1. MICROCOMPUTERS SYSTEMS DESIGN I: HARDWARE, SOFTWARE & APPLICATIONS

PURPOSE: Introduce available microcomputer systems, software aids, design process, technology trends.

SELECTED TOPICS: Microcomputer Architecture; Microprocessor building blocks including CPU's, RAM's, ROM's, PROM's, I/O's; signal converters, displays, keyboards, modems, printers, floppy disk drives; microcomputer applications including aircraft navigation, point of sale terminals, digital communications, process control systems, automobile electronics, telecommunications; software aids including assemblers, editors, compilers and simulators; survey of available microcomputers.

COORDINATORS AND LECTURERS: Dr. Richard K. Smith (Rockwell International); Mr. Al Beal (National Semiconductor Corp.); Mr. Terry Brown (Intel Corp.); Mr. Ron Bishop (Motorola Semiconductor Products); and Mr. Michael Lecard (Scientific Microsystems, Inc.).

DATES: March 3-7, 1975 FEE: $345.00

2. MICROCOMPUTERS SYSTEMS DESIGN II: APPLICATIONS, PROGRAMMING AND IMPLEMENTATION—THROUGH ACTUAL EXPERIENCE

PURPOSE: To familiarize the participant with microcomputer applications through a workshop experience.

SELECTED TOPICS TO BE COVERED: The use of programming aids for microcomputer software development including assemblers, timesharing computer terminals, editors, compilers, microprograms, macroprograms, loaders, and debuggers for microcomputers; use of hardware/software assemblers for software development; validation of program using RAM's, editing, run-in of PROMS, simulations with timesharing support software; Software user library subroutines with illustrative examples; operational microcomputer program; Programming for fast real time applications, memory and speed requirements; Microcomputer laboratory: Programming of real problems using actual microcomputer hardware and software assemblers and timesharing terminal.

COORDINATORS AND LECTURERS: Same as in course I.

DATES: March 10-14, 1975 FEE: $345.00

3. MODERN MEDICAL COMPUTER IMAGE PROCESSING

PURPOSE: To provide an intensive introduction to modern techniques for medical image processing. An introduction to computer image processing, pattern recognition, sensomtivity, and performance measures of imaging systems will be given. Particular emphasis will be devoted to modern techniques, equipment and application which promise to produce a significant improvement in medical image processing through graphs, Computerized Tomography, Quantitative Measurements in Cardiology, Electron Radiography, Automated Chromosome Analysis, Microscopic and Electron Microscope Applications, Ultrasound Imaging and Acoustical Holography.

COORDINATORS AND LECTURERS: Dr. Ernest L. Hall (USC); Dr. Richard P. Kruger (USC); Dr. Kenneth R. Castleman (JPL and Cal-Tech); Dr. C. Metz (Univ. of Chicago); Dr. E. Phillip Mintz (USC); Mr. Robert H. Slezer, M.S. (JPL and Cal-Tech); Dr. G. Wade (Univ. of California, Santa Barbara).

DATES: March 26-28, 1975 FEE: $275.00

4. ADVANCED COMPUTER MEMORY TECHNOLOGY

PURPOSE: To provide a comprehensive review of the latest advances in device and material technologies for computer memory.

SELECTED TOPICS TO BE COVERED: Computer memory architecture; Bipolar and MOS memory devices; Charge-coupled memory devices; magnetic storage technologies (bubble domain devices, ferrite cores, magnetic discs and tapes); Fabrication technology (ion implantation, ion milling, sputter etching, projection masking, e-beam lithography); Memory applications.

COORDINATORS AND LECTURERS: Dr. P. K. George, Rockwell International; Mr. D. K. Benson, Rockwell International; Mr. J. P. Reekstin, Rockwell International; Mr. R. D. Nelson, Rockwell International; Mr. J. P. Reekstin, Rockwell International; Mr. R. B. Helmick, Rockwell International.

DATES: March 31-April 4, 1975 FEE: $345.00

OTHER CONTINUING ENGINEERING EDUCATION COURSES OFFERED BY USC:

SUMMER, 1975

COMPUTER:
- Modern Techniques for the Design of Reliable Software
- Programming Systems Design: Assemblers and Compilers
- Modern Methods for the Design of System Principles
- Design Automation of Digital Systems
- Diagnosis and Fault-Tolerant Design of Digital Systems
- Design and Analysis of Efficient Algorithms
- Logical Design of Digital Systems
- Microprocessors Systems Design I: Hardware, Software & Applications
- Microcomputers Systems Design II: Applications, Programming and Implementation—Through Actual Experience
- Software Systems Analysis

IMAGE PROCESSING:
- Mathematical Pattern Recognition
- Optical Information and Signal Processing
- Image Processing Concepts
- Advanced Topics in Image Processing
- Modern Medical Computer Image Processing
- New Methods of Spectral Estimation

MATERIALS SCIENCE:
- Laser Safety: Hazards, Precautions and PPE
- Modern Materials Processing Using Lasers
- Dye Lasers and Their Applications

For further information on these and other Engineering short courses, write:
Dr. R. S. Kashef, Director
Continuing Engineering Education
Powell Hall 212, University Park
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