Library Support for Foundational Literacies

Library staff would be happy to work with academic departments and faculty members in a variety of ways as they design courses which fulfill Foundational Literacies requirements. We can provide:

- Course-integrated instruction.
- Workshops which can be developed for departments and/or could incorporated as a part of specific classes.
- Assistance with assignment design.
- Instructional content for courses, such as LATTE modules and tutorials.
- Faculty workshops for faculty who are interested in incorporating digital research tools into their teaching.

The sections below provide examples of topics that can be covered through workshops and instruction. These topic lists are not exhaustive, and some topics could be covered in more than one area. Please contact your liaison librarian (https://lts.brandeis.edu/research/staff.html), Mark Dellelo from the Digital Media Lab (dellelo@brandeis.edu), or Ian Roy from the MakerLab (ianroy@brandeis.edu) with questions.

Course-integrated instruction and workshops can cover topics such as:

- Citation Management tools such as Zotero and EndNote.
- Data Analysis tools for quantitative and qualitative research (Qualitative tools: Atlas.ti; Quantitative tools: R, SPSS, Stata, Excel).
- Survey design with Qualtrics.
- Data visualization.
- GIS tools.
- Text-mining tools.
- Methods for identifying, evaluating, and interpreting data.
- For classes creating multimedia projects: In addition to covering relevant software, the Digital Media Lab Manager can work with students on developing narrative and argument with multimedia: how best to tell a story or structure an argument within your chosen medium (e.g., audio podcast, audiovisual slideshow, video essay, narrative movie).
- Instruction on tools, practices, and workflows for capturing and editing digital media (e.g., photos, graphics, video, audio) acquired through various means: discovered online, captured from physical formats like discs, originally produced with cameras and microphones.
• For classes in which students will “create original work in a digital medium or a work of scholarship that engages digital media,” librarians can help students find credible sources and work with classes on a unit covering students’ rights and responsibilities as information creators. Example topics could include: intellectual property, Creative Commons, fair use, copyright, public domain, and net neutrality.

• For Writing Intensive classes: To address the learning goal “understand how to make a contribution to the ongoing progress of research in that discipline,” librarians can:
  ○ provide instruction on the frameworks of scholarly communication, publishing, and the roles of those contributing to research.
  ○ introduce specialized resources for different disciplines

• Active learning sessions in the University Archives & Special Collections. Example class sessions:
  ○ For classes discussing social justice topics, students can view materials from the University Archives and create a timeline of social justice movements throughout Brandeis’ history.
  ○ For classes working with primary sources, we can pair physical archival materials with a database of digitized primary sources. For example, the Carl Van Vechten photograph collection could be paired with our databases of historical African American newspapers. Each student might view a photograph from the Van Vechten collection and then search the database for a newspaper article about the individual in the photograph.
  ○ A close reading session in which students review rare books from Special Collections on a variety of subjects, and analyze the text based on guided questions, and then present their book to the rest of the class
  ○ For literature or creative writing courses, students can use photographs from Archive & Special Collections as a means to tell stories.

• Critical understanding of participatory information environments, such as Wikipedia. A session on this topic could include discussion about how the information resource is constructed, how to use the resource, how to analyze of the resource’s values and limits, and how to follow up and fact check on the information presented.

• How data moves topics, taught by the MakerLab:
  ○ How filesystems work.
  ○ Data in transit, how routers work.
  ○ How encryption works.
  ○ How networks work, and how the internet works.
  ○ Data lifecycle - active research data.
  ○ How to run your endpoint.
  ○ Lifestyle adjustments about how to curate your digital footprint.
EXAMPLES: When I press a button on my phone and you see what I type with your eye - there is a lot going on between my finger and your eyeball.

How Stuff is Made: How low the barrier into the engineering and design conversation: Digital fabrication Tools - Traditional vs. Additive manufacturing

- Things that run on G-code: 3DP, Lasercutter, CNC
- Material possibilities
- How things are drawn in 3D (CAD)
  - 3D Modeling
  - Sketchup, Autodesk Fusion 360, Solidworks, TinkerCad, Antimony, OpenScad, Blender.
- EXAMPLES: Creating custom molecules for studying active sites on proteins.

How computer vision (3D scanning) works.

- Digitizing anything from the real world to the digital world.
- Structured Light, LIDAR, Photogrammetry, CMM
  - Artec, Skanert, Remake, Photoscan
- EXAMPLES: Creating duplicates of ancient artifacts at 0.10mm full color accuracy - enough resolution to perceive fingerprints from 3,000BC that no one knew were there.

How you give a robot a command and have it complete an action

- How control theory works - How to tune your robots.
- PID control theory: “Feel what’s going on in the graph.”

Pilots as a Service (PaaS)- The MakerLab can rent you not just a drone, but a pilot to fly the drone, file a flight plan and insurance, and help with data processing.

Building Virtual Environments in Unity and Unreal

- Bring real world experiments into Virtual Reality.
- 3D Scan buildings or interior spaces and create virtual models of the space (or 3D Print physical models).

Robotics

- Programming.
- board selection / sensor selection / component selection.
- wiring layout.
- use-case research (pairing components, environmental factors).
- battery
  - battery charging, battery maitnance, type selection, C ratings.
- radio control options.
- video transmission.
- PID, filtering, understanding curves, motor mixing.
**Assistance with assignment design**

In addition to working with the faculty on designing assignments related to the topics listed in the above section, we can work with faculty on assignment design, including:

- Assignments which involve evaluating the validity of digital sources.
- Assignments which involve evaluating the quality of data and statistics.
- Projects which provide students with the opportunity to contribute to scholarly conversation beyond the classroom. For example: sharing their work through posters and websites.

- For Writing Intensive classes:
  - To help students “become adept in the research and composition procedures of a discipline” and “learn to evaluate one’s own written work as a contribution to a discipline,” librarians can work with faculty members to develop assignments which address these learning goals. Assignments might involve:
    - Using a seminal source to trace a scholarly conversation in the discipline.
    - Students tracing changes within the discipline over time.
    - After students in a class have started selecting sources for a research project, each student evaluates a classmate’s sources and citations, providing constructive feedback.

- The University Archives & Special Collections provide opportunities for students to work with unique materials:
  - For Humanities classes working on digital projects: Transcription and/or translation of materials from University Archives & Special Collections. Archives & Special Collections has books and other materials in a variety of languages, including Hebrew, Latin, French, and German. Alternatively, we have textual materials (such as correspondence, diaries, other documents) that could be used in the same manner for translation as well as transcription. See the Michael Lally letters (http://bir.brandeis.edu/handle/10192/28550) for an example of a transcribed collection.

- Fabricating physical objects for coursework.
- Digitizing real world objects - taking things from reality and putting them into computer environments.

- For classes developing digital media projects, the Digital Media Lab Manager can provide:
  - Advice about possible formats for original digital media projects (e.g., audio podcasts, audiovisual slideshows, video essays, interview packages, dramatic skits, narrative movies)
○ Examples of completed assignments within each of the above digital media project formats.
○ Help identifying the materials and tools needed to work successfully in each of the above digital media project formats (e.g., photographs, interviews, cutaways, voice-overs, natural sound, music; wide shots, medium shots, close shots).
○ Best practices and resources for discovering and capturing digital media online and/or from physical formats like discs (e.g., video clips, audio clips, photos, graphics).
○ Information about time and resources required to work in each of the above digital media project formats; project management and planning advice (pre-production, production, media management, post-production, exporting and publishing).
○ Help designing grading rubrics for the above digital media project formats.

**Instructional materials for courses**

- Modules in LATTE covering topics such as critical evaluation of information sources
- Interactive tutorials which introduce specialized databases and present effective research strategies
- Online course research guides, customized for the needs of a specific class
- 3D Printing Modules - Creating physical copies of digital files
- 3D Scanning Modules - from small objects to large buildings
- VR/AR modules - how to create virtual environments, bring your class on a fieldtrip to the great barrier reef, or create a platform for research, or democratize access to places or objects
- Designing stuff and getting it made tutorial: Building a robot, or a prototype, or the pitches and branding around those
- How to create a Runbook or Screenshoot workflow tutorial guide for a specific piece of Hardware or Software or for a specific technical workflow
  - How to communicate a step by step digital process or workflow
- Handouts and instructional videos on workflows for digital media projects

**Faculty workshops**

For faculty who are interested in incorporating digital research tools into their courses, we can offer workshops on a variety of topics, such as:

- “AM, VR, and Flying Robots” - Why are these the four things the MakerLab supports? How did we pick this toolset? How 3D Printing, 3D Scanning, Virtual Reality, and
Robotics can all work together as a single workflow to support coursework or research.

- Integrating a digital media assignment into your curriculum (choosing a suitable project format, planning around available time and resources, creating an assignment schedule, developing a grading rubric).
- Digital research tools with a low learning curve.
- A “Get in the mind of an undergraduate researcher” workshop which would discuss the research process of undergraduate students, including how they find and evaluate sources and the aspects of research which are confusing for students.
- “What has changed since you completed your dissertation research?” A workshop covering new research tools and resources.