The University of Iowa
School of Library and Information Sciences
Fall 2018

Course	SLIS 5020: Computing Foundations
Course Schedule	Mondays 4:30-7:15
On Campus	3092 Main Library
EXE Section	https://uiowa.zoom.us/j/442879837
Instructor	Lindsay Mattock
Office Location	3072 Main Library
E-mail	lindsay-mattock@uiowa.edu
Office Hours	Tuesdays and Thursdays by appointment, schedule at lindsaymattock.net/officehours.html

Course Overview

In this course, we will begin to break into the "black box" of the computer. The LIS field demands professionals who are competent in computing and comfortable working with digital platforms and tools. Computing is more than simply sending email, building webpages, and creating documents. In this course, we will utilize the Raspberry Pi to fully explore hardware, software, and the tool that we call the computer. As a survey course, we cannot possibly address every technology that you will encounter in your practice. Instead, the goal of this course is to provide you with an opportunity to explore various aspects of computing and to critically engage with hardware and software.

To be successful in this course you must: tinker, play, build, make, tweak, experiment, hack, and break things. You will push your boundaries and the boundaries of the technology, ask many questions of yourself and your peers, be confused and/or frustrated and/or lost, dig yourself out of those traps and think deeply about the digital tools that you will engage with during your time here at SLIS, in your professional posts, and in all other aspects of your life. This course is not about gaining mastery of particular tools, but rather building the skills and experience that will allow you to be comfortable and confident engaging with and evaluating new and familiar technologies.

Required Technology

Each student must purchase a Raspberry Pi by the third week of class. The Raspberry Pi is a credit card sized computer that will allow us to build servers and webpages, experiment with programming in Python, and work with content management systems like WordPress. If none of these terms is familiar, do not despair - the Raspberry Pi is a blank slate from which we will all work together to complete the projects as a group.

You will each need to purchase a Raspberry Pi and a few essential pieces of hardware to make it functional. You'll want to have your Pi in hand for our third class meeting - September 11th. You may elect to purchase the individual components listed below or find a starter kit (like this one https://thepihut.com/collections/raspberry-pi-kits-and-bundles/products/raspberry-pi-3-starter-kit) that contains the elements you need:

1. Raspberry Pi Model 3
2. 16G or larger Class 10 Micro SD Card (preferably with NOOBS and Raspbian installed)
3. Power supply
4. HDMI cable (or HDMI output to an input appropriate for your monitor)
5. Raspberry Pi 3 heatsink kit (recommended)
6. Raspberry Pi 3 case (optional)

Kits and components are also available through online retailers such as Allied Electronics (alliedelec.com), SparkFun (sparkfun.com), or Amazon.

In addition to these components, you'll need access to a monitor with a HDMI port (or the appropriate adaptor) and a USB keyboard and mouse. If you are taking the on-campus version of the course, the monitor, HDMI cable, keyboard, and mouse will be available for you.

Required Textbooks

There are no required texts for this course. The required readings and class projects for each week are available electronically on the course ICON site.

Semester at a Glance

Week 1 | August 20	Introduction to the Course
Week 2 | August 27	Binary, Bits, and Basics
September 3	Labor Day
Week 3 | September 10	Introduction to Raspberry Pi
Week 4 | September 17	HTML/CSS
Week 5 | September 24	HTML/CSS
Week 6 | October 1	XML/XSLT
Week 7 | October 8	XML/XSLT
Week 8 | October 15	Python
Week 9 | October 22	Python
Week 10 | October 29	LAMP
Week 11 | November 5	LAMP
Week 12 | November 12	LAMP
November 19	Thanksgiving
Week 13 | November 26	WordPress
Week 14 | December 3	WordPress

Course Work and Final Grades

Course Work at a Glance

Assignment	% of Final Grade	Due Date
Weekly Check-Ins	10%	Weekly, throughout term
Project 1 Report: Getting Started w/ RPi	15%	September 17
Project 2 Report: HTML/CSS	15%	October 1
Project 3 Report: XML/XSLT	15%	October 15
Project 4 Report: Python	15%	October 29
Project 5 Report: LAMP and WordPress	15%	December 10
Letter to a Future Student	15%	December 14

1. Weekly Check-Ins

Completed in class each Monday
10% of final grade

During the last 15 minutes of the class session each week you will complete a short timed-writing assignment projects, along with two reflective questions (What did you learn this week? and What was the muddiest point?). This assignment will serve as a check-point so that I can ensure that everyone is clear on the major concepts introduced in class. This is also an opportunity for you to review and reflect on the week, provide feedback, and continue the conversation with your classmates.

Each question on the Check-In is worth 1 point. To receive credit for your response, you must make an attempt to answer each question to the best of your ability. Incorrect answers will still receive 1 point, if you make an attempt to fully articulate your answer. Responses such as, "I don't know," "I didn't understand," "I learned a lot about x this week," or "I don't have a muddiest point" are NOT acceptable answers and will NOT receive credit.

At the end of the term your scores for all of the Check-Ins will be totaled and divided by the total number of Check-In questions for the term to determine your letter grade.

2. Project Reports

Due Mondays, as scheduled, by 4:30 pm

75% of total grade

Throughout the course of the term, we will be working on a number of projects with the Raspberry Pi. At the beginning of each project, you will be provided with a set of instructions that will guide you through the successful completion of the project. At the end of each project, you will submit a brief report detailing your experience. Each report will be divided into three sections: an Introduction, Process, and Reflection. The requirements for each section are listed below, along with a few suggested questions to guide your thinking. You are free to frame your responses in whatever way you feel is most appropriate. You do NOT need to answer all of the listed questions.

Introduction (1 paragraph): The introduction is the abstract for your report. Provide a brief synopsis of what is to follow in your report. *What were the main objectives and key concepts for the project? Did you achieve them? What did you learn about computing?*

Process (3-5 paragraphs): The process section should summarize your experience working through the project. This section should NOT provide step-by-step details, but an overview of your experience. You may choose to highlight key pieces of the project to answer the questions above, but SHOULD NOT reiterate the project instructions. *How did you approach the project? Were you able to complete the entire project successfully? Where did you have to troubleshoot? What were the most challenging sections? What questions do you have that remain unanswered?*

Reflection (5-7 paragraphs): Reflect on your experience and what you have learned. This section should provide an analysis of the experience, drawing upon the course topics, themes, and readings, along with your personal experiences. Someone reading your reflection should have a sense of why this project was significant to your learning, how your understanding of computing has changed (or not), and how the project has impacted your understanding of technology in your LIS practice. *What skills did you acquire? How did you connect the reading or course discussion to the project activities? Where do you see this technology being useful in LIS practice? What do you want to learn more about?*

You will submit your Project Report as a single .pdf to the appropriate assignment link on ICON. Your Project Reports will be graded according to the following rubric:

Requirement	Percentage	Expectations
Introduction	15%	This section provides a brief summary of the report to follow, highlighting relevant aspects of the Process and Reflection sections. (See the project description for more details).

Process	30%	This section summarizes the process of completing the project, WITHOUT restating the steps outlined in the project instructions. This section should summarize your experience completing the project. (See the project description for more details).
Reflection	40%	This section analyzes your experience, drawing on the course topics, themes, and required reading. The reflection demonstrates a critical engagement with the technology, asking deeper questions about the nature of the project and the significance to the LIS field or to your understanding of technology. (See the project description for more details.)
Clarity	10%	Your Project Report demonstrates evidence of proofreading and proper use of grammar and punctuation. Any citations are properly formatted according to the citation guide in this syllabus.
Organization	5%	Your Project Report is well organized and easy to read. You have included your name and the project title at the top of the report, along with a clear heading for each section of the report.

3. Final Reflection – Letter to a Future Student

Due Friday, December 14, by 4:30pm

15% of final grade

While each of you will have an opportunity to provide feedback via the course evaluation at the end of the term, this final reflection is intended to give you an opportunity to reflect on the course and its impact on your progress towards your degree and career as an LIS professional. Each of you will write a 2-3 page letter addressed to a future MLIS student evaluating and critiquing the course and your performance over the course of the term. Each letter should reflect on your personal experience by selecting key experiences to support your critique.

You will submit your letter as a .pdf to the appropriate assignment link on ICON. Your letter will be graded according to the following rubric:

Requirement	Percentage	Expectations
Self-Reflection	40%	Your letter openly examines your personal experience and observations as a participant in the course, carefully selecting key observation and experiences as evidence to support your analysis and critique.
Analysis	45%	Your letter moves beyond simple description of your experience to an analysis of the key strengths and weakness of the course as well as an evaluation of your performance as a student. The letter synthesizes, analyzes, and thoughtfully evaluates issues and ideas introduced in the course, the course projects, reading materials, and the technologies that we used. Further, the letter connects this course to LIS education and professionalization as a whole.
Clarity	10%	Your letter demonstrates evidence of proofreading and proper use of grammar and punctuation. Any citations are properly formatted according to the course citation guidelines.
Organization	5%	Your letter is formatted as a formal letter including a proper opening addressed to a future student, closing, and signature.

Class Policies

Grading Scale

A	4.0	C+	2.33
A-	3.67	C	2.00
B+	3.33	C-	1.67
B	3.00	D	1.00
B-	2.67	F	0

Citation Guidelines

When citing sources in your assignments, you are required to use the following citation formatting.[1]

Citations in your responses should use parenthetical notation as follows:

> *General format*: The last name of the author of cited work should appear in the paper, followed by the year of the publication, and the page number cited, as in (Jones, 1990, p. 98). If there are several references to authors with the same surname, initials should be used to differentiate between the authors, as in (C. Jones, 1990, 98; D. Jones, 1985, 102).
>
> *Two authors*: For references containing two authors, list the authors in order of their appearance in the original publication, followed by date of publication, and page number, as in (Smith and Jones, 1986, pp. 102-103).
>
> *Three or more authors*: If a reference contains three or more authors, the citation should appear as (Rogers et al., 1980, p. 71).
>
> *Multiple quotations*: Multiple citations may appear in any order, but should be formatted according to the guidelines above with each reference separated by a semi-colon, such as (Shane and Cushing, 1991, p. 54; Chalmers, 1990 pp. 87-99; Kendall and Wells, 1992, p. 1).
>
> *Websites*: For resources on the web, include the URL in the citation, as in (www.google.com).

When citing the required texts, a bibliography is NOT required. However, if you choose to cite materials outside of those listed in the syllabus or the project instructions, you MUST include a bibliography with a full reference to the publication as listed below.

> *Papers in Journals:* Include the names of the authors, the title of the paper, the journal name, volume, issue, and number if applicable, along with the date of publication, followed by the start and end page numbers for the article. Examples:

Sonia Yaco, "It's Complicated: Barriers to EAD Implementation" *American Archivist* 71 (Fall/Winter 2008): 456-475.

Andromeda Yelton, "Political and Social Dimensions of Library Code," and "Learning to Code," *Library Technology Reports* 51, no. 3 (April 2015): 22-25.

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[1] Modified from the guidelines for the *First Monday* journal http://firstmonday.org/ojs/index.php/fm/about/submissions#style

Books: Include the names of the authors or editors (followed by eds.), the title of the book, the place of publication, publisher, and publication year.

Ed Krol, *The Whole Internet: User's Guide and Catalog, Second Edition* (Sebastopol, CA: O'Reilley, 1994).

Janet H. Murray, *Inventing the Medium* (Cambridge, MA: MIT Press, 2012).

Parts of Books: Include the names of the author of the section, the section title, the title of the book, the place of publication, publisher, publication year, and start and end pages of the book section.

Janet Abbate, "Building the ARPANET: Challenges and Strategies," in *Inventing the Internet* (Cambridge, MA: MIT Press, 1999): 43-81.

Finn Brunton, "Ready for the Next Message: 1971-1994," in *SPAM: A Shadow History of the Internet* (Cambridge, MA: MIT Press, 2013): 1-62.

Websites: Include the name of the site, followed by the URL.

"CSS Introduction," https://www.w3schools.com/css/css_intro.asp.

"A Gentle Introduction to XML," http://www.tei-c.org/release/doc/tei-p5-doc/en/html/SG.html

Office Hours

The course discussion board will serve as a forum for general questions about the course, projects, and assignments over the course of the term. Office hours will also be held, by appointment on Tuesdays and Thursdays each week. You may schedule an appointment at http://lindsaymattock.net/officehours.html

Assignment Deadlines

All assignments are due at the date and time listed in the individual assignment descriptions. **Late assignments will not be accepted.** This policy protects both your time and mine. Timely submission allows me to fairly evaluate everyone work and ensures that you will remain on track to complete all of your work by the end of the term. I will make exceptions for extenuating circumstances, so please reach out to me if you believe that you cannot meet an assignment deadline. See the *Extenuating Circumstances and Incomplete Grades*.

Extenuating Circumstances and Incomplete Grades

While I believe that you must attend class each week to get the most out of this course, I understand that extenuating circumstances (illness, bereavement, etc.) may interfere with your ability to participate fully in the course. It is your responsibility to contact me as soon as possible if such a circumstance will prevent you from attending a class session or completing the coursework according to the set schedule. I will then work with you to determine the best path forward for your particular situation. Incomplete grades will only be granted under these circumstances.

Academic Integrity

All students are expected to adhere to the standards of academic honesty. Citation is one of the key competencies of information literate individuals and as such it is crucial for LIS professionals to learn the standards of and practice proper attribution. It is your responsibility to ensure that you are following these standards. Any student engaged in plagiarism, cheating, or other acts of academic dishonesty, will be subject to disciplinary action.

The *Chicago Manual of Style 16th Edition* stresses the importance of providing proper attribution when reusing the materials of others, arguing that this practice "not only bolsters the claim of fair use but also helps avoid the accusation of plagiarism."[2]

Plagiarism is a serious offence that includes:

- stealing or passing off the ideas or words of another as one's own
- using another's work without crediting the source
- committing literary theft
- presenting as new and original a product or idea derived from an already existing source[3]

Plagiarism can be avoided by following the guidelines for proper citation and paraphrasing. Sections 13.1-13.6 of the *Chicago Manual of Style 16th Edition* <chicagomanualofstyle.org/16/ch13/ch13_toc.html> may be referenced for guidance. The University Writing Center <writingcenter.uiowa.edu> is another on-campus resource that is available to all students enrolled in course at the University.

Acts of plagiarism will be evaluated by the professor on a case-by-case basis and will be reported to the department. No credit will be given for plagiarized assignments. Minor transgressions will be documented in the student's departmental file. If the case is deemed to be sufficiently egregious, the offence will be reported to the Graduate College and may result in expulsion from the program. Please review the policies in the *School of Library and*

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[2] *The Chicago Manual of Style, 16th Edition* (Chicago: The University of Chicago Press, 2010): 190.

[3] *Merriam-Webster Online,* s.v. "plagiarize," accessed January 6, 2016, http://www.merriam-webster.com/dictionary/plagiarize

Information Science Student Handbook<slis.grad.uiowa.edu/current-students> and the *Graduate College Rules and Regulations* <grad.uiowa.edu/manual-part-1-section-iv-academic-standing-probation-and-dismissal>.

Students with Disabilities

Many students require particular accommodations in the classroom. I am happy to work with you to ensure that you have the best learning experience possible. If you are or may be requesting an accommodation, please speak with me privately and contact Student Disability Services, 3015 Burge Hall, 319-335-1462/319-335-1498 (TTY), as early as possible in the term. This will ensure that we both have all the tools and information that we need to have a successful semester working together. A comprehensive description of the services of that office can be obtained at http://sds.studentlife.uiowa.edu.

Reading and Topic Schedule

The required reading is to be completed **before** class each week. All readings are available electronically through the course ICON site or the University of Iowa Libraries. Please note that the reading/topic schedule may be modified to suit the needs of the class. We will discuss any changes as a group before they are made.

Week 1 | Aug. 20 – Introduction to Computing Foundations

Office for Information Technology Policy's Digital Literacy Task Force, "Digital Literacy, Libraries, and Public Policy," (January 2013), https://districtdispatch.org/wp-content/uploads/2013/01/2012_OITP_digilitreport_1_22_13.pdf

Week 2 | Aug. 27 – Binary, Bits, and Basics

Charles Petzold, "Bit by Bit by Bit," *Code: The Hidden Language of Computer Hardware and Software* (Redmond, WA: Microsoft Press, 2000): 69-85.

Kenneth Thibodeau, "Overview of Technological Approaches to Digital Preservation and Challenges in Coming Years," *The State of Digital Preservation: An International Perspective* (Washington DC: Council on Library and Information Resources, 2002): 4-13.

SEPTEMBER 3 – LABOR DAY

Week 3 | Sept. 10 – Introduction to Raspberry Pi

Ryan Heitz, "Meet Raspberry Pi," *Hello Raspberry Pi!* (Shelter Island, NY: Manning, 2016): 3-32.

Andrea Laue, "How the Computer Works," in Susan Schreibman, Ray Siemens, and John Unsworth, eds., *A Companion to Digital Humanities* (Malden, MA: Blackwell, 2004), 145-160.

Week 4 | Sept. 17 – HTML/CSS

w3School.com, "HTML Introduction," https://www.w3schools.com/html/html_intro.asp

w3School.com, "CSS Introduction," https://www.w3schools.com/css/css_intro.asp

Tim Berners-Lee, "Information Management: A Proposal," (CERN, March 1989), https://www.w3.org/History/1989/proposal.html

Week 5 | Sept. 24 – HTML/CSS

William J. Mitchell, "Recombinant Architecture," in *City of Bits: Space, Place, and the Infobahn* (Cambridge, MA: MIT Press, 1996), 46-105.

Week 6 | Oct. 1 – XML/XSLT

w3School.com, "Introduction to XML," https://www.w3schools.com/xml/xml_whatis.asp

w3School.com, "How Can XML Be Used?" https://www.w3schools.com/xml/xml_usedfor.asp

Anne J. Gilliland, "Setting the Stage" in *Introduction to Metadata, Third Edition,* Murtha Baca, ed. (Los Angeles: Getty, 2016): http://www.getty.edu/publications/intrometadata/setting-the-stage/

Week 7 | Oct. 8 – XML/XSLT

w3School.com, "XSL(T) Languages," https://www.w3schools.com/xml/xsl_languages.asp

"Introduction: To Classify Is Human," in *Sorting Things Out: Classification and Its Consequences* (Cambridge, MA: MIT Press, 2000), 1-32.

Week 8 | Oct. 15 – Python

PFS Python Brochure http://brochure.getpython.info/media/releases/psf-python-brochure-vol.-i-final-download.pdf/view

Andromeda Yelton, "Political and Social Dimensions of Library Code," and "Learning to Code," *Library Technology Reports* 51, no. 3 (April 2015): 22-25 and 26-30.

Week 9 | Oct. 22 – Python

Safiya Umoja Noble, "A Society, Searching," in *Algorithms of Oppression: How Search Engines Reinforce Racism (*New York: New York University Press, 2018), 15-63.

Week 10 | Oct. 29 – LAMP

Ed Krol, "What is the Internet" and "How the Internet Works," in *The Whole Internet: User's Guide and Catalog, Second Edition* (Sebastopol, CA: O'Reilley, 1994): 13-21 and 23-34.

Week 11 | Nov. 5 – LAMP

Janet Abbate, "Popularizing the Internet," in *Inventing the Internet* (Cambridge, MA: MIT Press, 1999): 181-220.

Week 12 | Nov. 12 – LAMP

Finn Brunton, "Ready for the Next Message: 1971-1994," in *SPAM: A Shadow History of the Internet* (Cambridge, MA: MIT Press, 2013): 1-62.

Week 13 | Nov. 26 – WordPress

Kyle M. L. Jones and Polly Alida-Farrington, "Getting Started with Wordpress," and "Guest Pieces" *Library Technology Reports* (April 2011): 8-15 and 34-60.

Week 14 | Dec. 3 – WordPress

Safiya Umoja Noble, "Conclusion," and "Epilogue," in *Algorithms of Oppression: How Search Engines Reinforce Racism (*New York: New York University Press, 2018), 171-186.