




Introduction to Network Information Systems

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General Resources

- **Instructor:** Martin Wolske: mwolske@illinois.edu (preferred contact method); 217-840-7434 (mobile)
- **Weekly Class:** Tuesday 1:00-3:50pm, LIS 131
- **Office Hours:**
 - Mondays: 1pm-3pm
 - Tuesdays: 11am-noon; 4pm-5pm

 [Syllabus \(last updated 7/15/16\)](#)

 [News and Announcements](#)

 [Open Discussion Forum](#)

Interactive Story or Game Project Activities & Resources

Each team of 3-4 students will use a design thinking process to create an interactive story or game using Scratch or Minecraft and the Raspberry Pi. The goal of the story or game is to highlight in some way the role of women, people of color, or other minorities in technology. Students are encouraged to bring their creativity to bear in the project, incorporating various digital and non-digital arts into the process and final product. See the [linked chart](#) for a full listing of learning objectives associated with this project.

 [Project Discussion Forum](#)

 [Project Deliverables](#)

Internet of Things Device Project Activities & Resources

Each team of 3-4 students will use a design thinking process to create an Internet of Things device. In truth, this can be any sort of remotely accessible/controllable device. To facilitate generalization from the first project, you should plan on using the Raspberry Pi as your platform for building your Internet of Things device. Examples might include using a web browser on a smartphone to:

- turn on LEDs, or control the color of an LED, connected to the Raspberry Pi;
- select and control music played through the Raspberry Pi; or
- read data from sensors connected to the Raspberry Pi.

Students are especially welcome and encouraged to design their product around a specific real-world community need or opportunity. See the **linked chart** for a full listing of learning objectives associated with this project.



Project Discussion Forum



Project Deliverables

Community Collaboration Project Activities & Resources

Each team of 3-4 students will work with an assigned community partner for this project. Students should especially work to apply traditional reference interview skills to the design context in order to understand the strengths, opportunities, and aspirations of the community partner motivating this collaboration. The project should be developed in such a way that the community partner can be active users-as-designers (see Fischer and Herrmann for more on this concept) on an ongoing basis.

Out of respect for our community partners, it is important that collaboration with the partner(s) begin early in the semester to allow sufficient time to fully develop and implement the project. Further, the scope of the project should be appropriate to assure that the community project is completed in accordance with the expectations as agreed upon between the community partner and the student team.

The instructor will be an ex officio member of each team. See the **linked chart** for a full listing of learning objectives associated with this project.



Project Discussion Forum



Project Deliverables


Topic (8/23): Course & Design Thinking Intro

By the end of this topic, you should have a basic familiarity with:

- a more expansive view of digital literacy;
- the critical sociotechnical perspective;
- the ways the skills you have developed through your past everyday innovations bring value to our collective leadership, and how these skills can generalize to the digital realm;
- design thinking & how it fits with the class projects;
- the layout of the course, how grades will be assigned & what is expected of participants.

This topic is also meant to help all of us better understand the various goals we hope to accomplish over the course of the semester, and to tweak the course plan to better align with individual and group goals.

 [Troubleshooting Forum](#)

 [Activities and Resources](#)

Graded Assignments Due Next Week

 [Reflections on the News](#)

Topic (8/30): Interactive Storytelling/Adventure

Project Tools

By the end of this topic, you should have a basic familiarity with:

- working in the Scratch tile-based programming environment;
- core computer science concepts, including: sequencing, iteration, conditionals, variables, and modularization;
- core computational thinking concepts, including: logically analyzing & organizing a project in ways that allow use of digital tools to help accomplish them;
- ways to use rapid prototyping to quickly test out & refine iterated ideas;
- the steps to turn a project idea into working code;
- the Raspberry Pi, how to turn it on & how to log on.

 [Troubleshooting Forum](#)

 [Activities and Resources](#)

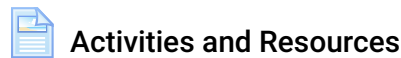
Graded Assignments Due Next Week



Topic (9/6): Breadboarding and Electronics

By the end of this topic, you should have a basic familiarity with:

- building a basic electronic circuit & using code to interact with the circuit;
- soldering electrical circuits
- ability to explore a range of information sources, guides, and worksheets to inform current project work



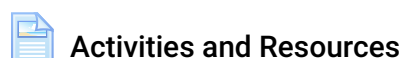
Graded Assignments Due Next Week



Topic (9/13): Python & Minecraft on the Pi

By the end of this topic, you should have a basic familiarity with:

- navigating the Minecraft environment;
- how to generalize lessons learned performing tile-based programming in Scratch to Python & Minecraft;
- using the Python Minecraft API (Application Programming Interface) to automate actions in Minecraft;
- the differences between Python programming in the Integrated Development and Learning Environment (IDLE) & in a command-line text editor.




Graded Assignments Due Next Week

Topic (9/20): Demystifying Hardware


By the end of this topic, you should have a basic familiarity with:

- The core hardware components of all computers: Input/output devices; integrated circuits such as system memory, CPUs, and controllers; storage devices such as hard drives and CD-ROMs;
- The basic steps needed to maintain, upgrade, and repair a computer;
- The flow of data through a computer from input device to active application and back to output device.

 Troubleshooting Forum

 Activities and Resources

Graded Assignments Due Next Week

 Hardware Essentials Quiz


 Reflections on the News

Topic (9/27): Demystifying the Operating System

By the end of this topic, you should have a basic familiarity with:

- The core parts of an operating system: the kernel, the user interface, the supporting applications;
- Generalizing operating system competency to a novel operating system environment;
- How the economic, social, cultural, historical, and political contexts, along with the personal preferences and biases, shape and thereby become embedded within sociotechnical products;
- the social and individual ramifications of choosing open vs. closed software within and for different social, economic, and cultural contexts.

 Troubleshooting Forum

 Activities and Resources

Graded Assignments Due Next Week



Software quiz



Reflections on the News

Topic (10/4): Demystifying Networking

By the end of this topic, you should have a basic familiarity with:

- The different types of networks in everyday use;
- The basic components of Local Area Networks (LANs) and the Internet;
- The steps to setup, troubleshoot, and maintain networks.



Troubleshooting Forum



Activities and Resources

Graded Assignments Due Next Week



Reflections on the News

Topic (10/11): The Client/Server Architecture

By the end of this topic, you should have a basic familiarity with:

- The client/server architecture and open protocols;
- How to setup and remotely access Apache (HTTP, aka web, server), MySQL (relational database server), and Wordpress (PHP-based suite of programs);
- The role programming languages such as PHP play as glue tying together multiple servers;
- The difference between and the ways to effectively use markup languages such as HTML and XML, style sheets such as CSS, and programming languages such as PHP and Python.



Troubleshooting Forum



Activities and Resources

Graded Assignments Due Next Week




Demystifying Coding Quiz

Topic (10/18): Python, Electronics, Data, and the Internet

By the end of this topic, you should have a basic familiarity with:

- How Python, PHP, and Apache can be used to send data to, and receive data from, remote electronics;
- The distinctions between centralized Internet server implementations and decentralized, federated Internet servers as it applies to the "Internet of Things", and ramifications for effective use to achieve individual and group goals.

 Troubleshooting Forum Activities and Resources


Graded Assignments Due Next Week

 Reflections on the News

Topic (10/25): The Internet Protocol

By the end of this topic, you should have a basic familiarity with:

- The Internet protocol, IP addresses, IP names, and how they apply to nodes on a LAN;
- Registering domain names, and other ways to find a node across the Internet;
- Routers, the essential role they play on the Internet, and how they work.

 Troubleshooting Forum Activities and Resources

Graded Assignments Due Next Week


 Demystifying Networking Quiz Reflections on the News

Topic (11/8): Broadband, Community Building & Social Justice

By the end of this topic, you should have a basic familiarity with:

- The technical distinctions between core Internet technologies and the ramifications of selecting one technology over others to gain Internet access;
- The historical development of the Internet and some of the key social, political, and economic factors currently influencing its development;
- The social justice impacts of current and emerging Internet policies and practices.

 Troubleshooting Forum

 Activities and Resources

Graded Assignments Due Next Week

 Demystifying the Cloud Quiz

 Reflections on the News


Topic (11/15): Critical Questions for Ethical Community Informatics Practice

By the end of this topic, you should have a basic familiarity with:

- Some critical questions that might help inform more ethical implementation of your community collaboration project;
- Group difference and the essential resource it provides for achieving more socially just project outcomes;
- Meta-design as design concept supporting not only user-centered design, but also facilitating user-as-designer.

During this topic, we will also work to further consider additional in-fill skills development that might be covered as a class in support of team community collaboration projects.

 Troubleshooting Forum

 Activities and Resources

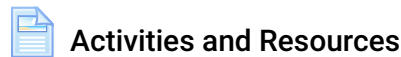
Graded Assignments Due Next Week



Topic (11/29): Information Communication Technologies & Community Building

By the end of this topic, you should have a basic familiarity with:

- Evaluation methods for assessing the positive and negative impacts that different technologies and specific implementations of a technology have on individual and social groups from different economic, social, and cultural contexts;
- Emerging strategies from our own practices as a class and within our profession supporting more effective selection of technologies and specific implementations of technology that more closely align with personal and group preferences, values, and goals;
- Ways in which digital and non-digital technologies amplify human forces in ways that foster or hurt community building initiatives.



Graded Assignments Due Next Week




Topic (12/6): Emerging Technologies & the Information Sciences

By the end of this topic, you should have a basic familiarity with:

- Major theories regarding the adoption and diffusion of innovation within social groups;
- The Gartner Hype-cycle;
- The Horizon Report, the LITA Emerging Technology Presentations, and other sources for keeping up with emerging technologies that might impact the profession;
- Strategies for applying the learning outcomes from this semester to a critical analysis of emerging technology and current contexts, so as to inform more

inclusive, just adoption (or non-adoption) of emerging technologies and trends.

 **Troubleshooting Forum**

 **Activities and Resources**

Graded Assignments Due Next Week

 **Reflections on the News**

Topic 18 is not available

Topic 19 is not available

Topic 20 is not available



You are logged in as **Martin Wolske**: Learner-Instructor (**Return to my normal role**)