CAT:
Course Aggregation Tool

COS 333, Spring 2013

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Roadmap

- The Problem
- Features
- Live Demo
- How it Works
- Limitations / The Future

The Problem

Princeton's course search tool is

unnecessarily complicated, and

makes poor use of available data.

The Problem

Course Search

Search

Term 13-14 Fall Keyword Search

Closed & Canceled

Course title

Instructor

Distribution Area All

Course Level All

Catalog Number

Meeting days (by default all)

Monday Tuesday Wednesday Thursday Friday

Start time within the hour (by default all)

8:00 9:00 10:00 11:00 12:30 1:00 2:00 3:00 4:00 5:00 after 6:00

Subjects (by default all)

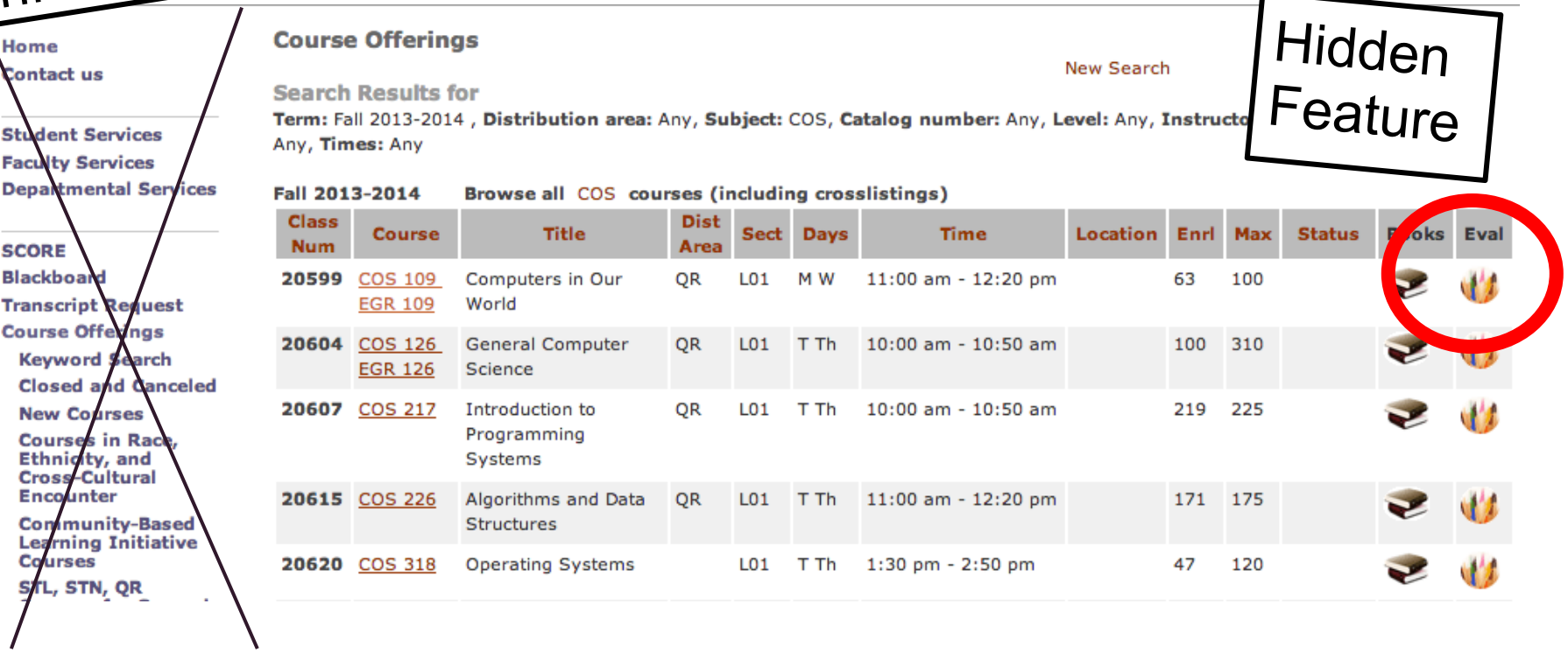
AAS Ctr African American Studies
AFS African Studies
AMS American Studies
ANT Anthropology
AOS Atmospheric & Oceanic Sci
HUM Humanistic Studies
ISC Integrated Science Curriculum
ITA Italian
JDS Judaic Studies
JPN Japanese

CLICK ALL THE THINGS!

The Problem

Extraneous Information

Hidden Feature



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Keyword Search
Closed and Canceled
New Courses
Courses in Race, Ethnicity, and Cross-Cultural Encounter
Community-Based Learning Initiative Courses
STL, STN, QR

Course Offerings

New Search

Search Results for

Term: Fall 2013-2014 , **Distribution area:** Any, **Subject:** COS, **Catalog number:** Any, **Level:** Any, **Instructo** Any, **Times:** Any

Fall 2013-2014 **Browse all** COS **courses (including crosslistings)**

Class Num	Course	Title	Dist Area	Sect	Days	Time	Location	Enrl	Max	Status	Books	Eval
20599	COS 109 EGR 109	Computers in Our World	QR	L01	M W	11:00 am - 12:20 pm		63	100			
20604	COS 126 EGR 126	General Computer Science	QR	L01	T Th	10:00 am - 10:50 am		100	310			
20607	COS 217	Introduction to Programming Systems	QR	L01	T Th	10:00 am - 10:50 am		219	225			
20615	COS 226	Algorithms and Data Structures	QR	L01	T Th	11:00 am - 12:20 pm		171	175			
20620	COS 318	Operating Systems		L01	T Th	1:30 pm - 2:50 pm		47	120			

The Problem

Course Title: Advanced Programming Te

You may view each semester's quantitative course evalu
division, department, subject, or cou

Course evaluation data may not be redistributed, circ
anyone outside of the University.

5 = Excellent, 4 = Very Good, 3 = Good, 2 = Fair, 1 = Poo

Export as Excel

Question	Responses	Response Rate	Excellent	Very Good	Good	Fair	Poor	N/A	Mean
Lectures									
I think that the overall quality of the lectures was:	85	70%	38%	28%	14%	14%	6%	0%	3.78
Papers, Reports, Problem Sets, Examinations									
I think that the overall quality of the written assignments was:	81	66%	28%	35%	19%	11%	6%	1%	3.69
Readings									
I think that the overall quality of the readings was:	81	66%	7%	6%	12%	6%	1%	67%	3.37
Overall Quality of the Course									
I think that the overall quality of the course was:	84	69%	38%	32%	19%	6%	5%	0%	3.93

In the online course evaluation the University invites students to provide advice for their peers by asking the question "W d you give to another student considering taking this course?"

n can be accessed by clicking here. The University does not consider the information rsity course evaluation data, it does not take the information into consideration in approving courses for permanent status; and it does not take the information into consideration in making tenure or promotion decisions.

Poor Presentation of Powerful Data

Hidden Feature

The Problem

Feedback for COS 333 in Spring 2011-2012

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You may view each semester's quantitative course evaluation summaries by division, department, subject, or course.

Course evaluation data may not be redistributed, circulated, or disclosed to anyone outside of the University.

5 = Excellent, 4 = Very Good, 3 = Good, 2 = Fair, 1 = Poor

Feedback for other students:

Question	Number of Responses	Strongly Recommend	Recommend	Neutral	Recommend Against	Strongly Recommend Against	N/A	Mean
Would you recommend this course to other students?	82	51%	32%	9%	7%	1%	--	4.24

Feedback:

- A great course with a final project that is as fun as you make it. Must take before graduation especially if you're planning on going into industry. Be a little careful with the first few assignments because the grading is much harsher than in 217/226 because they won't bother to figure out what the bug is; if it fails a test of theirs, it fails. Some people will complain that there is nothing in the lectures that you can't glean from Wikipedia, but having it presented to you so you know what is out there is, personally, much more valuable than a dozen hours roaming Wikipedia and not knowing major topics from minor details.
- Be prepared to put a lot of time into the assignments and he final project. The grading happens quikly so the projecct has to be easy to navigate and understand the functionality of (meaning good documentation is a must). Leave LOTS of time for debugging, making improvements and planning.
- Breezes through so many topics in 1 semester, only covering generalities, so that you really aren't able to learn much that's really solid. Assignments in 1st half of the semester are pretty tedious, and while I do like the project in the 2nd half (where you build a web/mobile app), it's not something I learned because of the class - it's something I ended up learning on my own
- Come in with a group to do the project or seek out high achieving students to be part of a group -- DO NOT get started late.
- Definitely a must take class, especially if you're lacking a foundation in programming techniques outside of 226 and 217
- Definitely take it. Will give you some mind-blowing insights into the complications involved in real
everything is not a bed of roses and you *need* to know how to work WELL
hopes to work in teams in a CS environment in the future. Plus you get acqu
me
out to explore by yourself.
- Definitely take the course!

No Logical Next Step

The Problem

Too many options

Too many pages

No logical flow

The ~~Problem~~ *Solution*

- Google-like natural searches

- Results packed with information:
  - Current and Historical Registrar data
  - Numerical and Written reviews

- Platform for comparison:
  - Graphs and plots
  - Save courses for later

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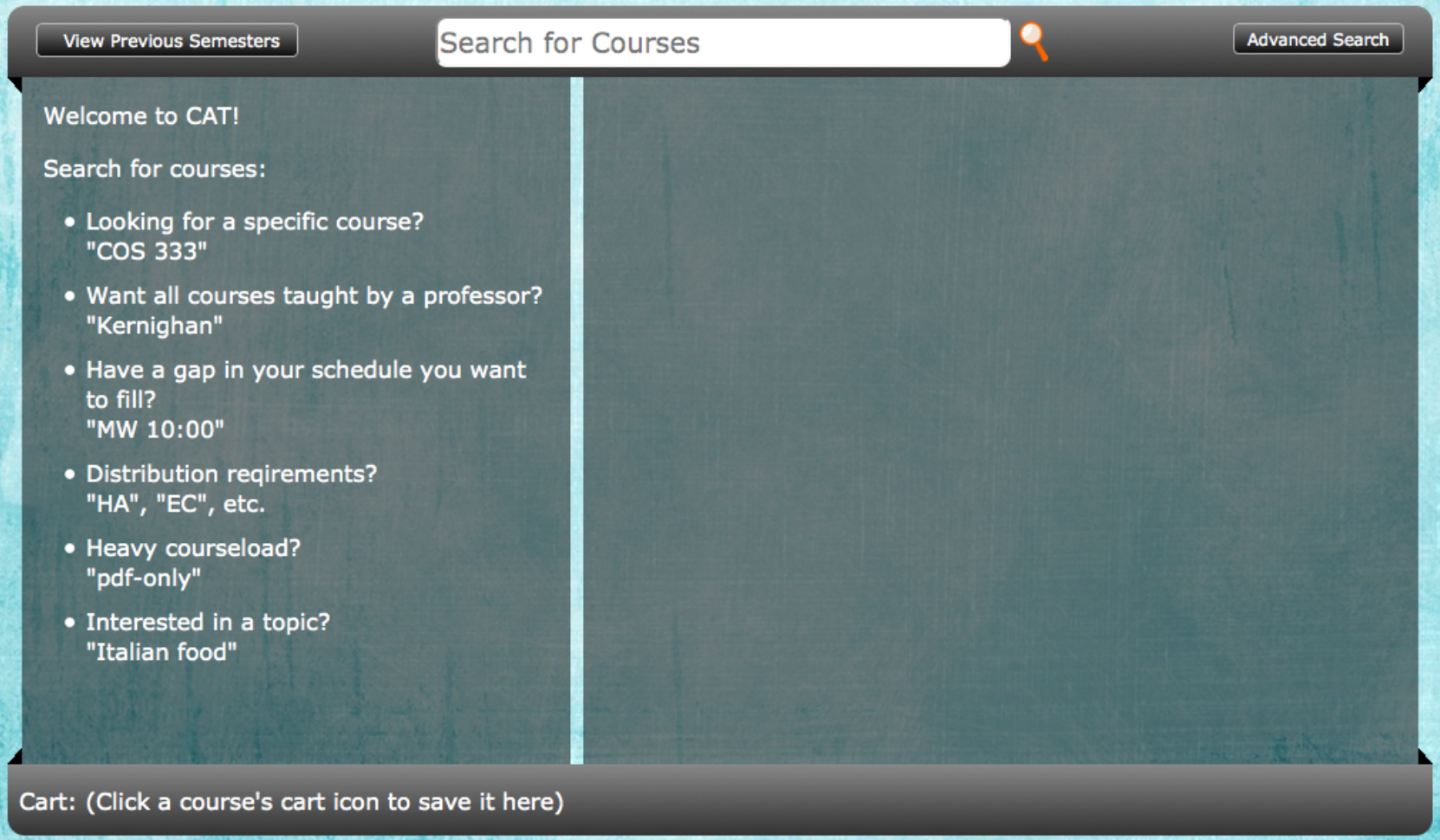
Features

- ***Smart***: Omnibar searches by a variety of intuitive categories.
- ***Clean***: Past semesters hidden by default, but accessible with one click.
- ***Tailored***: Results are sortable, and are color-coded according to rating.
- ***Efficient***: Courses can be saved in cart for later review.
- ***Powerful***: Course review data displayed in informative graphs.

Features


Welcome to CAT! | About
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View Previous Semesters
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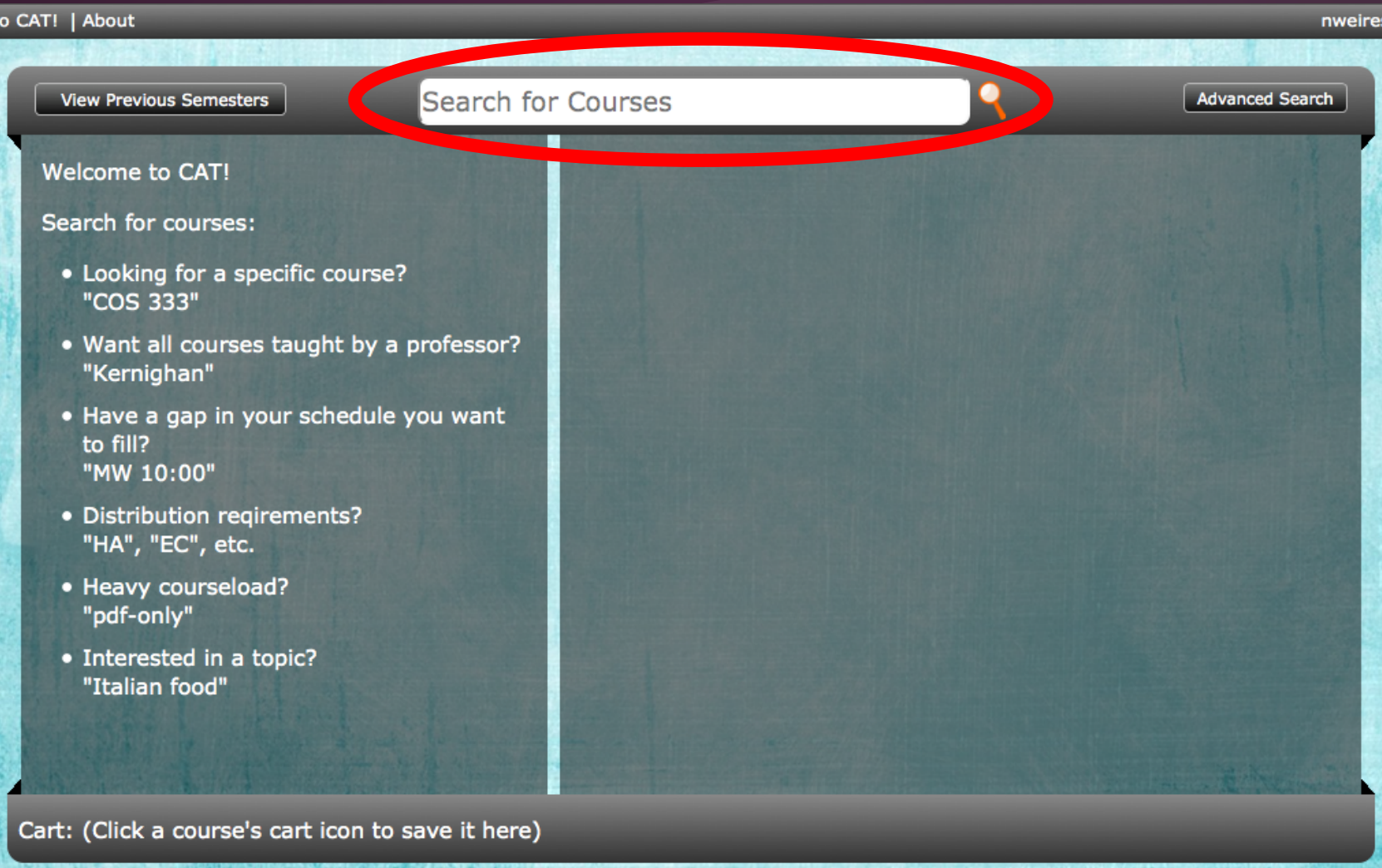
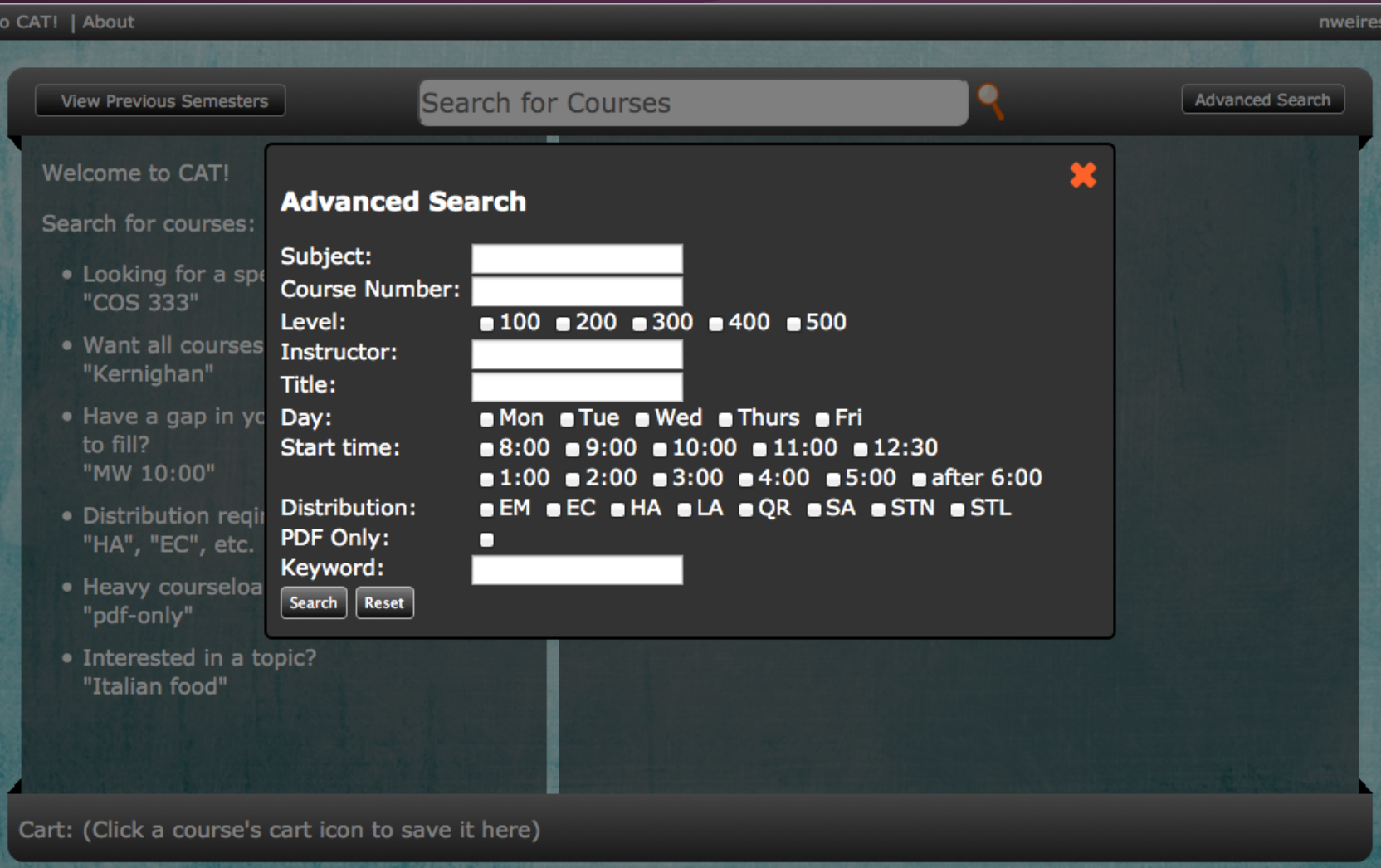
Welcome to CAT!
Search for courses:
• Looking for a specific course?
"COS 333"
• Want all courses taught by a professor?
"Kernighan"
• Have a gap in your schedule you want to fill?
"MW 10:00"
• Distribution reqirements?
"HA", "EC", etc.
• Heavy courseload?
"pdf-only"
• Interested in a topic?
"Italian food"
Cart: (Click a course's cart icon to save it here)

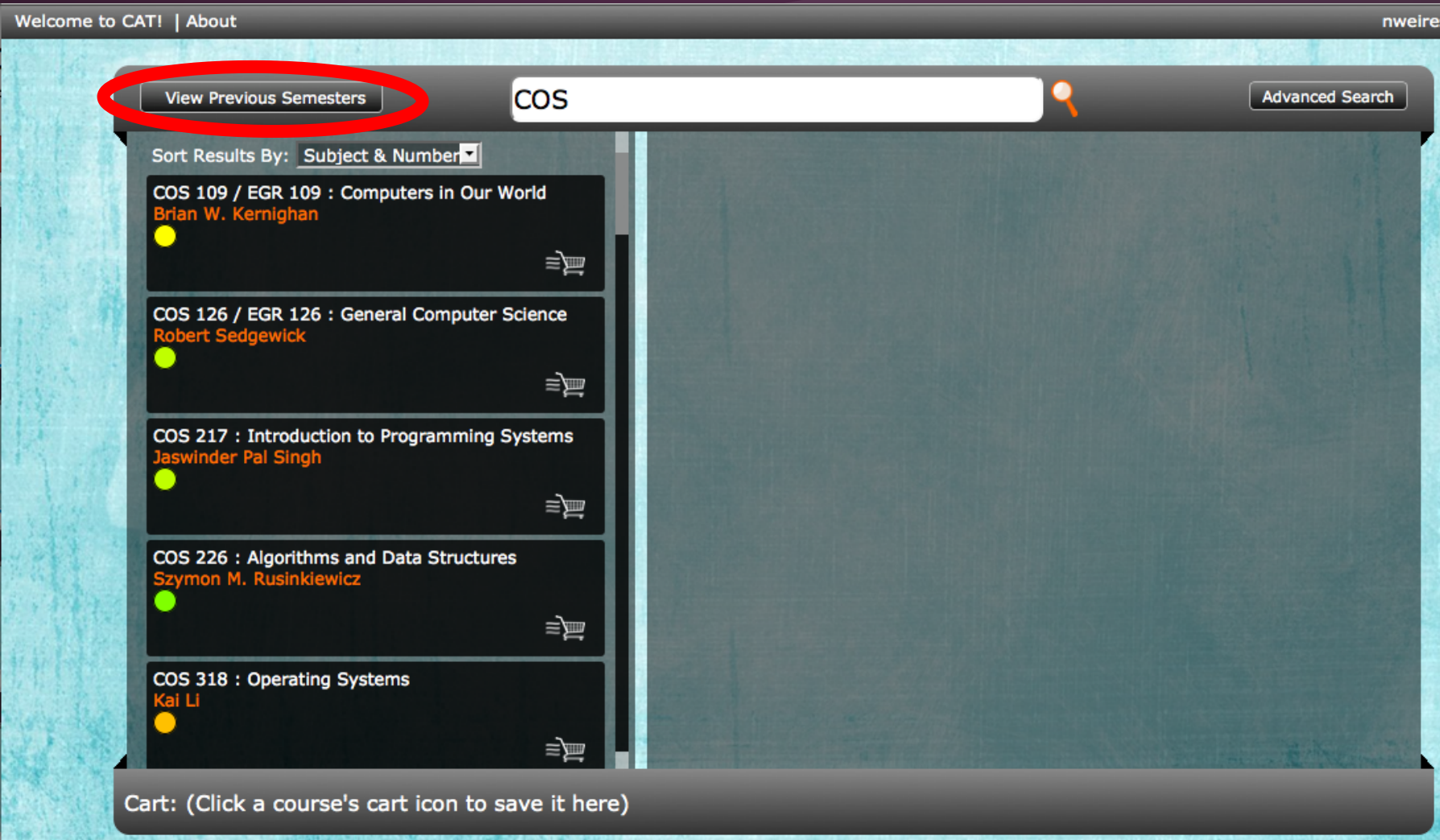
Features: Search



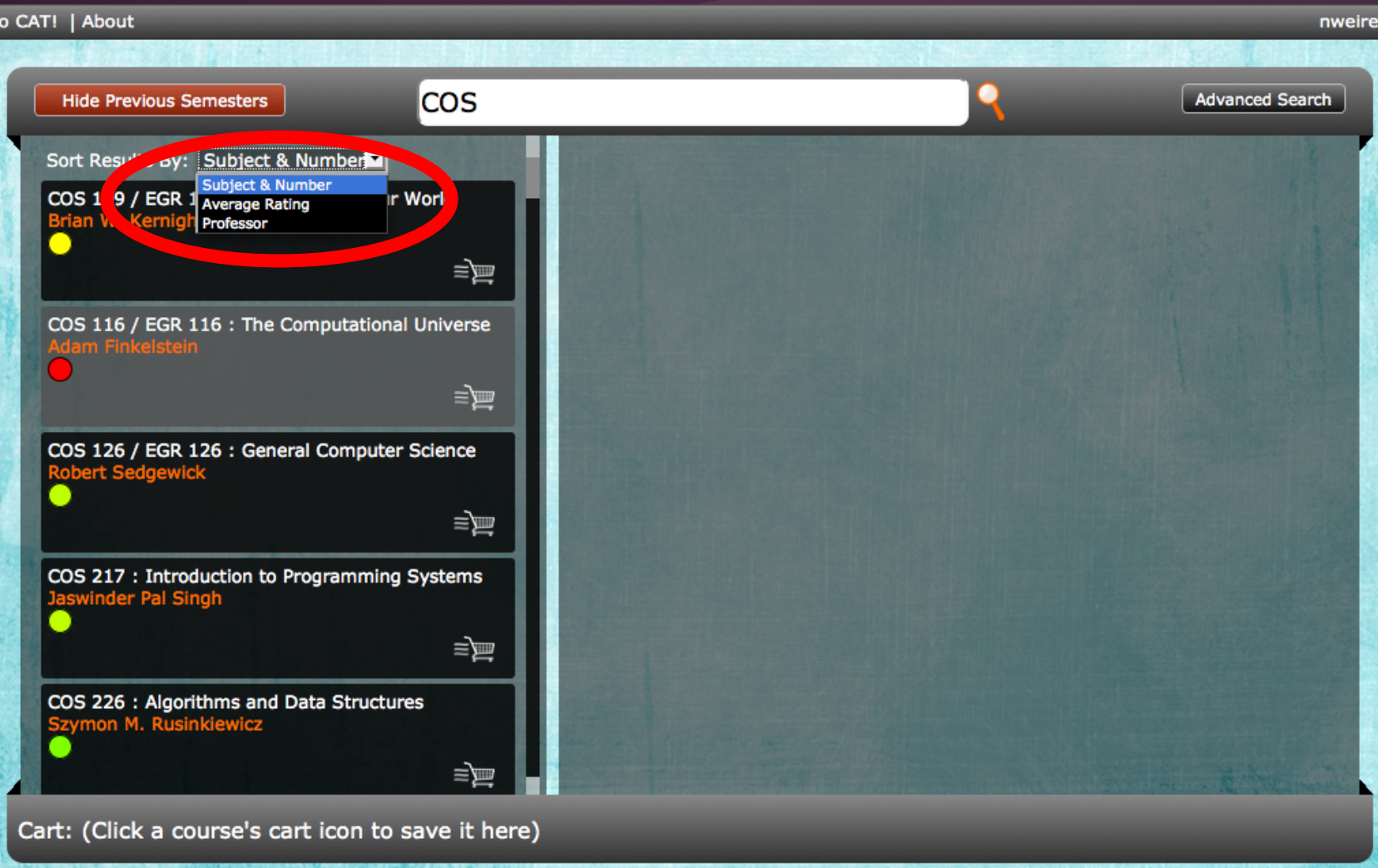
Features: Advanced Search



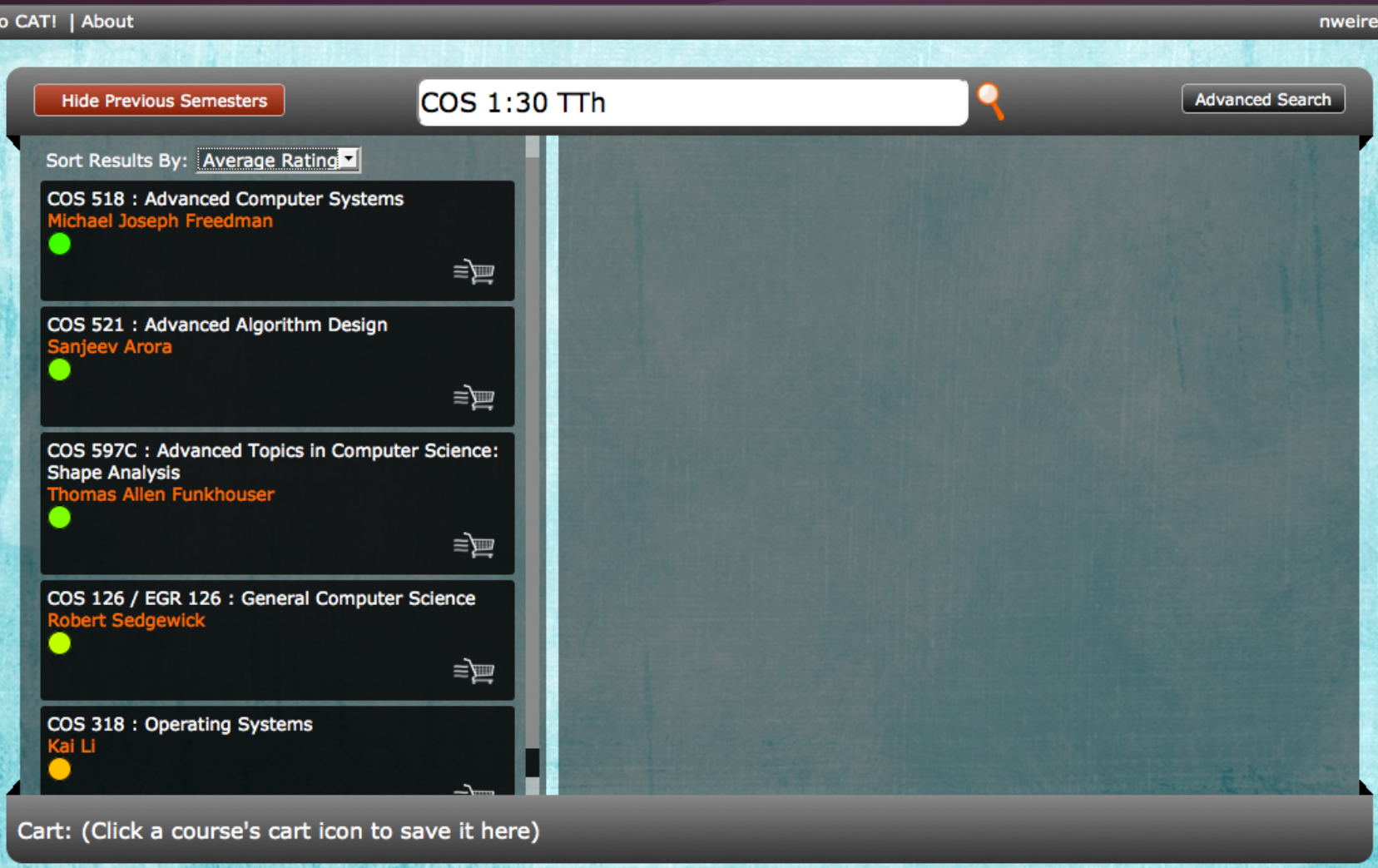
Features: Previous Semesters



Features: Rank

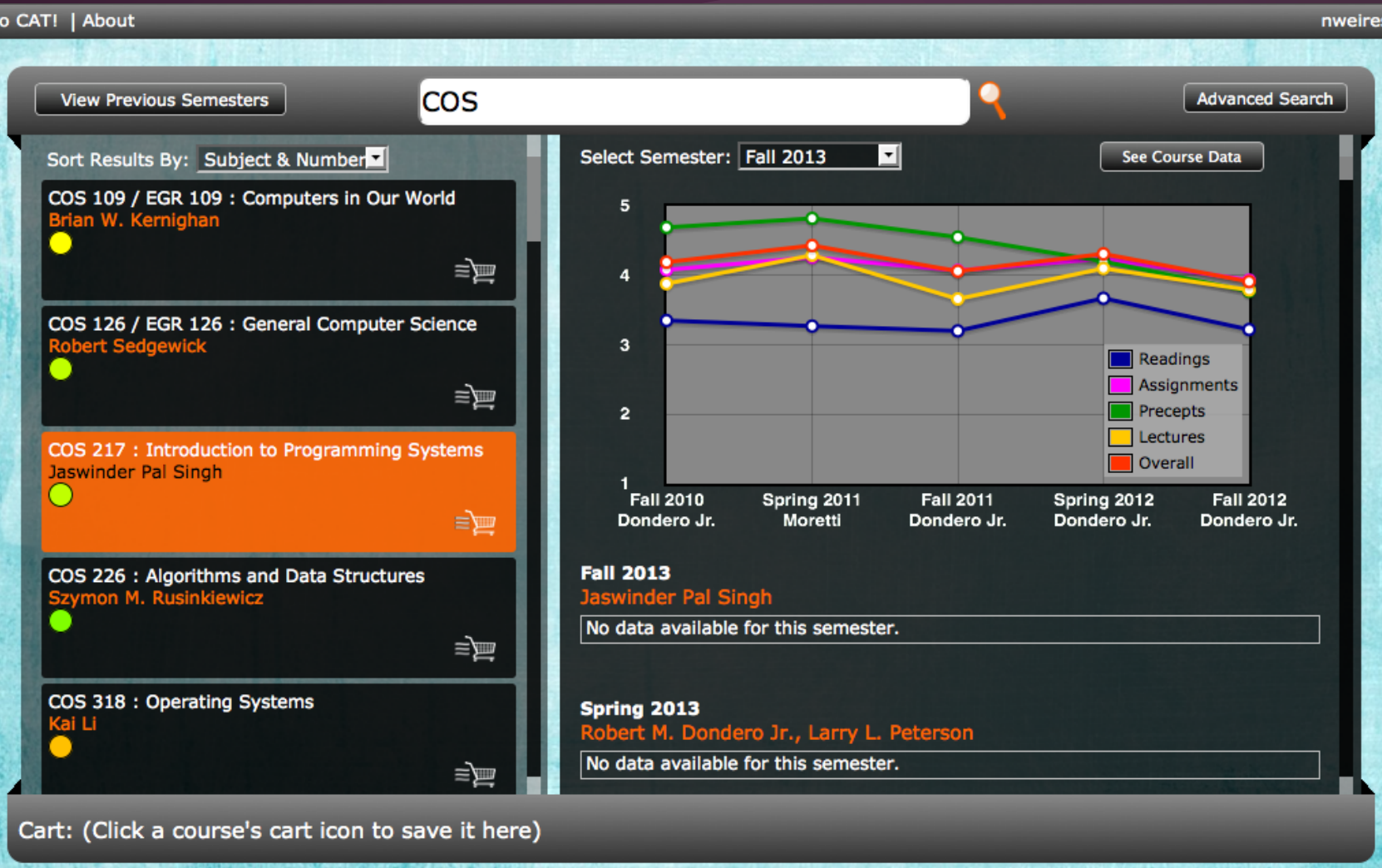


Features: Color Coding

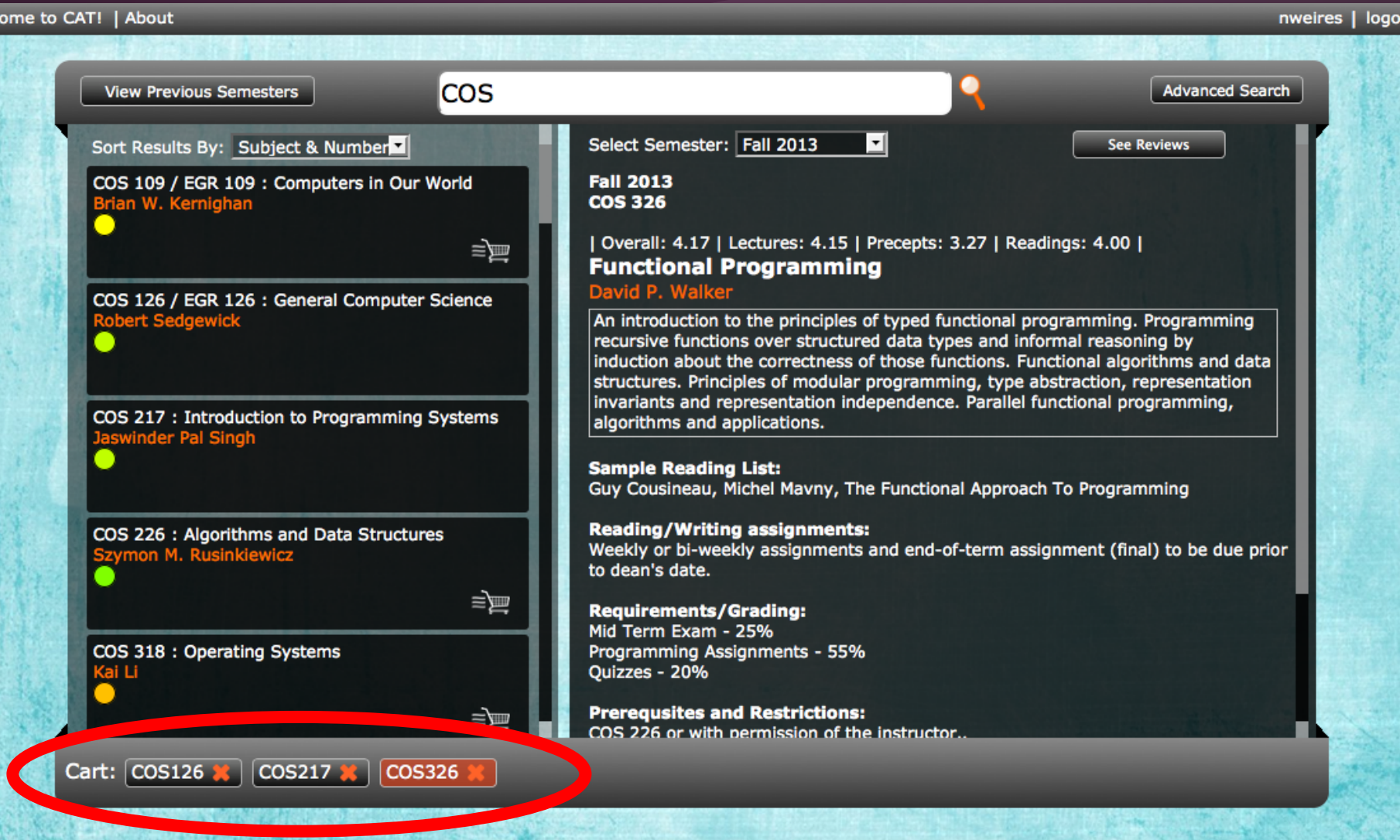


Features: Class Display

Features: Reviews



Features: Cart



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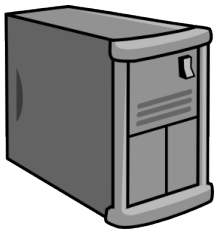
How it works: the data

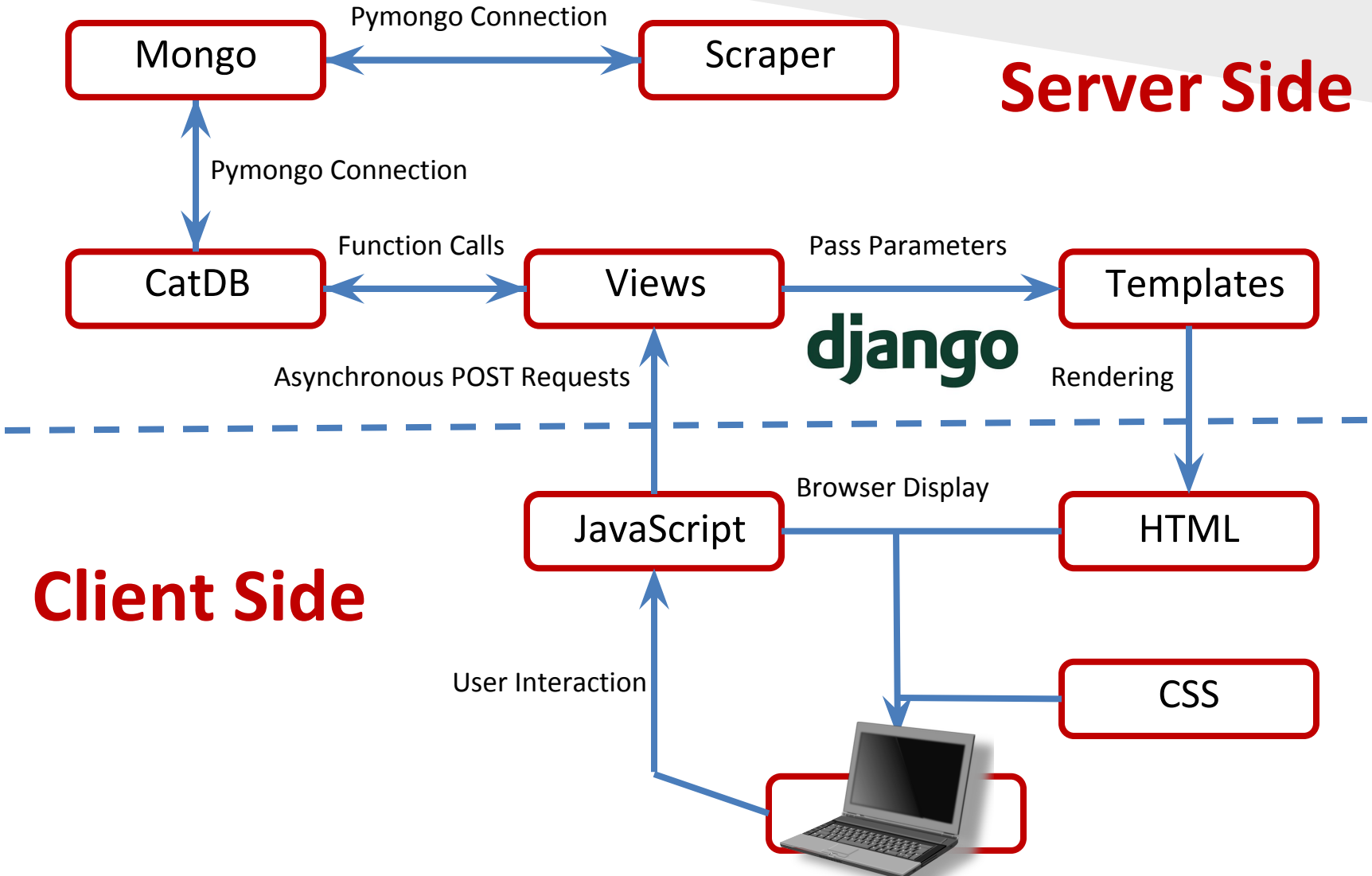
- Sources:
  - OIT webfeed (course and professor info, in XML)
  - Registrar site (grading, distribution area)
  - Course review site
- Techniques:
  - BeautifulSoup (Thanks to Alex Ogier '12!)
  - Automated script to scrape course review data (Thanks to Candy Button '13!)

How it works: the stack

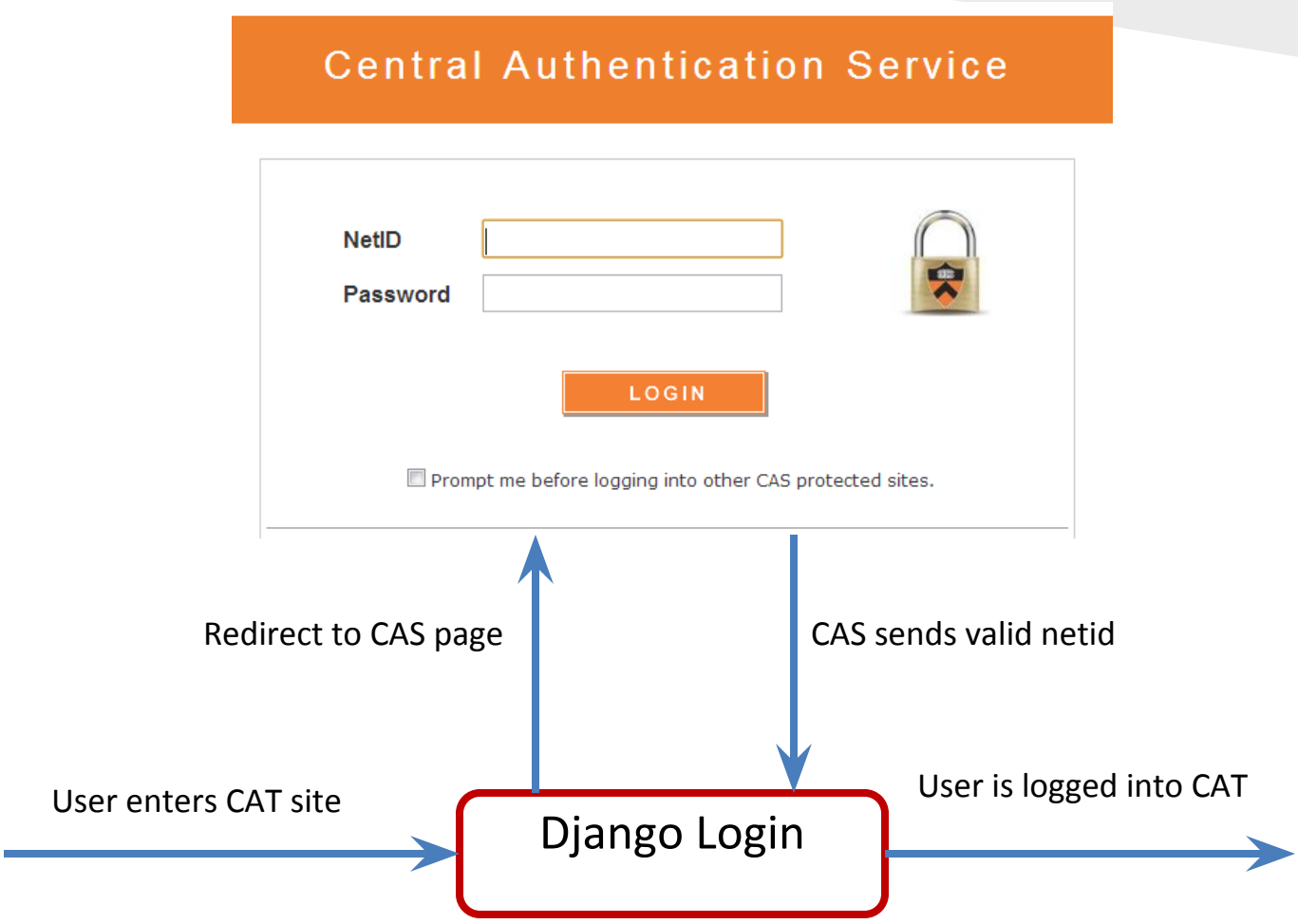


```
$(jQuery)

  <html>

  {css;}
```

How it works: the flow



How it works: security



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Limitations

Smarter Searching

- Keyword searches sometimes give unexpected results
- Ex. "Christian Ethics"

Departmental re-numberings

- Ex. Math Department
- Need a mapping from old to new course numbers
  - automated?
  - manual?

The Future

- Professor info
- Official Tigerapps support
- Integration with ICE
- Textual Analysis of Cart Data

Thank you!

Questions?