LOUISIANA STATE UNIVERSITY

SCHOOL OF LIBRARY & INFORMATION SCIENCE

Preservation and Digitization of Audiovisual Materials

LIS 7506 Summer

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**Meeting Time:** Online

**Office Hours:** By appointment

**Course Description:** Introduction to the concepts and basic techniques for preservation and digitization of moving image and recorded audio materials.

**Objectives:** By the end of the course, a student will be able to:

* Discuss the history and role of audiovisual materials in cultural heritage institutions;
* Identify the properties of audiovisual formats and their associated preservation and digitization challenges; and
* Discuss the limitations of basic digitization of audiovisual materials and the benefits of advanced digitization techniques.

**Topics Covered:** History of audiovisual formats; the role of audiovisual materials in cultural heritage institutions; properties of audiovisual formats; condition inspection; basic audiovisual conservation; playback equipment; digitization standards and techniques; limitations of basic digitization techniques; and contemporary issues in basic audiovisual preservation and digitization.

**Communication:** Students are strongly encouraged to use the Moodle site created for this class to view class slides and communicate class related questions or suggestions to the instructor and classmates.

**Method:** Lecture/Discussion/Hands-on Exercises/Reading

If you are a student of special need, please contact the instructor within the first two weeks of the course.

Successful completion of the course will require approximately six hours of weekly work for each credit hour. Students in this three-credit course should expect to spend 18 hours a week on class work and preparation.

**Information for Students with Disabilities**

LSU policy requires a student who claims disability status to make a formal request for accommodation through the Office of Disability Services, 115 Johnston Hall, phone 225-578-5919. This office provides the necessary evaluation and recommendations to ensure full participation in the course. For more information, go to <http://www.lsu.edu/disability>

**Required Textbooks:**

Cocciolo, Anthony. *Moving Image and Sound Collections for Archivists*. Chicago: SAA, 2017.

Gracy, Karen F. *Film Preservation: Competing Definitions of Value, Use, and Practice*. Chicago: SAA, 2007. <https://catalog.hathitrust.org/Record/005555032>

National Film Preservation Foundation. *The Film Preservation Guide: The Basics for Archives, Libraries, and Museums*. San Francisco: NFPF, 2004. <http://www.filmpreservation.org/preservation-basics/the-film-preservation-guide-download>

Harrison, Helen P. *Audiovisual Archives: A Practical Reader*. Paris: UNESCO, 1997. <http://unesdoc.unesco.org/images/0010/001096/109612eo.pdf>

Additional readings will be available through Moodle or on the open web.

**Grading Breakdown and Due Dates:**

|  |  |  |
| --- | --- | --- |
| **Assignment** | **Due Date** | **%** |
| Participation | Ongoing | 20 |
| In the News | Ongoing | 5 |
| Activities | Ongoing | 25 |
| Format Presentations |  | 15 |
| Issue Paper |  | 35 |

**Grading Scale:**

|  |  |  |  |
| --- | --- | --- | --- |
| 99-100 | A+ | 74-76 | C |
| 94-98 | A | 70-73 | C- |
| 90-93 | A- | 67-69 | D+ |
| 87-89 | B+ | 64-66 | D |
| 84-86 | B | 60-63 | D- |
| 80-83 | B- | 59 or less | F |
| 77-79 | C+ |  |  |

# Course Schedule and Required Readings

*Note: The required textbooks will be referred to with the following abbreviations: Cocciolo, Gracy, NFPF, and Harrison.*

**Unit 1: Introduction & History**

Week 1: Introduction and Syllabus Review

NFPF, Chapter 1

Gracy, Chapter 1

Edmudson, Ray. *Audiovisual Archiving: Philosophy and Principles,* 3rd ed. Paris: UNESCO, 2016. Sections 3.3-4.5 and Appendix 2. <http://unesdoc.unesco.org/images/0024/002439/243973e.pdf>

History of Audiovisual Formats

Millard, Andre. *America on Record: A History of Recorded Sound.* 2nd edition. Cambridge: Cambridge University Press, 2005. Introduction, Chapters 6 and 7.

Morton, Jr., David L. *Sound Recording: The Life Story of a Technology*. Westport, CT: Greenwood Press, 2004. Chapters 6, 11, and 15.

Slide, Anthony. *Nitrate Won’t Wait: A History of Film Preservation in the United States.* Jefferson, NC: McFarland & Co, 1992. Introduction and Chapter 11.

Horak, Jan-Christopher. “Introduction to Film Gauges” <http://archive.is/xt5rw>

Week 2: Audiovisual Materials in Cultural Heritage Institutions

Gracy, Chapter 4

CLIR. *The State of Recorded Sound Preservation in the United States: A National Legacy at Risk in the Digital Age*. Washington, D.C.: CLIR, 2010. Chapter 1

Heritage Preservation. *Heritage Preservation Index Report*. Washington, D.C.: Heritage Preservation, 2005. Chapter 4.

Frick, Caroline. *Saving Cinema: The Politics of Preservation*. New York: Oxford University Press, 2011.Chapters 2-3.

Greene, Steve. “Chasing Technology: The Challenge of Preserving Audiovisual Records,” *Prologue* 39, no. 2 (Summer 2007). <http://www.archives.gov/publications/prologue/2007/summer/technology.html>

Jones, Janna. *The Past is a Moving Picture: Preserving the Twentieth Century on Film*. Gainesville, FL: University Press of Florida, 2012. <http://muse.jhu.edu/book/17754> Introduction

Ishizuka, Karen L. and Patricia R Zimmermann (eds.). *Mining the Home Movie: Excavations in Histories and Memories*. Berkeley: University of California Press, 2008. <http://muse.jhu.edu/book/25389> Introduction

Legal and Ethical Issues of Audiovisual Materials

NFPF, Chapter 8

Harrison, Chapters 1.8-1.9, 1-12-1.13

Cocciolo, Chapter 3

Hirtle, Peter B., Emily Hudson, and Andrew T. Kenyon. *Copyright & Cultural Institutions: Guidelines for Digitization for U.S. Libraries, Archives, & Museums*. Ithaca, NY: Cornell University Library, 2009. Selections

The Association of Moving Image Archivists. *AMIA Code of Ethics*. 2010. <http://www.amianet.org/sites/all/files/Code%20of%20Ethics%20-%20100101.pdf>.

International Federation of Film Archives (FIAF). *Code of Ethics*, 2002. <http://www.fiafnet.org/pages/Community/Code-Of-Ethics.html>

Wilkinson, Alec. “A Voice from the Past.” The New Yorker 19 May 2014. <http://www.newyorker.com/magazine/2014/05/19/a-voice-from-the-past>

**Unit 2: Format Properties & Equipment**

Week 3: Moving Image Format Properties

NFPF, Chapter 2

Cocciolo, Chapters 8-10

Bigourdan, Jean-Louis. *Vinegar Syndrome: An Action Plan*. Rochester: Image Permanence Institute, Rochester Institute of Technology. <http://www.imagepermanenceinstitute.org/webfm_send/308>

International Federation of Film Archives. *Glossary of Film and Technical Terms*. <http://www.fiafnet.org/~fiafnet/commissions/TC%20docs/Glossary%20Technical%20Terms%20v1%204s.pdf>

Recorded Audio Format Properties

Cocciolo, Chapters 7, 11

Bigourdan, Jean-Louis, Jim P. Reilly, et al. *The Preservation of Magnetic Tape Collections: A Perspective.* Rochester: Image Permanence Institute, Rochester Institute of Technology. <http://www.imagepermanenceinstitute.org/webfm_send/303>

Recording technology history (Timeline).  
<http://www.aes.org/aeshc/docs/recording.technology.history/notes.html>

Library of Congress. “Care, Handling and Storage of A/V Materials.” Washington, DC: Library of Congress. <http://www.loc.gov/preservation/care/record.html>

Sommer, B. W. & Quinlan, M. (2009). Chapter 5: Recording Technology. *In The Oral History Manual*, 2nd Ed. (pp. 31-43). Lanham, MD : AltaMira Press.

Week 4: Moving Image Equipment

NFPF, Chapter 3

Farrington, Jim. *Audio and Video Equipment Basics for Libraries*. Lanham, MD: Scarecrow Press, 2006. Chapter 3.

Recorded Audio Equipment

Harrison, Chapter 8.3

Farrington, Jim. *Audio and Video Equipment Basics for Libraries*. Lanham, MD: Scarecow Press, 2006. Chapter 2

Schuller, Dietrich. *Audio and Video Carriers: Recording Principles, Storage and Handling, Maintenance of Equipment, Format and Equipment Obsolescence.* International Association of Sound and Audiovisual Archives, 2008. <http://www.tape-online.net/docs/audio_and_video_carriers.pdf>

**Unit 3: Preservation**

Week 5-6\*: Moving Image Preservation

NFPF, Chapters 4-6

Gracy, Chapters 7

Harrison, Chapter 7.1, 7.3

*Additional Resources*

The Association of Moving Image Archivists. *Storage Standards and Guidelines for Film and Videotape*. <http://www.amianet.org/sites/all/files/storage_standards_0.pdf>

IPI media storage quick reference  
<https://www.imagepermanenceinstitute.org/webfm_send/301>

IPI Storage Guide for Acetate Film <https://www.imagepermanenceinstitute.org/webfm_send/299>

Library of Congress. “Care, Handling and Storage of A/V Materials.” Washington, DC: Library of Congress. <http://www.loc.gov/preservation/care/record.html>

Schuller, Dietrich. *Audio and Video Carriers: Recording Principles, Storage and Handling, Maintenance of Equipment, Format and Equipment Obsolescence.* International Association of Sound and Audiovisual Archives, 2008. <http://www.tape-online.net/docs/audio_and_video_carriers.pdf>

Wheeler, Jim. *Videotape Preservation Handbook*. Hollywood: AMIA, 2002. <http://www.amianet.org/sites/all/files/WheelerVideo.pdf>

Recorded Audio Preservation

Harrison, Chapter 7.2, 7.4

IPI media storage quick reference   
<https://www.imagepermanenceinstitute.org/webfm_send/301>

Casey, Mike and Bruce Gordon. *Sound Directions: Best Practices for Audio Preservation*. Indiana University and Harvard University, 2007. Chapter 5 <http://www.dlib.indiana.edu/projects/sounddirections/bestpractices2007/>

Farrington, Jim. "Preventive Maintenance for Audio Discs and Tapes." *Notes: Quarterly Journal of the Music Library Association* (Vol. 48, No. 2), December 1991: 437-445.

**Unit 4: Digitization**

Weeks 6-7: Moving Image Digitization

Cocciolo, Chapter 4

Fleischhauer, Carl. “Format Considerations in Audio-Visual Preservation Reformatting: Snapshots from the Federal Agencies Digitization Guidelines Initiative.” *ISQ* 22, no 2 (2010): 34-40. <http://www.digitizationguidelines.gov/audio-visual/documents/IP_Fleischhauer_AudioVisual_Reformatting_isqv22no2.pdf>

Wright, R. *Preserving Moving Pictures and Sound*. Digital Preservation Coalition. <http://dx.doi.org/10.7207/twr12-02>

Goldsmith, B. (2013). *Digitizing Video for Long-Term Preservation: An RFP Guide and Template*. New York: New York University Libraries.

Science and Technology Council of the Academy of Motion Picture Arts and Sciences. (2007). *The Digital Dilemma: Strategic Issues in Archiving and Accessing Digital Motion Picture Materials.* Chapter 6. <http://www.cosmo-digital.com/cd2015/digital_dilemma.pdf>

Federal Agencies Digitization Guidelines Initiative  
<http://www.digitizationguidelines.gov/>

Witness. *Activist’s Guide to Archiving Video* 2013. <https://archiving.witness.org/archive-guide/>

Community Archiving Workshop <http://communityarchiving.org/>

Recorded Audio Digitization

Audio tape digitization workflow. <http://www.jazzpoparkisto.net/audio/>

Casey, Mike and Bruce Gordon. *Sound Directions: Best Practices for Audio Preservation*. Indiana University and Harvard University, 2007. Chapter 2 <http://www.dlib.indiana.edu/projects/sounddirections/bestpractices2007/>

CLIR. *Capturing Analog Sound for Digital Preservation: Report of a Roundtable Discussion for Best Practices for Transferring Analog Discs and Tapes*. Washington, D.C.: CLIR, 2009. <https://www.clir.org/pubs/reports/reports/pub137/pub137.pdf>

Federal Agencies Digitization Guidelines Initiative  
<http://www.digitizationguidelines.gov/>

# Course Requirements and Evaluation

**1. Readings & Lecture**

For each week, you must read the assigned readings and watch the posted lecture **prior** to engaging in discussion. Lectures and slides will be posted on Moodle no later than 12:00 pm on Mondays.

**2. Class Participation (20%)**

Participation in class discussion is expected of all students. Such discussions will analyze, criticize and synthesize the readings, lectures and relevant experiences. Participation is an important part of the learning experience. You must view the weekly lecture and read the assigned readings prior to participating in the online discussion. You are also required to read all discussion postings on Moodle.

*Requirements and Instructions for Participation*

These are discussion questions, not quizzes or exam questions. They are meant to help you understand what you have read by asking you to think more deeply about a few important points. They are also an opportunity for me to correct any misunderstandings. I expect you to put thought into your answers and demonstrate you have read the assigned material. However, I do not expect you to be “right” or provide lengthy essays. Each of your original posts should be around 300 words, but no more than 750 words.

Since the course is offered during the condensed summer session, there will be two separate discussion forums for each week. You are required to make an original post in each discussion forum. These original posts will each address one of the discussion questions and should be posted separately to allow for individual streams of replies. Your original posts is worth 3-5 points based on the discussion rubric posted on Moodle. Responses to others’ posts are worth 1-3 points, using the same rubric, just scaling down. The maximum for each forum is 10 points (for a combined total of 20 points per week).

You can earn the maximum points with a few excellent posts, with several average posts, many mediocre posts, or some combination thereof. Posts which say nothing more than some variation of “I agree” earn no points. A post must add something original to the discussion in order to earn at least 1 point.

*Due Date*

Each week’s discussion forum will be open when the week begins. The forum will remain open, but only posts that are made by noon of the Monday after the week ends will be graded.

**3. A/V Preservation & Digitization in the News (5%)**

One of my goals for this class is to make students understand the wide range of audiovisual preservation and digitization projects available. I will set aside a portion of the lecture videos to briefly discuss items of “a/v preservation & digitization in the news” that either I bring in or students find in local, national, or international media outlets. I will create an area on Moodle for you to submit any story or interesting digital collection you find and wish to make part of our discussion. All students are expected to participate in the discussion by finding examples of and participating with others in class to respond to particular issues when appropriate.

**4. Activities (25%)**

Throughout the semester, you will complete various course-related activities. Individual instructions will be discussed for each exercise.

**5. Format Presentations (15%)**

Students will present a summary of the properties, use, and preservation and digitization concerns for a moving image and a recorded audio format not covered during class. Students will also prepare a one-page handout for each format for the class for each format presentation. The handouts should be submitted by.

**6. Issue Paper (35%)**

Students will research and write a 3,000-4,000 word issue paper on an approved topic related to audiovisual preservation or digitization concerns. The essay will include least 10 peer-reviewed scholarly sources about the topic. Students will submit a topic proposal by June 15, and the final paper is due on.

**Submission of Assignments:**

Written assignments are due on the specified date by 11:59 pm submitted via Moodle. Work submitted late without an acceptable excuse will be downgraded 10 points per week (or portion thereof) it is submitted late. Acceptable excuses must be submitted to the instructor via email and approved *prior* to the assignment deadline.

The average grade in the course is a B, which indicates that the student has met the expectations and requirements for the assignment and the course. An A indicates that the student has exceeded the requirements and demonstrated a superior understanding of the principles and concepts involved.

Written assignments are to be typed, and submitted electronically via Moodle. Papers are to be **1.5 spaced using a 12-point font with 1-inch margins**. You may not resubmit work that has already been used in fulfillment of the requirement of this or any other course. Rules of academic conduct require that you not use the work of others without clearly indicating it as such. Academic misconduct will result in being reported to the LSU Student Advocacy & Accountability office. All students are required to know and abide by the University’s Policy for Academic Integrity and the LSU Code of Student Conduct. A copy of these documents may be found at: <http://www.lsu.edu/judicialaffairs>

It is expected students will consult and appropriately cite the research and professional literature where merited. Grades will also be reduced for papers that include irrelevant content to “fill up space” to meet the length specifications for a paper. Please rely on either the Chicago or APA citation style manual for your submissions. These are available in the library, bookstore or may be purchased through online book vendors.

**Moving Image Identification Exercise (on Moodle)**

This exercise asks you to use several resources in order to properly identify film types, soundtrack type, film stock dates, and videotape types. You can attempt this exercise more than once before the deadline, and your maximum score will count. Before working on this lesson, you may wish to download the exercise resources listed on Moodle. I also provide the basic images (without multiple choice answers) if you wish to look up possible answers before starting the exercise.

**Moving Image Preservation Exercise**

Situation: You work at Sagamore University Special Collections & Archives and oversee the preservation program. Since you were hired 6 months ago, you have conducted a quick preservation survey of the entire SUSCA holdings. While you are confident with the paper and photographic materials, you are concerned about the film-based materials storage conditions.

Here is a summary of the film holdings based on your survey:

* Specific Collections
  + Johnson Newsreel Collection: a collection of B&W newsreels on both acetate and nitrate base. Due to the nitrate the entire collection is kept frozen in a special vault at 32 F and 33% RH.
  + Smith Film Collection: a collection of rare 8mm and 16mm color films on acetate and polyester base. This is kept in your cold storage vault at 57 F and 50% RH.
* General Collections
  + The remainder of the film materials are spread out among the remaining collections, and are housed either in the general collection vault or in the unprocessed collection holdings.
  + Since nitrate film is well known, and asked about during appraisal and acquisition, you are confident there is no additional nitrate in the collections
  + The general collection vault is kept at 65 F and 50% RH
  + The unprocessed collection holding area is kept at 65 F and 65% RH

1. Create an account at <http://filmcare.org>

2. Walk through the process of characterizing your collection using the information above for the following four collections: Johnson Newsreel Collection; Smith Film Collection; General Collection Vault; and Unprocessed Collection Holdings.

3. Once you have entered in the associated information, click Preservation Overview and review the provided information. Click PDF and save the downloaded PDF.

4. Click view collection recommendations, and review the provided information. Download and save the PDF.

5. Click through and review the information in the following two sections.

6. Upload the two PDF files in the exercise submission folder on Moodle.

**Moving Image Digitization Exercise (on Moodle)**

Complete the 4 Part Exercise on Moodle. You will submit 4 XML files, a Fixity report, and 4 access videos.

**Moving Image Digitization Exercise (on Moodle)**

Complete the 4 Part Exercise on Moodle. You will submit your edited WAV and MP3 files and associated metadata.

**PB Core Cataloging Exercise**

Select one of the provided DVD box sets on Moodle. For the purpose of this exercise, we’ll assume each of these box sets was created by digitizing a series of original Betacam SP broadcast master tapes for commercial distribution.

Now, the production company has re-digitized the films at a higher resolution to make them available through a streaming service. Each digital master file is a 720x480 10-bit uncompressed Quicktime file, which has been converted to ProRes at a resolution of 1920x1080 for production purposes.

Assignment Part 1

1. Using the PBCore Cataloging Tool, create a PBCore Asset record for a single film in the box set, including all instantiations: the Betacam SP, the DVD, the uncompressed digitized file, and the production file.
2. Using the PBCore Cataloging Tool, create a PBCore Asset Record for the DVD box set.
3. Choose one of the PBCore spreadsheet templates and create an inventory of your complete physical collection, including all Betacam SP tapes and DVDs
4. Submit the final files via Moodle

Assignment Part 2

1. Using the PBCore Cataloging Tool, create a PBCore Asset record for a the film from the moving image digitization exercise, including all instantiations: the VHS, the uncompressed digitized file, and the production file.
2. Choose one of the PBCore spreadsheet templates and create an inventory of your complete physical collection
3. Submit the final files via Moodle