

**SCHOOL OF INFORMATION
UNIVERSITY OF TEXAS AT AUSTIN**

MATERIALS IN LIBRARIES, ARCHIVES AND MUSEUMS

Lecturer: Karen Pavelka, UTA 5.422
Meeting time: Thursday, 9-12, UTA 1.506B
Office hours: TBD
Email: pavelka@ischool.utexas.edu
Lab phone: 471-8269 Office phone: 471-8286

Course Overview:

Underlying factors in the physical nature of records materials; concepts of permanence and durability and their assessment; basic concepts of materials science; materials found in library, archive and museum collections, especially manuscripts, books and photographic processes. Context of conservation and preservation practice.

Objectives:

1. To impart understanding of the materials frequently encountered in library, archives and museum collections through emphasis on common, underlying factors of stability and deterioration.
2. To allow the student to gain an understanding of the conservation and preservation literature.
3. To emphasize the importance of understanding classes of materials, similarities and differences.
4. To learn to identify and investigate components of objects and assess stability.
5. Secondary emphasis will be placed on methods of fabrication, especially as they relate to durability or physical toughness of materials.
6. Historical development of materials will be discussed especially where it is relevant to understanding the range of materials likely to be encountered and where it bears on lasting qualities.

Recommended texts: One copy of each will be kept in the lab for limited loans

- Benson, R. (2008). *The printed picture*. New York: Museum of Modern Art. The companion website to this book can be found at: <http://www.benson.readandnote.com/videos/woodcut-printing> Accessed August 12, 2015 when the text was there but the videos were not loading.
- Boersma, F. (2007). *Unravelling textiles: A Handbook for the preservation of textile collections*. London: Archetype
- Jurgens, M. (2009). *The digital print: Identification and preservation*. Los Angeles: Getty Conservation Institute.
- Lavedrine, B. (2003). *A guide to the preventive conservation of photograph collections*. Los Angeles: Getty Conservation Institute.

Required readings

Students are responsible to have read all the readings listed on the syllabus before class and are expected to come to class prepared to discuss them. Every week in class we will review the readings for the next week and I will let you know which are the most important, which are trivial and just for fun, and which will be over your heads. There are many more books, journals, samples etc. in UTA 1.506 and you are welcome to use any of the materials in that room. Please do not remove anything from 1.506 without my specific permission for each item.

Assignments

Research Paper

A research paper is required for this class. The objective of the paper is to provide you with experience in framing a question about the nature of materials, becoming familiar with the resources available for conservation and preservation technology, evaluating citations critically, and communicating with colleagues. It is an opportunity to read about something that interests you. **The topic must be approved by the instructor.** Selected papers from previous classes are stored in manuscript boxes in 1.506 and may provide inspiration if you are looking for a topic.

The paper will be submitted in four stages:

- **The topic will be chosen by September 14.** Students will post their thesis question or statement to Canvas where it will be shared with other class members. Post the file in the folder titled *Paper topics due September 14*. Title the file: Yourlastname_topic using a one word summary for your paper and no spaces in the title. (For instance, if I were writing a paper on the subtleties of deterioration of gum bichromate prints I would title it: Pavelka_gumprints) I will **only** accept assignments as a **Word doc**.
- **A complete paper including the bibliography is due SUNDAY November 5.** This version of the paper is to be posted on Canvas in the folder titled *Draft research papers* where it will be accessible to the rest of the class. This version will not be graded but I will offer comments on the draft; it is intended to promote an exchange of ideas and observations. Title the file Yourlastname_draft
- **November 9 & 16** Each student will be assigned a time to lead a discussion about his or her research. The discussion might include a brief summary of the work; impediments or successes encountered, especially if you found a useful research technique or source; suggested areas for further research; others areas as appropriate. You should prepare questions for discussion. The point is not merely to present your work, but to get feedback from your colleagues. The discussion format may vary according to class size.
- **The final paper is due Friday, December 8; please post directly to Canvas.** *This version will be graded.* Post the file on Canvas in the folder titled *Final Research Paper*. Title the file Yourlastname_finalpaper. Selected paper copies will be kept on file in UTA 1.506 (Lab Ante Room) for reference for future students. **Please let me know if you do not want your paper included in this group.**
- Again, please **submit all assignments as a Word doc** so I can use Comments and Track Changes to give feedback. **I will not accept PDF files or any format other than Word.**

Article presentation "Journal Club"

Each student is required to present one article to the rest of the class. Students will be assigned a date to present and the article should relate to either the class topic for the day, or the student's research paper. You should select a scholarly article rather than something from the popular press. Each student will select an article and distribute copies to the class **at least one week before** the assigned presentation date. You may use the folder provided on Canvas or use another method of distribution as you like. The student will then lead a discussion of the article focusing on the significant points, successful arguments or flawed assumptions, how the article contributes to the existing body of literature, etc. The presenter should prepare a list of discussion questions. All class members are responsible for reading each article, but the presenter will read much more carefully and critically than other class members. The presentation will be graded on the quality of the article, how well the information is presented and the level of discussion that is generated.

Agents of deterioration observation

You will be reading about the agents of deterioration for class on September 21. For each agent select one object on display at the Blanton that exhibits either evidence of or vulnerability to that threat. For instance, if you found a print with a charred edge on display you could site evidence of fire damage, and if you saw a person removing a framed object from the wall and putting it in their backpack, you could site vulnerability to theft. (This will not happen. Framed objects are screwed to the wall and backpacks are not allowed.) Your justification for the threat should be realistic, i.e. while paper can burn easily, a framed object on a museum wall is not really vulnerable to the threat of fire. The risk of fire is very small, and if one did occur, the sprinkler system would likely extinguish it quickly. Space aliens will not be considered a plausible threat.

Identify each object by title, artist and location. Use the visitor map available at the front desk at the Blanton to identify the room where the object is located. Using the CCI guidelines, identify the specific agent and either how the damage is likely to have occurred or how you think it might occur.

We will be visiting the Blanton Museum on Thursday September 21 for a behind the scenes tour of the institutional activities. While we will not be going through all the galleries as a group, you may be able to use the time after class to view the collections. Your examples must be taken from objects on display, not anything we see in storage on our tours. Although they are on the syllabus for September 28, it is to your advantage to have the readings about agents of deterioration read before we visit the Blanton on September 21. Students may exchange ideas and observations with each other, but the papers must be written individually. You may use any object on display

whether or not someone else is using it. The assignment is due September 28 and should be submitted under *Agents of Deterioration Observation* in Assignments on Canvas. This assignment counts towards your final grade

Depending on how the tours progress, I will try to set aside 10 minutes or so at some time on the 21st to discuss this assignment, and of course, please feel free to ask questions at any time.

Quizzes

There will be at least one quiz for printing process and photo process identification. There may be others including "pop" quizzes. All quizzes combined only count for 5% your grade and they are graded very liberally. I give them to help me know what people are understanding or misunderstanding.

Useful dates to remember

September 14:	Research proposal due; post directly to Canvas. Students are strongly advised to speak with the instructor before submitting a proposal. <i>Please note there are only 8 ½ weeks until the draft is submitted.</i>
September 28:	Agents of deterioration paper due.
November 5: SUNDAY	Written paper, bibliography and discussion questions are due. Please post directly to Canvas. Students are expected to read all papers before the class discussion and be prepared to offer comments and suggestions. DUE AT MIDNIGHT SUNDAY
November 9 & 16:	Discussion of class papers. Collegial. Food provided.
December 7:	Photo and print process identification quiz.
December 8:	Final papers due; post directly to Canvas.
To be assigned:	Individual article presentations.

Grading

Grade points will be distributed as follows:

Research paper	20 points
Research paper presentation	10 points
Participation in paper discussions	5 points
Article presentation "Journal Club"	20 points
Agents of deterioration summary	20 points
Quizzes	5 points
Attendance and *participation	20 points

*Participation is mandatory and defined by the amount of meaningful content each student contributes to the class. That said, participation is not dominance, rather open and welcoming discussion that includes everyone. If you never open your mouth in class, other than when you are presenting, you will not get a grade higher than a B for the class and more likely a C. On the other hand, if you tend to dominate every discussion, especially with personal anecdotes, expect a low grade.

Course Policies

Students with disabilities may request appropriate academic accommodations from the Division of Diversity and Community Engagement, Services for Students with Disabilities, 471-6259, <http://www.utexas.edu/diversity/ddce/ssd/>

Students are expected to adhere to the University Honor Code. <http://registrar.utexas.edu/catalogs/gi09-10/ch01/index.html>

By UT Austin policy, you must notify me of your pending absence at least fourteen days prior to the date of observance of a religious holy day. If you must miss a class, an examination, a work assignment, or a project in order to observe a religious holy day, you will be given an opportunity to complete the missed work within a reasonable time after the absence.

<<<<< Class 1 - 31 August >>>>>
Context and introduction

- Anderson, S. (2016, August 21). David's Ankles: How imperfections could bring down the world's most perfect statue. Retrieved from <http://www.nytimes.com/2016/08/21/magazine/davids-ankles-how-imperfections-could-bring-down-the-worlds-most-perfect-statue.html?rref=collection%2Fsectioncollection%2Fmagazine&action=click&contentCollection=magazine®ion=rank&module=package&version=highlights&contentPlacement=3&pgtype=sectionfront>
- Brazil, R., & ChemistryWorld. (2014, June 28). Modern chemistry techniques save ancient art. Retrieved August 1, 2016, from <http://www.scientificamerican.com/article/modern-chemistry-techniques-save-ancient-art/?page=2>
- Grann, David. (2010). The mark of a masterpiece. *The New Yorker*, July 12 – 19. Available on-line through UT Libraries.
- Greene, V. (2006). Using case studies to examine the decision-making process for cleaning ethnographic objects. *Journal of the American Institute for Conservation*, 45, 183-199. Available through JSTOR through UT libraries. Under subheading Digital Preservation.
- Indiana University Bloomington; School of Education. (2005, September 7). How to recognize plagiarism. Retrieved August 1, 2016, from <https://www.indiana.edu/~istd/definition.html>
- Lambert, Simon. (2014). The early history of preventive conservation in Great Britain and the United States (1850-1950). Retrieved August 1, 2016, from <http://ceroart.revues.org/3765>
- Magnified movements: Using Eularian video magnification with cultural heritage objects. (2016) Retrieved August 1, 2016, from <http://www.magnifiedmovements.com/> Read narrative and look at video library.
- Noel, W. (April 2012). Revealing the lost codex of Archimedes. Retrieved from http://www.ted.com/talks/william_noel_revealing_the_lost_codex_of_archimedes?language=en
- Olsen, E. (2013, February 27). Scientists uncover invisible motion in video. Retrieved from http://bits.blogs.nytimes.com/2013/02/27/scientists-uncover-invisible-motion-in-video/?_r=0
- Owens, T.J. (2017). Getting beyond digital hyperbole and tools for looking ahead. Retrieved from <http://www.trevorowens.org/2017/06/getting-beyond-digital-hyperbole-tools-for-looking-forward/>
- Panagiaris, G., Mertzani, M.; Malea, E.; and Maniatis, N. (2008). Towards a binding code of ethics for the conservation and display of human remains. In *15th triennial conference, New Delhi, 22-26 September 2008: preprints/ICOM Committee for Conservation*. Bridgland, Janet (Editor). ICOM Committee for Conservation pp. 364-369. (On Canvas)
- Princeton University. (August 2016). When to cite sources. Retrieved from <https://www.princeton.edu/pr/pub/integrity/pages/cite/>
- Valentine, J.; Li, J.; Zentgraf, T.; Bartal, G.; and Zhang, X. (2009). "An optical cloak made of dielectrics" *Nature Materials*, 8, 568. Available through Google Scholar. **Read this for the conceptual picture only; you are not expected to understand the physics here.**

<<<<< Class 2 - 7 September >>>>>
Preventive conservation
Article presentation:
Article presentation:

- Boersma, F. (2007). *Unravelling textiles: A Handbook for the preservation of textile collections*. London: Archetype. pp. 81-100
- Conservation Center for Art and Historic Artifacts. (2015.) Preservation resource materials. Retrieved from <http://ccha.org/publications> Become familiar with the resources found here.
- Lavedrine, B. (2009). From mass-produced artefacts to mass treatments: the impact of industrial development on the museum field. *Incredible Industry: Preserving the Evidence of Industrial Society*, pp. 15-24. The digital version of this volume is available at: <http://www.nkf-dk.dk> Retrieved August 1, 2016. You will have to navigate the site in Dutch, but the icons are fairly straight forward. There is a link at the bottom of the first screen labeled *Publikationer* that takes you to the publication.

- Measday, D. (2017). A summary of ultra-violet fluorescent materials relevant to Conservation. Retrieved from <https://aiccm.org.au/national-news/summary-ultra-violet-fluorescent-materials-relevant-conservation>
- National Archives of Australia. (2013). About the photographic activity test. Retrieved from <http://www.naa.gov.au/records-management/agency/preserve/physical-preservation/pat.aspx>
- Waller, R. (1994). Conservation risk assessment: A Strategy for managing resources for preventive conservation. Retrieved from <http://www.museum-sos.org/docs/WallerOttawa1994.pdf>

<<<<< Class 3 - 14 September >>>>>
Climate debate; Environmental control
Article presentation:
Article presentation:

- Ashley-Smith, J., & Burmester, A. (2013). *Plus-minus debate*. Retrieved from <http://www.doernerinstitut.de/downloads/Plus-Minus-Debate.pdf>
- Bickersteth, J. (2014). Environmental conditions for safeguarding collections: What should our set points be? *Studies in Conservation*, 59(4), 218-224. Available through UT Libraries
- Bichlmair, S., Holl, K., & Kilian, R. (2012). The moving fluctuation range - a new analytical method for evaluation of climate fluctuations in historic buildings. In J. Ashley-Smith, A. Burmester, & M. Eibl (Eds.), *Climate for Collections: Standards and Uncertainties* (pp. 439-450). London: Archetype. (On Canvas.)
- Boersma, F. (2007). *Unravelling textiles: A Handbook for the preservation of textile collections*. London: Archetype. pp. 31-46
- Bolliger, A., & Strobl, J. (2013). *Real savings discussion*. Retrieved from http://www.doernerinstitut.de/downloads/The_Real_Savings_EN.pdf
- Burmester, A., & Kostowski, R. (2013). *Stability versus stress discussion*. Retrieved from http://www.doernerinstitut.de/downloads/Stability_versus_Stress.pdf
- Doerner Institute. (20). Retrieved from http://www.doernerinstitut.de/en/projekte/Bizot/bizot_1.html
- Getty Conservation Institute. (2014). Conservation perspectives. Retrieved from http://www.getty.edu/conservation/publications_resources/newsletters/29_2/index.html Read everything that comes before GCI news.
- Image Permanence Institute. (n.d.). Sustainable preservation practices for managing storage environments. Retrieved from <http://www.ipisustainability.org/workshop-presentations/> Skim the various articles.
- Lavédrine, Bertrand. Photographs of the past : process and preservation. Los Angeles: Getty Conservation Institute, 2009. pgs. 58-63
- Neal, K. (2012, February 22). Power felt gives a charge. Retrieved from <http://news.wfu.edu/2012/02/22/power-felt-gives-a-charge/>
- The National Archives. *PAS 198:2012 Specification for managing environmental conditions for cultural collections*. London: British Standards Institution. (On Canvas.)
- Padfield, T. (2014) *Air exchange between an enclosure and its surroundings*. Retrieved from <http://www.conservationphysics.org/airex/airexchange.php>

<<<<< Class 4 - 21 September >>>>>
Appreciation and aesthetics
HVAC We will be touring the basement of the building. Dress appropriately. No sandals.
Meet at Blanton at 8:55
Guest speakers: Kristen Holder, Jeongho Park, Ralph Perez; Gabriela Truly

- Exhibitions: National Gallery of Art. (n.d.). Retrieved from <https://www.nga.gov/exhibitions/clrflimpr-tech.shtm>
- Hoffman, C., Hartl, A., Ahn, K. et. al. (2015). Studies on the conservation of verdigris on paper. *Restaurator*, 36(2), 147-182. Available on-line through UT Libraries.
- Pigments through the ages. (2013). Retrieved from <http://www.webexhibits.org/pigments/intro/uv.html>
- Rowlett, S. (2013, June 18). How to destroy a James Turrell. Retrieved August 1, 2016, from <http://hyperallergic.com/73609/how-to-destroy-a-james-turrell/>

10 Colors that faded away. (nd.) Retrieved <http://media.boingboing.net/wp-content/uploads/2011/10/listomania-1-1.jpg>
X-Rite Inc. (2013). Color test. Retrieved http://www.xrite.com/custom_page.aspx?pageid=77&lang=en
271 years before Pantone, an artist mixed and described every color imaginable in an 800-page book. (n.d.). Retrieved from <http://www.thisiscoossal.com/2014/05/color-book/>

<<<<< **Class 5 - 28 September** >>>>>

Agents of Deterioration

Article presentation:

Article presentation:

Canadian Conservation Institute. (n.d.). Ten agents of deterioration. Retrieved from <http://canada.pch.gc.ca/eng/1444330943476>

Kiefer, K. IMA conservation: The Oddy test. (2013) Retrieved from <https://www.youtube.com/watch?v=HKDM6kLgdys>

Library of Congress. (2014). Evaluating storage materials: Alternatives to the Oddy test. Retrieved from <http://www.loc.gov/preservation/outreach/tops/breitung/index.html>

Microscopy resource center. (2012). Retrieved from <http://www.olympusmicro.com/>

Read (at least) the following sections:

- Home page > Physics of Light and Color > Sources of Physical Light > Introduction to Visible Light Sources
- Home page > Physics of Light and Color > Primary Colors > Introduction to Primary Colors
- Home page > Microscopy Basic Concepts > Introduction > Anatomy of the Microscope
- Home page > Special Techniques > Polarized Light Microscopy > Polarization of Light

Most, P. V. D., Defize, P., Havermans, J., Doe, E. V. D., Bruin, G. D., & Forest-Flier, N. (2010). *Archives damage atlas: A tool for assessing damage*. The Hague: Metamorfoze. Retrieved from http://www.nationaalarchief.nl/sites/default/files/docs/nieuws/archives_damage_atlas.pdf

The psychrometric chart can be printed at the following site and there may be other sources if you search Google Images for psychrometric chart. I will give you a black and white photocopy in class.

Carrier. (n.d.). <http://www.greenbuildingadvisor.com/sites/default/files/psychrometric-chart-quantities-carrier.jpg>

<<<<< **Class 6 - 5 October** >>>>>

Basic concepts: Polymers

Article presentation:

Article presentation:

ADD TO THIS CLASS: http://sciencepolicy.colorado.edu/students/envs_5110/snow_1959.pdf

How to identify plastic materials using the burn test. (2014). Retrieved August 1, 2016, from <http://www.boedeker.com/burntest.htm>

Boersma, F. (2007). *Unravelling textiles: A Handbook for the preservation of textile collections*. London: Archetype. pp. 1-3

Chapman, C. and O'Connor, H. (1964). Magic molecule. Retrieved August 1, 2016, from http://www.nfb.ca/film/magic_molecule

Plastics news Europe. Retrieved August 1, 2016, from <http://www.plasticsnewseurope.com/>

Haude, M. E., O'Hern, R., and Nunberg, S. "Plastics are forever: Wraps, tools, films, and containers used in conservation." AIC News, September 2011. Retrieved August 1, 2016, from <http://www.conservation-us.org/docs/default-source/aic-news/2011-05-Sept-AICNews.pdf>

Kean, S. (2009, July 1). Does plastic last forever? Slate. Retrieved August 1, 2016, from <http://www.slate.com/id/2221963/>

Knowledge network. Science 360. Retrieved August 1, 2016, from <http://science360.gov/topic/Chemistry/> This site often has interesting research on polymers but the segments change frequently.

Microgalleria main directory. (2005). Retrieved August 1, 2016 from <http://pslc.ws/macrog/maindir.htm>

Snow, C.P. (1961). *The two cultures and the scientific revolution*. New York: Cambridge University Press.
Retrieved from http://sciencepolicy.colorado.edu/students/envs_5110/snow_1959.pdf
Syracuse University Libraries. (2013). *Plastics collection*. Retrieved from <http://plastics.syr.edu/>

<<<<< Class 7 - 12 October >>>>>

Basic concepts: Dyes and colorants; examination and analysis

Article presentation:

Article presentation:

- Ball, P. (2001). In *Bright earth: Art and the invention of color* (pp. 24-71). New York: Farrar, Straus and Giroux.
Personal copy located in Paper Lab.
- Boersma, F. (2007). *Unravelling textiles: A Handbook for the preservation of textile collections*. London: Archetype. pp. 47-60.
- Brazil, R. (2017). Coloring in the past. Retrieved from <https://www.chemistryworld.com/feature/raiders-of-the-lost-pigments/3007237.article>
- Conservation science for the cultural heritage: Applications of instrumental analysis*. (2013). Berlin, Heidelberg: Springer Berlin Heidelberg. This is available electronically from UT libraries. Read the **table of contents only** before class.
- Cosentino, A. (2013, April 15). Multispectral image analysis for art. Retrieved from <http://chsopensource.org/2013/04/15/multispectral-image-analysis-for-art-examination-multispec/>
- Giesbrecht, J. (2015, August 28). How the ballpoint pen killed cursive. *Atlantic*. Available through UT Libraries.
- Image Permanence Institute. (n.d.). Photographic activity test. Retrieved from <https://www.imagepermanenceinstitute.org/testing/pat> (Look over rest of website as well.)
- Johnston, I. (2014, July 13). Blackest is the new black: Scientists develop a material so dark that you can't see it... Retrieved from <http://www.independent.co.uk/news/science/blackest-is-the-new-black-scientists-have-developed-a-material-so-dark-that-you-cant-see-it-9602504.html>
- Small world image gallery. (2012). Retrieved from <http://www.microscopyu.com/smallworld/gallery/contests/2012/index.html>
- Spring, M., Liang, H., Peric, B., Saunders, D., & Podoleanu, A. (2008). Optical coherence tomography – a tool for high resolution non-invasive 3D-imaging of the subsurface structure of paintings. *ICOM Committee for Conservation Graphic Documents*, pp. 633-640. On Canvas.
- Smithsonian X3D. (2014). Retrieved from, <http://3d.si.edu/> Fun site. Look around.
- Warren, S. (2009). Hazards in industrial collections of the Canada Science and Technology Museum Corporation Ottawa, Canada. *Incredible Industry: Preserving the Evidence of Industrial Society*, pp. 225-232. The digital version of this volume is available at: <http://www.nkf-dk.dk> (Retrieved August 1, 2016). You will have to navigate the site in Dutch, but the icons are fairly straight forward. There is a link at the bottom of each screen labeled *Publikationer* that takes you to the publication.

<<<<< Class 8 - 19 October >>>>>

Applying concepts: Paper and ink

Article presentation:

Article presentation:

- Art of the photogravure. (n.d.) Retrieved from <http://www.photogravure.com/>
- Baty, J.W., Maitland, C., Minter, W., Hubbe, M. and Jordan-Mowery, S. (2010). "Deacidification for conservation," *BioResources* 5(3), 1955-2023. Search the title and journal and the PDF is available. Part of this article is dense, but just take the chemistry on faith.
- Grossman, E. (2014). Why receipts and greasy fingers shouldn't mix. Retrieved from <http://time.com/3531776/bpa-receipts-fast-food/>
- Hubbe, M. A. , and Bowden, C. (2009). Handmade paper, review, *BioResources* 4(4), 1736-1792. Search the title and journal and the PDF is available.
- Image Permanence Institute. (2014). Graphics atlas. Retrieved <http://www.graphicsatlas.org/>
- Iron gall ink website. Retrieved from http://irongallink.org/igi_index.html

- Krill, J. (2002). Introduction. In *English artists' paper: Renaissance to regency* (pp. 1-41). Winterthur, Delaware: Oak Knoll. (In lab.)
- Schweidler, M. (2007). Paper manufacture. In R. Perkinson (Ed. & Trans.), *The restoration of engravings, drawings, books and other works of paper* (pp. 41-45). Los Angeles: Getty. (Hard copy in lab.)
- Stephens, C. H., Barrett, T., Whitmore, P.M., Wade, J., Mazurek, J., & Schilling, M. (2009). Composition and condition of naturally aged papers. *Journal of the American Institute for Conservation*, 47, 201-216. Available through JSTOR
- Stephens, C. H.; Whitmore, P. M.; Morris, H. R.; and Bier, M. E. Hydrolysis of the amorphous cellulose in cotton-based paper. *Biomacromolecules* 9, no. 4 (2008), pp. 1093-1099 (Read the abstract only unless you have a strong chemistry background.) PDF available by searching title at <http://scholar.google.com/>
- Strlic, M., Cassar, M., & Kolar, J. (2008). NIR/Chemometrics approach to characterisation of historical paper and surveying of paper-based collections. *ICOM Committee for Conservation Graphic Documents*, pp. 293-300. On Canvas.
- What is a print? (n.d.). Retrieved from <http://www.moma.org/interactives/projects/2001/whatisaprint/flash.html>

<<<<< Class 9 - 26 October >>>>>
Applying concepts: Photographic materials
Article presentation:
Article presentation:

- Aardenberg Imaging and Archives. (2016). Light fade test results. Retrieved from <http://www.aardenburg-imaging.com/>
- Benson, R. (2008). *The printed picture*. New York: Museum of Modern Art. (Required text) Skim the entire text.
- Clark, S. (2009). *Preservation of photographic material* (2009 ed.). London: British Library, Preservation Advisory Centre. Retrieved from http://www.bl.uk/aboutus/stratpolprog/collectioncare/publications/booklets/preservation_of_photographic_material.pdf There are other useful resources on the site: <http://www.bl.uk/blpac/publicationsleaf.html>
- Dewitz, A. (2015). Printwiki :The free encyclopedia of print. Retrieved from http://printwiki.org/Front_Page
- George Eastman House (2016). Retrieved from <https://www.eastman.org/> Look around the site. It has useful information but changes frequently.
- Griffiths, A. (2016). Luminous-lint. Photography: History, evolution and analysis. Retrieved from <http://www.luminous-lint.com/app/home/> This has become a website that requires a subscription but there is some useful information available for free.
- Lavedrine, B. (2003). In *A guide to the preventive conservation of photograph collections* (pp. 3-142). Los Angeles: Getty. (Required text)
- NEDCC. (n.d.) Creating long lasting ink jet prints. Retrieved from <https://www.nedcc.org/free-resources/preservation-leaflets/5.-photographs/5.4-creating-long-lasting-inkjet-prints>
- Photoseed collection. (n.d.). Retrieved from <http://photoseed.com/>
- Van Roessel, Annemarie. "Through a Glass, Brightly: Re-viewing a Lost Architectural and Pedagogical Landscape Through Historic Lantern Slides." *Art Documentation: Journal of the Art Libraries Society of North America* 22, no. 1 (2003): 4-8. <http://www.jstor.org/stable/27949228>
- Weaver, G. (2008) *Guide to Fiber-Base Gelatin Silver Print Condition and deterioration*. New York: George Eastman House. Retrieved from <http://gawainweaver.com/library/>
- Weaver, G. (2013). Updated photo id. chart. Retrieved from http://gawainweaver.com/images/uploads/Process_ID_Chart_19th_Century_Photo.pdf

<<<<< Class 10 - 2 November >>>>>
Applying concepts: Photographic materials (Photo display)
Article presentation:
Article presentation:

- Digital print identification (2004). Retrieved from <http://aic.stanford.edu/sg/emg/juergens/>

- Frey, F., Heller, D., Kushel, D., Vitale, T., Warda, J., & Weaver, G. (2008). *The AIC guide to digital photography and conservation documentation* (J. Warda, Ed.). Washington, DC: AIC. Copies of first and second editions in lab.
- Image Permanence Institute. (2016). Digital print preservation portal. Retrieved from <http://www.dp3project.org/>
- Image Permanence Institute. (2016). Filmcare.org. Retrieved from <https://www.filmcare.org/>
- Messier, P. (2015). Conservation of photographs and works on paper. Retrieved from <http://www.paulmessier.com/>
Good site to know about.
- Stulik, D. and Kaplan, A. (2013). The Atlas of Analytical Signatures of Photographic Processes. Retrieved from http://www.getty.edu/conservation/publications_resources/pdf_publications/atlas.html
- Update on timeline of historical film colors. (n.d.). Retrieved from <http://filmcolors.org/>
- Wilhelm Imaging Research. (n.d.) Retrieved from <http://www.wilhelm-research.com/index.html> This site is for reference. Take a look at what is found here.

<<<<< Class 11 - 9 November >>>>>
Discuss papers

<<<<< Class 12 - 16 November >>>>>
Discuss papers

<<<<< Class 13 - 23 November >>>>>
Thanksgiving

<<<<< Class 14 - 30 November >>>>>
Applying concepts: Sound
Guest speaker: Sarah Norris

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Science Museum Group Journal. (2017). Sound and vision. Retrieved from <http://journal.sciencemuseum.org.uk/issues/spring-2017/> Read or skim the articles associated with sound. There is good information for photographic images as well.

<<<<< Class 15 7 December >>>>>
Time based media; Future directions for conservation
Print and photo id quiz

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