

I. Introduction

Purpose: To present the craft of electronic image forming in the context of both modernist art forms and post-industrial technologies. Guest lecturers specializing in the various creative and technical areas will augment the resources of the workshop. Special emphasis will be given ~~km~~ to the demonstration of the relevant technology and the illustration of applications through the presentation of video and audio tapes.

- A. Selected video tapes 1967-1975 demonstrating the basic modes of electronic image forming.
- B. Selected audio tapes of major pieces in the history of Electronic Music.
- C. Comparison and discussion.

II. Historical Approach

- A. Theory and Development of optical image reconstruction and chemical image ~~forming~~ recording.
- B. History of Television
 - 1. Basic technological concept of CRT display
 - a. parent inventions
 - 2. History of development of TV
 - a. early experiments
 - b. gov't control
 - c. commercial applications
 - d. sociocultural implications
 - 3. Invention of videotape recording
 - a. Basic technological concept
 - b. Sociocultural implications
McCluan, Burroughs etc.
 - 4. Invention of portable systems
 - a. technological concept
 - b. social and technological implications
 - c. Paik and others
 - d. Radical Software and others
 - e. Cable TV etc.

III. Focus on Systems

- A. Communications Theory, Information Theory, cybernetics general systems theory etc.,
 - 1. writings of Wiener, Bateson etc.
 - 2. these ideas in relation to history of understanding of natural systems and development of artificial systems
- B. Analog and Digital Systems
 - 1. concepts and implications
 - 2. analog systems
 - a. sound and image pickup, transmission and display
 - b. other natural and artificial analog systems

- C. Digital Systems
 - 1. Computerized modules
 - a. programming, memory, etc.
 - b. Boolean logic
- D. Analog Digital hybrid systems
 - a. A-D, D-A converter
 - b. use in analysis of audio and video information
- E. Development of Artificial Intelligence Systems

IV. Focus on Video Systems

- A. Image Detection
 - 1. Basic concepts of light and optics
 - 2. Electronic Scanning Process in video camera
 - 3. Other forms of image detection.
- B. The Video Signal
 - 1. Components
 - a. waveform analysis
 - 2. transmission and maintenance of integrity within system
- C. Display
 - 1. Scanning process in CRT
- D. Image modulation
 - 1. optical modulation
 - a. camera switching
 - b. external stroboscope
 - c. camera in motion
 - d. feedback
 - 2. Electronic modulation
 - a. system feedback and other internal aberrations
 - b. re-timing of raster scanning
demonstration on one-line (scope)
modulation of raster using waveforms
available scan-conversion systems
 - c. keying systems
 - d. colour modulation
 - 3. Digital Image Encoding
 - a. Advantages and problems of digital image storage-
speed and programmability
 - b. interface with existing video technology

recording
etc.

V. Audio Systems

- A. Laws of Acoustics
- B. Audio pickup, transmission and monitoring
- C. Audio synthesis systems
- D. Electronic and Electro-acoustic music

VI. Interface

- A. Audio-video interface
 - 1. technical aspect
 - 2. aesthetic problems
- B. Environmental Pieces
 - 1. Image and Sound
 - 2. The continuous installation
 - 3. Major Artists

VII. Interdisciplinary Discussion

- A. The Kinetic arts in various media
 - 1. general technological context
 - 2. historical context
- B. Open Discussion