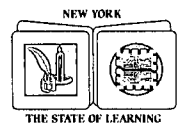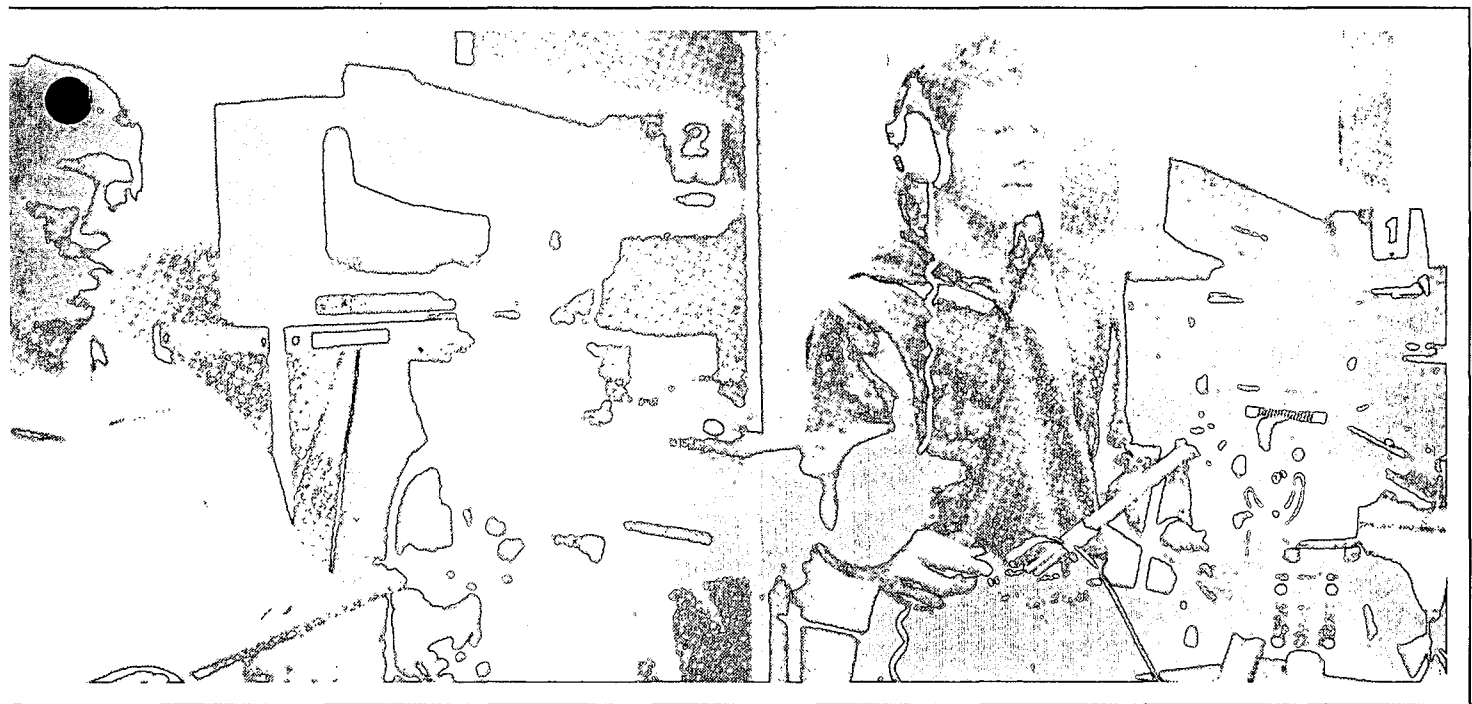# Tech Ed: Media Production Technology

TECHNOLOGY EDUCATION
MEDIA PRODUCTION TECHNOLOGY

GRADES 9-12
ELECTIVE

THE UNIVERSITY OF THE STATE OF NEW YORK

Regents of The University

OVERVIEW and RATIONALE

The national media business has a private market value of nearly half a trillion dollars divided between publishing, broadcasting, cable, movies and video. The market value of publishing is about 52 percent of all media, with broadcasting, cable, movies and video accounting for the other half. With the globalization of media companies, this amount is likely to increase dramatically as we approach the next century.

The media industry is about communicating. In business, education and government we face an increasing volume of information and a decreasing amount of time to determine what it means and how to convey it to people in a clear, concise manner. Communications technology has become computer-assisted and is now used by over 50 percent of the Unites States labor force. To select and utilize appropriate technology in order to communicate clearly and concisely will benefit all about to enter a constantly evolving information society.

Media Production Technology is a full-year, 1 unit course offered as an elective within the sequence of Technology Education. Its syllabus and instructional strategies are flexible. It can be delivered by high school departments ranging from the one-teacher program, to established graphic communications programs, to departments featuring full radio and television production studios. The relative emphasis on major communications media can be adjusted with the type of equipment and resources available and the background and experience of the instructor.

As communications technology continues to evolve, the implementation of the syllabus should be enhanced by equipment, facilities, resources and experience of the instructor and students. A long-range plan for equipment acquisition and replacement should be supported by the school administration. As the level of sophistication of the technology and student skills increases, the course activities and facilities should offer continual challenges.

Media Production Technology requires a laboratory having the appropriate graphic and electronic media equipment. Students must have access to personal computers capable of integrating text, graphics, sound, video and communication interfaces. The study of electronic media requires access to audio and video equipment. The facility should also be equipped with appropriate graphic arts, photography and related printing equipment. For hands-on activities, workstations representing up-to-date processes and methods should be available in sufficient numbers. Safety instruction should be delivered throughout the course.

SYLLABUS OBJECTIVES

Through the implementation of this syllabus, the student will:

1. Evaluate media systems and describe the strengths of each system.

2. Appreciate the production techniques used in different systems of communications.

3. Implement time-line scheduling and budget forecasting in media production.

4. Participate and contribute as a member of a production team to reach a common goal.

5. Have developed critical listening and viewing skills to evaluate media productions.

6. Know terminology appropriate for the specific media.

7. Use appropriate technology when making media assisted presentations.

PERFORMANCE OBJECTIVES

The performance objectives of the syllabus are intended to clearly present what students are expected to know, do and be like, following instruction in a given topic. The knowledge (K), skills (S) and attitudes (A) that students should acquire are identified for each topic, under "competencies to be developed".

Syllabus Outline

	Estimated Learning Time*
I. Module: **Communication Technology Review**	**2 hours**
Topics:	
A. Electronic Mass Communication Systems (EMCS)	1 hour
B. Graphic Mass Communication Systems (GMCS)	1 hour
II. Module: **Orientation to Media Systems and Production Facilities**	**16 hours**
Topics:	
A. Audio Media Technology	4 hours
B. Visual Media Technology	4 hours
C. Multimedia/Integrated Media Technology	4 hours
D. Interactive Media Technology	4 hours
III. Module: **Media Learning Activities (MLAs)**	**36 hours**
Topics:	
A. Graphic Equipment Operation	12 hours
B. Audio Equipment Operation	12 hours
C. Video Equipment Operation	12 hours
	54 hours
IV. Module: **Applying Media to the Message**	**12 hours**
Topics:	
A. Communication Concepts	6 hours
B. Proposal Development/Approval	6 hours
V. Module: **Producing the Message**	**36 hours**
Topics:	
A. Electronic/Graphic Preproduction	6 hours
B. Electronic Production	12 hours
C. Graphic Production	12 hours
D. Electronic/Graphic Postproduction	6 hours
VI. Module: **Presentations and Critiques**	**6 hours**
Topics:	
A. Media–assisted Presentations	3 hours
B. Assessment and Evaluation	3 hours
	108 hours

Hours are estimates based on limited field testing. How hours are allocated will depend on equipment availability

3

SYLLABUS OUTLINE

	Estimated Learning Time

I. Module: Review – Communication Technology **2 hours**

Topics:
- A. Electronic Mass Communication Systems (EMCS) 1 hour
  1. Historical time line
  2. Audio systems
  3. Visual systems
  4. Multimedia systems
  5. Impacts of EMCS
  6. EMCS models
- B. Graphic Mass Communication Systems (GMCS) 1 hour
  1. Historical time line
  2. Still imaging systems
  3. Printing and publishing systems
  4. Drawing and illustration systems
  5. Impacts of GMCS
  6. GMCS models

II. Module: Orientation – Media Technology and Production Facilities **16 hours**

Topics:
- A. Audio Media Technology
  1. Record and playback procedures
  2. Telephone and telecommunications procedures
  3. Radio production processes
- B. Visual Media Technology 4 hours
  1. Photographic still imaging processes
  2. Electronic still imaging procedures
  3. Printing production processes
  4. Presentation graphics procedures
  5. Computer-assisted drawing and illustration
  6. Facsimile procedures
- C. Multimedia/Integrated Technology 4 hours
  1. Video production processes
  2. Television production processes
  3. Audio/visual presentation techniques
  4. Video conferencing procedures
  5. Multimedia production processes

D. Interactive Media Technology   4 hours
   1. Computer procedures
   2. Interfacing computers and/or other media devices

III. Module: **Media Learning Activities**   **36 hours**
   Topics:
   A. Graphic Equipment Operation   12 hours
      1. 35mm or view camera
      2. Flood or strobe lighting system
      3. Still video camera or cameraback
      4. Color illustration, image manipulation and page layout software
      5. Scanner, digitizer or image capture hardware and software
      6. Presentation graphics and animation software
   B. Audio Equipment Operation   12 hours
      1. Sound digitizing and editing hardware and software.
      2. Analog recording and mixing devices
      3. Digital play and record devices
      4. MIDI system
   C. Video Equipment Operation   12 hours
      1. Video camera, recorder or camcorder
      2. Manual or automatic video editing system
      3. Audio dub to video feature
      4. Video enhancer, special effect generator or character generator

IV. Module: **Applying Media to the Message**   **12 hours**
   Topics:
   A. Communication Concepts   6 hours
      1. Need to communicate
      2. Team identification
      3. Problem solving strategies
      4. Media determination
   B. Proposal Development/Approval   6 hours
      1. Proposal preparation
      2. Determine budget and schedule
      3. Present proposal to client(s)
      4. Obtain feedback – make adjustments

V. Module: **Producing the Message**   **36 hours**
   Topics:
   A. Electronic/Graphic Preproduction   6 hours
      1. Market/format
      2. Script/storyboard/design
      3. Input devices
      4. Processing devices
      5. Output devices
      6. Quality control devices

B. Electronic Production   12 hours
    1. Recording/shooting
    2. Splicing (physical/electronic)
    3. Dubbing
    4. Editing
    5. Recorded productions
    6. Live productions

C. Graphic Production   12 hours
    1. Electronic imagesetting
    2. Image conversion
    3. Image carrier preparation
    4. Image transfer

D. Electronic/Graphic Postproduction   6 hours
    1. Product evaluation
    2. Final editing, finishing and binding
    2. Feedback and adjustment
    3. Distribution
    4. Impacts
    5. Final message evaluation

VI. Module: **Presentations and Critiques**   **6 hours**
    Topics:
    A. Media–Assisted Presentations   3 hours
        1. Room characteristics and layout
        2. Equipment selection and placement
        3. Presentation techniques

    B. Assessment and Evaluation   3 hours
        1. Assessment tools and techniques
        2. Evaluation procedures

Media Production Technology

<div align="right">

**Estimated
Learning Time**

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I. Module: **Communication Technology Review**   **2 hours**

    A. Topic: Electronic Mass Communication Systems (EMCS)   1 hour

        1. **Performance Statement:**
Upon satisfactory completion of this topic, the student will be able to describe the evolution of electronic mass communications and the impact it has had on our ability to communicate.

        Competencies to be Developed:
After studying this topic, the student will be able to:

          a. Identify significant developments in the evolution of media and multimedia technology. (K)
          b. Explain the difference between a media and multimedia system. (K)
          c. Describe an EMCS model that has had an impact of the way we communicate today. (K)

        Suggested Instructional Strategies:

          1. After completing a reading assignment, involve the class in a discussion to identify the significant developments in EMCS technology.
          2. From the text or references, have students compile a chronology representing the changes in EMCS technology, and then prepare a visual display.
          3. Prepare a lesson for students that distinguishes today's EMCS from those of the past.

    B. Topic: Graphic Mass Communication Systems (GMCS)   1 hour

        1. **Performance Statement:**
Upon satisfactory completion of this topic, the student will be able to Describe the evolution of graphic mass communications and the impact it has had on our ability to communicate.

Competencies to be Developed:

After studying this topic, the student will be able to:

a. Identify significant developments in the evolution of graphic media. (K)

b. Explain the differences among graphic media technologies. (K)

c. Describe a GMCS model that has had an impact of the way we communicate today. (K)

Suggested Instructional Strategies:

1. After completing a reading assignment, involve the class in a discussion identifying the significant developments in GMCS technology.

2. From the text or references, have the students compile a chronology representing the changes in GMCS technology, and then prepare a visual display.

3. Prepare a lesson for students that distinguishes the current GMCS.

II. Module: **Orientation to Media Technology and Production Facilities 16 hours**

   A. Topic: Audio Media Technology   4 hours

      1. **Performance Statement:**

Upon satisfactory completion of this topic, the student will know which equipment and facilities are available for audio media production and the level of technical quality that can be expected.

Competencies to be Developed:

After studying this topic, the student will be able to:

a. List and describe the equipment available for telecommunications and radio production. (K)

b. List and describe the features of facilities available, their role in production and how they compare with facilities used by the industries represented. (K)

c. Describe the types of messages that can be produced with available audio equipment, facilities and resources. (K)

Suggested Instructional Strategies:

1. Provide a learning experience that features a tour of the equipment and facilities available and a series of related technical presentations.

2. Lead a class review of textbook sections dealing with major equipment used by broadcast/recording studios. Compare them with your laboratory equipment.

B. Topic: Visual Media Technology   4 hours
   1. **Performance Statement:**
      Upon satisfactory completion of this topic, the student will know which
      equipment and facilities are available for visual media production and the
      level of technical quality that can be expected.

   Competencies to be Developed:
      After studying this topic, the student will be able to:
      a. List and describe the equipment available for still imaging, printing
         production, presentation graphics, drawing and illustration and
         facsimile. (K)
      b. List and describe the features of facilities available, their role in
         production and how they compare with facilities used by the
         industries represented. (K)
      c. Describe the types of messages that can be produced with available
         graphic equipment, facilities and resources. (K)

   Suggested Instructional Strategies:
      1. Provide a learning experience that features a tour of the equipment
         and facilities available and a series of related technical
         presentations.
      2. Lead a class review of textbook sections dealing with major
         equipment used by photographers, printers/publishers and
         illustrators. Compare them with your laboratory equipment.

C. Topic: Multimedia/Integrated Media Technology   4 hours
   1. **Performance Statement:**
      Upon satisfactory completion of this topic, the student will know which
      equipment and facilities are available for multimedia production and the
      level of technical quality that can be expected.

   Competencies to be Developed:
      After studying this topic, the student will be able to:
      a. List and describe the equipment available for multimedia
         production. (K)
      b. List and describe the features of facilities available, their role in
         production and how they compare with facilities used by the
         industries represented. (K)
      c. Describe the types of messages that can be produced with available
         equipment, facilities and resources. (K)

Suggested Instructional Strategies:
1. Provide a learning experience that features a tour of the equipment and facilities available and a series of related technical presentations.
2. Lead a class review of textbook sections dealing with major equipment used by broadcast television or video production studios. Compare them with your laboratory equipment.

D. Topic: Interactive Media Technology   4 hours
   1. **Performance Statement:**
      Upon satisfactory completion of this topic, the student will know which equipment and facilities are available for interactive media production and the level of technical quality that can be expected.

   Competencies to be Developed:
      After studying this topic, the student will be able to:
      a. List and describe the equipment available for interactive media production. (K)
      b. List and describe the features of facilities available, their role in production and how they compare with facilities used by the industries represented. (K)
      c. Describe the types of interactive programs that can be created with available equipment, facilities and resources. (K)

   Suggested Instructional Strategies:
      1. Provide a learning experience that features a tour of the equipment and facilities available and a series of related technical presentations.
      2. Lead a class review of textbook sections dealing with major equipment used by broadcast television or video production studios. Compare them with your laboratory equipment.

III. Module: **Media Learning Activities (MLAs)**   **36 hours**
    A. Topic: Graphic Equipment Operation   12 hours
       1. **Performance Statement:**
          Upon satisfactory completion of this topic, the student will be able to demonstrate competence with equipment, processes and techniques in selected areas of graphic media.

    Competencies to be Developed:
       After studying this topic, the student will be able to:
       a. Set up, operate and create with selected graphic production equipment in a series of training exercises. (S)

b. Apply accuracy and quality control to production techniques. (S)
c. Work within a schedule. (S) (A)
d. List and describe the applications of systems studied. (K)

Suggested Instructional Strategies:
1. Assign small teams or individual students to a series of hands-on training exercises (MLAs) to experience as a packaged activity (35 mm or view camera; a flood or strobe lighting system; still video camera or camera back; color illustration, image manipulation and page layout software; scanner, digitizer or image capture hardware and software; presentation graphics and animination software).
2. Involve the students in individualized progress monitoring to provide you with self-evaluation and feedback (daily log sheets, assessment portfolio, etc.).
3. Use procedural work sheets in conjunction with team-to-team/student-to-student cooperative learning.

B. Topic: Audio Equipment Operation   12 hours
   1. **Performance Statement:**
      Upon satisfactory completion of this topic, the student will be able to demonstrate competence with equipment, processes and techniques in selected areas of audio media.

   Competencies to be Developed:
   After studying this topic, the student will be able to:
   a. Set up, operate and create with selected audio production equipment in a series of training exercises. (S)
   b. Apply accuracy and quality control to production techniques. (S)
   c. Work within a schedule. (S) (A)
   d. List and describe the applications of systems studied. (K)

   Suggested Instructional Strategies:
   1. Assign small teams or individual students to a series of hands-on training exercises (MLAs) to experience as a packaged activity (sound digitizing and editing hardware and software; analog recording and mixing devices; digital play and record devices; MIDI systems).

2. Involve the students in individualized progress monitoring to provide you with self-evaluation and feedback to the teacher (daily log sheets, assessment portfolio, etc.).
3. Use procedural work sheets in conjunction with team-to-team/student-to-student cooperative learning.

C. Topic: Video Equipment Operation   12 hours
   1. **Performance Statement:**
      Upon satisfactory completion of this topic, the student will be able to demonstrate competence with equipment, processes and techniques in selected areas of video media.

   Competencies to be Developed:
      After studying this topic, the student will be able to:
      a. Set up, operate and create with selected video production equipment in a series of training exercises. (S)
      b. Apply accuracy and quality control to production techniques. (S)
      c. Work within a schedule. (S) (A)
      d. List and describe the applications of systems studied. (K)

   Suggested Instructional Strategies:
      1. Assign small teams or individual students to a series of hands-on training exercises (MLAs) to experience as a packaged activity (video camera, recorder or camcorder; manual or automatic video editing system; audio dub to video feature; video enhancer, special effect generator or character generator).
      2. Involve the students in individualized progress monitoring to provide you with self-evaluation and feedback to the teacher (daily log sheets, assessment portfolio, etc.).
      3. Use procedural work sheets in conjunction with team-to-team/student-to-student cooperative learning.

IV. Module: **Applying Media to the Message**   **12 hours**
    A. Topic: Communication Concepts   6 hours
       1. **Performance Statement:**
          Upon satisfactory completion of this topic, the student will be able to discuss the need to communicate and decide how to apply the media to the message.

12

Competencies to be Developed:

After studying this topic, the student will be able to:

a. Participate in a group decision, acknowledging input of others, and support the team's goal of a theme or concept. (S) (A)

b. Brainstorm strategies to determine which media will best communicate the message. (S)

Suggested Instructional Strategies:

1. Poll the class to identify interests in team productions related to specific messages, then divide students into teams.

2. Give students examples of media and multimedia productions. Media examples: presentation graphics program, answering service message, radio commercial, radio air-shift, spot or process color graphic product. Multimedia: presentation graphics with audio, video production (training, recruiting, sales or informational), still video with audio, animation with audio, photographic slide tape program, TV show, news broadcast.

3. Schedule planning sessions to use problem solving strategies to determine titles, themes, concepts, markets and appropriate media.

4. Require teams to develop line-and-staff production charts showing the technical responsibilities or contributions of each member.

5. Provide several examples of message design based on different media technology. Look at product advertising for a selected car model and discuss the strengths and weaknesses of various print, audio and audio-visual messages designed for it.

B. Topic: Proposal Development/Approval   6 hours

1. **Performance Statement:**

Upon satisfactory completion of this topic, the student will be able to gain client approval by formally presenting a media plan.

Competencies to be Developed:

After studying this topic, the student will be able to:

a. Define and set goals necessary to complete a production. (K)

b. Project cost and establish a schedule for client presentation to best communicate the message. (K)

c. Develop a clear and concise media plan for group presentation. (K) (S)

d. React to client feedback and establish a consensus for a final plan. (S) (A)

Suggested Instructional Strategies:
1. Invite a sales representative of an advertising agency to involve students in a discussion pertaining to sales presentations.
2. Have each group prepare a production schedule and equipment/facilities list from which a master calendar, production schedule and equipment use list can be developed.
3. Lead a class discussion dealing with "client" relations. Be specific about time, facility and people (TFP) requirements as these may affect the production schedule.

V. Module: **Producing the Message**   **36 hours**
   A. Topic: Electronic/Graphic Preproduction   6 hours
      1. **Performance Statement:**
      Upon satisfactory completion of this topic, the student will be able to develop a client-approved media plan for production, and identify supplies and setup equipment.**Competencies to be Developed:**
      After studying this topic, the student will be able to:
        a. Complete a team assignment dealing with the treatment and preparation of a graphic layout, script or storyboard. (S) (A)
        b. List appropriate supplies and equipment for production. (K)
        c. Explain his/her contribution to the production schedule. (K)

      Suggested Instructional Strategies:
      1. Have students establish deadlines for storyboard, script or layout. Schedule meetings during class time to evaluate progress of team members.
      2. Ensure the availability of materials, equipment and facilities.

   B. Topic: Electronic Production   12 hours
      1. **Performance Statement:**
      Upon satisfactory completion of this topic, the student will use selected production equipment to produce segments of the client approved message.

      Competencies to be Developed:
      After studying this topic, the student will be able to:
        a. Set up and operate selected video and audio tape recorders/reproducers to record the client approved message. (S)
        b. Review recorded material to evaluate the segments (scenes/takes) for quality and message appropriateness or review tape of a live production.(S) (A)

c. Catalog and dub original footage for postproduction editing. (S)
d. Edit dubbed raw footage into a complete workprint (roughcut) for supervisory approval. (K) (S)
e. Work with client to gain final edit approval of "roughcut." (S)

Suggested Instructional Strategies:
1. Require team members to identify production areas in which they are, or will become, competent. Ensure that all areas of production necessary to complete the project are covered. Training and practice in addition to Module III's Media Learning Activities may be required.
2. Have students develop a list of props and wardrobe changes necessary for each scene. Have crew members scout and confirm locations and obtain permission to shoot for all "on-location" segments. Have students evaluate locations for lighting and audio requirements.
3. Have student directors audition and select talent for individual scenes. Block and rehearse scenes before production. Ask drama/speech teacher(s) to help student directors develop strategies.
4. Involve the students in individualized progress monitoring to provide you with self-evaluation and feedback (daily log sheets, assessment portfolio, etc.).
5. Devise a "scratch" sheet to list individual scenes and takes to be used during post production editing.
6. Show "rough cut" to clients and third party viewers for evaluation.

C. Topic: Graphic Production   12 hours
1. **Performance Statement:**
   Upon satisfactory completion of this topic, the student will use selected production equipment to imageset, convert and reproduce the number of copies required by the client.

Competencies to be Developed:
After studying this topic, the student will be able to:
a. Set up and operate the production equipment necessary to image the client approved message. (S)
b. Perform the conversion processes (such as photo processing and digitizing) necessary to transform images for the final stages of production. (S)
c. Prepare the image carrier required for final production. (S)
d. Transfer or produce the message as specified by the production plan. (S)

Suggested Instructional Strategies:
1. Require team members to identify production areas in which they are, or will become, competent. Ensure that all areas of production necessary to complete the project are covered. Training and practice in addition to Module III's Media Learning Activities may be required.
2. Have photographs added to printed products by traditional halftoning or by digitizing using a scanner. Spot color also can be added during the stripping process and process color can be added if laboratory is properly equipped.
3. Use still video to add photographs to presentation graphics programs. The process requires an electronic camera and a digitizing device. A scanner also can be used to add photographs to presentation graphics.
4. Involve the students in individualized-progress monitoring, so they can offer self-evaluation and feedback to the teacher (daily log sheets, assessment portfolio, etc.).

D. Topic: Electronic / Graphic Postproduction   6 hours
    1. **Performance Statement:**
    Upon satisfactory completion of this topic, the student will assemble electronic footage/graphic production materials in postproduction to finish the client approved message.

Competencies to be Developed:
After studying this topic, the student will be able to:
a. Select appropriate "systems" to complete the message. (K)
b. Set up and operate selected graphic,video and audio tape recorders/reproducers to edit "raw footage" and production segments into a client approved message. (S)
c. Add music, special effects and graphics into the final edited master. (S)
d. Evaluate finished product for quality control.(S) (A)
e. Catalog, dub or finish final production for the client. (S)

Suggested Instructional Strategies:
1. Have students discuss the best method for integrating special effects and postproduction materials into the final product.
2. Visit a postproduction facility using time-code and computers to finish video productions and/or a trade shop specializing in binding and finishing graphic products.
3. Discuss the benefits involved of using time-code and computers in the final editing process.

4. Discuss the advantages of a computerized on-demand graphic production system.
5. Have students develop an evaluation of the final edit of the electronic message/printed product.
6. Have students apply a final cost assessment to the production.

VI. Module: **Presentations and Critiques**   **6 hours**
A. Topic: Media Assisted Presentations   3 hours

1. **Performance Statement:**
Upon satisfactory completion of this topic, the student will evaluate the means and methods available to make the final presentation, and will present the product to the client, using appropriate presentation techniques.

Competencies to be Developed:
After studying this topic, the student will be able to:
a. Devise a form for making a site survey to evaluate the physical characteristics, layout and equipment requirements of the presentation room. (K)
b. Perform a site survey and make a list of necessary equipment for the final presentation. Draw a floorplan listing equipment placement and audience arrangement. (S)
c. Evaluate the presentation room for ergonomic considerations of the audience. (S) (A)

Suggested Instructional Strategies:
1. Have students evaluate the effectiveness of media presentations in classrooms, conference rooms, theaters and screening rooms.
2. Discuss environmental factors as they relate to message retention and audience receptiveness.
3. Present mediated materials in lightened and darkened settings; discuss the effect of the presentation under different lighting conditions.
4. Play back audio/visual messages using various speakers and systems; discuss the relationship of audio quality on message effectiveness.

B. Topic: Assessment and Evaluation   3 hours

1. **Performance Statement:**
Upon satisfactory completion of this topic, the student will evaluate the effectiveness of the developed message.

17

Competencies to be Developed:

After studying this topic, the student will be able to:

a. Devise a form which asks the audience to determine the effectiveness of the message and explain their interest in the message. (K)
b. Review the program/message objectives with the client. (A)
c. Understand formative evaluation techniques. (K)
d. Apply a formative evaluation to the message and determine ways the message could be improved visually and/or aurally. (S)

Suggested Instructional Strategies:

1. Lead the class in a final review of the production and ask students to discuss aspects of the production that might have been accomplished differently.
2. Have students devise an exit poll evaluation form asking viewers to comment on message content and presentation techniques.
3. Ask a representative of an advertising or public relations firm to describe evaluation tools used by that firm and how they are applied to message design.
4. Ask the client to formally evaluate the product as to whether the message achieved the stated goals and objectives.

EQUIPMENT LIST
Suggested equipment to support the Instructional Strategies of
Media Production Technology

COMPUTER EQUIPMENT
One workstation for every two students. The workstations must have adequate memory and storage to manipulate sound, video and graphic applications.

COMPUTER INTERFACES
2 – image capture boards or frame grabbers with encoders
1 – black and white and color 8-bit scanner w/software
1 – 600 dpi laser printer
1 – audio digitizer
1 – CD ROM player
2 – modems (for telecommunications w/separate phone lines)

COMPUTER SOFTWARE (for each workstation)
• Page layout (for desktop publishing)
• Illustration and draw
• Presentation graphics
• Audio digitizing & editing
• Animation
• 3-D
• MIDI
• CD ROM art and music

AUDIO EQUIPMENT
1 – mixing board with at least a 4-track tape recorder capable of over-dubbing
2 – high quality playback systems (amplifier and stereo speakers)
2 – compact disc players
2 – cassette recorder/players (1 dual unit)
4 – microphones
2 – quality headsets

VIDEO (minimum: Hi-8 or SVHS or the highest resolution consumer system at the time of purchase)

2 – cameras with extra batteries

2 – player/recorders

2 – monitors

1 – editing system (includes a dual deck system capable of reading time code, character generation, audio dubbing and special effects)

2 – tripods

2 – flood light systems

ELECTRONIC STILL IMAGING (silver photographic equipment and darkroom optional)

6 – still video cameras

2 – still video disk drive to interface with a computer

1 – player

1 – color printer

GRAPHIC EQUIPMENT

4 – layout tables

1 – graphic arts camera (roomlight type or electrostatic direct platemaker)

4 – screen printing workstations

1 – work sink

1 – paper cutter

1 – electric stapler (capable of saddle and side stapling)

1 – punch or drill

1 – padding press

1 – offset press

1 – electrostatic copy system

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