



SIGGRAPH 1992

*19th International Conference  
On Computer Graphics and  
Interactive Techniques*

*McCormick Place, Chicago  
July 26 - 31*

# COURSE NOTES

# 4

VIDEO TECHNOLOGY FOR  
COMPUTER GRAPHICS

*Organizer*  
**Dean Winkler**  
Post Perfect, Inc.

VIDEO TECHNOLOGY FOR COMPUTER GRAPHICS

Siggraph 1992

Course #04

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**Please note:**

An NTSC VHS videotape has been supplied with these course notes. It contains many of the videotapes presented in the course as well as additional videotapes, which time did not permit us to view in this course. Copyrights to the material contained on this tape are the sole property of the contributors. Under no circumstances may these VHS cassettes be duplicated, edited, cablecast or broadcast! The contributors to this tape have been very generous in allowing us to give you copies of their work. Please do not betray their trust by violating this copyright agreement.

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**Course description:** This course is designed to give computer graphics professionals a thorough understanding of the theory and practical applications of video technology. It will be broken into four parts as follows:

- o **Part I: Video Theory.** This will start with scanning theory, describe the monochrome video signal, the NTSC color video signal, color encoding techniques, signal measurement, and review all current video formats including D-1 and D-2 digital video and HDTV.
- o **Part II: Electronic Image Processing and Special Effects.** This will present a general model of video image compositing, which is applicable to hardware or software based compositing.
- o **Part III: Contemporary Video Production and Post Production Techniques.** This will include: video special effects hardware, combining CGI and video special effects, video compositing/layering, combining CGI with live action, and other related topics.
- o **Part IV:** Will present examples of video art from around the world.

**Who should attend:** Computer graphics professionals who anticipate using video technology, or who have been using video and wish to have a stronger technical background and better understanding of current techniques and works in the field.

**Chair Biography:**

Dean Winkler holds bachelor of science and master of science degrees from Rensselaer Polytechnic Institute. He is one of the founders of Post Perfect Inc., an electronic special effects facility, in New York City. Winkler is also a computer/video artist and has created over 5 1/2 hours of video art, which have been shown internationally, including at every Siggraph, from 1982 through 1990. His interests span art and engineering. He holds a U.S. Patent, and has received numerous awards in the television industry. He lectures frequently in the United States and abroad.

## SCHEDULE

I.	Introduction	8:45	9:00
II.	Monochrome Video Theory	9:00 -	9:30
III.	NTSC Color Video Theory	9:30 -	10:30
	BREAK	10:30 -	10:45
IV.	Video Image Processing and Special Effects	10:45 -	12:00
	LUNCH	12:00 -	1:30
V.	Current Production and Post Production Techniques	1:30 -	3:00
	BREAK	3:00 -	3:15
VI.	"Frames For Seconds" Collection of Recent Video Art From Around the World	3:15 -	4:15
VII.	Open Discussion/Questions	4:15 -	4:30

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\* Courtesy Grass Valley Group Inc.

\*\* Courtesy Tektronix Inc.