

Tutorial Schedule

8:30- 8:45	Introduction (Marcus)
8:45-10:00	Terminology, physiology, perception (Murch)
10:00-10:15	Morning break (approximate)
10:15-12:00	Terminology, physiology, perception, continued (Murch)
12:00- 1:30	Lunch
1:30- 3:00	Cognitive aspects (Smith)
3:00- 3:15	Afternoon break (approximate)
3:15- 4:30	Communication, aesthetics (Marcus, Arent)
4:30- 5:55	Complex data display (Robertson)
4:55- 5:00	Closing remarks (Marcus)

Tutorial Outline

Goals (Marcus)

Communication

Information

Persuasion

Aesthetics

Ease of learning, memory

Ease of use, performance

Terminology (Murch)

Visible spectrum

Dimensions of color

Dimensions of human vision

Physiology (Murch)

The lens

The retina and optic nerve

Rods and cones

The visual cortex

Color deficiencies

Perception (Murch)

Perception of chromatic color

Perception of achromatic color

Hue, saturation, lightness, brightness

Colorimetry

Color description systems

Color models

- Additive

- Subtractive

- Optical

- Opponent color model

Color ordering and naming

Color spaces

- RGB

- CIE

- HLS

- Munsell

- Uniform color spaces

- Relative strengths and weaknesses

Color vision deficiency

- Red-green confusion

- Yellow-blue confusion

Color illusions

- Simultaneous contrast

- Accommodation

User interface issues

- Depiction of color spaces on crt's

- Manipulation

- Selection

- Use of AI to provide expertise

- Screen/hardcopy conversion issues

- Differing color gamuts

- Gray scales

Different media

Screen

Slides

Overhead

Film

Video

Paper

Principles of color reproduction

Case Studies

Solids depiction

Presentation graphics

Cognitive aspects related to usability (Smith)

Assignment of meaning: color coding

Relativity

Redundancy

Preferences

Creating impressions

Impacting performance

Learning

Case studies

Communication and Aesthetics (Marcus and Arent)

Syntactics

Figure-field

Color palettes, schemes, and harmonies

Color composition, hierarchy, emphasis

Color naming

Berlin and Kay's work

Universal color terms (NBS)

Semantics

Denotation schema

Short-term (7 ± 2 items) vs. long-term memory

Scales

Blue > red

Gray > color > white

Common denotations

Red: danger, stop, hot, fire

Yellow: warning, caution

Green: ok, proceed, vegetation

Blue: cool, water

Professional palettes

CAD/CAM

Process control

VLSI

Architecture and urban planning

Quantitative vs. qualitative denotation

Connotation issues

Expression

Historical relations

Fashions

Cultural influences

User interface issues

Levels

Operating system vs. application

Components

Screen

Windows

Icons

Cursors

Mail

Help

Desk accessories

History

Navigation

Pragmatics (Marcus, Arent)

Legibility of type and graphics

Buyers vs. users

Novices vs. experts

Hardcopy device capabilities

Thermal

Electrostatic

Dot matrix printers

Laser printers

Ink jet printers

Slides

Offset printing

Color matching systems (Pantone, Toyo, etc)

Other media

Cosmetics

Inks

Textiles

Paints

Product and corporate identity

Persuasive communication: advertising, emotions

Case studies

Graphic arts workstation

Business graphics

Desktop slidemaking

CAD/CAM systems

AI and expert systems

Complex data display (Robertson)

Closing remarks (Marcus)