

Web Syllabus — GLIS 633: Digital Media

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Calendar Description

Foundational scientific concepts and basic techniques of digital media production and manipulation and their relevance in galleries, libraries, archives, and museums (GLAM). Tools and techniques for creating and handling digital media. Digitizing audio, image, video, and text materials, and using various software packages for manipulating and preserving digital sound, images, and video.

Disclaimer

The information in this early-release Web Syllabus is preliminary. Updated details, in particular for assessment and readings, will be made available on myCourses at the appropriate time.

Learning Outcomes

At the end of the course you should be able to

- Outline the fundamental principles of digitization
- State the limitations of human perception and how it affects the digitization practice
- Interpret core standards of data compression
- Distinguish various forms of data compression
- Prepare and perform digitization tasks commonly performed in library and archival settings
- Modify digital sound and image

Course content

- Overview of multimedia systems and applications
- Principles of digitization: sampling, quantization, Nyquist theorem
- Digitization practice in audiovisual archive and (academic) library
- Digital audio: sounds, speech and music, audio effects, MIDI
- Digital imaging: resolution, file formats, color representation, raster vs vector formats
- Analog and digital video
- Basic sound, image and video editing
- Data compression techniques

Assessment

The course uses quizzes, labs, and individual assignments.

Quizzes. A series of online quizzes will be administered to track progress on the main components of the course, including: Audio, Images, Video, and Compression.

Labs. The labs are basic introductions to digital media editing using various freeware. They cover audio (using Audacity), images (using GIMP), and video (TBD). Students with relevant experience are not required to follow the lab instruction, but are required to hand in the final products of assigned lab exercises.

Assignments. A series of individual assignments aim to provide experience with various theoretical and practical issues in digital media; for instance, the relation between choices in digitization parameters and fill size or document quality.

Assessment format	Number of assessments	% of final grade
Quiz	TBD	TBD
Lab	3	≤ 10
Assignment	TBD	TBD

Required materials

Software

The course uses a variety of (free) software, some of it you will need to install on your own computer. You can find the necessary information here:

Medium	Freeware	Version	Download link	Comment
Audio	Audacity	2.4.2	https://www.audacityteam.org/download/	Required
Images	GIMP	2.10	http://www.gimp.org/downloads/	Required
	Inkscape	1.0	https://inkscape.org/en/download/	Optional
Video	Olive	0.1.0 Alpha	https://www.olivevideoeditor.org/download.php	To be confirmed

Textbook

There is **no required textbook**. However, I do recommend and refer to the follow book:

- Yue-Ling Wong (2016). Digital media primer: Digital audio, video, imaging, and multimedia programming. Boston: Pearson. (QA76.575 W665 2016).

Readings

Digitization Standards

- Bamberger, R., & Brylawski, S. (2010). The state of recorded sound preservation in the United States: a national legacy at risk in the digital age. Washington, D.C.: Council on Library and Information Resources.
- Federal Agencies Digitization Initiative (2016). Technical Guidelines for Digitizing Cultural Heritage Materials: Creation of Raster Image Master Files.
- Digital Preservation Handbook (2015), 2nd Edition, <http://handbook.dpconline.org/>, Digital Preservation Coalition.

Miscellanea

- Breeding, M. (2014). Ongoing challenges in digitization. *Computers in Libraries*, 34(9), 16-18.
- Michel, J.-B., et al. L. (2011). Quantitative analysis of culture using millions of digitized books. *Science*, 331(6014), 176-182. doi:10.1126/science.1199644
- Mindel, D., & Russell, K. (2014). Building digital collections on a budget. *Computers in Libraries*, 34(9), 4-6, 8-10.
- Pechenick, E. A., Danforth, C. M., & Dodds, P. S. (2015). Characterizing the Google Books corpus: Strong limits to inferences of socio-cultural and linguistic evolution. *PloS ONE*, 10(10), e0137041. doi:10.1371/journal.pone.0137041
- Rosenblum, A.L., Burr, G., & Guastavino, C. (2013). Survey: Adoption of published standards in cylinder and 78rpm disc digitization. *IASA Journal*, 41, 40-55.