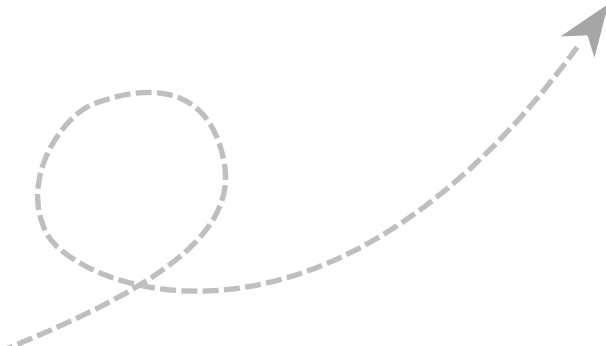

ENGL 529

Content Management

Strategies for developing and delivering multimodal content via digital media. Focus on the principles of database design, interface development, usability testing, and collaborative content management within professional communication settings.



WELCOME

My Favorite Class to Teach

My name is [Geoff Sauer](#). Welcome to my *very favorite* grad seminar.

This is because server-side web tools have transformed academic research and technical/professional communication, while most students have never formally learned about this technology at all.

In this class, students learn to understand web-based applications, and learn to build and use them for specific purposes.



Why Is This Important to Learn?

When I asked students in 2021 which of these they'd prefer, almost everyone chose the one on the right. The CMS.

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<https://nextcatalog.registrar.iastate.edu/collegeofliberalartsandsciences/english/>

UNDERGRADUATE STUDY

Students in the undergraduate majors offered through the English Department develop critical thinking, cultural awareness, effective communication, imagination, leadership, pedagogy, and agency as citizens.

In a communication-rich and globally connected world, these skills play a crucial role in every profession. Studying in English expands and deepens individual engagement in the social, cultural, artistic, scientific, technical, and environmental work of society.

Students interested in majoring in English can choose from this range of options:

- **BA in English** (with possible emphases in Literature, Creative Writing, Film, Literary Editing, or Rhetoric)
- **BA with a double major in English and Education** (for students seeking licensure in secondary education with an opportunity to earn an [ESL endorsement](#) as well).

Page 1 of 6 1112 words English (United States) Focus 140%

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https://docs.google.com/document/d/110% Search 110% ISU FB Mail SNM Dashboard 313WP phpMyAdmin 313 314 411 Webex Zoom Other Bookmarks

Web-Based Content Creation

Content management involves software which runs on web servers, which people use through browsers or apps on their devices.

In the past ten years, these have proliferated.

This semester we'll study how these run, build some, and spend time on a final project to build a high-quality CMS for a real client.

Some Examples of Well-Known CMSes

I bet you'll have used some of these. They're omnipresent. This one, of course, is Wikipedia.



Some Examples of Well-Known CMSeS

This one is Facebook. Though, of course, all social media are CMSeS.

6

The image shows a screenshot of the Facebook mobile app interface. At the top, there is a navigation bar with icons for the Facebook logo, search, home, notifications (9+), groups (1), profile, and a menu. Below the navigation bar, the main content area is divided into several sections. On the left, there is a sidebar with links to the user's profile (Geoffrey Sauer), Friends, Groups, Marketplace (1 new), Watch (9+ new videos), Memories, and a 'See more' option. The main content area features a 'Create Story' button, a carousel of stories from James Ewald, Romeo Oriogun, and Danica Lee Schieber, and a post from Todd Matthew Murphy. On the right, there are sections for 'Your Pages' (ISU Studio for New Media), '11 Notifications', 'Create promotion', 'Contacts' (Alisha Sauer, John Sauer, Robin Lea, Samantha Robinson-Adams, Gloria Betcher, John Walter, Armand Douroux), and 'Your Shortcuts' (ISU Studio for New Media, Iowa State University Rhetoric and Professional..., Ames Small Dog Park Group).

Geoffrey Sauer

Friends

Groups

Marketplace
• 1 new

Watch
• 9+ new videos

Memories

See more

Your Shortcuts

ISU Studio for New Media

Iowa State University Rhetoric and Professional...

Ames Small Dog Park Group

Create Story

James Ewald

Romeo Oriogun

Danica Lee Schieber

What's on your mind, Geoffrey?

Live video

Photo/video

Feeling/activity

Create room

Todd Matthew Murphy
10m · 🧑

I just donated to [Animal Lifeline of Iowa](#) and [Furry Friends Refuge](#) in honor of Betty White's 100th Birthday! Consider making a donation to

Your Pages

ISU Studio for New Media

11 Notifications

Create promotion

Contacts

Alisha Sauer

John Sauer

Robin Lea

Samantha Robinson-Adams

Gloria Betcher

John Walter

Armand Douroux

Some Examples of Well-Known CMSeS

7

You know Instagram, right? CMSeS manage multimodal content (they're the best at that).

Instagram

Search



iluvsu2



paul.labossiere

...



geoffrey.sauer
Geoffrey Sauer

Switch

Suggestions For You

See All



quinnsauersfanpage

Followed by lucy_e_y + 3 more

Follow



daedae_stevo

Followed by jasminesummer93 + ...

Follow



sharon.morrison57

Followed by tarapruett92 + 2 more

Follow



humanitytorbayofficial

Suggested for you

Follow



isabelholt92

Suggested for you

Follow

Some Examples of Well-Known CMSeS

YouTube, of course. And Google, and Google Docs, and all of the Alphabet, Inc. web services are database-driven.

☰

YouTube

Search

🔍

🎤

📺

📱

🔔

🏠

Home

🔍

Explore

📺

Subscriptions

📺

Library

All

Wilderness

The Walt Disney Company

Debates

Music

Live

Britain's Got Talent

Sitcoms

You ready for the day?

Debreadstick

800 views • 4 days ago

Upper Current River Overnight Trip

jpruettontheriver

621 views • 4 months ago

01. Another Day In Paradise

02. One More Night

03. Against All Odds

04. You'll Be In My Heart

05. Every Lover

06. In The Air Tonight

07. I Don't Care Anymore

08. I Wish It Would Rain Down

09. Sunradio

10. You Can't Hurry Love

11. Can't Stop Loving You

12. Do You Remember

13. Your Colors

14. On My Way

15. Strangers Like Me

16. Take The Hammer

17. Son Of Man

18. Look Through My Eyes

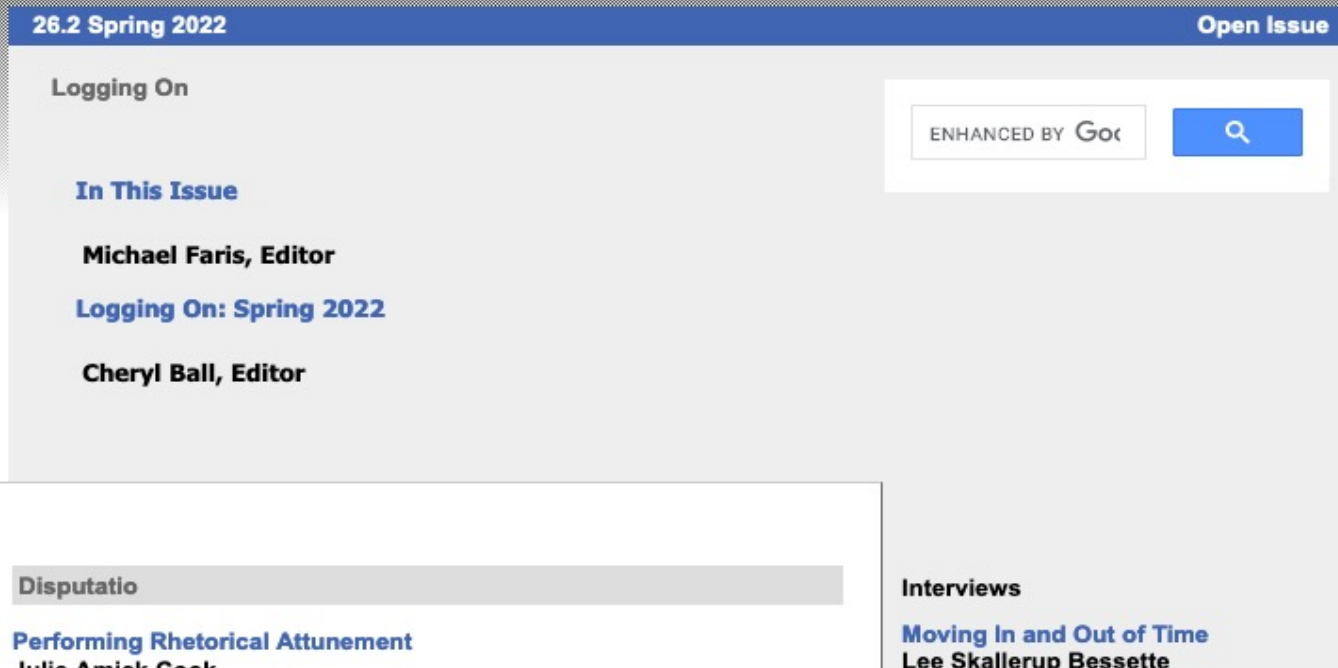
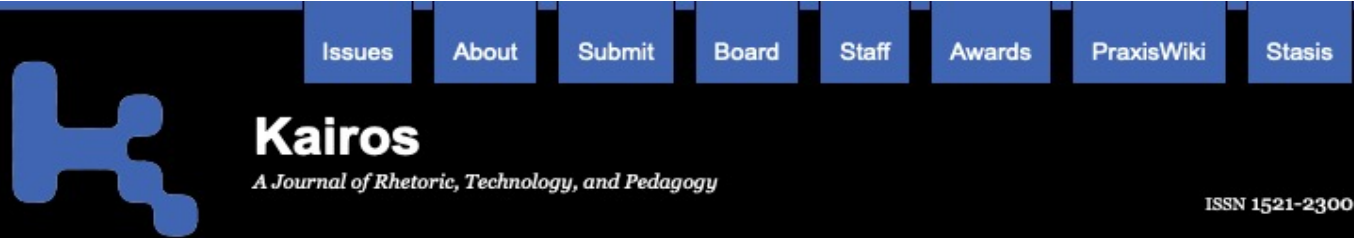
The Best Of

PHIL COLLINS

Some Examples of Well-Known CMSes

9

Scholarly journals are also CMS-based. This is *Kairos*, a multimodal scholarly journal in Rhetoric.



Some Examples of Well-Known CMSes

10

Scholarly journals are also CMS-based. This is *JBTC*, a leading journal in Technical and Professional Communication.



Search 

Browse

Resources 

Access Options:


Sign In


Institution


Society


Cart

Journal of Business and Technical Communication

Iowa State University

1.774

Impact Factor


5-Year Impact Factor 2.128

[Journal Indexing & Metrics »](#)

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About This Journal

Journal of Business and Technical Communication (JBTC), is peer-reviewed and published quarterly, keeps you informed about the latest communication practices, problems and trends in both business and academic settings or sectors. It covers written, oral



Some Examples of Well-Known CMSes

11

Amazon, famously, is database-driven just like all the CMSes we'll study this term. This site wouldn't work without databases.

amazonprime

Deliver to Geoffrey Ames 50010

Computers ▾Computer Cables & Interconnect

🔍

🇺🇸 ▾Hello, GeoffreyAccount & Lists ▾Returns & Orders

🛒 8 Cart

AllToday's DealsBuy AgainAmazon BasicsNew ReleasesBest SellersBrowsing History ▾ComputersShopper ToolkitGift Cards

ComputersLaptopsDesktopsMonitorsTabletsComputer AccessoriesPC ComponentsPC GamingDeals

1-24 of over 70,000 results for "Computer Cables & Interconnects"Sort by: Featured ▾

Amazon Prime

☐ prime

Climate Pledge Friendly

☐ Climate Pledge Friendly

Department

< Any Department

< Electronics


< Computers & Accessories

< Computer Accessories & Peripherals

Cables & Accessories

Computer Cables & Interconnects

Ethernet Cables




HDMI to VGA, 5 Pack, Moread Gold-Plated HDMI to VGA Adapter (Male to Female) for Computer, Desktop, Lapto...

★★★★☆ ▾ 41,526

\$34⁹⁹

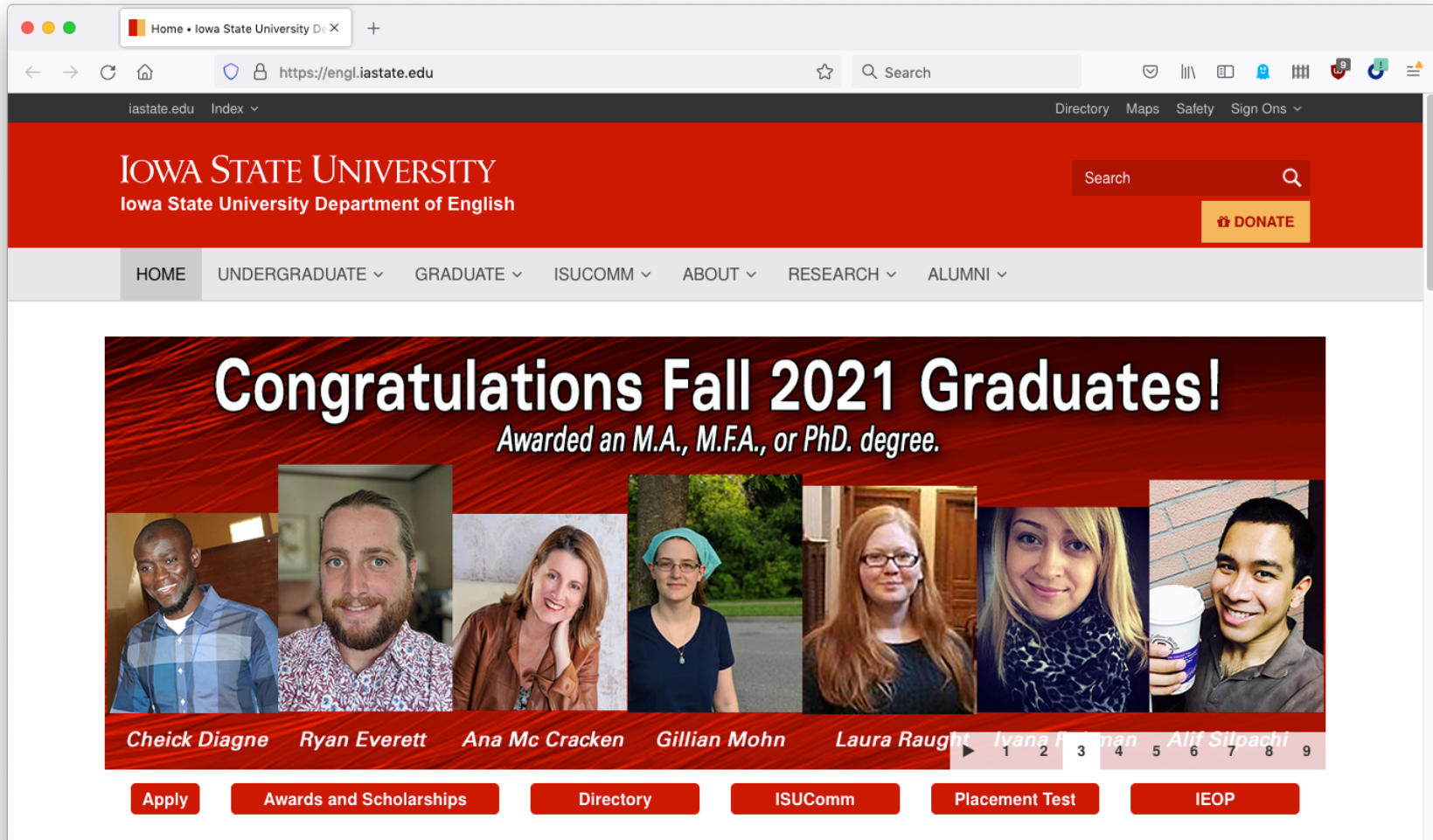
prime FREE Delivery Thu, Jan 20



Anker New Nylon USB C to USB C Cable (6ft 60W, 2-Pack), USB 2.0 Type C Charging Cable for iPad Mini 6,...

Some Examples of Well-Known CMSes

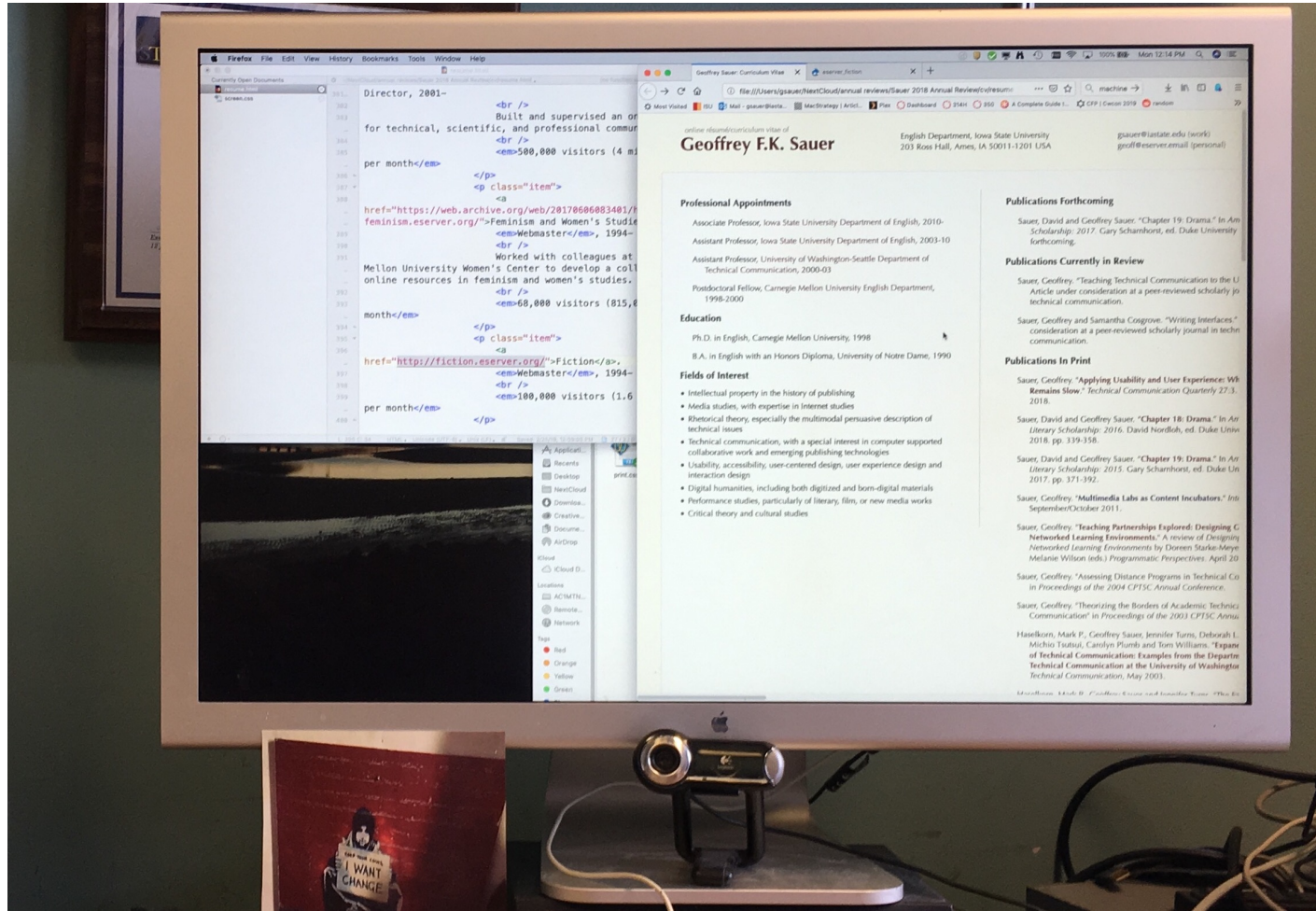
The ISU English Department website is CMS-based as well (as are most ISU websites).



Our Class Server (snm.engl.iastate.edu)

We have a (campus only) server dedicated to this class, which can host our CMSes. You'll learn it this semester.

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ENGL 529: Content Management

14

The best graduate seminar, ever? We'll see.

The course will have four major stages:



Database Design

SQL and RDBMSes



Interface Development

PHP, Python, Ruby



Implementation

WordPress et al.



User Experience

Final CMS Projects

1: Coding for Database Design

Underneath every content management system is a database. We'll learn to code good ones.



MySQL

An RDBMS

We'll learn to use MySQL, PostgreSQL, MariaDB, and some noSQL databases, such as Redis.

About Database Design

Principles and Practice of RDBMS Software

Every content management system runs on a relational database.

In the first part of the term, we'll learn about relational databases, and how to build and edit them for use in specific simple websites.

We'll learn the difference between good and poor designs for such databases. We'll also learn some basics of security for information protection.

Skills

Coding



Writing



Graphic Design



Interface Design



2: Coding for Interface Development

Learning how CMSES work involves first learning to build simple ones, from scratch.



PHP

a coding language

We'll learn to use PHP, and also look at Node.JS, Python, and Ruby.

About Interface Development

Coding CMSES using Backend Languages

Coded web backend applications connect to databases, loading page content which is then styled following the backend program's template (usually written in languages such as PHP, Python, JavaScript or Ruby).

We'll learn to code these from scratch, understanding how large content management systems use this same technology to generate modern web services, websites, social media, and apps.

Skills

Coding



Writing



Graphic Design



Interface Design



3. Implementation (including Cloud/Containerized CMSes)

We'll install on our class server some very popular CMSes, so we can look 'under the hood' and learn how they work.



CMSes

WordPress et al.

This semester we'll install dozens of CMSes, so we can practice configuring and administering them for specific purposes.

About Implementation

We'll install popular CMSes, this term

Most modern CMSes are installations of software, either free and open source, or commercial. This semester we'll explore dozens of CMSes we can install on our class server (snm.engr.iastate.edu) or on your personal computers (probably using containerization software such as Docker).

We'll get experience with many CMSes, and each student can choose a single CMS to use for a large final project.

Skills

Coding



Writing



Graphic Design



Interface Design



Some CMSES We Can Implement (by Hand or Docker)

18

Some of the CMSES we'll be able to install this semester. We probably won't have time for *all* of these, but we can choose.



Social Media

Mastodon, BuddyPress, Diaspora, and PeerTube.



Webservers and Services

Apache 2, nginx, Zope, Varnish, PiHole, and Plex.



Traditional Content Management Systems

WordPress (with WooCommerce and BuddyPress),
Drupal, Plone, Joomla, PrestaShop, and Confluence.



Cloud and Collaboration Services

Wikimedia, Redmine, Jira, Gitea, Bitbucket, Taiga,
Nextcloud, Kavita, Pyshelf, Paperless-NG, Calibre.



Learning Management Systems

Canvas, Moodle, Collabora Code, Etherpad, and
Ethercalc.



Data Science/Analytics Tools

MySQL, MariaDB, PostgreSQL, Redis, Solr, R,
PHPmyadmin, PHPpgadmin, LimeSurvey, Matomo,
Jupyter Lab, and Grafana.

4. User Experience

Once the CMS has content, you then create a high-quality user experience.



Usability/UX

Responsive

Once we've added content to implemented CMSes, then we customize its UX to suit audiences/specific needs.

About User Experience

We'll take CMSes, and make them great.

"Out of the box" CMSes all tend to look like one another. Customizing a content management system, adding user interface elements, features, and design components to create a truly original website or web service takes time and dedication.

We will create final projects for the end of the semester which will allow students to practice this final stage of CMS production and editing.

Skills

Coding



Writing



Graphic Design



Interface Design



Destinations: the Cloud



CMSES often end up, once designed and built, on cloud service providers. At the end of the semester, we'll explore how CMSES such as the ones we've built can be transferred to cloud-based services, for security and longevity.

So. Get ready!

This is exciting material, but it's complex.

There's a lot of reading, plenty of hands-on lab work, and quite a bit of 'debugging' to learn these technologies.

But if you put in the time, I feel strongly what you learn will be useful. I've taught this course at ISU in 2006, and my former students have gone on to do amazing things with CMSes.