined the technical staff of Bell Laboratories in 1948 and has engaged in research on the physics of solids, with emphasis on their magnetic and electrical properties. He has been concerned especially with cyclotron and ferromagnetic resonance. He assumed his present responsibilities in 1961.

Dr. Galt received the A.B. Degree from Reed College in 1941 and the Ph.D. in physics from M.I.T. in 1947. He is the author of 40 technical papers in his fields of interest.

He is a Fellow of the American Physical Society, a member of the I.E.E.E., and the Honorary Societies, Phi Beta Kappa and Sigma Xi.

#### **HERMANN K. GUMMEL**

Hermann K. Gummel is head of the Design Analysis Department at Bell Laboratories, Murray Hill, N.J.

Dr. Gummel joined Bell Laboratories in 1957. He has been concerned primarily with semiconductor electronics in which field he has published twenty papers and holds three patents.

He was born in Hanover, Germany, and received a degree in physics from Phillips Universitat, Marburg, in 1952 and 1957.

Dr. Gummel is a member of the American Physical Society and Sigma Xi.

#### **JOHN E. IWERSEN**

Dr. J. E. Iwersen is Director of the Semiconductor Device Laboratory at Bell Telephone Laboratories, Murray Hill, N.J.

Dr. Iwersen received his B.S. degree from Wagner College and M.A. and Ph.D. (Chemistry) degrees from The Johns Hopkins University. Dr. Iwersen joined Bell Laboratories in 1955. He has specialized in the development of semiconductor devices, with emphasis on silicon transistors and integrated circuits.

#### **J. F. KAISER**

James F. Kaiser is a member of the technical staff of the Information Processing Research Department at Bell Telephone Laboratories, Murray Hill, New Jersey.

He joined Bell Laboratories, in 1959 and first engaged in acoustics research studies. More recently he has been concerned with problems of data processing, digital filter design, system simulation, and graphic display of data.

A native of Piqua, Ohio, he received an E.E. degree in 1952 from the University of Cincinnati, and the S.M. and Sc.D. degrees in electrical engineering from the Massachusetts Institute of Technology in 1954 and 1959, respectively.

He is a member of the Institute of Electrical and Electronics Engineers, the Society for Industrial and Applied Mathematics, the Association for Computing Machinery, and the American Mathematical Society. He is also a member of the honor societies Sigma Xi, Tau Beta Pi, and Eta Kappa Nu.

#### **IRWIN W. SANDBERG**

Irwin W. Sandberg, head of Systems Theory Research Department at Bell Laboratories is responsible for mathematical and computer-aided analysis of complex systems.

Dr. Sandberg joined Bell Laboratories in 1958. He initially was concerned with synthesis and analysis of active and time-varying electrical networks, studies of properties of nonlinear control systems and problems in communication theory and numerical analysis.

Dr. Sandberg received his B.E.E., M.E.E., and D.E.E. degrees in Communications from Polytechnic Institute of Brooklyn in 1955, 1956 and 1958 respectively.

He is a member of the honorary societies Eta Kappa Nu, Tau Beta Pi and

Sigma Xi. He has received many awards among which are the Westinghouse Fellow, Bell Laboratories Fellow, and Who's Who in American Education. Dr. Sandberg is a member of IEEE and has served as Vice-Chairman of the Professional Group on Circuit Theory.

#### **H. SEIDEL**

Dr. Seidel's activities have generally related to microwave network theory and solid state device study and application. His publications have included work on microwave filters and couplers, ferrite propagation and device studies, masers, parametric devices, and, most recently, feedforward correction studies.

Dr. Seidel has been with Bell Telephone Laboratories at Murray Hill for 20 years. He received his BEE from CCNY and his MEE and DEE degrees from Polytechnic Institute of Brooklyn.

#### **JOSEPH J. SUOZZI**

Dr. J. J. Suozzi is head of the Electronic Common Power Systems and Computer Studies Department, Bell Laboratories, Whippany, N.J.

He began his Bell System career as a test planning engineer with Western Electric Co. in 1951. He joined Bell Laboratories in 1955 and assumed his present position in 1965.

Dr. Suozzi has been concerned with magnetic amplifiers, memory devices, and development of twistor memories for E.S.S. systems.

He received his B.E.E. cum laude and M.E.E. in electrical engineering from The Catholic University in 1949 and 1954 respectively. He received the Ph.D., also in electrical engineering, from Carnegie Mellon University in 1958.

Dr. Suozzi is a member of IEEE and Sigma Xi. He served as the first director of the I.E.E.E.'s *Transactions on Magnetics* from 1965 to 1967 and was chairman of its Magnetics Group in 1969 and 1970.

## Section Plant Tour

The North Jersey Section will conduct a tour of the manufacturing center of the Personal Products Co., a division of Johnson & Johnson, Inc., at Milltown, New Jersey.

The manufacturing facilities, being different and original, will be of high interest to everyone. Included in the tour will be the steam power plant, automated material handling facilities as well as inspection facilities. The tour will last approximately one hour and fifteen minutes, and will be followed by refreshments.

Tour is limited to 20 persons. Please fill in the registration slip below and mail it before February 21, enclosing self-addressed envelope.

*Time:* Wednesday, February 28, 7:20 P.M.

*Place:* Personal Products Co., Milltown, N.J.

Mr. John J. Imm  
c/o General Electric Co.  
25 East Willow St.  
Millburn, N.J. 07041  
Phone: 376-9000

Name.....

Company.....

Address.....

Phone.....

## Students' Night

The North Jersey Section will hold its Eighth Annual Student's Night hosted by the Fairleigh Dickinson University IEEE Student Chapter at the Teaneck Campus of Fairleigh Dickinson University on Wednesday, February 7, 1973. The theme will be "Trends in Engineering Opportunities."

Any IEEE student member and date is invited. The total cost, fifty cents, includes a full course dinner, door prizes and some very interesting information. Tickets will be available through IEEE local branch officers.

*Time:* Wednesday, February 7, 7:30 P.M.

*Place:* Becton Hall Auditorium, Fairleigh Dickinson University, Teaneck, N.J.

*Pre-Meeting Dinner:* Student Common Building, FDU, Teaneck, 6:30 P.M.

## Hospital Bioengineering

The Metropolitan Chapter IEEE Group in Engineering and Medicine and Biology will present Dr. Bryan Parker, Director, Department of Bioengineering, Montefiore Hospital and Medical Center. Dr. Parker's talk is titled "Bioengineering in the Hospital."

*Time:* Wednesday, February 14, 7:30 P.M.

*Place:* South Laboratory, Rockefeller University, York Ave. & 66th Street, NYC.

*Pre-Meeting Dinner:* Tower Building Cafeteria, Rockefeller University, 6:00 P.M.

## Product Line Planning

The Aerospace and Electronic Systems Group, Metropolitan New York-North Jersey Chapter, will present Dr. Walter R. Beam who will discuss "From Technology to Products—Planning a Product Line."

Planning can be a valuable tool for developing and exploiting the company's resources. Dr. Beam will discuss planning the development of a product line, getting

multiple use from costly technologies, and other examples which will illustrate how various functions are brought into coordination in order to produce compatible and successful products for the commercial marketplace.

Dr. Beam, formerly a staff Director in IBM's Systems Development Division and responsible for technical planning, is now an independent consultant to manufacturers and users of digital equipment. He is an IEEE Fellow, and serves as Editor of IEEE Soundings, the Institute's tape cassette periodical.

*Time:* Thursday, February 22, 8:00 P.M.

*Place:* ITT Defense Group Auditorium, 500 Washington Ave., Nutley, N.J. (main lobby entrance near base of microwave tower)

*Pre-Meeting Dinner:* Copperhood Restaurant, 1 Park Ave., Lyndhurst, N.J., 6:00 P.M.

## Data Transmission

On February 13, the Communications Society, North Jersey Section, will present a talk on Data Transmission Systems by Mr. Charles W. Lewis, Network Manager, Data & Transmission Systems of New Jersey Bell Telephone Co.

Mr. Lewis will give an overview of analog transmission systems and modems presently employed by N.J. Bell. His talk will subsequently cover data transmission parameters in light of present analog transmission methods. This will lead into perhaps the most interesting topic of the evening, the Digital Data System, which will be offered to users in approximately 1974. A discussion will follow.

For further information, call Norman Hettinger at (914) 694-2879 or (201) 488-2100.

*Time:* Tuesday, February 13, 8:00 P.M.

*Place:* N.J. Bell Building, 650 Park Ave., East Orange, N.J. Exit 147 Garden State Parkway, West on Springdale Ave., South on Clinton Street, West on Park Ave. Exit 145 Garden State Parkway, South on Grove St., West on Central Ave., North on Clinton St., West on Park Ave.

*Pre-Meeting Dinner:* Holiday Inn, Evergreen Place, East Orange, N.J.; 6:00 P.M.





Power and Industrial Div.

# EDUCATIONAL PROGRAM SPRING & FALL 1973



## REVIEW STUDY GROUPS — FOR PROFESSIONAL ENGINEER EXAMINATIONS

This program is designed to prepare candidates for Professional Engineering License examinations in New York and New Jersey. The material is consistent with the national type of exam used for the New York license examinations. Candidates for Part I and Part II should enroll in Study Group No. 1, No. 2 and No. 3. The New York State Board permits graduates of approved schools to take Parts I and II and qualify for "Engineering-in-Training." New York exams will be held in December 1973 and April 1974. Please note that the fall course will be completed prior to the December exam.

ENDORSED BY NYSSPE

**BASIC ENGINEERING SCIENCES I (IEEE-ASME)****STUDY GROUP NO. 1**

Review for Part I and Part II, N. Y. Exam. Review will cover practical applications of Statics, Mechanics, and Mathematics.  
MONDAYS, Starting August 27, 1973, 6:15-8:45 P.M., 12 Sessions

**BASIC ENGINEERING SCIENCES II (ASME-IEEE)****STUDY GROUP NO. 2**

Review for Part I and Part II, N. Y. Exam. Review will cover practical applications of Dynamics, Fluid Mechanics, Thermodynamics, and Electrical Principles.

TUESDAYS, Starting August 28, 1973, 6:30-9:00 P.M., 12 Sessions

**ENGINEERING ECONOMICS AND PRACTICE (IEEE-ASME)****STUDY GROUP NO. 3**

Review for Engineering Economics for all three sections of the exam. Review will cover economic comparisons, annual cost, present worth, and rate of return. Fixed and operating costs, accounting and cost analysis, depreciation, taxes and valuations will also be reviewed.

THURSDAYS, Starting August 30, 1973, 6:30-9:00 P.M., 12 Sessions

**MECHANICAL ENGINEERING (ASME)****STUDY GROUP NO. 4**

Review for Mechanical Engineering Section of Part III, N. Y. Exam. Application of mechanical engineering principles to combustion, gas dynamics, compression shock, nozzle design, steam power plant cycles, psychrometrics, air conditioning heat transfer, nuclear reactors, Mach cone, Kinetics, gyroscope motion, vibratory motion, balancing of machines, compound shafts, design of gears, hydraulics, pumps and fans, stress and deformation of machine elements, etc.

WEDNESDAYS, Starting August 29, 1973, 6:30-9:30 P.M., 14 Sessions

**ELECTRICAL ENGINEERING AND APPLICATIONS (IEEE)****STUDY GROUP NO. 5**

Review for Electrical Engineering Section of Part III, N. Y. Exam. Electrical Engineering Principles and Applications of: transformers a-c and d-c machines, transmission lines, filters, wave guides, networks, impedance matching, bridges, coupled circuits, resonance, harmonics, transients, three-phase power, amplifiers, electronic circuits. Root locus and Routh Criteria.

WEDNESDAYS, Starting August 29, 1973, 6:30-9:00 P.M., 12 Sessions

### REGISTRATION INFORMATION

GROUPS #	FEE PER GROUP	PAYABLE TO	MAIL TO
1, 3	\$30 each for Members, IEEE, ASME, NYSSPE; \$40 each for all others	"POWER & IND. GROUP N. Y. SECTION IEEE"	<i>I. M. Berger</i> , Vice Chairman Educational Committee, IEEE N. Y. C. Transit Authority, Rm. 1200 370 Jay St., Brooklyn, N. Y. 11201 Phone: (212) 852-5000, Ext. 4495
5	\$50 each for Members, IEEE, ASME, NYSSPE; \$60 each for all others		
2, 4	\$30 each for members, IEEE, ASME, NYSSPE; \$40 each for all others	"ASME METROPOLITAN SECTION"	<i>Thomas Gucciardo</i> , Educational Comm. ASME, Metropolitan Section N. Y. C. Health & Hospital Corp. Bureau of Engineering & Maintenance 66 Leonard St., N. Y., N. Y. 10013 Phone: (212) 566-6940
15, 16, 17, 18, 19	\$25 each for Members, IEEE, ASME, NYSSPE; \$35 each for all others	"POWER & IND. GROUP N. Y. SECTION IEEE"	<i>Harry Johnson</i> , Vice Chairman Educational Committee, IEEE Roytran Co. 179 N. 10th Street, Brooklyn, N.Y. 11211 Phone: (212) 782-1505





**STUDY GROUP NO. 15**  
**ELECTRIC POWER UTILITIES**  
**AND THE ENVIRONMENT**

**MONDAYS, 6:30-8:30 P.M., Starting February 26, 1973**

Consolidated Edison Co., Rm. 1701, 4 Irving Place, New York, N.Y. 10003

**Group Sponsor:** Fred Kresse, Consolidated Edison Company  
Tel. (212) 460-4214

**Chief Group Coordinator:** John Tambasco, Urban Development Corp.  
Tel. (212) 974-7617

**Group Coordinator:** Fred Kresse, Consolidated Edison Company  
Tel. (212) 460-4214

**Group Coordinator:** Gerard Barton, Public Service Electric & Gas  
Tel. (201) 684-7000, X307

Electric power plants and transmission lines have become a focal point for action in responding to the national concern for protecting the environment. The electric power utility management is faced with conflicting interests since the public is demanding substantially more electric power and greater reliability while planned utility construction is increasingly being delayed by controversy and litigation over environmental concerns. This study group explores the alternatives open to electric power utility impact on the environment.

1. **Air Quality** - The general urban air quality situation discussed with respect to the objectives of controls and standards, with emphasis on the role of the utility.  
*Dr. Ferrand, Director, Bureau Technical Services, Dept. of Air Resources, City of New York.*
- 2-3. **Pollution Control Techniques** - These sessions will cover the technologies and progress in dealing with the various pollutants - including particulates, noxious gases, waste heat.  
*William Patterson, Director, Construction and Environment Engr., EBASCO Services.*
4. **Fossil Fuels** - This session will discuss the reserves of these resources and the methods of desulphurization.  
*Fred Strauss, Consolidated Edison of New York.*
- 5-6. **Electric Energy Systems** - These sessions will cover the range of methods of electric energy production from existing to future with the objective of analyzing their future potential and economics involved.  
*Dr. James Burger, Research Dept., Public Service Electric & Gas, New Jersey.*
7. **Beautification of Facilities** - The discussion will provide the general scope of methods used by the utilities in the rehabilitation of transmission and distribution facilities.  
*Norman Belesman, Public Service Electric & Gas, N.J.*
8. **Plant Siting** - Such topics as the use of existing sites, obtaining new sites and the urban siting of nuclear plants will be discussed in this session.  
*Robert Riscica, Consolidated Edison of New York.*
9. **Federal, State and Local Regulations** - Government activities affecting utilities are discussed and future trends and possibilities analyzed.  
*Orville Hanson, Consolidated Edison of New York.*
10. **Economics of Environmental Consideration** - Methods used by utilities to establish organization to meet the environmental problems, and the economics involved.  
*Speaker to be announced.*

**STUDY GROUP NO. 16**  
**MODERN AUTOMATIC CONTROL SYSTEMS II**  
**TUESDAYS, 6:30-8:30 P.M., Starting February 27, 1973**

Consolidated Edison Co., Room 1425, 4 Irving Place, N.Y., N.Y. 10003

**Group Sponsor:** Gerald B. Ryff, Consolidated Edison Co.  
Tel. (212) 460-3983

**Chief Group Coordinator:** Neville Softleigh, Public Service Electric & Gas  
Tel. (201) 622-7000

**Group Coordinator:** Jalal Gohari, American Electric Power  
Tel. (212) 422-4800, X551

**Group Coordinator:** Sheldon Heitman, Otis Elevator Co.  
Tel. (212) 244-8000, X685

This is the second of a series of ten-session study courses for electrical, consulting, project engineers and operating personnel who are concerned with modern control system application. Topics covered will include the uses of Modern Automatic Control Systems in Fossil-Fueled Generating Stations and in Power Systems Control.

1. **February 27 - Local Electric Power Systems Control** - Control of Generation-Load-Frequency Control Methods & Parameters.  
*Speaker from Leeds & Northrup Co.*
2. **March 6 - Use of Computers in Power Plant Control** - Monitoring and Control of Plant Systems.  
*Speaker from General Electric.*
3. **March 13 - Modern Turbine Control Systems** - Parameters, Devices and Methods.  
*Speaker to be announced.*
4. **March 20 - Modern Boiler Control Systems** - Parameters, Devices and Methods.  
*Speaker to be announced.*
5. **March 27 - Modern Generator Control Systems** - Parameters, Devices and Methods.  
*Speaker to be announced.*
6. **April 3 - Uninterruptible Power Supply Systems** - Requirements, Uses and Types.  
*Speaker from Roytran Co.*
7. **April 24 - Coordinated Control of Boiler Turbine Generator Systems** - Methods of Controlling All Plant Parameters for Efficient Plant Operation.  
*Speaker from Leeds & Northrup Co.*
8. **May 1 - Future Trends of Automatic Control State of the Art and Beyond** - Control Systems & Computers.  
*Speaker to be announced.*
9. **Date to be announced - Tour** - A Tour of an Appropriate Automated Plant or Facility.
10. **Date to be announced - Tour of Con Edison Steam Plant** - A Guided Tour of Con Edison New E. 60th Street Steam Plant - 6 Package Boilers Designed for Operation by Two or Three Operators.



# M — Special Study Groups



SPRING 1973

## STUDY GROUP NO. 17

### FUNDAMENTALS OF ELECTRICAL DESIGN

Practical Design Principles for Industrial and Commercial Building Low-Voltage Distribution Systems

WEDNESDAYS, 6:00-8:00 P.M., Starting February 28, 1973

Roger Smith Hotel, 47th Street & Lexington Ave., New York, N.Y.

Group Sponsor: J. Domorski, Automatic Switch Company  
Tel. (212) 344-3765

Chief Group Coordinator: William Perlman, Roytran Co.  
Tel. (212) 782-1505

Group Coordinator: Joseph Dedeo, Automatic Switch Company  
Tel. (212) 344-3764

Group Coordinator: Alex Korn, Stone & Webster Engrg. Corp.  
Tel. (212) 592-9300

This series of ten-session study courses is for electrical, consulting and project engineers, contractors, architects and others who are concerned with power distribution systems.

This course will stress practical design and application information for distribution systems, stressing actual experience over abstract theory.

These sessions will be presented by Mr. Arthur Freund, Chief Electrical Engineer, Brodsky Hopf & Adler.

1. February 28 - Medium Voltage (5-15 Kv) Switchgear Construction - Ratings - Application - Relaying Fusible switches circuit breakers - Motor Starters.
2. March 7 - Transformers - Dry Type - Askarel Filled - Oil Filled - Ratings - Application - Connections.
3. March 14 - Service Entrance Equipment - Large Services - Small Services - Code Requirements - Metering - Circuit Breakers - Service Protectors - Bolted Pressure Switches.
4. March 21 - Low Voltage Switchgear - Construction - Air Circuit Breakers - Ratings - Application - Selectivity - Magnetic Trip Units - Static Trip Units.
5. March 28 - Low Voltage Switchboards - Nema Standards - Design and Construction - Bus Ratings - Bus Bracing - Circuit Breakers - Fused Switches - Hybrid Types - Application.
6. April 4 - Panelboards - Circuit Breakers - Switches and Fuses - Construction - Application - Standards - Special Features - Circuit Breaker Ratings - UI Fuse Classifications.
7. April 11 - Motor Control and Motor Control Centers - Starters Reduced Voltage Starting - Ratings - Overcurrent Protection - Short Circuit Protection - Motor Control Center Construction - Application.
8. April 18 - Ground Fault Protection - Needs - 1971 Code Requirements - Practical System Design - Application - Damage Limits - Coordination - Life Protection - Hospital Systems.
9. April 25 - Grounding - Power Factor Correction - Wire and Cable - Grounding Code Requirements - Good Grounding Power Factor - Cost Savings - Calculations - Wire and Cable Types - Application.
10. Bus Duct - Summary Questions - Bus Duct Design Types - Horizontal Systems - Vertical Risers - Code Requirements - Voltage Drop Take-off Devices and Methods - Summary and Questions.

## STUDY GROUP NO. 18

### ENGINEERING COMPUTER PROGRAMMING

#### PART II

WEDNESDAYS, 6:30-8:30 P.M., Starting February 28, 1973

Consolidated Edison Co., Rm. 1701, 4 Irving Place, N.Y., N.Y. 10003

Group Sponsor: David Hawkins, Consolidated Edison Co.  
Tel. (212) 460-2650

Chief Group Coordinator: Al Cox, Bussman Manufacturing Co.  
Tel. (212) 267-1466

Group Coordinator: Gary Golinski, Bussman Manufacturing Co.  
Tel. (212) 267-1466

Instructor: David Hawkins, Consolidated Edison Co.  
Tel. (212) 460-2650

This study series will review systems, software and solution techniques for solving engineering problems. Some knowledge of FORTRAN or BASIC will be helpful but is not essential. Emphasis will be given to problems and examples which illustrate the principles involved.

1. February 28 - REVIEW OF FORTRAN/AND BASIC PROGRAMMING.
2. March 14 - Introduction to Systems Analysis - Development of an integrated system of programs for engineering problem solving. Analysis of data sources, reports required, and current processing techniques.
3. March 21 - Organized Development of a System of Programs - Development of program specifications and file structures. Program development, documentation and user education.
4. March 28 - Time Sharing, Remote Batch and Batch Computer Systems - Analysis of the advantages, problems and costs of each system.
5. April 4 - Simulation Models - Introduction to simulation models; how to develop models; and how models can be used to solve engineering problems.
6. April 11 - Principles of Iterative Solution Techniques - Iterative problems, Newton solution techniques.
7. April 18 - Statistical Analysis With Computers - Calculation of probabilities, means, variance and sample sizes. Reliability analysis.
8. April 25 - Linear Programming - Development of linear models, solution techniques and applications.
9. May 2 - Project Management System - Use of CPM, advantages and limitations; development of project management systems for many projects with limited number of activities in each project.
10. May 9 - Special Languages for Generation of Reports - Introduction to high level languages which generate reports and programs by the use of super commands.



N. Y. Section, IEEE



Power and Industrial Div.

# EDUCATIONAL PROGRAM SPRING 1973

Metropolitan Section



ASME

## STUDY GROUP NO. 19

### A LAW COURSE FOR ENGINEERS

THURSDAYS, 6:30-8:30 P.M., Starting March 1, 1973

Consolidated Edison Co., Rm. 1701, 4 Irving Place, New York, N.Y. 10003

Group Sponsor: *Kent Weitzel, Westinghouse  
Tel. (212) 692-3613*

Chief Group Coordinator: *Samuel Digwo, Con Edison Company  
Tel. (212) 460-6737*

Group Coordinator: *Elias Mercouris, Tel. (516) 379-9613*

Group Coordinator: *William Montgomery, Con Edison Company  
Tel. (212) 460-6164*

#### Instructors:

*Mr. Karl F. Milde, Jr., of the law firm of Brumbaugh, Graves, Donohue & Raymond, Mr. Milde, S.B. Physics; S.B. Elec. Eng., M.I.T.; J.D. Georgetown University, is a member of the New York State Bar.*

*Mr. Stephen M. Raphael of the law firm of Raphael and Marcus. Mr. Raphael, A.B. Columbia, LL.B., Harvard University, is a member of the New York State Bar, and is an Adjunct Assistant Professor of Law at New York University.*

This course is designed to explore the association of law and engineering. An engineer should be aware of his legal rights and able to recognize the legal implications of his decisions.

1. March 1 - Introduction to the Law - (a) Civil vs. criminal law, elements of a cause of action. Federal Court System. *Mr. Milde.* (b) Concept of Jurisdiction. State Court System. *Mr. Raphael.*

2. March 8 - Contract Law - What constitutes a binding agreement; sales; damages; usages of the trade; contracts of adhesion. *Mr. Raphael.*
3. March 15 - Tort Law - Negligence, intentional torts and strict liability; fraud and misrepresentation; professional liability; product liability. *Mr. Raphael.*
4. March 22 - Warranties, Leases & Evidence - Warranties, Sales vs. Leases. Exclusive distributorships and contracts not to compete. What constitutes legal evidence; expert testimony. *Mr. Raphael.*
5. March 29 - Property & Taxation - Real vs. personal property. Mortgages and leases. Income taxation: capital gains, realization, deferred income and professional deductions. *Mr. Raphael.*
6. April 5 - Business Entities, Trademarks & Unfair Competition - (a) Agency, partnerships and corporations. SEC procedures. *Mr. Raphael.* (b) Acquisition and registration of trademarks. Scope of protection. Palming off; commercial disparagement and misrepresentation. *Mr. Milde.*
7. April 12 - Copyright Law - Common law vs. Statutory Copyright. Copyrightable subject matter. Notice and registration. Ownership and renewal. *Mr. Milde.*
8. April 19 - Patent Law - Types of patents. Patentable subject matter. Conditions and patentability. Trade secrets. *Mr. Milde.*
9. April 26 - Patent Office Procedures - The patent classification system. Searching. The patent application. Examination procedure. Appeal procedures. *Mr. Milde.*
10. May 3 - Patent Enforcement & Licensing - What constitutes infringement. Doctrine of equivalents and file wrappers estoppel. Repair vs. reconstruction. Patent misuse and anti-trust. *Mr. Milde.*

## REGISTRATION FORM

Name (printed) .....  
Firm ..... Position .....  
Business Address .....  
Phone No. ....  
Home Address .....

Study Group .....  
Member of:  
☐ IEEE  
☐ ASME  
☐ OTHER  
☐ NON-MEMBER  
Membership  
No. ....

(Do Not Write In This Space)  
Admission Card No. ....  
Refund Certificate No. ....  
Fee Paid \$..... (Cash, Check, M.O.)  
Date ..... By .....

Note: See Registration Information for Checks

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(Do Not Write In This Space)  
Admission Card No. ....  
Refund Certificate No. ....  
Fee Paid \$..... (Cash, Check, M.O.)  
Date ..... By .....

Note: See Registration Information for Checks



## Engineers Week Dinner

The American Society of Mechanical Engineers, North Jersey Section is holding a dinner meeting to celebrate "Engineers' Week." Guest speaker is Mr. Rocco Ricci, of the Environmental Protection Agency. IEEE members are welcome.

Mail remittance; \$9.00 for one person, \$8.00 for spouse or date to: Mr. Burghard Ruterbories, Esso Research and Engineering Co., P.O. Box 101, Florham Park, N.J. 07932.

*Time:* Wednesday, February 21, cocktails 6:30 P.M., Prime Ribs Dinner, 7:30 P.M.

*Place:* The Friar Tuck, Route 23, Cedar Grove, N.J.

## Cable & Satellites

The Metropolitan Chapter of the Information Theory Groups is presenting an all-day Tutorial on the Promise of Cable and Satellite Telecommunications. This event is co-sponsored by the Electrical Engineering Departments of the City College of New York, New York University, and the Polytechnic Institute of Brooklyn. It will be held on Thursday, March 1, 1973, at the uptown Campus of the City College of New York - The Steinman Building, W. 140th Street and Convent Avenue, Room T-123.

The lectures will be tutorial and will present current thinking of government and industry. Technical and Sociological problems and possible solutions will be discussed by the panel of experts. Attendees will be able to meet with the speakers during lunch and two coffee breaks. The program:

8:30- 9:00 AM *Registration*

9:00 AM *Telecommunications in the New Rural Society - P. C. Goldmark, Goldmark Comunciations*

10:15 AM *Coffee*

10:45 AM *Technical Problems Relating to the Future of Broadband Communication - W. F. Utlant, Institute of Telecommunication Sciences*

12:00 AM *Lunch*

1:30 PM *Cable TV and Satellites - R. Marsten, NASA*

2:45 PM *Coffee*

3:15 PM *Interactive TV - C. Zrakat, Mitre Corp.*

Advance registration can be made before February 14, 1973. The advanced registration fee is \$30.00 and includes lunch. The registration fee after February 14th is \$30.00 but does not include lunch. (There are many restaurants in the vicinity of the City College of New York) The registration fee for students is \$6.00, but does not include lunch. Checks should be made payable to the New York Chapter Information Theory Group and mailed to Professor D. L. Schilling, Department of Electrical Engineering, City College of New York, New York 10031.

For additional information call D. L. Schilling at (212) 621-2621, or J. Garodnick at (203) 327-7270.

## Automotive Electronics

The Metropolitan New York Joint Chapter on Circuits and Systems will hold a meeting on Wednesday, March 7, 1973, at ITT Laboratories Auditorium, Nutley, New Jersey.

Subject of the meeting is "Automotive Electronic Circuits and Systems." The scheduled speaker is Charles W. Beardsley.

## Professional Activities

The New York Section and the Power Industrial Division of the NY Section will co-sponsor a general meeting on Wednesday, March 21, on "New IEEE Professional Activities."

Mr. J. E. Casey, Manager, Career Development, IEEE Headquarters Staff will discuss some objectives and recent developments dealing with Pension Plans, Employment Practices and Guidelines, Manpower Planning and Salary and Fringe Benefits Surveys.

This meeting will also include an announcement from the Nominating Committee.

*Time:* Wednesday, March 21, 6:30 - Refreshments served 6:00-6:30 P.M.

*Place:* Consolidated Edison Company, 4 Irving Place, New York, N.Y.

## Hz Is First?

At a joint meeting of the Control System Society and the North Jersey Section on April 18, the "Second Oldest Profession" will be discussed by a panel.

*Time:* Wednesday, April 18, 8:00 P.M.

*Place:* To be announced.

## Met Opera & Tour

The officials of the Metropolitan Opera House have again graciously consented to be the host of members of the IEEE and their wives at a backstage tour of their facilities.

In conjunction with the tour a *very limited* block of tickets has again been reserved for our group for the matinee performances of "Don Giovanni" on March 3 and "Carmen" on March 10.

*Time:* Saturday, March 3 and March 10, 10:30 A.M.

*Place:* Metropolitan Opera House

Please send form and STAMPED SELF-ADDRESSED ENVELOPE to:

Mrs. Rita McGlynn  
80 Park Place, Room 7339  
Newark, N.J. 07101

For backstage inspection tour of the Metropolitan Opera House please send to:

Name.....

Address.....

..... Phone.....

*Tour* — 2 tickets for

☐ March 3 only      ☐ March 3 or 10  
☐ March 10 only

*Opera*

Enclosed is my check or money order for \$33.00 made out to P&I Division, New York Section, IEEE for two tickets for the Saturday matinee opera performance on:

☐ March 3 only      ☐ March 3 or 10  
☐ March 10 only

Priorities for requests for all tickets will be assigned in order of receipt of request, regardless of date selected. *No requests* can be honored or acknowledged without a *stamped self-addressed envelope*.



## Electron Devices Meet

The Electronic Devices Group is sponsoring a seminar on V-Groove Etch Isolation Process.

**Time:** Thursday, February 8, 8:00 P.M.

**Place:** City University of New York, Graduate Center.

## Mini-Computers

The Power & Industrial Division of the IEEE will hold a General Meeting on Wednesday, February 21, 1973.

Mr. Leslie S. Kirschner, a Senior Consultant with Auerbach Associates, and Mr. Flavio Schiavon, an Applications Engineer in the Mid-Atlantic Regional Office of the Data General Corporation will discuss applications and future trends in the use of Mini Computers and related peripheral equipment.

**Time:** Wednesday, February 21, 6:30 P.M. (Refreshments Served: 6:00-6:30 P.M.)

**Place:** Consolidated Edison Company, 4 Irving Place, New York, N.Y.

The title of the March 21 meeting is: "IEEE Sponsored Benefits."

## Testing Seminar

The New York Joint Chapter on Instrumentation & Measurements is sponsoring an all-day seminar on Automatic Instrument Testing which will be held at Newark College of Engineering on April 24, 1973.

**Registration Fee:** IEEE Members, \$10.00  
- Non-Members \$15.00

**For Further Information Call:** Mr. James W. Harte, Jr. (201) 243-4700 Ext. 555  
Mr. John Dietz (201) 736-1000 Ext. 442

Mr. David C. Roberts (212) 422-4800 Ext. 8228

**Time:** Tuesday, April 24, 9:00 A.M. to 4:00 P.M.

**Place:** Alumni Center, Newark College of Engineering, 323 High Street, Newark, N.J.

## Section Nominees

### NOMINATIONS FOR SECTION OFFICERS 1973-1974

<i>Chairman</i>	Dr. Harlan J. Perlis NCE
<i>V. Chairman</i>	John H. Gerth BTL
<i>Treasurer</i>	Dr. Max J. Schindler RCA
<i>Secretary</i>	Frank B. Gialanella Automatic Switch Kenneth Grace, Jr. BTL
<i>Member-at-large</i> (1)	James C. Gass Allis Chalmers Paul E. Orehek Public Service
<i>Member-at-large</i> (1)	Dr. Robert McMillan NCE Maitland McLarin Picatinny Arsenal

Elections will be by mail with ballots in the May NEWSLETTER. More information will be in the March NEWSLETTER.

## Help Needed!

The Education Committee of the North Jersey Section needs help. Each year a program is presented that is felt to be of interest to a large segment of the IEEE membership.

It would be desirable for each Group and Chapter to be represented on the Committee to insure that the programs are of current interest. If you are interested in serving on the Education Committee, please contact the Chairman, Frank Gialanella (201) 966-2459, Automatic Switch Co., 6 Watsessing Ave., Bloomfield, N.J. 07003 or the Group Coordinator Alan H. Stolpen (201) 256-4000 or (201) 687-9226, 2037 Balmoral Ave., Union, N.J. 07083.

## Get Involved!

The N.J. Multigroup (SMC, EMB, NS, GE) would like to try a new type of program through which interested members can become aware of public interest problems in their field of competence and participate in the solution of these problems. The plan is to have public officials or others present their problems at a multigroup meeting. Suggestions on how to solve the problem could be made by the attendees at such a meeting, or an *ad hoc* committee could be formed to investigate the problem further. Such a meeting would be open and announced in the NEWSLETTER. An effort would be made to assure the attendance of a nucleus of members with the various skills needed to address the problem. The types of problem contemplated are ones which require a multidisciplinary approach and which would otherwise be beyond the resources of those who have responsibility for its solution.

We would like to hear from or about anyone who might consider presenting such a problem. We would also like those who are interested in participating in this program (not limited to multigroup members or electrical engineers) to let us know. Please include a brief list of your fields of competence.

Contact Gerald Rabow, 309 Grant Avenue, Nutley, New Jersey, 661-1978 (home) or 284-0123 (office), or Martin Hollander, 361-5000 (business).



## IEEE AND ASME NORTH JERSEY SECTION LECTURE SERIES – SPRING 1973

The education committees of the ASME & IEEE will jointly sponsor an eight session program entitled "O.S.H.A." The lecture series is scheduled to start February 28, 1973 and end April 18, 1973.

The Instruction will be given by some of the top authorities in the various areas concerned with this course. Text material is included in registration fee.

### I. Overview Introduction to O.S.H.A.

#### A. Federal Involvement

1. Responsibility of the employer
2. From the inspection to the citation
3. Monetary penalties

Speaker: *Mr. J. Schindler, U.S. Department of Labor*

#### B. State Involvement

1. As a participating State – As effective as O.S.H.A. to be accepted
2. Present regulations – Future requirements as per O.S.H.A. participations
3. Explanation of areas where most frequent violations are cited
4. What to do

Speaker: *Mr. A. Canessa, NJ Dept. of Labor & Industry*

### II. Incorporation of Standards Into O.S.H.A. – How standards were written

Speaker: *Mr. N. Detarnowsky, American National Standards Institute*

### III. Executive Management & Supervisor Responsibility in Safety & Health – Corporate Involvement

- A. Management Policy & Active Participation
- B. Supervisory Education & Training
- C. Safety Inspection – Unsafe Conditions & Unsafe practices

Speaker: *Mr. H. Eiermann Jr., S.C.M. Corporation*

### IV. Organization & Development of Safety Programs

- A. Safety Committees
- B. Accident Investigations

C. Employee Education Posters, etc.

D. Planning for Emergencies

E. Analysis of Accidents

Speaker: *Mr. A. Canessa, NJ Dept. of Labor & Industry, Mr. H. Eiermann Jr., S.C.M. Corporation*

### V. Occupational Environmental Health Aspects – Industrial Hygiene Field

- A. Overview of Occupational Health
- B. O.S.H.A. Standards on Occupational Health
- C. Are You In Compliance
- D. What you can do

Speaker: *Mr. G. Stanton, NJ Dept of Labor & Industry, Mr. F. Warden, Western Electric Co.*

### VI. Electrical Safety

- A. General Code Rules
- B. Overcurrent Protection
- C. Grounding
- D. Flexible Cords

Speaker: *Mr. A. Cartal, Middle Dept. Inspection Agency*

### VII. Related Aspects of Federal Regulations toward Product Safety & Environment

- A. Consumer Safety Act of 1972
- B. Problems of Pollution – Solid Wastes Air, Water

Speaker: *Mr. V. Meyers, Western Electric Co.*

### VIII. Material Handling & Machine Safeguarding Significance & Ways to Control Material Handling & Machine Accidents

Speaker: *Mr. J. Marcel, Chubb & Sons*

**Time:** 7:00 – 9:00 PM, Wednesday Evenings Starting February 28, 1973 and ending April 18, 1973.

**Place:** To be announced in near future

**Information:** For additional information contact: Frank Gialanella, Automatic Switch Co., 6 Watsessing Avenue, Bloomfield, N.J. 07104. Phone 201-966-2459.

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### REGISTRATION FORM – O.S.H.A. LECTURE SERIES

Send to: Mr. S. Salvatore, Wilbur B. Driver Co., 241 Oraton St., Newark, N.J. 07104

Name \_\_\_\_\_

Tech. Society \_\_\_\_\_

Firm \_\_\_\_\_

Position \_\_\_\_\_

Business Address \_\_\_\_\_

Phone \_\_\_\_\_

Home Address \_\_\_\_\_

Phone \_\_\_\_\_

Check or money order enclosed –

\_\_\_ Member – \$50 – Registration Prior to February 14 – \$45

\_\_\_ Non-member – \$60 – Registration Prior to February 14 – \$55

Please make check or money order payable to: NORTH JERSEY SECTION ASME



# IEEE INTERCON/73

March 26-30

## The difference is the dimension

At the IEEE International Convention and Exposition there will be hundreds of new and innovative product demonstrations – all live and in living color – at the New York Coliseum.

The new equipment is there – in all three dimensions (even the back-wiring). And *you're* there tuning the new boxes for yourself, and asking your own direct questions to the company representatives.

A few blocks away, at the Americana Hotel, the world's leading technologists are there. More than 250 speakers will discuss, debate, report, comment, on *relevant* technical subjects...live!

Your communication is two-way, face-to-face, and immediate. Save time while you see and talk to the industry leaders.

See four-hundred displays, almost 60 technical sessions, a working printed circuit board line, and a special Semiconductor Innovations and Applications Center celebrating the 25th Anniversary of semiconductor technology.

IEEE INTERCON is all about new ideas – useful ideas for engineers, managers, marketers. You can learn more in one day at INTERCON than in eight weeks any other way. Put INTERCON on your calendar right now – March 26-30.

**IEEE  
73  
INTERCON**



For a copy of the full technical program, hotel reservation form, and ticket order form for the exciting events, write or call

Convention Department, IEEE  
345 E. 47th Street, New York 10017  
Phone: (212) 752-6800