

# Improvement to the class registration website interface of Northeastern University

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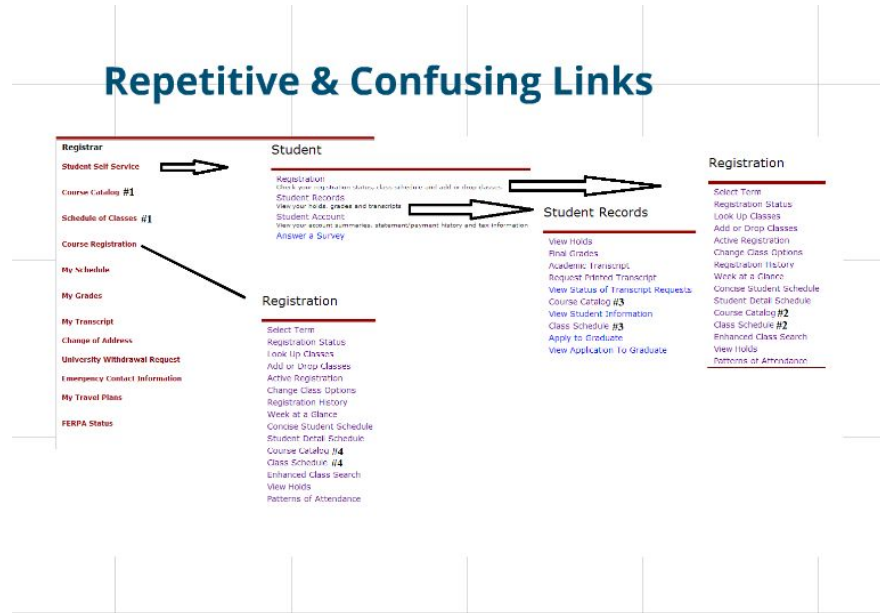
# Project brief

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This is a Human Factors project for my NEU graduate program.

My role in the project is **identifying problems** of the old interface and **creating a new prototype** for the school's Class Search and Registration webpage interface.

# Problem analysis



- Terms of the navigation bar are confusing. It is easy for users to get lost, and they have to click through many levels of menus to achieve their goal.
- As an example in the picture, students might click the “Student Self Service” option which would make them go through 2 more pages to get to the class registration page.

# My improvement

## One Link, One Search Bar

The screenshot shows a web interface for a Registrar. On the left is a vertical navigation menu with the following items: Registrar, Student Self Service, Course Schedule and Registration, My Schedule, My Grades, My Transcript, Change of Address, University Withdrawal Request, Emergency Contact Information, My Travel Plans, and FERPA Status. The main content area features a search bar titled 'NEU Course Search'. Below the title is a prompt: 'Begin typing the name of a course, department, time, or lecturer to see courses.' There is a search input field with a 'Go!' button to its right. Below the input field is a placeholder text: 'Enter search text to see a list of matching courses.' To the right of the search bar is a cart icon showing '0 courses in cart.' and a 'View cart' button. An arrow points from the 'Course Schedule and Registration' link in the menu to the search bar.

- I recommended we **remove** the repetitive and misleading options from the menu.
- Because the user has to always find a class page first before registering it, “Class Search and Registration” should be **combined** into one option. It will take the user to the new interface I created.

# Problem analysis

## Endless Long List

Dynamic Schedule

Search by Term:

- None
- None
- Fall 2013 Semester (View only)
- Summer 2 2013 Semester
- Summer Full 2013 Semester
- Summer 1 2013 Semester
- Spring 2013 Semester
- Fall 2012 Semester (View only)
- Summer 2 2012 Semester (View only)
- Summer Full 2012 Semester (View only)
- Summer 1 2012 Semester (View only)
- Spring 2012 Semester (View only)
- Fall 2011 Semester (View only)
- Summer 2 2011 Semester (View only)
- Summer Full 2011 Semester (View only)
- Summer 1 2011 Semester (View only)
- Spring 2011 Semester (View only)
- Fall 2010 Semester (View only)
- Summer 2 2010 Semester (View only)
- Summer Full 2010 Semester (View only)
- Summer 1 2010 Semester (View only)

CRN:

Subject:

- Biotechnology - BIOT
- Business - CPS Sem - BUSS
- Business Administration - BUSN
- Chemical Engineering - CHME
- Chemistry & Chemical Biology - CHEM
- Chemistry - CHEM
- Civil & Environmental Engineer - CIVE
- Communication Studies - COMM

Course Number:

Title:

Attribute Type:

- All
- NU Core 1st year Writing
- NU Core Adv Writing in Dscpln

Course Level:

- All
- CPS - Graduate
- CPS - Undergraduate
- Continuing Education
- Graduate
- Law
- Undergraduate

Show only courses with seats available

+/- More Options

Schedule Type:

- All
- Individual Instruction
- Lab
- Lecture
- Off-campus instruction
- Off-campus instruction w/ lec
- Performance/Individual Lesson
- Recitation/Discussion

Instructional Method:

- All
- Blended
- Cooperative Education
- Hybrid
- NU Faculty-led Study Abroad
- Online
- Study Abroad
- Video Streaming

Credit Range: hours to hours

Campus:

- All
- Boston, Main
- B9 Broad St., Boston
- Burlington
- Charlotte, NC
- Dedham
- Nahant

Part of Term:

- All
- Full Term
- Full Term Grad

Instructor:

- All
- Abderrazzaq, Mohammad A.

- To find the class for registration, user had to go through multiple dropdowns and scrollable lists.
- This process consumed a large amount of time, because users had to read through many options to find the one they wanted.

# My improvement

## Tag-enabled instant search

### NEU Course Search

Begin typing the name of a course, department, time, or lecturer to see courses.

Summer2013-1 x Mathematics x Undergraduate x 3:20 pm x Lakshmibai x  
4 credits x 2000-level x

**MATH 2331-01 - Linear Algebra**

**Lecturer:** Lakshmibai,Venkatraman    **Time:** 3:20pm - 5:00 pm  
**Days:** M T W R    **Location:** TBA    **Credits:** 4    **Capacity:** 35    **Actual:** 33  
**Seats:** 2

- Instead of the dropdowns and scrollable lists, I recommended using **a tag-enabled search bar**. User could just input relevant keywords to find the classes.
- Tags give users an idea of what to search for, and also minimize typing.

# Problem analysis

## Long Message and Multiple tap

**IE 7315 - Human Factors Engineering**

Offers students an opportunity to acquire the necessary knowledge and skills to recognize and analyze existing or potential human factors problems and to identify, design, and possibly implement feasible solutions. Includes introduction to human factors and ergonomics; engineering anthropometry and biomechanics; physiology related to human factors and workstation design; cognition and information processing; decision making, attention, and workload; human error and accidents; human-machine interface design; controls and displays; and human factors applications in transportation, aerospace, consumer product design, and so forth. *Prereq. Engineering students only.*  
4,000 Credit hours  
4,000 Lecture hours

**Levels:** Graduate  
**Schedule Types:** Lecture ([LINK BETWEEN TABS](#))

Mech & Industrial Engineering Department

**Course Attributes:**  
GSEN Engineering

**Human Factors Engineering - 36643 - IE 7315 - 01- (Boston, Main) - Credits 4**

**Associated Term:** Spring 2013 Semester  
**Levels:** Graduate  
**Attributes:** GSEN Engineering  
**Instructors:** Yingzi Lin (P)  
**Schedule Type:** Lecture  
Traditional Instructional Method

[Course Materials](#)

**Restrictions:**  
Must be enrolled in one of the following Levels:  
Graduate  
Must be enrolled in one of the following Colleges:  
College of Engineering

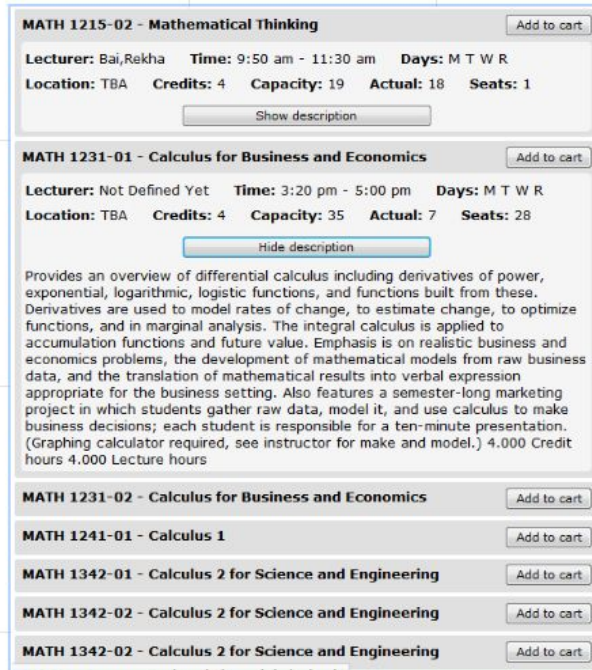
**Scheduled Meeting Times**

Type	Time	Days Where	Date Range	Capacity	Actual	Seats	Room	Size
Class	2:50 pm - 4:30 pm	MW Robinson Hall 109	Jan 07, 2013 - Apr 20, 2013	65	49	16	110	
Final Exam	1:30 pm - 4:30 pm	W Richards Hall 458	Apr 24, 2013 - Apr 24, 2013					

- There was too much information for classes - only some of it was important for users to decide if they should register.
- Since the content of one class is so long, user had to open many pages to compare different classes.

# My improvement

## Only selected Information , Same page, Comparable



The screenshot displays a list of math courses. The first course, **MATH 1215-02 - Mathematical Thinking**, is highlighted with a blue border. Below its title, it shows details: Lecturer: Bai, Rekha; Time: 9:50 am - 11:30 am; Days: M T W R; Location: TBA; Credits: 4; Capacity: 19; Actual: 18; Seats: 1. A 'Show description' button is visible below these details. The second course, **MATH 1231-01 - Calculus for Business and Economics**, is also highlighted. Its details are: Lecturer: Not Defined Yet; Time: 3:20 pm - 5:00 pm; Days: M T W R; Location: TBA; Credits: 4; Capacity: 35; Actual: 7; Seats: 28. A 'Hide description' button is visible below its details. Below the second course, there are four more courses listed: **MATH 1231-02 - Calculus for Business and Economics**, **MATH 1241-01 - Calculus 1**, **MATH 1342-01 - Calculus 2 for Science and Engineering**, and **MATH 1342-02 - Calculus 2 for Science and Engineering**. Each course entry includes an 'Add to cart' button.

**MATH 1215-02 - Mathematical Thinking**

**Lecturer:** Bai, Rekha **Time:** 9:50 am - 11:30 am **Days:** M T W R  
**Location:** TBA **Credits:** 4 **Capacity:** 19 **Actual:** 18 **Seats:** 1

**MATH 1231-01 - Calculus for Business and Economics**

**Lecturer:** Not Defined Yet **Time:** 3:20 pm - 5:00 pm **Days:** M T W R  
**Location:** TBA **Credits:** 4 **Capacity:** 35 **Actual:** 7 **Seats:** 28

Provides an overview of differential calculus including derivatives of power, exponential, logarithmic, logistic functions, and functions built from these. Derivatives are used to model rates of change, to estimate change, to optimize functions, and in marginal analysis. The integral calculus is applied to accumulation functions and future value. Emphasis is on realistic business and economics problems, the development of mathematical models from raw business data, and the translation of mathematical results into verbal expression appropriate for the business setting. Also features a semester-long marketing project in which students gather raw data, model it, and use calculus to make business decisions; each student is responsible for a ten-minute presentation. (Graphing calculator required, see instructor for make and model.) 4.000 Credit hours 4.000 Lecture hours

**MATH 1231-02 - Calculus for Business and Economics**

**MATH 1241-01 - Calculus 1**

**MATH 1342-01 - Calculus 2 for Science and Engineering**

**MATH 1342-02 - Calculus 2 for Science and Engineering**

**MATH 1342-02 - Calculus 2 for Science and Engineering**

- I recommend showing search results in expandable boxes.
- Users could have the choice to decide the amount of information they need for making decisions.
- Multiple classes could be shown in the same page for easy comparison.



# Problem analysis

- To register multiple classes at once, users had to remember the CRN IDs of the classes, and input them in a different page. This system increased the mental burden of users and was time consuming.

## Friendly & instant multiple course registration

Add Classes Worksheet

CRNs

<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
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### Course Cart

4 courses in cart.

<b>MATH 1231-02 - Calculus for Business and Economics</b>	<input type="button" value="Remove from cart"/>
<b>MATH 1342-02 - Calculus 2 for Science and Engineering</b>	<input type="button" value="Remove from cart"/>
<b>MATH 2331-01 - Linear Algebra</b>	<input type="button" value="Remove from cart"/>
<b>MATH 2341-01 - Differential Equations and Linear Algebra for Engineering</b>	<input type="button" value="Remove from cart"/>

## My improvement

- I recommended treating the class registration system as an online shopping experience.
- User could add the classes for registration in a cart by clicking one button, visible in search results.
- User could review the classes they added in a modal, then click one button to register for all.

# Clickable Prototype

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A clickable prototype also made (with coding help by Alex Krusz) for my design.

Link: <http://krusz.net/course-selector/>

# User Test Result

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User testing of the clickable prototype was performed by my project group members.

Results:

- **37.63%** time savings to register a group of classes when they used the new prototype, as compared with the existing site.
- **92.14%** of participants would prefer to switch to the new interface.