

Assignment 06: Heuristic Evaluation

Team 10:

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Executive Summary

Our team conducted the heuristic evaluation of UM SI website academics section based on Nielsen's theory. The academics section pages are intended to serve both major user groups: prospective and current students as valuable information source.

This study was conducted in the following steps:

1. Decided to concentrating on evaluating the academics section
2. Introduced each team member to Jakob Nielsen's 10 heuristics
3. Performed individual heuristic evaluation independently
4. Consolidated individual heuristic evaluation results
5. Rated the team severity of each violations

We identified the most critical findings and came up with recommendations:

- Finding 1: Persisting navigation issues in the whole website
- Recommendation 1: Several pages on the SI website needs redesign to maintain consistency and simple navigation
- Finding 2: Inconsistent layout results in more cognitive load for the user
- Recommendation 2: A standard layout for pages on the same level should be used consistently throughout the site
- Finding 3: Issues with labels and styles negatively affect the learn-ability of the user
- Recommendation 3: Appropriate labels should be used across all pages
- Finding 4: Search functionality
- Recommendation 4: Several different mechanisms for addressing the problem of helping users recover from incorrect searches

Introduction

Our system is the University of Michigan School of Information website, more specifically the Academics section (<http://si.umich.edu/academics>). The content in the academics section is targeted towards both prospective and current SI students, at both the masters and doctoral levels. Current SI students visit this section of the website in order to learn, among other things, about degree requirements, upcoming events, and opportunities within the SI community. Prospective students visit this section to obtain

information about application requirements and deadlines. In addition, prospective students who wish to apply to SI may do so through the “Admissions” page of the Academics section.

Violations of web usability standards can undermine users’ confidence in the system. For prospective students, this can deter them from applying to the school, while for current students, this can decrease the efficiency and success of trying to use the website. As an example, several students have complained of the difficulty of locating the Tracking and Planning Sheets (aka “TAP sheets”) which outline degree requirements for concentrations within SI. In this stage of usability testing, we used Nielsen’s ten heuristics (See Appendix B) to assess how well the “Academics” section of the SI website meets usability standards. The Methods section of this report outlines the process by which our team performed the heuristic evaluations. In this process, we identified usability shortcomings of the site, the most important of which can be found in the Findings & Recommendations section of this report. In addition, we recommended solutions (also found in that same section), which if adapted could improve the site’s usability. The heuristic evaluations and our ratings are located in the appendices.

Methods

Sections of the Product Selected

Rather than evaluate the entire SI site, in our project we have decided to focus mainly on the Academics section. For one, this allowed us to reasonably narrow our project scope. However, far from being an arbitrary choice, we believe that addressing the “Academics” section will be off most benefit to our client and to our fellow SI students. Just from a glance, it is apparent that much of the content on the “Academics” section has no apparent organizational scheme, which might make it more difficult for users to locate information on this section of the website.

Process of Evaluation and Demographic Information of Evaluators

The first step in our evaluation was to introduce each team member to Jakob Nielsen’s 10 heuristics and to discuss how each team member interpreted the heuristics. In addition, we agreed upon the conventions we would use in recording the violations.

Next, each team member performed an independent evaluation and identified areas of the Academics section which violated at least one of Nielsen’s ten heuristics. Each evaluator independently noted several problems on the website as well as the usability heuristics which these violated. For each problem, the evaluator rated the severity of the problem on a scale of 0-4 (see appendix C).

The evaluators were all current MSI students and consisted of 3 males and 1 female, ranging from the age of 24 to 36 (see Appendix A). Between all of the

evaluators, we examined the site using two MacBook Pros, a MacBook Air, as well as a PC. The Internet browsers used to evaluate the site were Internet Explorer and Google Chrome.

About Heuristic Evaluation and the Heuristics Used

In our evaluation, we used Jakob Nielsen's ten heuristics. The heuristics represent guidelines which usable systems should follow. As a method for investigating the usability of a website, heuristic evaluation is easier and cheaper to perform than usability testing. A list of Nielsen's ten heuristics and a short description of each one can be found in appendix B.

Consolidating Results and Prioritizing Findings

Our team's individual evaluations can be found in Appendix F. After the independent evaluations were complete, the team met to compile all of our individual findings for each heuristic into a single document, combined similar findings, and began to select which findings were more severe. Each member of the group took a turn presenting his list of heuristic violations to the group, displaying the problem on the site and giving a short argument for why he believed the finding violated the particular heuristic(s). If the group decided that the issue noted was indeed a violation of one of Nielsen's ten heuristics, the issue was included on the master list. While the one group member was presenting the finding, other group members noted whether they had or had not also noticed the violation. If more than one team member noticed a way in which the site violated a heuristic, the corresponding entries from each of these team members' lists were combined into one item in the master list. The resulting table of consolidated findings can be found in Appendix E. For this consolidated list, the team used the same 0-4 scale as before to indicate the severity of each problem. In the findings and recommendations section, we only addressed the problems which were rated as more severe by the team in the consolidated list.

Findings and Recommendations

After consolidating the findings and assessing the severity of each finding, we went through the consolidated list to observe some general trends as well as locate which problems we identified as being the most important. This section of the report describes the findings which the group identified as being the most important to fix in order to improve the usability of the Academics Section. Although several of the lower priority findings are not addressed here, they may be found in the individual and consolidated heuristic evaluations and it may be of interest to our client to examine them. The reason that these are not addressed in this section is that they involve mostly cosmetic flaws that were judged not to decrease the overall usability of the Academics section.

Finding 1: Persisting navigation issues in the whole website

a). The left hand navigation strands users on pages.

As the left hand navigation bar presents a map of where the user is on the site, by default users rely on it to jump to other sections within the same section of the SI website. However, at times, the left hand side menu disappears although the site remains the same (Figure 3). One example of this is when a user clicks on a certain course listing in the course catalog and the site takes him to a page which describes the course (see figure 3b). However, as the left navigation has disappeared, there is no way for users to navigate to other pages in the Academics section. This violates the heuristic User Control and Freedom as the lack of flexibility and control frustrates users. The disappearance of the left navigation also violates the heuristic Consistency and Standards as the left navigation is used consistently elsewhere on the site.

Violations: User Control and Freedom, Flexibility and Efficiency of use, Consistency and Standards

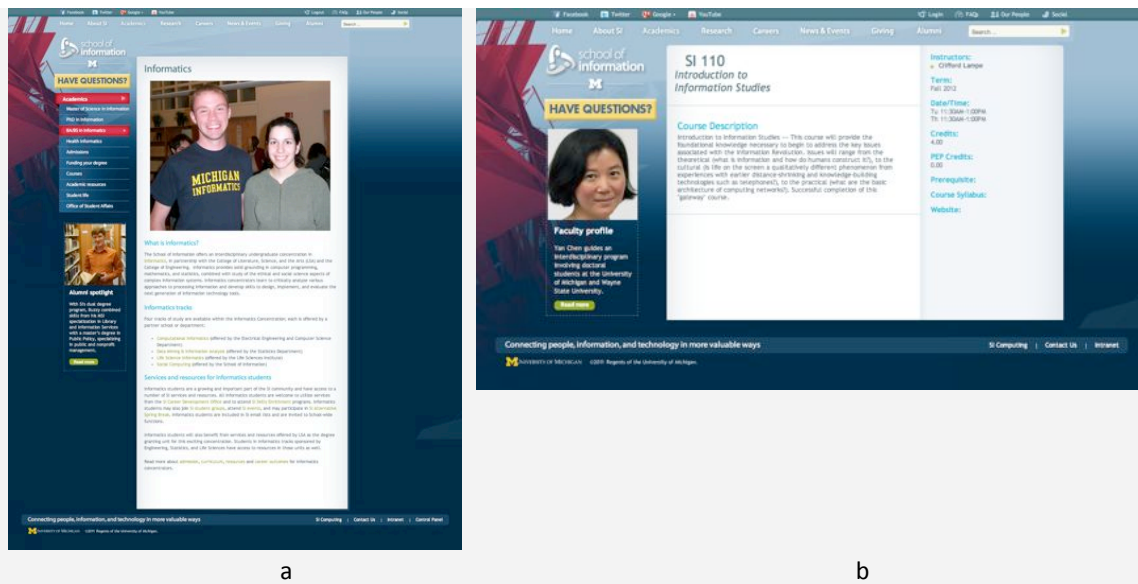


Figure 3: We can see the left menu bar present in figure a but disappeared in figure b

3a: <http://www.si.umich.edu/academics/informatics>

3b: <http://www.si.umich.edu/class/sync-100>

b). Same styled hyperlinks, menu options behave differently

For pages that use hyperlinks, often the hyperlinks are styled the same but behave differently. For example, on certain pages, clicking on a hyperlinked name of a person opens up an email client, while on other pages, it simply opens up the person's profile page. Thus a user may click a link expecting to get a profile page, but may be surprised when the link instead opens up an email client. As another example, the user may click on a link expecting to go to another section of the SI website, and may be surprised when in fact he is taken to a different website altogether (see Figure 4). As

external and internal links are styled the same, this does nothing to prevent users from performing an action which they want to undo, thus violating the heuristic of Error Prevention. In addition, the fact that is no standard on the website for styling links violates the heuristic of Consistency and Standards.

Violations: Consistency and Standards, Error Prevention

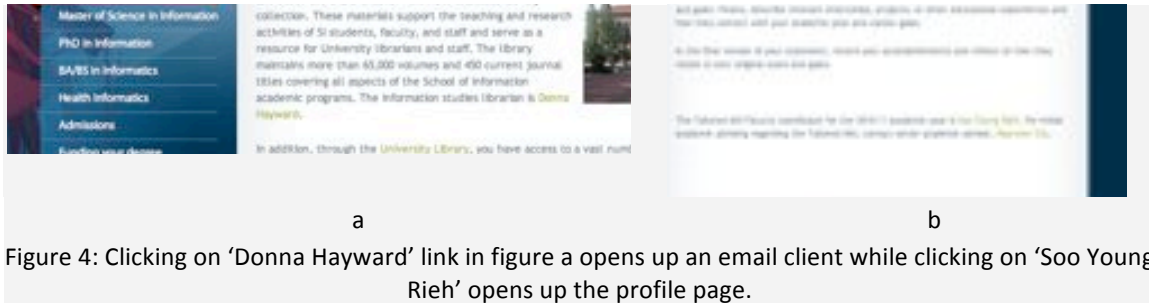


Figure 4: Clicking on 'Donna Hayward' link in figure a opens up an email client while clicking on 'Soo Young Rieh' opens up the profile page.

4a: <http://www.si.umich.edu/academics/resources/libraries>

4b: <http://www.si.umich.edu/academics/msi/tailor-your-msi-degree>

c) The left hand menu is not complete

As pointed out in the previous paragraphs, users tend to use the left hand side menu bar for navigating through all the pages. However, only links to selective pages are available through this bar. These links are sometimes repeated on the contents page along with links to other pages that are not included in the menu. There is no way to predict when a particular page body will contain links than what is listed in the menu (Figure 5). Again, this violates the Consistency and Standards heuristic as the convention on the site is to put all the links in the sidebar also in the body of the page. If links are present in one and missing in another, this might cause users to miss out on important information. Also, as experienced users may use the left navigation bar more than regular users, it violates the heuristic Flexibility and Efficiency of use since it effectively cuts off experienced users from their time-saving method of navigating.

Violations: Consistency and Standards, Flexibility and Efficiency of use.

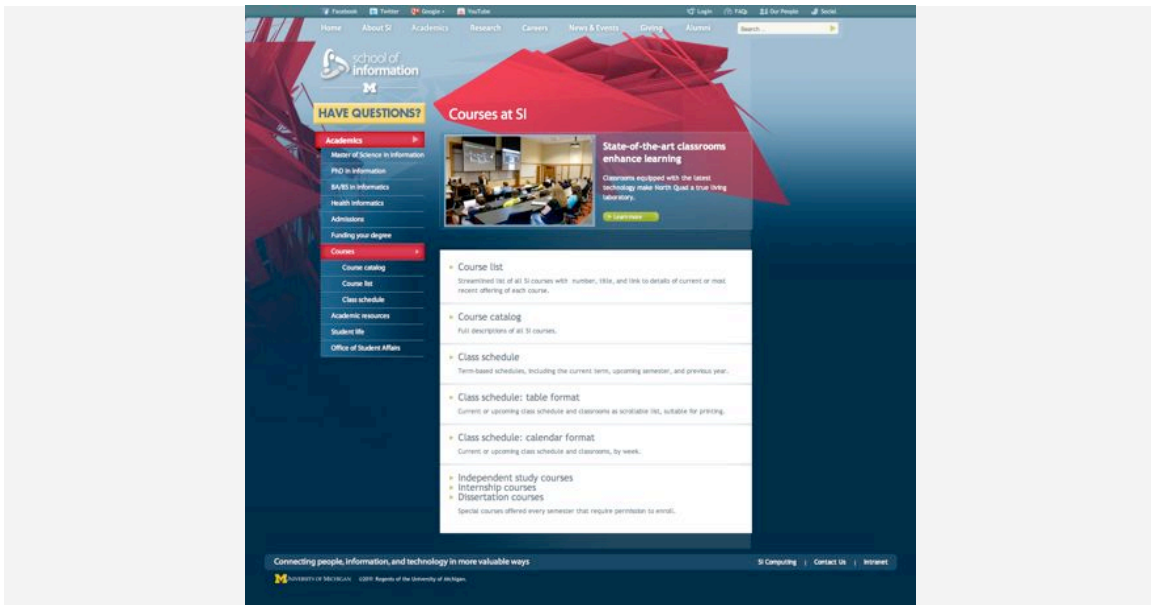


Figure 5: Links on the left menu bar are less than what are displayed on the contents page which might result in missing out on some information for the user.



<http://www.si.umich.edu/academics/si-courses>

Recommendations

Regarding the left navigational menu, the left menu should remain visible on all pages, as the user depend on it for navigation throughout the SI website. It should never strand the user on any page. Similarly, all links should be present in the page body and in the left navigation bar. In some cases, this might result in a lengthy menu bar. As a compromise, in these cases, including just the one page (instead of all the pages) will suffice. For example, the “Students Groups” page contains a list of well over 10 student groups in SI and in Rackham. When a user clicks on for example the “Health Informatics Society”, only one tab can be displayed (see Figure 5a) in the left navigation bar (rather than all 10+ student groups). This way, a user will recognize that there are links missing from the left navigation bar, but will understand that he can just go back to the “Student Groups” page to locate the rest of the links.



Figure 5a: Proposed redesign

Hyperlinks which perform similar functions should be styled the same in order to prevent unwanted mistakes. For example, differently colored hyperlinks could be used for opening new tabs and refreshing a page. For external links, one idea to consider is placing the  icon after links which open up an external page (e.g. [Some Random External Link](#) ). Also, if a link is going to open an email client, use the actual e-mail address rather than the person's name in the hyperlink (e.g. "Contact john.smith@xyz.com").

Finding 2: Inconsistent layout results in more cognitive load for the user

a) Inconsistencies in layout of the main region

Many variations of page layouts have been used. Some pages have a wide picture on the top followed by information while other pages have a small picture with text wrapped around it. There are also pages that just have text or links on them. Even pages at the same level of hierarchy or under a particular section are not consistent amongst themselves (Figure 6). This will prevent the user from creating a pattern in his mind. The users will not be able to tell where they should expect the page header or the relevant information. This primarily violates the principle of Flexibility and efficiency of use. This will reduce the flexibility and make the experience inefficient for expert users. Violations: Aesthetic and minimalist design, Flexibility and efficiency of use.

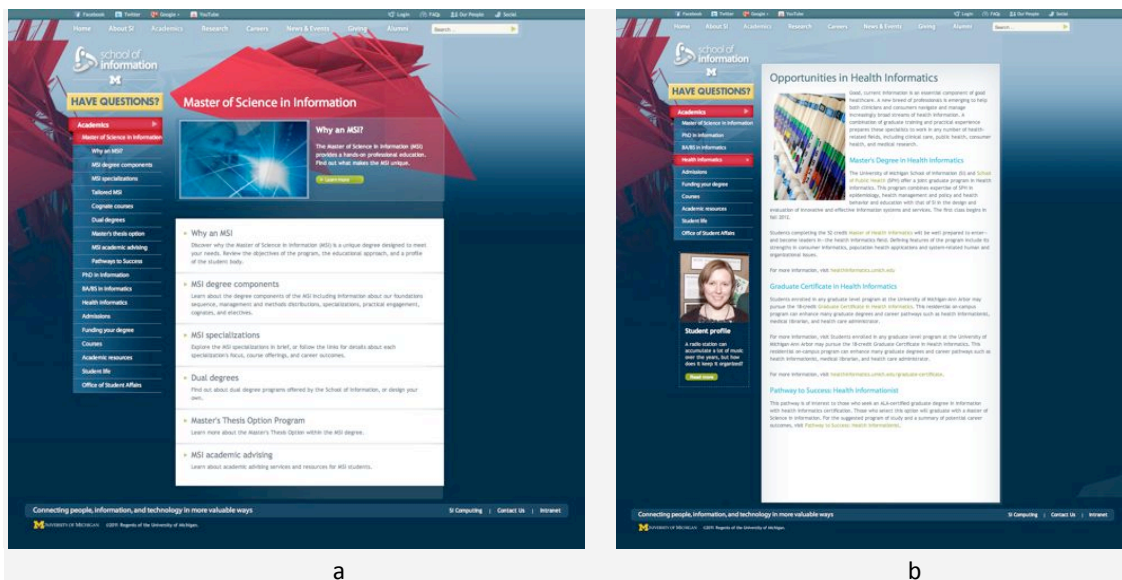


Figure 6: We can see the difference in layout of pages at the second level, comparing the MSI page with the Health Information page

6a: <http://www.si.umich.edu/academics/master-science-information>

6b: <http://www.si.umich.edu/academics/mhi/opportunities-health-informatics>

b). Inconsistent and Illogical Usage of the left and right panes.

On various pages, both the right and left panes may or may not contain content. There are several problems here. For one, the content contained in the panes often is not related in any way, shape, or form to the content in the body of the page. For example, in the “MSI Specializations” section, a “Donor spotlight” is shown in the left pane, despite the fact that the content of the page is not related to philanthropy. This violates the Aesthetic and Minimalist Design heuristic as the spotlights often do not contribute any additional value to the text in the body of the page.



Figure 7: From <http://www.si.umich.edu/academics/msi/msi-specializations>

In addition to people profiles, the right pane contains links on several pages. One example are each of the individual MSI Specialization pages, where the right pane contains the Tracking and Planning Sheet (see Figure 8 for an example), which allows students to track their progress towards their degree. However, as the site does not establish and follow a clear convention for how the right pane will be used, this violates Nielsen’s Consistency and Standards Heuristic. In addition, most pages on the site do not include any links on the right pane. This impairs usability because people will have little to no clue about which content they should expect in the right pane and thus risk missing relevant pieces of information.

Violations: Consistency and Standards, Aesthetic and Minimalist Design



Figure 8: <http://www.si.umich.edu/academics/msi/archives-and-records-management-arm>

Recommendations

A standard layout for pages on the same level should be used consistently

throughout the site. This will help users identify what type of information in each region of the page. For example the second level pages should always contain the main links and sub-sections inside that level and the third level pages should contain more information about the sections inside that third level page.

Also the people profiles which appear in the side panes, should be related in some way to the content of the page. One recommendation to consider is using a header or even text on the page to indicate how the profile is related. For example, on the Health Informatics page, a profile of a current health informatics student could be shown under a header like “Read about current Health Informatics Students.” This will help the user create a pattern in his mind as to where to look for relevant content on the page. Related to this point, we would suggest moving all content from the right pane into the body of the page. If it is desirable to keep content on the right pane, some convention or method needs to be implemented for ensuring that a user will not miss the content located there.

Finding 3: Issues with labels and styles negatively affect the learnability of the user.

a). Labels do not follow the real world convention

In the course list page, there is a search box to search for courses and the button next to it is labeled ‘Apply’ (Figure 10). Generally for a search function, ‘Search’ label is used and ‘Apply’ is used in case of applying filters to narrow down search results. This violates the principle of Match between the system and the real world, as it is a general convention to use ‘Search’ label for searching of items.

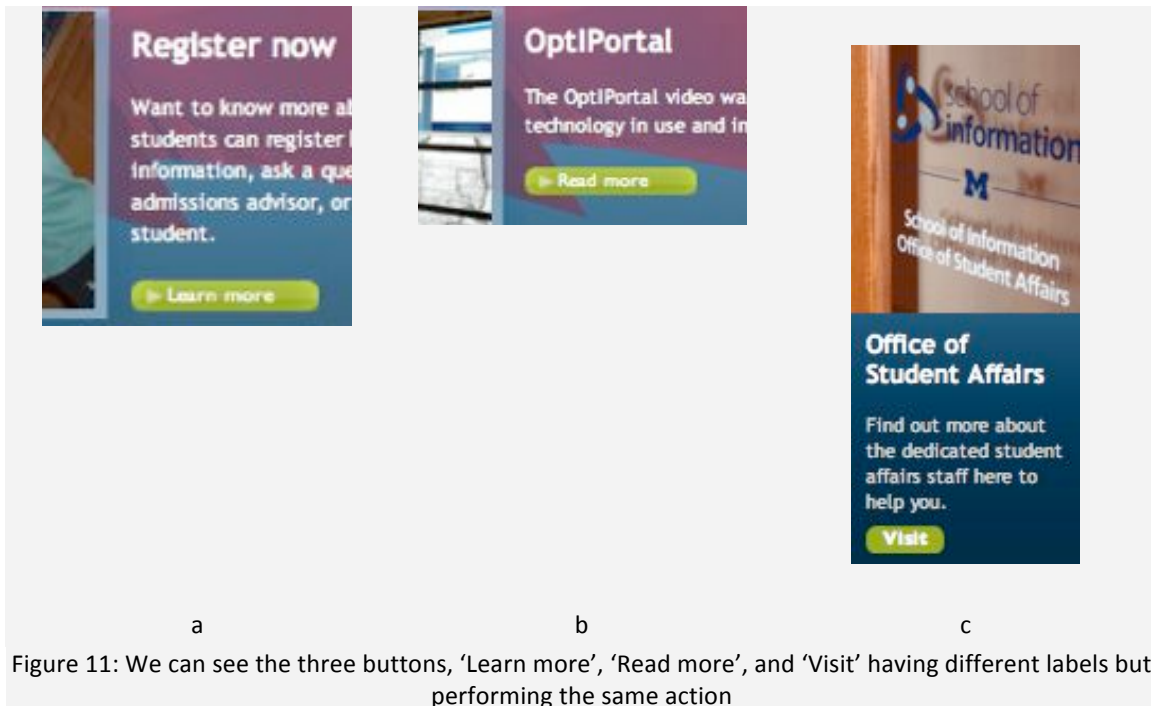
Also the buttons with same actions are labeled and style differently (Figure 11). ‘Learn More’, ‘Read More’ and ‘Visit’ buttons have been used in several places on the SI website. All of them take the user to another page providing more information about the object and they behave exactly the same. It is thus unnecessary and inconsistent to have three different labels and buttons to perform the same actions. This violates the principle of Consistency and Standards and Minimalist and Aesthetic Design.

Violations: Minimalist and Aesthetic Design, Consistency and Standards, Match between the system and the real world.



Figure 10: 'Apply' button is used after the search box instead of 'Search' button

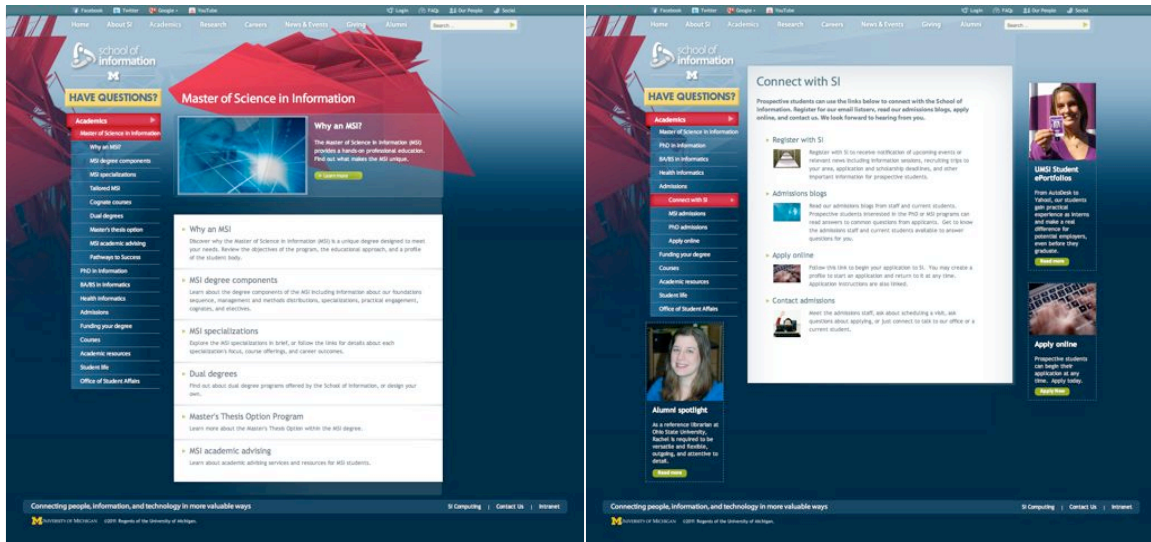
<http://www.si.umich.edu/academics/courses/master>



b). Different font styles and colors have been used across different pages

Bold font has been used for the high-level page description on some of the pages (Figure 12). That makes the page heavy and draws more user attention than needed. It appears jarring and cluttered. For instance, the font used on the [Check Application status](#) is different from the rest of the site. In addition, the button "Check my MSI or PhD application status" is a normal grey and boxy button instead of rounded and green like most of the rest of the site. This violates the principle of Consistency and Standards. The lower level links are green in color while the higher-level links are teal. There is no reason for the links to be of different color as the font size indicated the type of text. Since links have multiple colors, infrequent users will have to mouse over all the text to identify which of the text can be clicked. This primarily violates the principle of Consistency and Standards and Flexibility and efficiency of use.

Violations: Minimalist and Aesthetic Design, Consistency and Standards, Flexibility and efficiency of use.



a

b

Figure 12: Figure a and b shows the different style used for the same level of page. Moreover there is unnecessary use of bold font in figure b in the description text after the header 'Connect with SI'

12a: <http://www.si.umich.edu/academics/master-science-information>

12b: <http://www.si.umich.edu/academics/admissions/connect-si>

Recommendations

Appropriate labels should be used across all the pages. In case of searching for courses, 'Search' label should be used instead of 'Apply'. Also instead of using 'Learn More', 'Read More', or 'Visit' to perform the same type of action, we should consistently use a single label like 'Learn More' to provide more information about the topic under consideration.

A consistent font style and color should be maintained across the SI website to make the website aesthetically pleasant and to increase learnability and efficiency. The "Check Application" section should be similar in style to other pages on the site. Also same color should not be used for normal text and hyperlinks. Hyperlinks should be assigned a single, distinct color and normal text or headings should be in another color in order to increase learnability and to ensure user doesn't make mistakes.

Finding 4: Search functionality

a). Main Search functionality is broken

The main search functionality, which is present on every page, is broken in several aspects (Figure 13). To start with the presentation of search results, violates the heuristic principles of Match between the system and the real world and Consistency and Standards. The heuristic Help Users Recognize, Diagnose, and Recover from Errors is violated as the user is not given any tips for how to refine his search after user enters a wrong query (misspelled words) and the system gives a blank page. In addition, the Help and Documentation heuristic is violated since there are no instructions, which assist users in entering helpful search results in the first place. This lack of instructions also leads to a violation of the heuristic Error Prevention, as the design does not suggest to the user which terms they should be entering, which in turn leads to errors.

To give an example, let's examine the search box in the course catalog. Users might not realize that the course number is not part of the course description and type in something like "110", which returns only a blank page and nothing which might help the user recover from this error. If a user types in "Introduction", the search will return all results, which contain "Introduction" in the course title or in the course description. However, this requires that a user remember the course title or description, which violates the Recognition rather than Recall Heuristic.

Violations: Help Users Recognize, Diagnose, and Recover from Errors, Help and Documentation, Recognition rather than Recall, Match between the system and the real world, Consistency and Standards.

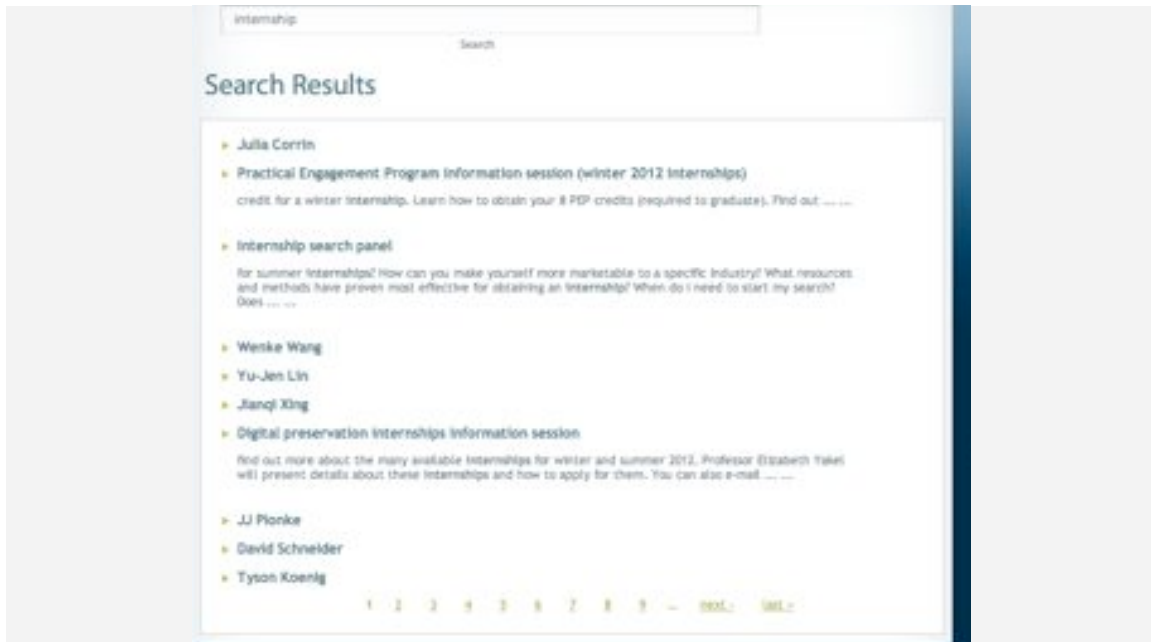


Figure 13: We can see the inconsistency in search results as some have description and some don't

b). Confusing search items in the Courses section

Another problem with the search functionality on the website - in particular on the course catalog - is that several of the search boxes require users to enter different information (Figure 14). For example, the search box in “Class Schedule” requires users to enter a “Catalog Number” and a “Title”. In contrast, the “Course List” page requires users to enter a word found in course title, and finally the “Course Catalog” requires users to enter in a word found in the course description. This violates the Consistency and Standards and Error prevention heuristic, as the search functionality is not consistent throughout the site. This risks confusing the user, as he may not realize exactly which parameters he is supposed to enter into each search box.

Violations: Consistency and Standards, Error prevention.



Figure 14: Confusing labels for the search box items

Recommendations:

There are several different mechanisms for addressing the problem of helping users recover from incorrect searches. For one, the site could provide suggestions of possible searches, which a user could perform instead of the incorrect search (e.g. “Did you mean this:”). Another method that might prevent errors in the first place (but could possibly be hard to implement) is an auto-recommender (similar to what Google has), which would cut down on misspellings and could suggest better searches. A third recommendation would be to include field which denote clearly what is to be entered into that field. Although this is implemented in the course catalog, just having one search bar could lead users to think that they can enter whichever terms they desire. Having search options similar to G-mail’s search mechanism would allow users to specify information as needed. For example, users might specify the course title, the course number, the instructor’s name or even which specialization it counts for. This has the advantage of giving the user several options so in case he does not remember one piece of information (e.g. the course’s title), he can simply neglect to enter it into the

corresponding field and instead enter in information which he remembers (e.g. the course number).

Finding 5: Usability strengths of the SI website

Although we emphasize problems with the left navigation bar, we found that for the most part, it remains consistent throughout the website. In addition, it provides users with an easy way to horizontally navigate between various subpages of the Academics section and (for the most part) shows the user which page he is currently on by highlighting the corresponding tab. In addition, several sub-pages within the Academics section are well organized (e.g. the MSI Specializations page), which assists users in locating information quickly.

Discussion:

It was debated among the team whether some of the recommendations were indeed severe. While some members of the team recommended redesigning the buttons and page layout, other members believed that these were more aesthetic preferences which would have very minimal impact on the learnability of the site. It is possible that some of the team felt this way because we have been evaluating the SI website for awhile now and have since grown fairly familiar with all the features. It is possible that if an evaluator who did not have as much experience with the website were to come and look at it that he would have very different points to make. However, the fact that some members of the team did in fact question the severity of the findings required that the members who supported these findings to justify their arguments and thus makes for a more compelling argument that these findings are in fact major. If the opinion is that in fact several of the findings that we have covered are minor usability flaws, it might be seen as a testament to the fact that most of the problems captured by the heuristic evaluation were not too severe. It is particularly notable that there was no problem that any group member rated as having a severity of "4", which again suggests that the website does not have any major usability issues that need to be addressed.

Conclusion:

Our Heuristic evaluation has led us to recommend that the navigation, search functionality, aesthetics, and layout of the SI Academics section can be enhanced by following our recommendations. We believe that many of these recommendations will address several of the issues that were revealed by the other usability testing methods our group has conducted this semester, namely the interviews and the comparative evaluation. In addition, the heuristic evaluation has revealed several points that were missed by these earlier methods. Knowing about these issues now will help us to better design our usability testing as well as our surveys. Through the heuristic evaluation, we have developed several theories about what issues hinder users from effectively using the site. In later usability testing, we will have the opportunity to examine whether these theories do in fact hold up. This will provide us with more data points which in turn will help us further refine our final usability recommendations to our client.

References

<http://www.si.umich.edu/academics>

Nielsen, Jakob. Heuristic Evaluation. (1994). In J. Nielsen & R. L. Mack, (Eds.), Usability Inspection Methods. New York, New York: John Wiley & Sons.

Appendix A: Evaluators and Tools

This table contains demographic information about the evaluators and the tools they used during their individual evaluations.

Evaluator	Bethany	David	Mukul	Shuo
Age	36	25	24	24
Sex	Female	Male	Male	Male
Computer Model	Dell Inspiron	Macbook Pro	Macbook Pro	Macbook Air
Web Browser	Internet Explorer 8	Google Chrome	Google Chrome	Google Chrome 17.0.963.79
Operating System	Windows 7	Mac OS X 10.6.7	Mac OS X 10.7.1	Mac OS X 10.7.3
Monitor Size	17"	13"	15"	13.3"
Monitor Colors	64-bits	32-bits	32-bits	32-bits
Monitor Resolution	1600*900	1280 * 800	1280 * 800	1280 * 800

Appendix B: JAKOB NIELSEN'S USABILITY HEURISTICS

These are Jakob Nielsen's ten heuristics and a brief description of each one. These heuristics and descriptions were taken from J. Neilson and R. L. Mack's book Usability Inspection Methods published in 1994 (pg 49)

No.	Heuristic	Brief Description
1	Visibility of system status	The system should always keep users informed about what is going on, through appropriate feedback within reasonable time.

2	Match between system and the real world	The system should speak the users' language, with words, phrases, and concepts familiar to the user, rather than system-oriented terms. Follow real-world conventions, making information appear in a natural and logical order.
3	User control and freedom	Users often choose system functions by mistake and will need a clearly marked "emergency exit" to leave the unwanted state without having to go through extended dialogue. Support undo and redo.
4	Consistency and standards	Users should not have to wonder whether different words, situations, or actions mean the same thing follow platform convention.
5	Error Prevention	Even better than good error messages is a careful design which prevents a problem from occurring in the first place.
6	Recognition rather than recall	Make objects, actions, and options visible. The user should not have to remember information from one part of the dialogue to another. Instructions for use of the system should be visible or easily retrievable whenever appropriate.
7	Flexibility and efficiency of use	Accelerators-unseen by the novice user-may often speed up the interaction for the expert user to such an extent that the system can cater to both inexperienced and experienced users. Allow users to tailor frequent actions.
8	Aesthetic and minimalist design	Dialogues should not contain information which is irrelevant or rarely needed. Every extra unit of information in a dialogue competes with the relevant units of information and diminished their relative visibility.

9	Help users recognize, diagnose and recover from errors	Error messages should be expressed in plain language (no codes), precisely indicate the problem, and constructively suggest a solution.
10	Help and documentation	Even though it is better if the system can be user without documentation. Any such information should be easy to search, focused on the user's task, list concrete steps to be carried out, and not be too large.

Appendix C: Severity Rating Scale

These are the severity scores and explanations we used to determine the severity of the usability issues we discovered.

Rating	Meaning
0	I don't agree that this is a usability problem at all
1	Cosmetic problem only: need not be fixed unless extra time is available on project
2	Minor usability problem: fixing this should be given low priority
3	Major usability problem: important to fix, so should be given high priority
4	Usability catastrophe: imperative to fix this before product can be released

Appendix D: Evaluator Key

This table shows the code of each team member. These codes are used in the consolidated heuristic evaluation in the next Appendix under the column labelled “Evaluator” to refer to members of the team.

Code	Evaluator
BH	Bethany Huseman
DR	David Ross
MB	Mukul Bisht
SY	Shuo Yang

Appendix E: CONSOLIDATED HEURISTIC EVALUATIONS

In the consolidated findings table, The column labelled “Evaluators” consists of the initials of the evaluator(s) who noticed the problem listed in a given row. The column labeled “Individual Severity” consists of the severity ratings of each of the evaluators who noticed the problem. We used the convention of including each member’s severity rating in the order in which the names are listed in the “Evaluators” column. For example, if David and Shuo noticed the same heuristic violation, their initials would be listed in the Evaluators column as “DR, SY”. If David rated the severity as 3 and Shuo rated it as 2, the ratings would be listed as “3,2” (in the same order as the names are listed in the “Evaluators” column).

“Group Severity Rating” refers to one rating which the entire group agreed upon at the meeting. Problems with a group severity rating of 3 or 4 were considered to be important. The column labelled “Section” notes which part of the site the error can be found on. “Heuristics Violated” identify which of Nielsen’s 10 heuristics were violated, following the order listed in Appendix B. Finally, “Proposed Solution” column refers to the fix that the group came up with for solving the identified problem.

As a quick note, the “Group” and “Individual” Severity Ratings refer to the severity of the problem, not the degree to which each individual heuristic is violated. The more heuristics were violated, the more likely a problem was to be rated as a 3 or 4 in severity by group members.

No.	Brief Description of Issue	Heuristics Violated	Individual Severity	Group Severity	Evaluators	Proposed Solution
1	<p>Have Questions' button is the most prominent button on the screen. It does not do much apart from opening up a light box where users can submit questions. It grabs most of the attention of the user and as it is not one of the primary buttons, it distracts the user. Also Its not clear what this should be used for. Is it for all issues relating to the site, or is it to answer specific questions about issues relating to the program?</p> <p>After we open it, it is not easy to close as we have to select the 'Close' button and then click on it to close it, unlike the basic interaction of light box in which we can click anywhere to close it.<i>(Section: All SI pages)</i></p>	2,3,4,10	3,3,3,2	3	BH, DR, MB, SY	<p>This button should be positioned below all the other links. The font size used for this should not be bigger than that being used in the menu. Yellow color of the button will make it prominent enough for the users to notice the button and post questions. This should be grouped with a link to FAQs. Users would rather search for existing answers before they go ahead and post a question and wait for a reply.</p>
2	<p>When the user hovers over the "Logout", the tooltip says "login". This is contrary to what the user would expect and adds confusion.<i>(Section: All SI pages)</i></p>	2	2	1	BH	<p>Make the tool tip say "logout" when the user is logged in</p>

3	The Academics link in the left hand menu is not clickable. When exploring the website the user tends to use the left menu a lot. He would naturally tend to click on the Academics link on the left to go to the home page of Academics region. The only way for him to go there is by clicking on the Academics link in the Primary top-level menu bar. <i>(Section: academics)</i>	2,3	2,2	2	BH, MB	Make the Academics link clickable.
4	The design of the 'Read More' button at the 'Admissions' and for the 'Alumni Spotlight' is different. <i>(Section: academics)</i>	4	1,2	2	BH, MB	Read More button's design and text should be always consistent
5	The logo of School of Information is below the menu bar which gives it a lower priority than other elements on the page. This violates the heuristic of information appearing in its natural order. <i>(Section: academics)</i>	2	1	1	MB	School of Information logo should be given first preference in terms of visual flow on the page.
6	The SI abbreviation is not defined anywhere, so a prospective student who doesn't know what SI means will get confused. <i>(Section: academics)</i>	2	1	1	MB	The SI abbreviation should be defined somewhere so that a new user understands that it means School of Information.
7	The bullet point design for the quick links is inconsistent and is different from each other. <i>(Section: academics)</i>	2,8	2	1	MB	Keep the bullet points consistent

8	No visual hierarchy on the page and all the elements look disconnected from each other which might create confusion in the mind of the user. For example, even if the user is on the Academics page, the image is of the hall and Admissions is displayed below it. All the nearby elements do not seem to have any kind of grouping with the image. <i>(Section: academics)</i>	2	2	2	MB	There needs to be grouping of the elements which are together. Based on Gestalt's law of grouping, elements which are closer seem to form a group. So we need to ensure that the elements which are together should be together and should have some kind of connection.
9	Different layouts have been used for links under Master of Science in Information, Phd in Information and BA/BS in informatics. <i>(Section: academics)</i>	4	2	2	MB	This is a cosmetic problem and most likely the same user would not visit both MS and PhD sections. However, ideally using the same layout will give the user a consistent feed forward of what they may expect by clicking on one of the links on the menu.

10	The Academics page does not have a page title. This is inconsistent with the rest of the website. The most prominent word that appears almost like a title is Admissions. It might confuse the users to see a page titled Admissions when they have actually clicked on academics. Also, if the user is on the page for an extended period, there is a chance that he may forget that he is actually on the Academics page and feel he is actually on the admissions page. <i>(Section: academics)</i>	1,4,6	2	2	MB	Add a page title to the Academics page
11	There is some overlap in the links under the Academics Menu on the left and the Academics region on the right but not all the links are same. This can be confusing to the user. <i>(Section: academics)</i>	4	2,3,2,2	3	BH, DR, MB, SY	Links should either be completely match the menu on the left or be completely unrelated to the menu.
12	The profiles, Advising, Alumni Spotlight, etc regions keep changing on every page. It makes it difficult to understand the relevance of that information with the changing pages. <i>(Section: academics)</i>	4	3,3,3	3,3,3	BH, DR, MB	Make these regions relevant to the pages.
13	Users would be lost if they hit the "Learn more" on the register now area. <i>(Section: academics/admissions)</i>	1,3,4	3,3,2,3	3	BH, DR, MB, SY	Include breadcrumb trail

14	Both hyperlinks on the Register Now page-- "Register with SI" and "Want to talk to an admissions advisor..."--seem to go to the same Register now form page. Having two links suggests to user that there are two different relevant pages to visit.(Section: <i>academics/admissions</i>)	8	2	1	BH	Reword this page so just one link goes to the form, or integrate the form into a clear page so no intervening page is needed
15	The design of the page is different from other pages. The font used on the page is different from the rest of the site. In addition, the button "Check my MSI or PhD application status" is a normal grey and boxy button instead of rounded and green like most of the rest of the site. This violates consistency for the user.(Section: <i>academics/admissions</i>)	4	1	1	BH	If possible, change the skins of these forms to match those used elsewhere in the site.
16	The left navigation area of the online application system is inconsistent with other pages.(Section: <i>academics/admissions/apply-online</i>)	4	1	3	SY	Make left navigation consistent from page-to-page
17	A breadcrumb is used on the page to go back to the MSI Admissions links creating inconsistency in the design.(Section: <i>academics/admission-application-deadlines</i>)	4	2,3,2	2	BH, DR, MB	Use this bread crumbing consistently throughout the site

18	Both the course list and course catalog page have almost similar content and this is confusing for the user as course description can be found in the course catalog page directly while the same information (and more) is available in the course list page. <i>(Section: academics/courses)</i>	4,6,8	3,3,2,1	2	BH, DR, MB, SY	Combine the course list and course catalog section.
19	The 'Apply' label on the search button is not correct to search for results and can confuse the user. <i>(Section: academics/courses)</i>	2,4	2,3	2	MB, BH	Use the more universally understood "Search" instead
20	The search box does not give any suggestions and the user has to rely on his memory to search for courses. <i>(Section: academics/courses)</i>	5,6	2	2	MB	Set default text value in the search box.
21	Currently user has to click through course list page by page. Link to page through is only present at the bottom of each list. Both of these features add to the amount of time and effort required to browse through the course list. <i>(Section: academics/courses)</i>	7	3	2	BH	Give the user the option to view all the courses in a single page
22	The Course Title search system does not try to correct mistakes of spellings of the users and just shows no results in case of spelling mistakes. <i>(Section: academics/courses)</i>	5,9	2,3	2	MB, BH	Add spelling correction function to the search.

23	The labels on the Class Schedule page are different from others, like 'Catalog number' does not immediately signify what it means. Also the search box is labeled 'Catalog number', but in the table it is called 'course number' which confuses the user. <i>(Section: academics/courses)</i>	2,4	2,2	2	BH, MB	Make the labels consistent with others'.
24	Being able to sort by column headers is an expected table feature, but the font and color of the headers of the Class Schedule table may cause the user to overlook this helpful feature. <i>(Section: academics/courses)</i>	2,4,10	2	2	BH	Adjust the font and color.
25	The design of this page is completely different from the rest and the links are also colored/styled differently. <i>(Section: academics/courses)</i>	4,5	2	2	MB	Make this page consistent with other pages.
26	The mouse icon in the calendar grid showing the courses is used to indicate two different functions that the user is supposed to perform, namely clicking and hovering. <i>(Section: academics/courses)</i>	1,4	2	2	DR	Make the mouse icon clear to the users.
27	Labels and grouping of links is confusing for the user as Academic Resources contain 'Skills enrichment program' inside it as a sub-link. <i>(Section: academics/courses)</i>	2	3,2	2	DR, MB	Make the labels and link clear to the users.

28	The left hand side menu disappears once a user clicks on a link in the course list. Instead, another irrelevant region 'Alumni Spotlight' shows up. The users will get lost due to this as they will not be able to go back unless they use the browsers back button. <i>(Section: academics/courses)</i>	3,4,5,9	3,3,3	3	BH, DR, MB	Add navigation to this page
29	"Independent study courses" and "Internship courses" don't have description like other similar links on the page. Also their styling is different from the rest of the links on the page. <i>(Section: academics/courses)</i>	4,8	1,2	1	MB, SY	Add short descriptions.
30	After clicking on any course item from the list, the user is taken to a new page with no way to go back, other than the browser's back button. In fact the entire left navigation has disappeared, leaving the user extra uncertain where they are in the website. <i>(Section: academics/courses)</i>	1,3,5,9	1,3	1	MB, BH	Keep the left hand menu constant. Alumni Spotlight may be shown on the right of the page
31	There is lot of information on this page but there is little difference between the links on the page and the normal text. <i>(Section: academics/courses)</i>	4,5	1	1	MB	Add styles.

32	The titles of the courses in the course catalog are not links. Thus, the only way for users to reach the complete description of the course is to go back to the course list and then click on that course. This experience can get very annoying for the users. <i>(Section: academics/courses/master)</i>	4,7	3,2	3	MB,BH	Link the course titles to go to the full description of the courses.
33	The navigation is not always consistent from page to page. If you select a course in the course list, the site takes you to a different page altogether. <i>(Section: academics/courses/master/list)</i>	3,4,5	3,3,3	3	BH, DR, MB	Redesign the navigation according to the content of pages.
34	The Course Title search box does not give any suggestions and the user has to rely on his memory to search for courses. <i>(Section: academics/courses/master/list)</i>	5,6,9,10	3,3,3	3	BH, DR, MB	Set default text value in the search box.
35	It is almost impossible to distinguish between the asterisk used for *recommended more than one student and the symbol used for bullet points. <i>(Section: academics/courses/recommended-cognate-courses)</i>	4	1	1	MB	A different symbol should be used for bullet points.

36	<p>On the Class Schedule page, there is no way for users to group the courses by time. The most common use case to go to the class schedule is to ensure that the classes the users wish to register for do not overlap. However, the page does not offer that view. This will force the users to create pseudo timetables only to check for overlaps.<i>(Section: academics/courses/master/list)</i></p>	7	3	3	MB	Allow the users to group courses by time.
37	<p>There is no way, other than the browser's back button, that the user can go back after clicking on the 'Independent Study Courses', 'Internship Courses', or 'Dissertation Courses'. Also the title displayed on the links is different from the main titles of the pages, which can create confusion in the mind of users.<i>(Section: academics/courses/si-independent-study-courses)</i></p>	1,2,3,4,5,8	3,3	3	MB, BH	Add navigation to these pages.
38	<p>A long list of Cognate courses has been listed while only a few of them count towards the Cognate degree. Visitors of this webpage are aspiring SI students so the other information will be irrelevant for them. There is a process explained for how students can find out if the course is counted.<i>(Section: academics/courses/student-recommended-cognate-courses)</i></p>	6,8,10	3,3	3	DR, MB	List only the cognate courses which count towards the degree on this page and provide a link to see all the other courses. Alternative would be to indicate which courses count towards the degree without the users having to go through the process defined on the page.

39	First bullet point under Cognate courses (Course 498) has not been separated from the preceding text. <i>(Section: academics/courses/student-recommended-cognate-courses)</i>	4,9	1	1	MB	Bullet points should start on the next line.
40	The primary menu bar on the left side has an inconsistent design for this page as it shows secondary level pages links on the left menu bar. Ex- 'Diversity Scholarships', and 'External Scholarships' appear as links on the left hand side menu bar which is totally inconsistent with the design. <i>(Section: academics/funding/scholarship)</i>	4	3,3,1	3	BH, MB, SY	Redesign the secondary level pages links.
41	Office of student affairs box in right-hand column has green button marked "Visit". The meaning is ambiguous to the user as there are similar buttons on the page which function the same and have the label 'Learn More' on them. <i>(Section: academics/funding-your-degree)</i>	4	2	1	BH	Change button to something like "Learn more"
42	There is no index area of "Funding your degree", which is inconsistent with other pages. <i>(Section: academics/funding-your-degree)</i>	4	2,2,1	2	DR, MB, SY	Add index area to make it consistent with other pages.

43	Clicking on 'Assistantships' in Academics left navigation expands out to reveal the sub-navigation of the 'University Library Associates'. This is not indented to show it is a sub-topic, making it appear to the user that the navigation has just mysteriously and unexpectedly grown by 1 item. <i>(Section: academics/funding/assistantships)</i>	1,2	3	3	BH	Be sure to indent navigation appropriately to convey the navigation hierarchy.
44	The font and style of these pages is completely different from that used on the other pages. <i>(Section: academics/master-science-information)</i>	4	1	1	MB	A consistent font should be used
45	Colors used for links are different on different pages. Green colored text is used to indicate links on Tailored MSI page while Bluish Grey text is clickable on the Dual degrees page. This way the users will not know what text will be clickable unless they hover over the text. <i>(Section: academics/master-science-information)</i>	4,7	1	1	MB	Maintain a single color for linked text
46	The links behave differently on these two pages. The links under MSI specialization just refresh the page partially while the links on the Dual Degree program open up a new tab. <i>(Section: academics/master-science-information)</i>	4	2,2	2	BH, MB	Interaction after clicking on links should be kept consistent

47	<p>Once the user clicks on a link on the MSI page there is no way for him to go back without knowing exactly where he came from or using the browser's back button.<i>(Section: academics/msi/msi-degree-components)</i></p>	1,3,5,6	2,3	3	MB, BH	<p>A good design should not depend on browser's back button. Breadcrumbs may be used or an option to go back to where they came back may be provided within the additional resources of the new page. This way at least a two way navigation would be provided to the users</p>
48	<p>Courses listed on this page are not linked. Most of the users coming to this page will be prospective students. They will not be able to tell much just based on the course name and number. Currently, although they can see the list of mandatory courses they have to find another path to find more information about the courses.<i>(Section: academics/msi/msi-degree-components)</i></p>	6,7	2,2	2	DR, MB, BH	<p>We can make the course lists as hyperlinks which can take the user to the course details section so that they can read more about it.</p>

49	Clicking on the buttons within the side panels with people's pictures takes users to a new page and the left hand side menu changes at times. This will confuse the user and the user may get lost in the site. <i>(Section: academics/msi/why-msi)</i>	3,4,9	2	2	MB	The left hand side menu should remain constant. All the options should be included in the left hand side menu and the relevant option should be highlighted. However, the users should have the flexibility to navigate to the page they came from without depending on the back button. Alternative option is to open the link in a new tab or provide this information in a pop up
50	This page contains a lot of text that is (arguably) irrelevant toward the page's purported goal of selling people on the MSI program. <i>(Section: academics/msi/why-msi)</i>	8	3	2	DR	Make it concise and focus on the key points.
51	Users would be lost if they hit the "Read more" on the Optportal area. <i>(Section: academics/phd-information)</i>	1,3,4	3,3,2,3	3	BH, DR, MB, SY	Include breadcrumb trail

52	<p>The Additional Resources region is not always visible. It is unlikely that users will easily be able to find these resources when they are on the website. Not all the menu options have this region on the right and users are more likely to scroll to the bottom of the main page before they look for Additional Resources. Thus, the region is not visible at that time when the students start looking for Additional Resources.<i>(Section: academics/resources)</i></p>	2,4	3	3	MB	<p>Keep the right hand side region fixed while only the main content page scrolls. Alternative solution is to have the links at the bottom of the Content page. However, a trade off would be that a frequent user would have to scroll to the bottom of the page before he can access the links.</p>
53	<p>Clicking on the link 'Donna Hayward' opens up the email client with writing an email option. Generally clicking on a staff name would open the details about the staff and this inconsistency can confuse the user.<i>(Section: academics/resources/libraries)</i></p>	4,5	3	3	MB	<p>Open the details when users click staff's name.</p>
54	<p>Clicking on some links on the page which have the same styling refreshes the current page, some links open new tabs and some open email client. This is very confusing for the user and he is bound to make mistakes.<i>(Section: academics/resources/libraries)</i></p>	4,5,7	3	3	MB	<p>Make consistent settings of opening new pages.</p>

55	Once the user clicks on a link within Additional Resources there is no way for him to go back without knowing exactly where he came from or using the browser's back button.(Section: <i>academics/resources</i>)	1,3,5,6	2	2	MB	A good design should not depend on browser's back button. Breadcrumbs may be used or an option to go back to where they came back may be provided within the additional resources of the new page. This way at least a two way navigation would be provided to the users
56	The style of this page is different from other pages which might confuse the user.(Section: <i>academics/staff members</i>)	4	1	1	MB	Make them consistent with other pages.
57	The style and color of links is different on the page which might confuse the user.(Section: <i>academics/student-life</i>)	4	1	1	MB	Make them consistent with other pages.
58	The styling of this page, the side bar styling is different from other pages which again confuses the user. The content of the right side bar is different for different courses and similarly with professors.(Section: <i>class/sync-10</i>)	4,8	2	2	MB	Make this page consistent with other pages.
59	If a user clicks on one of the links, the user is taken to a page with most of the information blank on the Details section.(Section: <i>people/marsha-antal</i>)	4	2	2	MB	Correct this bug.

Login box prompts for "the password that accompanies your username." It is not clear that this means the UM-Windows active directory password instead of the Kerberos one.	si.umich.edu					3						Say to enter your UM-Active directory password
Users may not be uncertain what the UM-Windows active directory password is.	si.umich.edu										3	Give a link to helpful documentation about the two different passwords right by that part of the form.
Duplicated navigation in Academics main box does not completely match the terms and order of the left navigation. User has to determine if they are the same or different.	Academics				3						3?	
How are BA/BS in informatics & Health informatics related?	Academics		2?									In a way, this is competing relevant bits of information, J? Or is it using information natural and logical?
Nothing happens when users click on "Academics" in the left navigation. The navigation items below it are clickable.	Academics		2									Users expect to be able to click on the Left navigation "Academics" and go back to the main academics page. Also a bit of a violation of undo/redo heuristic E.

Placement of "Courses" in the left navigation doesn't seem to be in the logical progression of steps.	Academics		1									I would put it before academic resources
Left navigation Pathways to success and Dual degrees are not matched in the main window navigation making the user work a bit harder to be certain the left and central navigation are the same	Academics - Master-science-information				2							
Clicking on Learn more button in box about Why an MSI just takes the user to the Why an MSI page that the left and central navigation lead to.	Academics - Master-science-information							2				
Return to list of MSI specializations link-- Links like this are not present on all of the Academics pages on a similar level.	Academics - MSI - Archives-and-records-management-arm				2							

<p>This page is divorced from the Academics navigation. Only way for user to find it (other than searching) appears to be through the specific specializations pages.</p>	<p>Academics -Msi - About-si-programming-requirement</p>													<p>2--Not Sure which this violates, Ditto for the Statistics requirement page http://si.umich.edu/academics/msi/about-si-statistics-requirement, might be helpful to at least include these as links in the third column of the MSI degree components page</p>
<p>It is not clear to the user who Contact us is referring to in the Certificate section. This is a problem if the user does not want to allow their computer to just open an email program to send an email.</p>	<p>Academics - Msi - Dual-degrees</p>	3												
<p>A PhD in Information in main box navigation does not match term in left navigation</p>	<p>Academics - Phd-information</p>				2									
<p>This is not bread-crumbed into the rest of the Academcis navigation</p>	<p>http://si.umich.edu/node/1055</p>	2											<p>Would be helpful to have this as a Right column link from the Technology section</p>	
<p>No links provided for user to read more about the two directores</p>	<p>Academics - -Phd-Phd-information</p>						1							

Alternating SI logo and Deep-blue logo provides visual interest, but indicates to the user there is something different between those marked with one logo, and those marked with the other	Academics - Phd - Doctoral-student-theses				1							
Informatics tracks section of page should probably mention Health informatics to reduce user confusion about how these all relate	Academics - Informatics											Not sure which heuristic this might be
Hyperlinked text appears in third column, which is empty in higher level	Academics - Admissions				1							
Register now is a page that is orphaned from the heirarchy, it has no breadcrumbing. It must be part of academics, and yet URL doesn't confirm this.	http://si.umich.edu/node/2477	3										
Both hypelinks on this page-- "Register with SI" and "Want to talk to an admissions advisor..."--seem to go to the same Register now form page. Having two links suggests to user that there are two different choices.	Academics - Admissions - Register_now				2?				2			Why even have this intervening page? Could this be clearly conveyed right in the form?
Clicking on hyperlink in Register now's window unexpectedly opens a new window.	Academics - Admissions - Connect_request	3										Other links also open new windows without advance warning.

<p>The URL shows this is part of Admissions, but the Navigation only lights up Academics. There appears to be no direct way from the Academics page to the registration form.</p>	<p>Academics- Admissions- Connect-request</p>	<p>3</p>											
<p>Clicking on any of the four subpages abandons the navigation cues. Only Academics remains red in the left nav, even though the path is Academics-Admissions-Connect with SI-Register with SI/Admissions blogs/Apply online/Contact Admissions</p>	<p>Academics - Admissions - Connect-si</p>	<p>3</p>											<p>Actually, this seems to be true of all subpages at this level of the hierarchy</p>
<p>Up til this level, clicking on left nav which is duplicated in the main window has expanded another layer of left navigation, but this time it doesn't</p>	<p>Academics - Admissions - Connect-Si</p>				<p>1</p>								
<p>Apply online doesn't seem to fit the theme of this page. Why is it a choice?</p>	<p>Academics - Admissions - Connect-si</p>		<p>2</p>										
<p>Unclear from the form how the user's private information will be protected or used</p>	<p>Academics - Admissions - Connect_request</p>	<p>2?</p>											

Form leaves user wondering exactly how it will work. Is this all? Will the user be emailed, called, sent RSS feeds? Are there more steps? How can the user unenroll?	Academics - Admissions - Connect-request	2										
Third column now has boxes with pictures, instead of being empty or having just hotlinks	Academics- Admissions- Connect-si				0							
Green buttons in third column don't have the arrow/triangle that the buttons on other screen have	Academics - Admissions - Connect-si				1							The missing green arrow seems to be consistently lacking in the third column of all of the pages, and in the student profile of the first column
What if I want to submit a question or comment without signing up for listserves? What if I only want some of the information, can I choose?	Academics - Admissions - Connect-request			2?								
The 3rd column offer links to TOEFL and GRE websites, but these group more naturally with admissions requirements	Academics - Admissions - Apply-msi- admissions-blog		2									
Users may wonder why is the email address the same to contact the admissions office and to talk to a current student?	Academics - Admissions - Contact- admissions		2?		2?							

The design of the page is different from other pages. The font used and the button "Check my MSI or PhD application status" is a normal grey and boxy button instead of rounded and green like most of the rest of the site.	Academics - Admissions - Application_statuses				1							Ditto for register with SI form. The button does match standard buttons of other websites though.
TOEFL is not hotlinked, even though it is hotlinked on the similar Masters page	Academics - Admissions - Phd-application-requirements				2							
Office of student affairs box in right-hand column has green button marked "Visit" Does this mean visiting them somehow, going to a webpage, learning more? Other similar buttons say "Learn more", "Read more", ...	Academics - Funding-your-degree		2?		2							Not quite as bad, but still not "more" is the Scholarships button on http://si.umich.edu/academics/funding/diversity-scholarships
Clicking on SI Scholarships in left navigation expands out to reveal Diversity Scholarships and External Scholarships. However, these two choices are not indented, obscuring the hierarchy and making it appear to the user that the navigation just mysteriously grew by 2 items.	Academics - Funding - Scholarships	3	3									Not sure if this is a violation of real world expectation of indents for subparts of hierarchies or of keeping users informed of where they are and what their options are.
Page says it is about scholarships, but it includes some loan only sources	Academics - Funding - External-scholarships				2?							Not sure which violation this is

Has the back-to-higher-page link	Academics - Funding - Gsigra-success-stories				2							Ditto for other green links on Assistanships page
Clicking on Academics left nav expands out the University Library Associates. This is not indented to show it is a sub-topic making it appear to the user that the navigation has just mysteriously grown by 1 item	Academics - Funding - Assistantships	3?	3?									
User must decide which of the 3 similar looking sub-navigations are the ones he/she needs. What's the difference between a course catalog and course listings?	Academics - Si-courses		2									Is explained in the main window when I think to look there
Course list and Course catalog in main page don't match order of left navigation	Academics - Si-courses				2							
Independent study, Internship courses, and dissertation courses are lost at the bottom of the main window and not represented in the left nav. Are these links the the only way for users to reach them?	Academics - Si-courses	2?					2?					Not sure of violation or severity

User must take the time to examine both the course list and course catalog, although they appear to be very similar.	Academics - SI-courses		3		3			3		3?			Have no idea which this violates, Hmm actually, I guess it is the match between system and the real world
User would benefit from easy-to-access help on how to enter searches in the Course Catalog "Description contains" search box	Academics - Courses - Master											3	Ditto Class schedule
The course title in the Course Catalog is not clickable, even though it is clickable in the course list.	Academics - Courses - Master				2								
User must wonder how to use the search course title box. Should they start with the number, or use keywords?	Academics - Courses - Master - List											3	Would be nice to have access to instructions
Searching course title box for information behavior returns a blank screen and the search box says Automotive. User must wonder what went wrong and how to get the wanted results	Academics - Courses - Master - List	3										3	Not sure if this violates telling me the state of the system, or explaining my error and how to recover from it
What does the green Apply button do?	Academics - Courses- Master - List		3										Ditto course catalog and Class schedule

Search box is called "Catalog number", but the table column is called "Course number" which obscures what information is supposed to be entered in the "Catalog number" search box	Academics - Courses - List				2							Make the labels match. Can also give a greyed out example in search box like 110.
Being able to sort by column headers is an expected table feature, but the font and color of the headers may cause the user to overlook this option.	Academics - Courses - List		2									
Why can the user sort by every column except the instructors?	Academics - Courses - List				2							
"Way finding" does not seem common terminology	Academics - Resources - Academic-resources		2									
The software information at the bottom of the page more closely relates to Technology, and yet is not on the Technology page at all.	Academics - Resources - Skills-enrichment-program		3									
Showing users what the buildings look like is useful, but would be nice to include a bird's eye map for people who orient that way, since the pictures don't fully show the path and choices.	Sites/Default/Files/Finding%20SI%20in%20North%20Quad.pdf							1				
Room Reservations and Group Project Meeting Spaces has not been updated for the new reservations policy	Academics - Resources - Facilities											Not sure if this is a Heuristic violation

Wording of the Student Lounge section causes confusion about where the computers, phone and printers are.	Academics-Resources -Facilities												Not sure if this is a Heuristic violation
Clicking ALA link takes user to a page requiring a log-in to FaceBook, which seems rather exclusive instead of informative	Academics - Studentlife - Student-groups	1											Also true for the Informatics Student Organization; SOIAR; and YASL. LILA put in an intervening page to deal with this. However, information is so brief, could probably put the information, the contact information all on the Student-groups page, with just links out for those sites with an outside webpage, thereby reducing the number of click through
Clicking on the various links either takes users to outside pages opened in the same window, or to Academics pages orphaned from the Navigation. Both require the user to click the web browser's Back button to get to the previously viewed Student groups page	Academics - Studentlife - Student-groups			2									This might also be considered a violation of Heuristic 1

Clicking "More about Ann Arbor" link leads to a similar page on the About SI channel. Why have two separate areas, instead of pointing to one?	Academics - Studentlife - Life-ann-arbor								2			
Clicking "Congrats Grads" button takes the user to a page that just seems to reproduce information from the page they just came from	Academics - Office-student-affairs								1			
Heather Carpenter's picture isn't provided, though it is present one click further in.	Academics - Staff-members				1							
Has a biography section, with non-biographical details.	People/Heather-carpenter	1			1?							

Individual Heuristic Evaluation - David Ross

Problem	Section	1	2	3	4	5	6	7	8	9	10	Severity
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The Login Option at the top of the page does not log users into the intranet (for that you have to go to the bottom of the SI page)	Everywhere	X							X			2.5
Redundancy in several areas of the website between the left nav and the main menu.	(several sections, but for example...) academics - master-science-information				X		X		X			3.5
In courses, left nav is not consistent w/ options offered in the main body of the webpage	academics -- si-courses				X			X	X			
Several profiles of people are put in random areas of the site. This decreases the effectiveness of their marketing (e.g. donor profile in the health informatics page)	http://si.umich.edu/academics/mhi/opportunities-health-informatics		X						X			
Redundancy in several areas of the website between the left nav and the main menu.	(several sections, but for example...) academics - master-science-information				X		X		X			3.5
In courses, left nav is not consistent w/ options offered in the main body of the webpage	academics -- si-courses				X			X	X			
Several profiles of people are put in random areas of the site. This decreases the effectiveness of their marketing (e.g. donor profile in the health informatics page)	http://si.umich.edu/academics/mhi/opportunities-health-informatics		X						X			

Redundancy in several areas of the website between the left nav and the main menu.	(several sections, but for example...) academics - master-science-information				X		X		X			3.5
In courses, left nav is not consistent w/ options offered in the main body of the webpage	academics -- si-courses				X			X	X			
Several profiles of people are put in random areas of the site. This decreases the effectiveness of their marketing (e.g. donor profile in the health informatics page)	http://si.umich.edu/academics/mhi/opportunities-health-informatics		X						X			
Redundancy in several areas of the website between the left nav and the main menu.	(several sections, but for example...) academics - master-science-information				X		X		X			3.5
In courses, left nav is not consistent w/ options offered in the main body of the webpage	academics -- si-courses				X			X	X			
Several profiles of people are put in random areas of the site. This decreases the effectiveness of their marketing (e.g. donor profile in the health informatics page)	http://si.umich.edu/academics/mhi/opportunities-health-informatics		X						X			
Redundancy in several areas of the website between the left nav and the main menu.	(several sections, but for example...) academics - master-science-information				X		X		X			3.5

In courses, left nav is not consistent w/ options offered in the main body of the webpage	academics -- si-courses							X					X	X			
Several profiles of people are put in random areas of the site. This decreases the effectiveness of their marketing (e.g. donor profile in the health informatics page)	http://si.umich.edu/academics/mhi/opportunities-health-informatics		X											X			

Individual Heuristic Evaluation - Mukul Bisht

Problem	Section	1	2	3	4	5	6	7	8	9	10	Severity	Proposed Solutions
After clicking on the Academics section on the main menu bar links, there is no indication from the menu bar which indicates the user is in Academics section which might confuse the user.	Academics	x										1	Academics link should be highlighted at the top after the user clicks and lands on that page.
The logo of School of Information is below the menu bar which gives it a low priority than other elements on the page. This violates the heuristic of information appearing in its natural order.	Academics		x									1	School of Information logo should be given first preference in terms of visual flow on the page.

<p>The SI abbreviation is not defined anywhere as a prospective student who doesn't know what SI means will get confused.</p>	<p>Academics</p>		<p>x</p>										<p>1</p>	<p>The SI abbreviation should be defined somewhere so that a new user understands that it means School of Information.</p>
<p>No visual hierarchy on the page and all the elements look disconnected from each other which might create confusion in the mind of the user. For example, even if the user is on the Academics page, the image is of the hall and Admissions is displayed below it. All the nearby elements do not seem to have any kind of grouping with the image.</p>	<p>Academics</p>		<p>x</p>									<p>2</p>	<p>There needs to be grouping of the elements which are together. Based on Gestalt's law of grouping, elements which are closer seem to form a group. So we need to ensure that the elements which are together should be together and should have some kind of connection.</p>	
<p>The bullet point design for the quick links is inconsistent and is different from each other.</p>	<p>Academics</p>		<p>x</p>					<p>x</p>				<p>2</p>		
<p>The design of the 'Read More' button at the 'Admissions' and for the 'Alumni Spotlight' is different.</p>	<p>Academics</p>			<p>x</p>								<p>2</p>	<p>Read More button's design and text should be always consistent</p>	

<p>There is some overlap in the links under the Academics Menu on the left and the Academics region on the right but not all the links are same. This can be confusing to the user.</p>	<p>Academics</p>		<p>x</p>		<p>x</p>								<p>2</p>	<p>Links should either be completely match the menu on the left or be completely unrelated to the menu.</p>
<p>The Additional Resources region is not visible and its unlikely that users will easily be able to find it when they are on the website. Not all the menu options have this region on the right and users are more likely to scroll to the bottom of the main page before they look for Additional Resources. The region is not visible at that time when the students start looking for Additional Resources.</p>	<p>Additional Resources</p>		<p>x</p>		<p>x</p>								<p>3</p>	<p>Keep the right hand side region fixed while only the main content page scrolls. Alternative solution is to have the links at the bottom of the Content page. However, a trade off would be that a frequent user would have to scroll to the bottom of the page before he can access the links.</p>

<p>Once the user clicks on a link within Additional Resources there is no way for him to go back without knowing exactly where he came from or using the browser's back button</p>	<p>Additional Resources</p>	<p>x</p>		<p>x</p>		<p>x</p>	<p>x</p>						<p>2</p>	<p>A good design should not depend on browser's back button. Breadcrumbs may be used or and option to go back to where they came back may be provided within the additional resources of the new page. This way at least a two way navigation would be provided to the users</p>
<p>Once the user clicks on a link on the MSI page there is no way for him to go back without knowing exactly where he came from or using the browser's back button</p>	<p>academics/msi/ msi-degree- components</p>	<p>x</p>		<p>x</p>		<p>x</p>	<p>x</p>						<p>2</p>	<p>A good design should not depend on browser's back button. Breadcrumbs may be used or and option to go back to where they came back may be provided within the additional resources of the new page. This way at least a two way navigation would be provided to the users</p>

<p>Courses listed on this page are not linked. Most of the users coming to this page will be prospective students. They will not be able to tell much just based on the course name and number. Currently, although they can see the list of mandatory courses they have to find another path to find more information about the courses.</p>	<p>academics/msi/ msi-degree- components</p>						x	x					2	<p>We can make the course lists as hyperlinks which can take the user to the course details section so that they can read more about it.</p>
<p>A long list of Cognate courses has been listed while only a few of them count towards the Cognate degree. Visitors of this webpage are aspiring SI students so the other information will be irrelevant for them. There is a process explained for how students can find out if the course is counted.</p>	<p>Academics- courses-student- recommended- cognate-courses</p>						x	x		x			3	<p>List only the cognate courses which count towards the degree on this page and provide a link to see all the other courses. Alternative would be to indicate which courses count towards the degree without the users having to go through the process defined on the page.</p>
<p>First bullet point under Cognate courses (Course 498) has not been separated from the preceding text.</p>	<p>Academics/cours es/student- recommended- cognate-courses</p>				x					x			1	<p>Bullet points should start on the next line.</p>

It is almost impossible to distinguish between the asterisk used for *recommended more than one student and the symbol used for bullet points.	Academics/courses/student-recommended-cognate-courses								x	x			1	A different symbol should be used for bullet points.
The links behave differently on these two pages. The links under MSI specialization just refresh the page partially while the links on the Dual Degree program open up a new tab.	MSI specializations, Dual degrees			x									2	Interaction after clicking on links should be kept consistent
The font and style of these pages is completely different from that used on the other pages	MSI specializations, Dual degrees			x									1	A consistent font should be used

<p>Have Questions' button is the most prominent button on the screen. It does not do much apart from opening up a lightbox where users can submit questions. It grabs most of the attention of the user and as it is not one of the primary buttons, it distracts the user</p>	<p>Academics</p>								<p>x</p>				<p>2</p>	<p>This button should be positioned below all the other links. The font size used for this should not be bigger than that being used in the menu. Yellow color of the button will make it prominent enough for the users to notice the button and post questions. This should be grouped with a link to FAQs. Users would rather search for existing answers before they go ahead and post a question and wait for a reply.</p>
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<p>Different layouts have been used for links under Master of Science in Information, PHd in Information and BA/BS in informatics.</p>	<p>Academics</p>				<p>x</p>									<p>This is a cosmetic problem and most likely the same user would not visit both MS and PhD sections. However, ideally using the same layout will give the user a consistent feed forward of what they may expect by clicking on one of the links on the menu.</p>
<p>The profiles and Advising regions keep changing on every page. It makes it difficult to understand the relevance of that information with the changing pages.</p>	<p>Academics</p>	<p>x</p>			<p>x</p>		<p>x</p>					<p>2</p>		

<p>The Academics page does not have a page title. This is inconsistent with the rest of the website. The most prominent word that appears almost like a title is Admissions. It might confuse the users to see a page titled Admissions when they have actually clicked on academics. Also, if the user is on the page for an extended period, there is a chance that he may forget that he is actually on the Academics page and feel he is actually on the admissions page.</p>	Academics	x			x		x							2	Add a page title to the Academics page
<p>The Label admissions, one line description and Read more button have been placed randomly in the region.</p>	Academics							x						1	The Read More button should be placed towards the end of one line description of Admissions as the intent is to enable the user to read more after they have read the primary description. Users will come to the decision point of reading more after reading the information provided in this region than before it.

<p>Buttons on the page are skinned differently. One button has a horizontal triangle on it while the other button does not have any symbol</p>	<p>Academics</p>		<p>x</p>		<p>x</p>				<p>x</p>				<p>1</p>	<p>Use a link to navigate to more information. It is more conventional to use a link when a user navigates to a new page also as this is a secondary action, it will draw less attention than the buttons and make the page less cluttered. If a button had to be used, a plain button with no icon would be recommended as the icon was not adding any value.</p>
<p>Buttons performing same actions are labelled differently. There are two buttons on the UI 'Learn More' and 'Read More'. Both of them take the user to another page providing more information about the object.</p>	<p>Academics</p>				<p>x</p>								<p>1</p>	<p>Use a consistent label so that it will be easier for users to anticipate what will happen on clicking the button.</p>

<p>Academics link in the left hand menu is not clickable. When exploring the website the user tends to use the left menu a lot. He would naturally tend to click on the Academics link on the left to go to the home page of Academics region. The only way for him to go there is by clicking on the Academics link in the Primary top level menu bar</p>	<p>Academics</p>			<p>x</p>	<p>x</p>			<p>x</p>		<p>x</p>		<p>3</p>	<p>Make the Academic link in the left hand side menu clickable.</p>
<p>Clicking on the buttons within the side panels with people's pictures takes users to a new page and the left hand side menu changes at times. This will confuse the user and the user may get lost in the site.</p>	<p>Why an MSI</p>			<p>x</p>	<p>x</p>				<p>x</p>			<p>2</p>	<p>The left hand side menu should remain constant. All the options should be included in the left hand side menu and the relevant option should be highlighted. However, the users should have the flexibility to navigate to the page they came from without depending on the back button. Alternative option is to open the link in a new tab or provide this information in a pop up</p>

Colors used for links are different on different pages. Green colored text is used to indicate links on Tailored MSI page while Bluish Grey text is clickable on the Dual degrees page. This way the users will not know what text will be clickable unless they hover over the text.	Tailored MSI, Dual degrees				x		x					1	Maintain a single color for linked text
A breadcrumb is used on the page to go back to the MSI Admissions links creating inconsistency in the design	academics/admissions/msi-application-deadlines				x							1	
The link styling is different from the rest of the pages which can confuse the user.	academics/admissions/apply-online				x	x						2	
The primary menu bar on the left side has an inconsistent design for this page as it shows secondary level pages links on the left menu bar. Ex- 'Diversity Scholarships', and 'External Scholarships' appear as links on the left hand side menu bar which is totally inconsistent with the design.	academics/funding/scholarships				x							3	

<p>The State of art learning classrooms region takes up the most prominent place on the courses page and it is in no way related to the courses. Users will go to this page to know about the courses. It is ok to have other information on the page, however that should not be the first thing the user has to read. More over by clicking on the Read more button in that box takes the user out of the context of courses. Thus the user may get lost.</p>	Courses								x				1	<p>Move State of art learning classrooms region to the right along with other 'advertisements' and additional information section or show this region on the Academics home page or under student life.</p>
<p>Labels are confusing and the user has to read the description text to understand more.</p>	Courses							x			x		1	
<p>Font and Styles are different for similar elements on the page. 'Internship Courses', and similar links are styled differently.</p>	Courses			x					x				1	
<p>The number of links on the primary left menu bar is different than the links displayed on the page.</p>	Courses			x	x								1	
<p>The search box does not give any suggestions and the user has to rely on his memory to search for courses.</p>	academics/courses/master/list				x	x							2	

The search system do not try to correct mistakes of spellings of the users and just shows no results in case of spelling mistakes.	academics/courses/master/list					x					x		2	
The 'Apply' label is not correct to search for results and can confuse the user.	academics/courses/master/list		x		x								2	
After clicking on any course item from the list, the user is taken to a new page with no way to go back.	class/sync-10	x		x		x					x		1	
The styling of this page, the side bar styling is different from other pages which again confuses the user. The content of the right side bar is different for different courses and similarly with professors	class/sync-10					x					x		2	
The labels on this page are different from others, like 'Catalog number' does not immediately signifies what it means.	academics/courses/list		x			x							2	
There is lot of information on this page but there is little difference between the links on the page and the normal text.	academics/courses/list					x	x						1	

<p>The left hand side menu disappears once a user clicks on a link in the course list. Instead, another irrelevant region 'Alumni Spotlight' shows up. The users will get lost due to this as they will not be able to go back unless they use the browsers back button.</p>	<p>Courses>Course List>Introduction to information studies</p>			x	x	x				x			3	<p>Keep the left hand menu constant. Alumni Spotlight may be shown on the right of the page</p>
<p>The titles of the courses in the course catalog are not links. Thus, the only way for users to reach the complete description of the course is to go back to the course list and then click on that course. This experience can get very annoying for the users.</p>	<p>Courses>Course Catalog</p>				x			x					3	<p>Link the course titles to go to the full description of the courses</p>
<p>There is no way for users to group the courses by time. The most common use case to go to the class schedule is to ensure that the classes the users wish to register for do not overlap. However, the page does not offer that view. This will force the users to create pseudo timetables only to check for overlaps.</p>	<p>Courses> Class Schedule</p>							x					3	<p>Allow the users to group courses by time.</p>
<p>The design of this page is completely different from the rest and the links are also colored/styled differently</p>	<p>academics/courses/table</p>				x	x							2	

If a user clicks on one of the links, the user is taken to a page with most of the information blank on the Details section.	people/marshantal				x								2	
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Individual Heuristic Evaluation - Shuo Yang

Problem	Section	1	2	3	4	5	6	7	8	9	10	Severity
The left navigation area of the online application system is inconsistent with other pages(https://www.applyweb.com/uminfo/)	academics/admissions/apply-online				*							1
Users would be lost if they hit the "Learn more" on the register now area(http://si.umich.edu/academics/admissions)	academics/admissions	*		*								2
Users would be lost if they hit the "Read more" on the OptIportal area(http://si.umich.edu/academics/phd-information)	academics/phd-information	*		*								2
The "Have Questions" icon under the logo of SI is not decent(http://www.si.umich.edu/academics)	academics								*		*	2
There are some overlaps between the "Course list" and "Course catalog"(http://si.umich.edu/academics/si-courses)	academics/si-courses							*				1

"Independent study courses" and "Internship courses" don't have description(http://si.umich.edu/academics/si-courses)	academics/si-courses				*		*						2
The "Tailored MSI", "Cognate Courses", and "Pathways to success" are missing from the main area(http://si.umich.edu/academics/master-science-information)	academics/master-science-information				*		*						2
There is no index area of "Funding your degree", which is inconsistent with other pages(http://si.umich.edu/academics/funding-your-degree)	academics/funding-your-degree				*								1
The level of subpages is confusing(http://si.umich.edu/academics/funding-your-degree)	academics/funding-your-degree				*								1