

Center for Professional Advancement Schedules August Short Courses

Saul Gordon Associates, Center for Professional Advancement, Hopatcong, N. J., has announced schedules for a number of intensive short courses set for the month of August.

A wide range of subjects—Computers and Scientific Data Processing; Extra-active Distillation; Fluorescence and Phosphorescence Spectrometry; Electroanalytical Techniques; Bio-Physical Techniques; and Electronics Workshop for Scientists and Engineers (Basic Principles)—will be covered in six Workshops scheduled during August, 1968, at the Center for Professional Advancement, Hopatcong, N. J. These intensive courses, each of 3- or 5-day duration, are aimed at helping meet the increasingly accelerated demand for post-baccalaureate level education in the fields of science and engineering technology.

August 5-9

Computers and Scientific Data Processing

Lecture and laboratory sessions will be combined with actual use of computers to cover computer basics, languages, flow charting, problem analysis and programming.

Lecture Topics: How to Get Along with the Computer Center; Applications to Physical and Life Scientists; Simpler Program Writing; Terminology; Techniques, Principles; Logical Design of Computers; Speed Disparities; In-put and Out-put Processors; Bulk Storage Devices—Disc, Drum, Tapes; Languages—Problem Oriented, Fortran; Introduction to Algol; Principles of Programming; Problems Analysis for Computer Processing; Formulation of Problems for Comprehensive Programming.

Workshop Director: R. F. Gabriel, Seton Hall University.

Fees: Tuition \$200; Resident Dormitory \$90, Non-resident \$60.

August 7-9

Extractive Distillation Workshop

A comprehensive study of vapor-liquid equilibrium, solvent selection and column design.

Lecture Topics: Vapor-Liquid equilibrium—Thermodynamic background, Calculation of vapor phase fugacities, Activity coefficients and composition, Activity coefficients and temperature, Rigorous calculations of bubble and dew points; Solvent Selection—Qualitative aspects, Quantitative aspects, Recommended procedure; Column Design—General column design procedure, Thermodynamic data, Ternary Systems, "Short-cut" design procedures, "Rigorous" design procedures, Actual tower design and specifications.

Workshop Director: Dimitrios Tassios, Newark College of Engineering, *Instructor:* Edward C. Roche, Jr., Newark College of Engineering.

Fees: Tuition \$135; Resident Dormitory \$55, Non-resident \$35.

August 12-16

Fluorescence and Phosphorescence Spectrometry

A thorough training in the basic principles and applications of every type of luminescence—fluorescence, phosphorescence, fluorescence spectroscopy, chemiluminescence, electrogenerated luminescence, x-ray fluorescence and fluorescence polarization, and analytical and biochemical applications.

Lecture Topics: Environmental Effects on Luminescence; Effects of Structure on Luminescence; Fluorescence Instrumentation; Correction and Calibration Methods; Determination of Inorganics, Metal Chelates; Determination of Organic Substances; Fluorescence Assay in Biology and Biomedical Research; Fluorescence Polarization; Fluorescence in Enzymology; Phosphorescence; Atomic Fluorescence Flame Spectrometry; X-Ray Fluorescence;

Electrogenerated Luminescence.

Workshop Director: Dr. Gerry G. Guilbault, Louisiana State University, New Orleans.

Fees: Tuition \$200; Resident Dormitory \$90, Non-resident \$60.

August 19-23

2nd Annual Electroanalytical Techniques Workshop

Intensive coverage of principal electroanalytical techniques used today include: polarography, coulometry, stripping analysis, specific ion electrodes and use of pH- and potentiostats.

Lecture Topics: Introduction to Electroanalysis; pH Measurement; Selective Ion Electrodes; Current Voltage Curves; General Polarography; Electrochemical Analysis of Organic Compounds; Electrochemical Analysis of Biological Materials; Electrochemical Relaxation Techniques; Coulometric Titrations; Coulometric Analysis; Stripping Analysis; Cyclic Voltammetry; Theory and Applications; Conductance and Oscillometry; Electroanalytical Techniques in Perspective.

Workshop Director: Dr. G. W. Ewing, Seton Hall University.

Fees: Tuition \$200; Resident Dormitory \$90, Non-resident \$60.

August 26-30

Bio-Physical Techniques Workshop

Assessment of Bio-Physical Techniques including: computers and mathematical models; lasers; ultracentrifugation; electrophoresis, resonance techniques; temperature jump techniques; electron microbeams; microelectrodes; neutron activation analysis; automatic pattern recognition techniques.

Lecture Topics: Computers: Digital and Analog; Mathematical Models; Compartmental Analysis; Laser Techniques; Ultracentrifugation—Preparative and Analytical; Electrophoresis—Free Boundary and Supported; Nuclear Magnetic Resonance; Electron Spin Resonance; Electron Microbeams and Microprobes; Temperature Jump Techniques; Microelectrode Techniques; Neutron Activation Analysis; Automatic Pattern Recognition Techniques.

Workshop Director: Richard Moore, American Red Cross.

Fees: Tuition \$200; Resident Dormitory \$90, Non-resident \$60.

August 26-30

Electronics Workshop for Scientists and Engineers (Basic Principles)

Intensive instruction in electronics for the nonelectronic engineer and scientists. Emphasis is on the operational fundamentals of electronics as applied to components, subsystems and complete instrumentation used in the physical, life and behavioral sciences, and in process control. Extensive laboratory work is featured.

Lecture Topics: Physical Background; Simple Circuits; Networks; "Black Box" Concepts; Alternating Current; Ammeters; Voltmeters; Bridges, Potentiometers and Ohmmeters; Semiconductor and Tube Fundamentals; Rectifiers, Filters and Power Supplies; Transistors and Vacuum Tube Equivalents; Single and Multistage Amplifiers; Feedback Systems and Oscillators; Typical Laboratory Instrumentation; Oscillators and Recorders.

Workshop Director: Saul Ritterman, Bronx Community College, City University of New York.

Fees: Tuition \$235 (Includes Laboratory Fees); Resident Dormitory \$85, Nonresident \$50.

Additional information on any of these courses is available on request. Contact Saul Gordon, Center for Professional Advancement, P. O. Box 66, Hopatcong, N. J. Phone (201) 398-7110.