Annals of the
University of North Carolina Wilmington
Master of Science in
Computer Science and Information Systems

http://www.csb.uncw.edu/mscsis/
SEARCH ENGINE OPTIMIZATION AND ONLINE MARKETING
FOR THE SWAIN CENTER

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A Capstone Project Submitted to the
University of North Carolina Wilmington in Partial Fulfillment
of the Requirements for the Degree of
Master of Science

Department of Computer Science
Department of Information Systems and Operations Management
University of North Carolina Wilmington

2012

Approved by

Advisory Committee

__________________________  __________________________
Dr. Thomas Janicki             Dr. Ron Vetter

__________________________
Dr. Judith Gebauer, Chair
Abstract


The Swain Center for Business and Economic Services is a part of the Cameron School of Business at UNCW. The primary purpose of this capstone project was to increase web traffic to the Swain Center in an effort to increase the attendance to the center’s events. The Swain Center holds events throughout the year for local residents, UNCW students, alumni and instructors that are based on the regional economy of Wilmington, NC. By increasing web traffic, the Swain Center will be easier to locate online and therefore should increase overall awareness of its events. This paper includes details on website coding changes to optimize the website and an analysis of how to integrate social networking sites such as Facebook and Twitter. Data was collected based on a peer school analysis, a literature review and interviews with local experts. After changes were made to the Swain Center website and social networks, the results were analyzed for their overall impact on the website.
Acknowledgements

Dr. Gebauer, Dr. Janicki and Dr. Vetter
Megan Criss with Wilmington SEO & Marketing, Inc.
Sage Island
Kyle Kight, Director of SEO at HomeInsurance.com
Christy Somersett, Web Developer at ATMC
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<th>Pages</th>
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</thead>
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</tr>
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<td>Mobile Website Use from Google Analytics- 8/12/11-9/30/11</td>
<td>11</td>
</tr>
<tr>
<td>7</td>
<td>Swain Center's Facebook Page August 2011</td>
<td>12</td>
</tr>
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<td>9</td>
<td>Microsoft Project Schedule</td>
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<td>Top Content and Top Exit Pages Google Analytics: 8/3/11-11/30/11</td>
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<td>12</td>
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<td>13</td>
<td>Sitelinks, Google Search Results: April 2, 2012</td>
<td>38</td>
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<td>48</td>
</tr>
<tr>
<td>24</td>
<td>iContact Newsletter Data 1/15/12 to 4/15/12</td>
<td>49</td>
</tr>
<tr>
<td>25</td>
<td>Ohio University Google Places Map</td>
<td>55</td>
</tr>
</tbody>
</table>
Chapter 1: Introduction and Background

The Swain Center for Business and Economic Development is located within the University of North Carolina, Wilmington and is a part of the Cameron School of Business. The Swain Center supports local private and public business community in Wilmington, NC by hosting events to forecast the economy and providing training opportunities for local business employees.

The Swain Center’s website contains information about their economic conferences and professional development opportunities. Figure 1 shows the Swain Center’s home page as of August 2011. It utilizes the Cameron School of Business website template which was updated in 2010. As a result, the website is easy to navigate and is formatted professionally.

This paper first provides background information about the Swain Center and analyzes its web presence. The next section provides a review of literature about web design and SEO techniques, summarizes a number of interviews with local professionals that were conducted to gather information about best practices, and presents an analysis of comparable peer schools. The final section describes the various SEO techniques that were implemented to the Swain Center’s website and provides an analysis of the results.

1.1 Current Web Presence

The purpose of the Swain Center’s website is to inform users about the Center’s conferences, presentations and training opportunities as well as to provide North Carolina economic data and contact information for the Center’s staff. The website does not provide a sign up for economic newsletters, only online attachments of the newsletters. The website also provides registration and event data for all programs.
Figure 1: Swain Center Home Page, http://www.csb.uncw.edu/ches/, August 2011
1.2 Website Statistics

As of August and September 2011, the majority of website visitors were located in Wilmington, NC. Figure 2 shows a map of visitors from across the world.

Figure 2: Map View of Visitors from Google Analytics- August 12- September 30, 2011

The majority of traffic to the website was driven via Google, Bing and Yahoo searches to find the Swain Center’s website or direct traffic to the exact website. Figure 3 provides a list of top traffic sources from Google Analytics for August 2011.

Figure 3: Top Traffic Sources from Google Analytics- August 2011
Users were locating the Swain Center primarily through the use of search engines. Below is data about popular search engines. As of August and September 2011, 93.53% of all search engine traffic for the Center came from Google.

![Figure 4: Search Engine Use - Google Analytics - August 12- September 30, 2011](image)

External links are web pages that link to the Swain Center. The majority of these links came from internal UNCW websites. Listed below in Figure 5 is a list of websites linking to the Swain Center in August 2011.

<table>
<thead>
<tr>
<th>Source</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. uncw.edu</td>
<td>607</td>
<td>93.53%</td>
</tr>
<tr>
<td>2. facebook.com</td>
<td>20</td>
<td>3.08%</td>
</tr>
<tr>
<td>3. southport-oakisland.com</td>
<td>16</td>
<td>2.41%</td>
</tr>
<tr>
<td>4. wilmingtonchamber.org</td>
<td>3</td>
<td>0.46%</td>
</tr>
<tr>
<td>5. csbapp.uncw.edu</td>
<td>2</td>
<td>0.31%</td>
</tr>
<tr>
<td>6. swagbucks.com</td>
<td>1</td>
<td>0.15%</td>
</tr>
</tbody>
</table>

![Figure 5: Top Referring Sites from Google Analytics, August 2011](image)
Google’s PageRank is a patented algorithm that ranks websites for specific search criteria. The search engine checks back-links to determine the website’s importance. Older ranking methods included how many times a search term was included on a webpage. Instead of just using keywords, PageRank uses generated links, assuming that the links are from important pages. The linked pages are also ranked by the PageRank algorithm. Google does not release the ranking factors they use for the purpose of protecting their search engine from spam and malicious users. [1, 2]

In August 2011, Google ranked the Swain Center’s website (csb.uncw.edu/cbes) at a score of 5 out of 10. This score is affected by the importance of other websites linking to the Swain Center. In other words, it is more valuable to have some links from sites with higher PageRank scores than a large number of links with lower scores. [3]

Alexa is another ranking system for websites that was applied to UNCW’s home page in August 2011. Alexa ranked the overall traffic of UNCW’s website at 83,453, and 20,472 for traffic in the US. The site took 0.647 seconds to load, which is faster than 87% percent of websites. [4]

Even though neither the Swain Center nor UNCW had a mobile website as of August 2011, the Swain Center had 135 mobile web page views during August 12-September 30, 2011. This accounted for 6.23% of all web traffic out of 2,167 visits for the two months. The existing website was easy to navigate with a mobile phone because the navigation bar was on the left hand side of the website, so it was not cut off by the width of the website. The conferences were listed on the top of the menu with links indicating directions, schedule, registration, and contact information.

Figure 6: Mobile Website Use from Google Analytics- August 12- September 30, 2011
1.3 Social Networking

As of August 2011, the Swain Center’s Facebook Page was titled, “Cameron School of Business Swain Center for Professional Development.” The page was not updated very often and only had 13 users connected to it. Figure 5 contains a picture of the Facebook page. The Center was not connected to any other social networking sites in 2011.

Figure 7: Swain Center's Facebook Page August 2011
Chapter 2: Review of Literature, Peer Schools and Local Experts

In an effort to develop a list of suggestions for improvements that can be implemented for the Swain Center, available literature on website optimization was reviewed. I also conducted a number of interviews with local experts and reviewed websites of similar economic centers at peer schools.

It is very important for users to be able to find a webpage through a search engine and there are several ways to improve this process through SEO. For example, site owners can utilize paid advertising to list a webpage on the search engine result listings. In order to naturally or organically raise search engine result listings, several changes can be made on the webpage itself, linking pages and social networking pages. [5, 6]

2.1 On Page Optimization

Among the recommended efforts for on-page optimization are adjustments to the metatags, titles and keywords that are included in the various pages of a website. Other important website characteristics are relevance, comprehensiveness, freshness and speed. Relevance includes results based on a user’s web history and location. Googlebots are systems that crawl the web looking for updated information. Whereas in the past, Googlebots crawled the web every few months, today they are able to identify updates within minutes. [7]

The URL naming conventions, or how web pages are named, are important to a search engine. Value is given to the web page if the URL contains keywords. Also the internal link structure should be easy to crawl or navigate through for a user or search engine.

Through the use of Google or Bing Webmaster Tools, a sitemap can be created and sent to the search engines. This helps search engines identify webpage locations more effectively, which in turn improves a webpage’s search engine results. A robots.txt file can be created to tell a search engine which pages not to index. [8, 9]

The use of specific words in the title sections of web pages and the actual text or body of a webpage can contain important keywords. These sections include titles, heading tags, metatags and image titles. These sections are empty by default when creating a webpage. [5]
Search engines place value on a website’s incoming and outgoing links. The search engine will judge the value of each link when determining the original webpage’s search engine results page (SERP). External links include social networking sites and other relevant web pages. [5]

2.2 Off Page Optimization

This section will cover any potential value that social networking websites could bring to the Swain Center’s target audience. All sites should provide relevant news and reminders on conferences only. If the social network isn’t used properly users have the option to hide or delete the account. Figure 8 displays the top 10 social networking sites by number of visits. As of March 2011, Facebook is the top used social network, YouTube is second, whereas MySpace’s use has greatly declined from previous years.
Figure 8: Top 10 Social Networks from DreamGrow.com

- Bebo
- Club Penguin
- Craig’s List
- Facebook
- Linkedin
- Meebo
- MocoSpace
- MySpace
- MySpaceTV
- Mylife
- Tagged
- Twitter
- Windows Live Ho..
- Yahoo Answers
- Yahoo Groups
- Yahoo Profiles a..

Created by Prit Kallas @
www.dreamgrow.com

Data from: http://www.marketingcharts.com/categories/social-networks-and-forums/ Note: The Hitwise data featured is based on US market share of visits as defined by the IAB, which is the percentage of online traffic to the domain or category, from the Hitwise sample of 10 million US internet users. The market share of visits percentage does not include traffic for all sub-domains of certain websites that could be reported on separately.
A Social Network is an online community that provides users with a platform to communicate. Businesses are able to take advantage of these networks to reach their target market. Most of these networks are offered free to users and businesses.

Facebook is a currently the most popular social networking website with an estimated 600 million active users as of August 2011. Personal users can create a profile and businesses are able to create a page that users can “like.” When a user likes a Facebook Page, they are able to see updates from that page. [10, 17]

Twitter had an estimated 200 million users as of August 2011. Twitter consists of users and businesses creating the same type of account. Users can choose to follow other users and are then updated on their status updates. It is estimated that Twitter generates 65 million tweets and 800,000 search queries a day. [11]

YouTube is a video sharing network and is the second fastest growing social network. One way businesses are able to benefit from the use of YouTube is by linking videos to their website. This makes it easier for the user to view information. It also benefits the business if the video is from the news and the user missed the broadcast. Users do not have to register to the site in order to view videos. [12]

Google provides many services to businesses and users in addition to their search engine. For example, Google Places is a web mapping service that is free for businesses to sign up, and complemented by Google Maps, another Google service, for directions. In August 2011, a search for “Swain Center Wilmington, NC” would result in the Google Places account for the entire UNCW on a map of Wilmington, NC. This is because the content of the web pages at UNCW is also searched when a user completes a local region search through Google Places. [13, 14]

A blog can be a separate website or part of an existing website. It gives users the ability to post updates quickly and users that are following the ability to comment on these posts. A user does not have to register in order to view the posts by the creator, so this is helpful for users that do not feel comfortable creating a social networking account.

LinkedIn is a social networking website made for the use of professional networking. A user’s profile contains their resume and their contacts or connections are coworkers, colleagues and friends. Users can recommend other user’s work experiences. Businesses and organizations have the ability to post job openings and create groups for
users to follow. Currently the Cameron School of Business has a LinkedIn group for alumni and local professionals to follow. [15]

2.3 Paid Advertising

Google AdWords is a program that allows businesses to display paid advertising results in a Google search. The ads are displayed at the top of the search results or along the side of the results. The ads are set up through targeted local, national and international campaigns. UNCW does not currently have any Google AdWords campaigns running; campaigns have been used in the past, however. [16]

Facebook Ads are displayed on the right hand side of the Facebook webpage once a user is logged into their account. Facebook Ads can be extremely targeted to a specific demographic. For example, an ad can be set up so that it only displays to users over the age of 25 that are located within 25 miles of Wilmington, NC. [17]

2.4 Peer School Analysis

This section provides data on schools that were chosen by the Cameron School of Business as comparable schools or aspirant schools in 2011. The Swain Center’s website was compared with business and economic development centers at the universities that had such a unit. The on-page and off-page SEO criteria that were used for the comparison were selected based on a literature review and recommendations by local experts. Tables 1-4 summarize the results of the analysis.
Table 1: Comparable Peer Schools for the Cameron School of Business: On Page Characteristics

<table>
<thead>
<tr>
<th>University</th>
<th>College of NJ</th>
<th>Illinois State</th>
<th>Bowling Green</th>
<th>University of Tennessee-Chattanooga</th>
<th>College of Charleston</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economic Center</td>
<td>Small Business Development Center</td>
<td>Stevenson Center for Community and Economic Development</td>
<td>Division of Research and Economic Development</td>
<td>The Center for Economic Education</td>
<td>South Carolina Economic Development Institute</td>
</tr>
<tr>
<td>Consistent with Business School</td>
<td>School of Business</td>
<td>College of Business</td>
<td>College of Business</td>
<td>College of Business</td>
<td>School of Business</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Clicks to Event Page</td>
<td>1</td>
<td>N/A</td>
<td>3</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Metatags used</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Consistent Navigation Bar</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>PageRank</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>3</td>
<td>1</td>
</tr>
</tbody>
</table>

We found that the majority of the economic center webpages at the peer schools were not designed consistently with their corresponding business schools’ websites. The Centers all had event pages located within 3 clicks or less. Most peer schools were not utilizing metadata or a consistent navigation bar. The average page rank was 5, the same as the Swain Center’s webpage.
Table 2: Comparable Peer Schools for the Cameron School of Business: Off Page Characteristics

<table>
<thead>
<tr>
<th>University</th>
<th>College of NJ</th>
<th>Illinois State</th>
<th>Bowling Green</th>
<th>University of Tennessee-Chattanooga</th>
<th>College of Charleston</th>
</tr>
</thead>
<tbody>
<tr>
<td>Newsletter Sign-up</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Facebook</td>
<td>NJ Small Business Development Center @ The College of NJ</td>
<td>Stevenson Center for Community and Economic Development</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Twitter Account</td>
<td>@SBDCatTCNJ</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>LinkedIn Group</td>
<td>NJSBDC@TCNJ</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Mobile Website</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Additional Social Networking</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A iTunes and YouTube for the Business School</td>
</tr>
</tbody>
</table>

The peer schools’ social networking status was similar to the Swain Center as of August 2011. The majority of schools did not have a newsletter sign-up, Facebook, Twitter or LinkedIn account. None of the schools had a mobile website.
Aspirant peer schools are schools that the Cameron School of Business strives to match. The Aspirant peer schools’ websites were judged against the same criteria as the peer schools.

Table 3: Aspirants Peer Schools: On Page Characteristics

<table>
<thead>
<tr>
<th>University</th>
<th>NC State</th>
<th>UNC</th>
<th>University of Miami at Ohio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economic Center</td>
<td>Office of Professional Development</td>
<td>UNC Executive Development</td>
<td>Center for Business Excellence</td>
</tr>
<tr>
<td>Consistent with Business School</td>
<td>Poole College of Management</td>
<td>UNC Kenan-Flagler</td>
<td>Farmer School of Business</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Clicks to Event Page</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Metatags used</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Consistent Navigation Bar</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Google PageRank</td>
<td>5</td>
<td>5</td>
<td>4</td>
</tr>
</tbody>
</table>

Aspirant peer schools scored differently than the majority of peer schools. Most of the economic centers stayed consistent with their corresponding business schools, and all had their main events listed on the home page (i.e. 1 click away). Metadata was used and almost all sites had a consistent navigation bar. The average page rank was the same as the Swain Center.
The Aspirant peer schools’ use of social networking was similar to the Swain Center. The majority of schools did not have a newsletter sign up, Facebook, Twitter or LinkedIn account. None of the schools had a mobile website.

In conclusion, this data shows that the Swain Center’s website was above average compared to peer and aspirant schools. However, we also found that the Swain Center should be utilizing all possible SEO techniques. This includes adding metadata to the website and adding accounts in social networks such as Twitter and LinkedIn.

Table 4: Aspirant Peer Schools: Off Page Characteristics

<table>
<thead>
<tr>
<th>University</th>
<th>NC State</th>
<th>UNC</th>
<th>University of Miami at Ohio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Newsletter Sign-up</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Facebook Page</td>
<td>NCSU, McKimmon Center for Extension and Continuing Education</td>
<td>UNC Executive Development</td>
<td>No</td>
</tr>
<tr>
<td>Twitter Account</td>
<td>@McKimmonCenter</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>LinkedIn Group</td>
<td>NCSU, McKimmon Center for Extension and Continuing Education</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Mobile Website</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Additional Social Networking</td>
<td>No</td>
<td>Business School Blog, iCal Event and iTunes for UNC</td>
<td>No</td>
</tr>
</tbody>
</table>
2.5 Local Experts

Experts were selected from top SEO Companies located the Wilmington, NC area. Of the ten companies selected, five chose to participate in the interviews. Interviews were conducted during July and August 2011. Below is a list of questions that were asked about SEO best practices and how they apply to the experts’ own clients.

- What is the purpose of your website or a website you have completed online marketing for?
- What is your target market?
- What is the size of your company and number of people working on marketing for this website?
- What SEO techniques do you use most frequently/are most important for your site, and which ones did you find to be most effective? Why?
- What are the least effective Search Engine Optimization techniques for your website and why?
- How do you prove that a technique is beneficial for your company? Or how do you formulate a ROI for a technique?
- Do you utilize any paid online advertising?
- How did you determine the most effective title tags and keywords for your website and how often do you update them?
- Does your company register in any online directories such as Yahoo Directory or DMOZ?
- How do you determine if your target market will utilize a specific social network and how often do you update social network statuses?
- What are the most important structural elements to your website?
- Do you complete changes to the website itself before completing changes to social networking sites or do you complete changes at the same time?

2.5.1 Interview Responses

The majority of interview responses were similar and provided different tips. Experts essentially recommend utilizing as many SEO techniques as possible across industries.

Some of the most effective strategies or solutions for on-page optimization starts with correctly using keywords. Keywords should be added to the title, metadata, heading tags and text of a website. Most traffic comes from a site’s top 10 keywords. Using more
than 10 keywords dilutes the importance of the keywords. 1-3 keywords should be targeted per webpage. Keywords should not be changed often; they can be updated based on events if needed.

For the title section of a webpage, local experts recommend a specific order. A title should lead with a keyword, followed by a geographical tag, and finish with the brand name. For example, the title for the Swain Center’s Economic Outlook Conference page would be: Economic Education Conference- NC- Swain Center. It’s important to remember that only the first 60 characters of a title tag are used by Google’s search engine.

The description section should be filled out for each individual landing page. There is a maximum of 155 characters, so the description should not exceed that amount. This section should also contain keywords, geographical tags and brand names in a sentence format.

Other places on the webpage that Google gives keyword consideration to are the heading tags. Heading tags (h1, h2 and h3) should be used to emphasize specific keywords throughout the page. The format of the text may change when updating the heading tags and should be checked. All places possible on a webpage should be utilized with keywords. For example, images can have titles and image descriptions that should be filled out with alt tags.

Given that both Google and Bing read the HTML code of a webpage, the code should be clean and organized. Search engines take into consideration not only all of the fields available to fill out, but also the text of the webpage. Google reads the first 250 words on the landing page, so important data should be listed first.

The structure of all webpages in a website should ensure that the top content that users are searching for and a home page link are available on all pages. Users should be able to access their data in less than 3 clicks. Breadcrumbs are a list of links a user went through to get to the current page, which helps with navigation throughout the site. Google Analytics provides a list of top content pages that can help determine the purpose of users who visit a website. The top content pages should be easily accessible on the navigation bar. In contrast, the top exit pages show where visitors are finding what they
need on a website or giving up on looking for data. The top exit pages should be checked to make sure a website is not losing visitors.

The main search engines provide free webmaster tools that can be used to analyze various different features on a website. Examples include the possibility to submit a sitemap to Google and Bing, or a Robots.txt file that can help guide search engines crawling the site.

Recommendations for off-page optimization start with the importance of links. Inbound links can have the biggest impact on search results, as they help users find a website. External links increase page rankings and can result from social networking and other relevant websites. Press releases are very helpful and some press releases can be completed at no cost. Directories help users to find a site and sites can be submitted to DMOZ, Yahoo Directory, Business.com and BOTW.org.

Social networking websites provide links to a webpage, engage users and help to expand a web presence and target audience. It is recommended that status updates occur 3-4 times a day depending on the target audience. Updates can be scheduled through Hootsuite or Roost to automatically update at specific times. Twitter can be set up to automatically respond to specific text in status updates. A blog can be added to a website and thus add to the overall page rank or value of the webpage. Updates can be synched with Facebook Notes and Social RSS. Social media should be branded; titles should contain brand names and not keywords. LinkedIn group and accounts will show up in Google search results.

Paid Advertising can be used through Google and Facebook. Facebook ads can help generate more fans to a page and can be used to target a very specific audience, distinguished for example by interests and demographics. Similarly, Google AdWords can also be used to target specific keywords and geographical areas. Banner ads are often viewed the least effective of paid online advertising and are called interruption marketing. However, since most traffic still comes from organic searches (around 80%), it is recommended that firms utilize paid advertising mainly for new businesses to gain visitors.
It is generally difficult to measure the effectiveness of each specific change made to a website, whereby measures of effectiveness can be completed through testing. For example, Google Analytics can show how users have responded to changes made to a webpage. To measure the effectiveness of a blog, one could analyze the number of users that visited the website through the blog.

All interviewees agreed that you have to keep up with social networking and SEO techniques. More information can be found at SEO companies’ websites and online newspapers. [18, 19, 20, 21] In conclusion, after learning the background on basic SEO techniques, it is important to utilize as many SEO techniques as possible and to stay current with trends in all areas of the internet.
Chapter 3: Plan of Potential Changes- Methodology

After reviewing relevant literature, expert recommendations and analyzing peer schools, it was decided that the Swain Center’s web presence should be improved in several ways. Through the use of SEO techniques we hoped to increase traffic to the website by making it easier to find through a search engine and to motivate users to stay connected through social networking sites. We also hoped to increase the awareness about conferences and professional development events among potential attendees. Measures taken to achieve these goals included optimizing the webpages and adding new features, such as social networks for the specific target market. Figure 9 outlines the plan in Microsoft Project.
<table>
<thead>
<tr>
<th>ID</th>
<th>Task Mode</th>
<th>Task Name</th>
<th>Duration</th>
<th>Start</th>
<th>Finish</th>
<th>Predecessors</th>
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<tr>
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<td></td>
<td>Research</td>
<td>25 days</td>
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<tr>
<td>2</td>
<td></td>
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<td>10 days</td>
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<td>Fri 5/13/11</td>
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</tr>
<tr>
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<td></td>
<td>Peer School Reviews</td>
<td>4 days</td>
<td>Mon 5/2/11</td>
<td>Thu 5/5/11</td>
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</tr>
<tr>
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<td></td>
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<td>Thu 6/16/11</td>
<td>Mon 8/15/11</td>
<td>2,3</td>
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<tr>
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<td></td>
<td>Update Plan</td>
<td>43 days</td>
<td>Thu 6/16/11</td>
<td>Mon 8/15/11</td>
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<td>6</td>
<td></td>
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<td>1 day</td>
<td>Tue 6/21/11</td>
<td>Tue 6/21/11</td>
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<tr>
<td>7</td>
<td></td>
<td>Interview Local Professionals</td>
<td>30 days</td>
<td>Wed 6/22/11</td>
<td>Tue 8/2/11</td>
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<td>8</td>
<td></td>
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<td>Mon 8/15/11</td>
<td>Mon 10/31/11</td>
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<td></td>
<td>On Page Changes</td>
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<td>Thu 9/1/11</td>
<td>Mon 10/31/11</td>
<td></td>
</tr>
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<td>10</td>
<td></td>
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<td>Wed 10/5/11</td>
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<td>Thu 10/13/11</td>
<td>Thu 10/20/11</td>
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<td>6 days</td>
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<td>Wed 10/5/11</td>
<td></td>
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<td></td>
<td>Thu 10/13/11</td>
<td></td>
<td></td>
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<tr>
<td>15</td>
<td></td>
<td>Robots.txt file</td>
<td>1 day</td>
<td>Wed 10/5/11</td>
<td>Wed 10/5/11</td>
<td></td>
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<tr>
<td>16</td>
<td></td>
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<td>43 days</td>
<td>Thu 9/1/11</td>
<td>Mon 10/31/11</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td></td>
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<td>25 days</td>
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<td>Wed 10/5/11</td>
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<tr>
<td>18</td>
<td></td>
<td>Facebook Ad (30 day trial)</td>
<td>1 day</td>
<td>Wed 9/14/11</td>
<td>Wed 9/14/11</td>
<td></td>
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<tr>
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<td>1 day</td>
<td>Wed 10/5/11</td>
<td>Wed 10/5/11</td>
<td></td>
</tr>
<tr>
<td>20</td>
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<td>Blog</td>
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<td></td>
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<td>21</td>
<td></td>
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<td>6 days</td>
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<td>Thu 10/20/11</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>6 days</td>
<td>Thu 10/13/11</td>
<td>Thu 10/20/11</td>
<td></td>
</tr>
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<td>22</td>
<td></td>
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<td>6 days</td>
<td>Thu 10/13/11</td>
<td>Thu 10/20/11</td>
<td></td>
</tr>
<tr>
<td>23</td>
<td></td>
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<td>17 days</td>
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<td>Fri 10/28/11</td>
<td></td>
</tr>
<tr>
<td>24</td>
<td></td>
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<td>Thu 10/6/11</td>
<td>Thu 10/6/11</td>
<td></td>
</tr>
<tr>
<td>25</td>
<td></td>
<td>Send Final Copy of Proposal in New Template</td>
<td>1 day</td>
<td>Tue 11/22/11</td>
<td>Tue 11/22/11</td>
<td></td>
</tr>
<tr>
<td>26</td>
<td></td>
<td>Update Final Paper</td>
<td>96 days</td>
<td>Mon 12/5/11</td>
<td>Sun 4/15/12</td>
<td></td>
</tr>
<tr>
<td>27</td>
<td></td>
<td>How to Guide for Dreamweaver, Contribute and Google Analytics</td>
<td>88 days</td>
<td>Thu 12/15/11</td>
<td>Sun 4/15/12</td>
<td></td>
</tr>
<tr>
<td>28</td>
<td></td>
<td>Recommendations for the Swain Center, CSB and UNCW</td>
<td>96 days</td>
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<td>Sun 4/15/12</td>
<td></td>
</tr>
<tr>
<td>29</td>
<td></td>
<td>Final Defense</td>
<td>23 days</td>
<td>Sun 4/1/12</td>
<td>Tue 5/1/12</td>
<td></td>
</tr>
<tr>
<td>30</td>
<td></td>
<td>Final Defense Presentation</td>
<td>1 day</td>
<td>Mon 4/16/12</td>
<td>Mon 4/16/12</td>
<td></td>
</tr>
<tr>
<td>31</td>
<td></td>
<td>Email Final Paper</td>
<td>6 days</td>
<td>Mon 4/16/12</td>
<td>Mon 4/23/12</td>
<td>28</td>
</tr>
<tr>
<td>32</td>
<td></td>
<td>Last Day to be cleared to Graduate</td>
<td>6 days</td>
<td>Tue 4/24/12</td>
<td>Tue 5/1/12</td>
<td>31</td>
</tr>
</tbody>
</table>

Figure 9 - Microsoft Project Schedule
3.1 On-Page Changes

As part of several on-page changes, Google & Bing’s Webmaster Tools were installed. These programs can be used free of charge and most recently provide features, such as the submission of a sitemap. Since Google Analytics was already installed at the Swain Center and CSB web sites, it provided a basis to analyze previous use data. Changes were to be made to both the websites of the Swain Center and the Cameron School of Business (e.g., metadata). In addition, we planned the development and improvement of external websites such as Social Networking sites.

We furthermore planned to analyze and improve the HTML code underlying the Swain Center’s website. It turned out that as a result of a recent update of the template that is used to set up the webpages, the Swain Center no longer had any meta-tags filled out on any of its pages, so plans were made to add titles, page descriptions, as well as keywords for image descriptions and heading tags for titles within each section of the website. An analysis of the results from Google Analytics indicated that the majority of keyword searches that brought users to the Swain Center came from users that were already aware of the Swain Center’s conferences and professional development opportunities. Adding more descriptions and keywords was expected to help users find the website more easily through search engines. In addition, we planned for changes to the metatags to also improve the Cameron School of Business website which was expected to benefit the Swain Center’s website.

3.2 Off Page Changes

The second set of planned changes was intended to better utilize social networking sites, such as Facebook and Twitter. A Blog was to be started for users that were not connected to any social networking websites. Links were added to the homepage to newly established or improved accounts on Facebook and Twitter, a blog, and a newsletter sign-up.

It was decided to expand the Swain Center’s existing Facebook page with the intent to add information about the center, events and professional development. Status updates would contain information about UNCW and upcoming events. A Twitter
account was created with similar intentions, as well as to provide a means for companies to stay connected closely with the Swain Center.

A blog was set up with Blogger/Google with the intent to showcase previous events the Swain Center has conducted. Similarly to the Facebook and Twitter accounts, the blog is connected to the Swain Center’s website.

The Swain Center has already utilized Google AdWords campaigns in the past so AdWords was not included in this plan. The Swain Center did not benefit from the AdWord campaign in the past. No free trial was given to the Swain Center for Google AdWords and this capstone will only be utilizing free SEO techniques. A Facebook Ads trial was used for $50. A Facebook Ad was created and targeted to a specific demographic in the Wilmington, NC area.

3.3 Not Included in Plan

No Black Hat SEO was included in this plan. This includes paying for any external links to the Swain Center, linking to sites that are not related to UNCW, CSB or the Swain Center, loading keywords in text hidden in website such as white text on a white background. This would have had a negative effect UNCW, CSB or the Swain Center on their search engine results.

MySpace was not used for this capstone because of its diminishing market share. A YouTube account was not created for the Swain Center due to no presentations being filmed. A LinkedIn account was not made because the Swain Center chose to not utilize this network at this time.
Chapter 4: Outline of Completed Project

This chapter provides more detailed information about the changes that were made to the Swain Center’s, CSB’s and UNCW’s websites that affect SEO. As outlined above, on-page changes include changes to the metadata, sitemap, robots.txt, heading tags and image tags. Off-page changes include Facebook, Twitter, Blog and a Newsletter.

4.1 On Page Changes

4.1.1 Metadata

The first changes were made to the metadata in the Swain Center’s and CSB’s top content and exit pages. Figure 10 shows both the top exit pages and content pages; they represent the most visited pages in CSB. Figure 11 shows the top keywords or the terminology that people used to find the Swain Center in August-November 2011.

Figure 10: CSB Top Content and Exit Pages From Google Analytics: August 3, 2011 to November 30, 2011
Swain Center Top Keywords

1. dr woody hall uncw
2. william w hall uncw
3. woody hall uncw
4. cameron school of business
5. uncw economic outlook conference
6. uncw school of business
7. swain center uncw
8. uncw swain center
9. www.csb.uncw.edu
10. uncw cfp
11. uncw kevin
12. uncw project management
13. uncw mba
14. coastal carolina university logo
15. dr. hall uncw

Figure 11: Swain Center Top Keywords From Google Analytics: August 3, 2011 to November 30, 2011
CSB Top Keywords

1. cameron school of business
2. uncw cameron school of business
3. uncw csb
4. joseph dougherty wilmington, nc
5. career day uncw
6. accounting major at uncw
7. csb uncw
8. uncw mba
9. uncw kevin
10. dr woody hall uncw
11. william w hall uncw
12. uncw business school
13. uncw business major requirements
14. uncw cameron
15. tuition for study abroad summer session 2 marseille, france uncw

Figure 12: From Google Analytics: August 3, 2011 to November 30, 2011

The titles, keywords and description fields were updated by looking at what users were currently using to search in Figure 11 and 12. For example, a user was more likely to search the abbreviated term of “UNCW” rather than to type the full “University of North Carolina, Wilmington.” However, this was not true for all terms. The Swain Center for Business and Economic Services was abbreviated CBES but users were more likely to remember and search for the name “Swain” and not “CBES”.

When UNCW’s website template was updated the title tags were deleted in fall 2011. So as a result, most of the webpages have not been updated. The majority of the following pages have empty metadata for this reason. Table 5 shows the before and after metadata for top Swain and CSB webpages.
<table>
<thead>
<tr>
<th>Table 5: Metadata</th>
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</thead>
<tbody>
<tr>
<td><strong>Swain Center’s Home Page</strong></td>
</tr>
<tr>
<td><a href="http://csb.uncw.edu/cbes/">http://csb.uncw.edu/cbes/</a></td>
</tr>
<tr>
<td><strong>Title</strong></td>
</tr>
<tr>
<td><strong>Description</strong></td>
</tr>
</tbody>
</table>

| **Economic Outlook Conference’s Home Page** | **Before** | **After** |
| [http://csb.uncw.edu/cbes/conf/eoc/index.htm](http://csb.uncw.edu/cbes/conf/eoc/index.htm) | -- | Economic Outlook Conference - Wilmington, NC – UNCW - Swain Center |
| **Title** | -- | UNCW’s annual Economic Outlook Conference (EOC) is Wilmington, NC’s premier forum for economic activity and forecasts. The EOC focuses on the local and national economies, the regional real estate forecast, along with a popular industry trend selected anew each year. |
| **Description** | University of North Carolina Wilmington, UNCW | Economic Outlook Conference, Swain, UNCW, Cameron School of Business, Dr Woody Hall, Lt. Governor Walter Dalton, Dr. Tom Simpson |

<p>| <strong>Professional Development’s Home Page</strong> | <strong>Before</strong> | <strong>After</strong> |
| <a href="http://csb.uncw.edu/cbes/profdev/index.htm">http://csb.uncw.edu/cbes/profdev/index.htm</a> | -- | Professional Development and Training - Wilmington, NC – UNCW - Swain Center |
| <strong>Title</strong> | -- | UNCW’s Cameron School of Business’ Professional Development and Training opportunities provided through the Swain Center. Opportunities include Project Management, Business |
| <strong>Description</strong> | -- |  |</p>
<table>
<thead>
<tr>
<th>Keywords</th>
<th>University of North Carolina Wilmington, UNCW</th>
<th>Swain, UNCW, Cameron School of Business, Project Management, Business Certificate, CFP</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th><strong>Swain Center’s Newsletter</strong>&lt;br&gt;<a href="http://csb.uncw.edu/cbes/newsletter/index.htm">http://csb.uncw.edu/cbes/newsletter/index.htm</a></th>
<th><strong>Before</strong></th>
<th><strong>After</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Title</strong></td>
<td>--</td>
<td>UNCW- Swain Center- Economic Barometer Newsletter</td>
</tr>
<tr>
<td><strong>Description</strong></td>
<td>--</td>
<td>The Swain Center's Quarterly Economic Barometer Newsletter and APICS and CSB - Operations Management Quarterly Reports</td>
</tr>
<tr>
<td><strong>Keywords</strong></td>
<td>--</td>
<td>UNCW, Swain, Economic Barometer Newsletter, APICS, Cameron School of Business, Operations Management Quarterly Reports</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Cameron School of Business Home Page</strong>&lt;br&gt;<a href="http://csb.uncw.edu">http://csb.uncw.edu</a></th>
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<th><strong>After</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Title</strong></td>
<td>Cameron School of Business - University of North Carolina Wilmington</td>
<td>--</td>
</tr>
<tr>
<td><strong>Description</strong></td>
<td>Cameron School of Business at the University of North Carolina Wilmington. The Cameron School is AACSB accredited and has 2500 students in 10 undergraduate concentrations and four master degrees</td>
<td>--</td>
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</tr>
<tr>
<td>Cameron School of Business Faculty</td>
<td>Before</td>
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<td>--------</td>
<td>-------</td>
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<td>CSB-UNCW- Faculty and Staff Resources</td>
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<td>Title</td>
<td>--</td>
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</tr>
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<td>UNCW, CSB, Faculty, Staff, Resources</td>
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<table>
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<td>Economic and Finance Faculty and Staff -CSB –UNCW</td>
</tr>
<tr>
<td>Title</td>
<td>--</td>
<td>Economic and Finance Faculty and Staff Directory for the Cameron School of Business at UNCW.</td>
</tr>
<tr>
<td>Description</td>
<td>--</td>
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<td>UNCW, CSB, Economics, Finance, Faculty, Staff</td>
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<td>Accountancy and Business Law Faculty and Staff - CSB- UNCW</td>
</tr>
<tr>
<td>Title</td>
<td>--</td>
<td>Accountancy and Business Law Faculty and Staff Directory for the Cameron School of Business at UNCW.</td>
</tr>
<tr>
<td>Description</td>
<td>--</td>
<td>Accountancy and Business Law Faculty and Staff Directory for the Cameron School of Business at UNCW.</td>
</tr>
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<td>Keywords</td>
<td>University of North Carolina Wilmington, UNCW</td>
<td>CSB, Accountancy, Business Law, Faculty, Staff, UNCW</td>
</tr>
<tr>
<td>CSB Advising Home Page</td>
<td>Before</td>
<td>After</td>
</tr>
<tr>
<td>-------------------------</td>
<td>--------</td>
<td>-------</td>
</tr>
<tr>
<td><a href="http://csb.uncw.edu/advising/admissions.htm">http://csb.uncw.edu/advising/admissions.htm</a></td>
<td>--</td>
<td>UNCW- CSB- Requirements for Admission</td>
</tr>
<tr>
<td><strong>Title</strong></td>
<td>--</td>
<td>Requirements for Admission into the Cameron School of Business at UNCW</td>
</tr>
<tr>
<td><strong>Description</strong></td>
<td>--</td>
<td>Requirements for Admission into the Cameron School of Business at UNCW</td>
</tr>
<tr>
<td><strong>Keywords</strong></td>
<td>University of North Carolina Wilmington, UNCW</td>
<td>Requirements, Admission, CSB, Cameron School of Business, UNCW</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Undergraduate Academics</th>
<th>Before</th>
<th>After</th>
</tr>
</thead>
<tbody>
<tr>
<td><a href="http://csb.uncw.edu/academics.htm">http://csb.uncw.edu/academics.htm</a></td>
<td>--</td>
<td>Academic Undergraduate - Cameron School of Business – UNCW</td>
</tr>
<tr>
<td><strong>Title</strong></td>
<td>--</td>
<td>Academic Undergraduate - Cameron School of Business – UNCW</td>
</tr>
<tr>
<td><strong>Description</strong></td>
<td>--</td>
<td>Academic Undergraduate Programs for the Cameron School of Business at UNCW</td>
</tr>
<tr>
<td><strong>Keywords</strong></td>
<td>Academic, CSB Academics, Undergraduate Academics, CSB, UNCW</td>
<td>Academic, CSB Academics, Undergraduate Academics, CSB, UNCW</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Accountancy and Business Law Home Page</th>
<th>Before</th>
<th>After</th>
</tr>
</thead>
<tbody>
<tr>
<td><a href="http://csb.uncw.edu/acg/">http://csb.uncw.edu/acg/</a></td>
<td>--</td>
<td>Accountancy and Business Law- CSB- UNCW</td>
</tr>
<tr>
<td><strong>Title</strong></td>
<td>--</td>
<td>Accountancy and Business Law- CSB- UNCW</td>
</tr>
<tr>
<td><strong>Description</strong></td>
<td>--</td>
<td>Accountancy and Business Law at the Cameron School of Business at UNCW</td>
</tr>
<tr>
<td><strong>Keywords</strong></td>
<td>University of North Carolina Wilmington, UNCW</td>
<td>Accountancy, Business Law, CSB, UNCW</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MBA Home Page</th>
<th>Before</th>
<th>After</th>
</tr>
</thead>
<tbody>
<tr>
<td><a href="http://csb.uncw.edu/mba">http://csb.uncw.edu/mba</a></td>
<td>--</td>
<td>MBA - CSB- UNCW</td>
</tr>
<tr>
<td><strong>Title</strong></td>
<td>--</td>
<td>MBA - CSB- UNCW</td>
</tr>
<tr>
<td><strong>Description</strong></td>
<td>--</td>
<td>Professional Master of Business Administration through the Cameron School of Business at UNCW</td>
</tr>
<tr>
<td><strong>Keywords</strong></td>
<td>University of North Carolina Wilmington, UNCW</td>
<td>MBA, CSB, UNCW, Master of Business Administration</td>
</tr>
</tbody>
</table>
### Economics and Finance Home Page

<table>
<thead>
<tr>
<th>Before</th>
<th>After</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Title</strong></td>
<td>Economics and Finance - CSB - UNCW</td>
</tr>
<tr>
<td><strong>Description</strong></td>
<td>About the Economics and Finance Department at the Cameron School of Business at UNCW</td>
</tr>
<tr>
<td><strong>Keywords</strong></td>
<td>University of North Carolina Wilmington, UNCW</td>
</tr>
<tr>
<td></td>
<td>Economics, Finance, Econ, FIN, CSB, UNCW</td>
</tr>
</tbody>
</table>

### Academics Graduate Programs Home Page

<table>
<thead>
<tr>
<th>Before</th>
<th>After</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Title</strong></td>
<td>--</td>
</tr>
<tr>
<td><strong>Description</strong></td>
<td>Graduate Programs for the Cameron School of Business at UNCW.</td>
</tr>
<tr>
<td><strong>Keywords</strong></td>
<td>Academics, CSB Graduate Programs, CSB Academics, Graduate Academics, CSB, UNCW</td>
</tr>
</tbody>
</table>

### 4.1.2 Heading Tags

The Swain Center’s web pages already had heading tags designated for each section of the webpage. The Cameron School of Business webpage template used also has a Style Sheet and uses heading tags with different formats and fonts.

### 4.1.3 Google Webmaster Tools

Google Webmaster Tools were installed and found a number of web errors and incorrect links. Sitelinks can also be edited through Google Webmaster Tools. These are the links that are listed below the main link to the Swain Center as pictured in Figure 13. In the Webmaster Tools, it is only possible to delete a sitelink, but one cannot designate which link it should be replaced with. Sitelinks are important because they show the top pages that users follow to easily find a site in search results.
4.1.4 Sitemap

UNCW has its own sitemap generator for all uncw.edu webpages. A separate sitemap was created for the Swain Center for all URLs starting with (csb.uncw.edu/cbes) in September 2011. A free sitemap generator can be used only for domains under 5,000 pages so only the Swain Center’s sitemap was created and not CSB. Google does not have any information about punishing a domain for having a separate sitemap for a sub domain. However, Google updates their algorithm often and this could change in the future. Sitemaps also need to be updated and resubmitted when new pages are created or deleted.
4.1.5 Robots.txt

Figure 14: CSB Robots.txt File

```
User-agent: *
Disallow: /_mm/
Disallow: /_notes/
Disallow: /_baks/
Disallow: /MMWIP/
User-agent: googlebot
Disallow: *.csi
```

CSB already had a Robots.txt file listed in their root directory. It shows a search engine where to search and what sections not to index. The file was formatted correctly and no changes were made. This file allows “googlebot” which is the search engine for Google, to index every page except for the files listed in the disallow sections. The first line of “User-agent:*” means all search engines have the same rights. No comments, spaces or indents should be entered into this file because it could confuse some search engines. Each disallow line should be listed separately. This file is also case sensitive and each directory should be listed as it is named on the server.

4.1.6 URLs

The Swain Center’s main URL is (http://csb.uncw.edu/cbes) and also has a redirect from (http://www.uncw.edu/swaincenter). This benefits the Swain Center because the term Swain is an important keyword and more credibility is given to a keyword if it also appears in the URL. The Swain Center also reuses URL’s from previous years conference so that more visitors have been to that specific URL. A new URL is made for each event and redirected back to the original link. For example the main link for the Economic Outlook Conference is (http://csb.uncw.edu/cbes/conf/EOC/index.htm) and the shortened new URL is (http://www.uncw.edu/eoc). The new links for each event or section of the website include (http://www.uncw.edu/jointecon), (http://www.uncw.edu/pm), (http://www.uncw.edu/gmat), and (http://www.uncw.edu/cfp).
4.2 Off Page Changes

4.2.1 Facebook

Several changes were made to social networking sites, such as Facebook. A shortened URL was created for the Facebook page, (www.facebook.com/SwainCenter.) The title of the page was changed from “Cameron School of Business Swain Center for Professional Development” to “UNCW- Cameron School of Business- Swain Center Professional Development.” The new title is easier to read and lists UNCW so that users are aware of where the Swain Center is located.

The Swain Center signed a contract with StarNews in Wilmington, NC in August 2011. StarNews then created a new custom Welcome tab for the Swain Center’s Facebook Page. The contract also links the Swain Center’s Facebook page with StarNews Facebook updates. StarNews has about 2,000 followers on their page, so their posts provide a lot exposure for the Swain Center. Facebook changed the look of its pages in March 2012 (Figure 15). As a result of its relationships the Swain Center’s Facebook page includes posts from StarNews and Wilmington Downtown, Inc.

![New Facebook Timeline, Facebook: March 2012](www.facebook.com/swaincenter)
A Facebook Ad was created with a trial for $50 in free advertising. The Ad was used for the Swain Center’s Professional Development Opportunities. The Ad was targeted to Facebook users within 50 miles of Wilmington, NC. To reach college graduates and local professionals, the ages targeted were 23-64. The Ad was also targeted to users who were not already connected to the Swain Center’s Facebook Page.

4.2.2 Newsletter

A trial version of iContact was added for the Swain Center. iContact is used by UNCW for mass emails, so an account for the Swain Center was added. A sign-up for the newsletter was added to Facebook and the Swain Center website.
4.2.3 Twitter

A twitter account was added for the Swain Center. Statuses are updated similar to the Swain Center’s Facebook account. Local businesses were followed from the Swain Center’s account. Figure 17 shows the format of the Twitter account.

4.2.4 Blog

Figure 18: Swain Center’s Blog April 2012 (http://uncwswaincenter.blogspot.com/)
A blog was added through BlogSpot or Blogger which is a free blog service through Google. Users have the option to sign up for email updates when there is a new post. A preview of the blog is picture in Figure 18.

4.2.5 Mobile Website

February 2012, UNCW updated their website to be more compatible with mobile devices. For the month of March 2012, the percent of mobile page views was 13%. Of the 1,602 total visits to the website for the month, 208 of the visits were from users on mobile phones. This number has jumped from 6.23% of visits during August and September 2011.

UNCW’s Web Team created a Mobile Style Sheet so that all UNCW webpages can be viewed on a mobile device. This was completed through a Cascading Style Sheet (CSS) Media Queries to determine the width of the mobile device’s screen size. This then results in changing the layout of the website on a mobile device. The resulting mobile web page shows bigger links and fewer pictures. Figure 19 shows a screen shot of how the website looks on an iPhone.
4.3 Not Completed

A LinkedIn group or MySpace account were not created for the Swain Center at this time. The Swain Center chose to not set up these accounts at this time. Facebook networking was not completed through local networking groups due to changes in only administrators can post on certain Facebook groups.

The Swain Center was also not registered in any directories at this time. Yahoo directory is $300 and Best on the Web (BOTW) is $149 annually or $299 for a one-time fee. [22, 23]
Chapter 5: Results of Changes Made

This section analyzes the effects of the changes made to the Swain Center website and Social Networking websites. In general, it is very difficult to assess the ROI of each change. Data from Google Analytics will be used to show the amount of referrals from external websites and keyword searches.

5.1 On Page Changes

5.1.1 Metadata

Keywords used for the Swain Center (After Updating Metadata and Heading Tags)

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>(not provided)</td>
</tr>
<tr>
<td>2.</td>
<td>dr woody hall uncw</td>
</tr>
<tr>
<td>3.</td>
<td>gmat prep classes wilmington north carolina</td>
</tr>
<tr>
<td>4.</td>
<td>swain center uncw</td>
</tr>
<tr>
<td>5.</td>
<td>uncw</td>
</tr>
<tr>
<td>6.</td>
<td>cameron school of business</td>
</tr>
<tr>
<td>7.</td>
<td>uncw cameron school of business</td>
</tr>
<tr>
<td>8.</td>
<td>uncw small business center</td>
</tr>
<tr>
<td>9.</td>
<td>uncw swain center</td>
</tr>
<tr>
<td>10.</td>
<td>gmat wilmington nc</td>
</tr>
<tr>
<td>11.</td>
<td>uncw events</td>
</tr>
<tr>
<td>12.</td>
<td>uncw gmat prep course</td>
</tr>
<tr>
<td>13.</td>
<td>uncw project management certificate</td>
</tr>
<tr>
<td>14.</td>
<td>cameron business school</td>
</tr>
<tr>
<td>15.</td>
<td>woody hall uncw</td>
</tr>
</tbody>
</table>

Figure 20: Keywords used for the Swain Center (After Updating Metadata) Google Analytics: December 1, 2011 to March 31, 2012

Figure 20 shows how the Keyword list has changed after the metadata was changed. Figure 11 shows the keywords used before changes to the Metadata.
However, this could be due to annual changes in what events and courses are offered by the Swain Center.

5.1.2 Sitemap

A sitemap was submitted for the Swain Center in September 2011. At that time the Swain Center’s PageRank was a 5. As of April 2012, the Swain Center’s PageRank is a 4 and the CSB web domain has a PageRank of 5. Submitting a separate sitemap from UNCW may have separated the Swain Center from CSB and dropped the PageRank. However, the separate sitemap for the Swain Center was deleted on 4/13/12 and UNCW’s web team submitted a new sitemap for all of UNCW on 4/13/12. [3]

5.2 Off Page Changes

5.2.1 Facebook

The Facebook Ad that was implemented was very successful for the Swain Center. The results of changing the Facebook Page have increased the number of Page likes from 13 in August 2011 to 139 in April 2012. A total of 84 of the Facebook Fans or 60% of total fans came from Facebook Ads. Figure 21 shows Facebook Insights for where Facebook Fans came from. [24]
Facebook Insights: August 1, 2011 to October 20, 2011

Facebook Insights: October 21, 2011 to December 31, 2011

Facebook Insights: January 1, 2012 to March 30, 2012

Figure 21: Facebook Insights
Referral Traffic from Facebook

From Facebook links posted, 199 visits to the Swain Center’s website came from Facebook. 72.36% of the Facebook links were new visits. Figure 22 shows Facebook referral traffic.

5.2.2 Twitter

The Swain Center is following 153 users on Twitter and has 122 followers which is a similar size to the amount of Facebook users following the Center. The Swain Center only had 14 visitors that came from Twitter. Figure 23 shows the low number of referrals from Twitter.
5.2.3 Blog

The Swain Center’s blog had no direct referrals back to the Swain Center’s website. The blog gives users the option to follow by email and in Google Analytics this would show up as a link from an email provider.

5.2.4 Newsletter

The Swain Center added UNCW Graduates in New Hanover, Pender and Brunswick counties from the Advancement office. The Swain Center now has 10,118 contacts with 8,607 contacts subscribed to the newsletter. 1,370 of the contacts’ emails bounced, 100 of the contacts chose to not receive emails from any UNCW list and 41 of the contacts unsubscribed from the Swain Center’s list. Figure 24 shows the percent of emails opened. [27]

Figure 24: iContact Newsletter Data 1/15/12 to 4/15/12
5.2.5 Percent of Social Media

Table 6 shows data from Google Analytics for the total amount of traffic referrals from social media websites and email links from the newsletter. The total percent of social media referrals is 8.99%. This data was collected from Google Analytics from 8/13/11 to 4/15/12. During that same time period, the total amount of referral traffic accounted for 37.94% of overall traffic, so this results in 3.41% of social media referrals for overall traffic.

<table>
<thead>
<tr>
<th>Description</th>
<th>Website</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facebook</td>
<td>Facebook.com</td>
<td>5.44%</td>
</tr>
<tr>
<td>Mobile Facebook</td>
<td>M.facebook.com</td>
<td>.21%</td>
</tr>
<tr>
<td>Twitter</td>
<td>t.co</td>
<td>.53%</td>
</tr>
<tr>
<td>Yahoo Email</td>
<td>Mail.yahoo.net</td>
<td>1.61%</td>
</tr>
<tr>
<td>Hotmail</td>
<td>Mail.live.com</td>
<td>.75%</td>
</tr>
<tr>
<td>AOL</td>
<td>Mail.aol.com</td>
<td>.19%</td>
</tr>
<tr>
<td>Other Email</td>
<td></td>
<td>.26%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>= 8.99%</strong></td>
</tr>
</tbody>
</table>

Table 6: Percent of Social Media Traffic Referrals from Google Analytics 8/13/11 to 4/15/12

5.2.6 Lessons Learned

The most effective tools were updating Facebook and implementing a Facebook Ad. It did not take a lot of time to set up a Facebook Page or a Facebook Ad but there was a large amount of visitors that came from this source. The least effective social networking accounts were Twitter and the Blog. Most social media websites take the same amount of time to update and maintain but for this target market Facebook proved to be the most effective. If I could change anything about the social networking section, I would add a LinkedIn account.

The on page changes are more difficult to calculate with an exact ROI. There are no direct links to track in Google Analytics. The most effective change would be to the metadata because it will help users find specific webpages for long term use of the website. The least effective tool would be submitting a sitemap for a subdomain.
The most important SEO resource that the Swain Center has is UNCW and being a part of the Cameron School of Business. Also, the majority of traffic comes from UNCW internal links. The domain age of CSB, links from UNCW and UNCW’s high web traffic help the Swain Center’s rankings and PageRank.
Chapter 6: Future Recommendations for the Swain Center & UNCW

In conclusion, based on the result from our data, I would recommend keeping up with a few specific SEO techniques. Of all the changes made to the website, I would recommend keeping up with metadata when a new webpage is created, naming all images and making sure heading tags are used. For social media, I would recommend staying current with Facebook updates, continue with Facebook Ads, create a LinkedIn account and create a Google Campus Maps account.

6.1 Google Analytics and Webmaster Tools

No annual data is available from Google Analytics for the Swain Center or CSB yet. The data starts in July and August 2011. I would recommend backing up data for each year so that trends can be analyzed. For example, it would be beneficial to use data from October 2010’s web statistics to analyze the number of visitors and their traffic sources for the previous year’s Economic Outlook Conference. The number of visitors for the month of October 2010 and October 2011 could be compared to see if the number of visitors grew in the past year. I would recommend keeping up to date with Google Webmaster Tools. This helps the web team at UNCW identify errors on the website.

6.2 CSB Portal

The CSB Portal is where the event website pages are created for each event that CSB holds at UNCW. The Swain Center currently deletes the previous year’s event page and reuses the page for the current year. This makes creating a new event page very fast but deletes valuable data of the visitors from the previous years’ events. This includes the number of visitors and their contact information.

The current default event page in the CSB portal does not include a text message reminder update for attendees. I would not recommend adding this to the default event page because all events for CSB would have to be supported.

6.3 URLs

I would recommend the Swain Center adding new URLs for their programs to make it easier for users to remember the web address. However, I would not recommend editing the main URL of (http://www.csb.uncw.edu/cbes) because of how long the
domain has been registered to the University. As of April 2012, the domain has been registered for 10 years and 5 months.

Google and Bing do not provide information if it is more valuable for a website to have an .org, .edu or .com domain. Also, no information is available to prove if having both .org and .edu domain redirect traffic to the same website will hurt a website’s creditability. The Swain Center could create (www.swaincenter.org) for a web address to simply redirect to the main URL. An .org domain may give more value to the Swain Center’s Professional Development events; visitors may think that a non-profit may hold classes at a lower cost. However, the Swain Center would have to worry about users going to the wrong web address of (www.swain.org) or (www.theswaincenter.com) which are for different schools. This change would be implemented on a trial and error basis and I would not recommend UNCW implemented any changes that are not proven to be effective.

6.4 Social Networking

I would recommend the Swain Center use Facebook Ads targeted to professionals in the Wilmington, NC region. The Swain Center benefited from a large number of new page likes on their Facebook Page. Also Facebook users were the only social networking users to actually visit the Swain’s page from links posted on status updates. I would recommend that the Swain Center keep their Twitter page and blog but not to spend as much time and effort on these websites.

I would highly recommend that the Swain Center add a LinkedIn group for the Swain Center and all of the Swain Center’s staff to add personal accounts. The LinkedIn group would allow the Swain Center to update group members of professional development opportunities and events. The LinkedIn personal accounts would allow for users to stay connected with the speakers at events. One of the top keywords searched for to find the Swain Center is Dr. Hall and users would see his LinkedIn account in search engine results for the Swain Center. LinkedIn would also stay consistent with UNCW’s current social networking. CSB and UNCW’s MS CSIS program have successful LinkedIn groups.
6.5 **UNCW Web Policies**

I would recommend that the Swain Center and all of UNCW should enforce UNCW’s web policies on anyone that has access to update a social networking account affiliated with the University. UNCW’s web policies contract currently makes a user agree to not post anything on the University’s website that is not professional. I would recommend that the University stay consistent with anything posted on the internet involving UNCW. [28]

6.6 **Metadata**

I would recommend that the Swain Center update the Metadata for pages when new speakers or if any event information changes. I would not recommend that a template is used for creating new webpages with generic metadata. This could result in too many pages with the same descriptions. Appendixes A & B show how to edit metadata and how to analyze what keywords to use in Google Analytics.

6.7 **Newsletter**

I would recommend the Swain Center continue with their newsletter through iContact. The Swain Center should create a new event on the CSB Portal and save email addresses from the previous year’s attendees. The Swain Center should also continue to use UNCW’s resources for gaining new contacts in the Wilmington area. This allows for the largest number of people to be reached through email.

6.8 **UNCW Google Campus Map**

A UNCW Map could be created through Google Places. This would also be beneficial for parking and directions. Example of another university on Google places is Ohio State, pictured in Figure 25.
The Swain Center does not need a separate account from UNCW but may benefit from having its location online for users that are having trouble finding directions within the UNCW campus. A listing could be created and updated with conference parking instructions. A Google Places account also allows users to comment and review the account. This should be monitored for accurate feedback from users. If the user signed up for the event in advance, they would receive an email reminder with parking instructions. This however would benefit users that are registering for the event the day of the event and use a Google search to find the location of the Swain Center.

Figure 25: Ohio University Google Places Map
References

15. LinkedIn, “LinkedIn” 2012 (http://www.linkedin.com )
27. iContact LLC., “Email Marketing and Social Media Marketing Software” 2012 (http://www.icontact.com/)
28. UNCW Information Technology Systems Division, “Responsible Use of Electronic Resources” 2007 (http://uncw.edu/policies/documents/07.100_Resp_Use_of_Elec_Resources0807.pdf)
Appendix A: How to Use Google Analytics
Google Analytics- How to Guide

http://www.google.com/analytics/

How to Change the Date Range

- Default time frame is the past 30 days
- Change by clicking the arrow next to the date range

How to find the top Keywords

- Keywords are the terms that people enter into search engines to find your webpage. You will want to use these terms in your titles, keywords, descriptions, headings and text of your webpage.
- Click on Traffic Sources on the navigation bar on the left

- On the page that displays, look at the bottom right section under Keyword and then click “View Full Report”
Then you can view a list of all keywords used to find your webpage. You should notice trends in the ways users use terms. For example, for the Swain Center users do not search CBES or Center for Business and Economic Services, they search the term “Swain” because it’s easier to remember.
Top Content

- Top Content pages show what pages people are visiting the most. These pages should be easy to navigate to from your home page.
- Click on the **Content** tab and **Overview** below it in the left navigation bar
The list of web pages shows your Top Content pages in the lower right side of the page.
  o In this list, the first 2 pages are the home page. The 3rd most popular page is the professional development home page and then the GMAT home page.
Top Exit Pages

- The Top Exit pages show top pages people are looking for or the pages they give up and leave website. It is important to check to make sure there are no web errors on these pages.
- Click on the **Content** tab and click on **Site Content** to expand that section on the navigation bar. Then select **Exit Pages**

<table>
<thead>
<tr>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. /cbes/</td>
</tr>
<tr>
<td>2. /cbes/profdev/gmat.htm</td>
</tr>
<tr>
<td>3. /cbes/index.htm</td>
</tr>
<tr>
<td>4. /cbes/profdev/swainbusinst.htm</td>
</tr>
<tr>
<td>5. /cbes/profdev/</td>
</tr>
<tr>
<td>6. /cbes/profdev/CertGlobBusProf/index.htm</td>
</tr>
<tr>
<td>7. /cbes/events/enov0t.htm</td>
</tr>
<tr>
<td>8. /cbes/profdev/index.htm</td>
</tr>
<tr>
<td>9. /cbes/conf/joint/index.htm</td>
</tr>
<tr>
<td>10. /cbes/profdev/projmgt/projectmgt.htm</td>
</tr>
</tbody>
</table>

- The resulting list of pages are your top exit pages
Top Referring Sites

- The Top Referring Sites shows where your traffic is coming from.
- Click on Traffic Sources, Sources and Referrals.

You can change how you view the data by the menu of different charts over the data on the right hand side.

The list of top traffic sources lists “uncw.edu” as a top traffic source. This would include any internal links on UNCW’s website or any UNCW Press Releases.

“T.co” is Twitter referrals.

Anything listed with “mail.live.com” or “mail.yahoo.com” would be any one that clicked on your webpage from an email forwarded to them or an emailed newsletter.
In Page Analytics

- In Page Analytics show where users click on links from your website
- Click on the **Content** tab and then click on **In-Page Analytics**

This page shows you the exact percent of clicks for a specific time range. You can also click on a link within this webpage and see the amount of clicks for that page as well.

- How to determine the percent of social media referrals
Appendix B: How to Use Adobe Contribute CS3
How to Use Adobe Contribute CS3 for UNCW Web Pages

Each Webpage should have:

- A title, description and keywords
- All images should be named well and have titles (ALT tags)
- Each section of the website should have a title- and heading tags should be used

Add a title to a webpage

- Click on Page Properties
- In the Category section select the Title/Encoding section
- Enter a Title in the Title section
  - An example title- “UNCW- Cameron School of Business- Faculty and Staff”
Add Keywords and Description

- Click the **Format** button on the main toolbar
- From the dropdown list select **Keywords and Description**
- In the box that opens enter **keywords** and a **description**
  - Example keywords - “UNCW, Cameron School of Business, Faculty, Staff”
    - Only use **3-10 keywords**
  - Example description - "Faculty and Staff Directory for the Cameron School of Business at UNCW"

![Page Keywords and Description](image)
How to check if your webpage has metadata filled out:

- Internet Explorer - Right click on webpage - View Source
- Mozilla Firefox - Right click on webpage - View Source
- Google Chrome - Right click on webpage - Source Code

- In the Window that opens you will see the HTML code for the website

- You should see your information in the <title>, <meta name="Keywords" content=> and <meta name="Description" content=>
Add Heading Tags

- Each section of the website should have a title within the webpage
- Heading Tags are used to show importance of these titles. For example, a Heading 1 tag is used for a very important title or section of the webpage. A Heading 2 title is given less value. Heading tags should go in order from Heading 1 at the top of the page and if Heading 6 is used it should be at the bottom of the page.

- Select the text
- Click the dropdown list starting with normal
  - The text will remain normal until you change it
The arrows on this webpage are pointed at different section titles. Both of these titles are labeled as **Heading 2 tags**.
Add a Title to an Image - or Alt Tags

- Before adding an image to the website, the image should be named with keywords, not just “Image1.” For example, a good image name for the image below would be “Cameron Professional Development Logo”
- Right click on the Image
- Select Image Properties

- Add a title with relevant keywords in the Description (ALT text) section
Add a Link to an Image

- Right click on the image
- Select Insert Link

For a link in your sub domain of UNCW:
  - Enter Link in HREF: (any text after your sub-domain- csb.uncw.edu/cbes)
    - For http://csb.uncw.edu/cbes/profdev
    - You would enter “profdev”
For all other links (outside of your sub domain of UNCW):
  - Select **Browse to Web Page** and enter **URL or web address**
How to Resize an Image

- Select the image
- Enter different numbers for the Width and Height

- Or you can select the image
- Click the resize option on the toolbar
Landing Pages

- A separate landing page can be created for information that is only listed in the text of one page. For example, the Swain Center has their programs listed all on one page. Also the programs have their own web pages or landing pages.
- Here is a list of programs offered:

**Professional Development and Training**

Brett Arends, online columnist for *The Wall Street Journal*, writes: “Invest in yourself...After all, your knowledge and skills are your most important asset.” Read full article [here](#).

**Certified Financial Planner (CFP®) Program**

$750 per module This program is for professionals in brokerage, insurance, accounting, banking and others looking to advance financial services skills to become accredited financial service providers.

Starts January 17, 2012; courses run consecutively until July 2013

New program will begin January 2013

**GMAT® Prep and Review Course (Graduate Management Aptitude Test)**

$275 This course will prepare individuals for the GMAT exam by teaching test taking techniques, strategies, and unique problem solving approaches to help achieve the score you need.

January 28 and 29, 2012
Saturday and Sunday
Here is a landing page for the GMAT program

Swain Center for Business & Economic Services

- The original URL for this page is- http://www.csb.uncw.edu/cbes/profdev/gmat.htm
- The URL of www.uncw.edu/gmat was also created for this page and redirects to the original URL
Appendix C: How to Use Dreamweaver
How to Use Dreamweaver CS3

To Edit a Webpage-

- **Double click** on the webpage in the Files section of Dreamweaver (Lower right corner)
- Click **No** – to the popup message “Get Dependent files? Dependent files will not be checked out.”
- Click **Yes**- to the popup message “Do you wish to overwrite your local copy of (webpage)?”

After Completing Changes-

- Save and Close the webpage
- Right click on the webpage in the Files section and select **Check in**
- Click **No**- for “check in Dependent files?”
- Right click on the webpage in the Files section and select **Turn off Read Only**
How to Edit Metadata

- Click on the option for Split or Code to view the HTML code
- An empty Title Tag will look like:
  - `<title> </title>`
  - Change to:
    - `<title>Cameron School of Business – Accounting - UNCW</title>`
    - Do not use quotes around the title text
    - A title should start with the Department name – Section – UNCW
- Empty Keywords:
  - `<meta name="Keywords" content="" />`
    - Search engines currently put less importance on this section of the metadata. You should only use 3-10 keywords. The values of the keywords decrease as you add more to the list.
    - If the keywords contain “University of North Carolina Wilmington, UNCW” change this to keywords specific to this webpage. If too many of the same keywords are used on too many pages, the value of the keywords cancel out. This also does not help a user find specific data on this page.
    - UNCW is a good keyword- few type out the full name “University of North Carolina Wilmington”
    - Cameron School of Business is a good keyword – not CSB- few a searching this specific abbreviation
    - Keywords will change with each department
    - Example Keywords will look like:
      - `<meta name="Keywords" content="Cameron School of Business, UNCW, Accounting" />`
• Empty Description:
  o `<meta name="Description" content="" />`
    ▪ This section displays the first text on the page if it is left empty.
      This section is important to fill out for landing pages that are
      searched often.
    ▪ The description should be short and should be unique to that
      specific landing page.

• Example Description:
  o `<meta name="Description" content="Information about the
    Accounting Department in the Cameron School of Business at
    UNCW" />`

• The keywords used for the Swain Center actually include “Dr. Woody Hall” This
  can be found by looking through keywords used in Google Analytics.
Heading Tags

- Heading Tags are used to show section titles within the page
  - Heading tags should be used in order from 1-6 from Heading 1 at the top of the page to (if needed) heading 6 at the bottom of the page
    - Not all heading tag numbers need to be used, but should always start with heading 1
  - Keywords should be used in the heading tags
- Changing the Heading tags will change the format of the text selected if a style sheet is used, so preview the webpage before publishing
- In **Design** - Select the text that should have a heading tag
  - In the Properties Box – The Format section has a drop down box to select Heading tags 1-6
  - Be sure to check the code after you change a heading tag to make sure you didn’t change any other text to another heading tag
- In **Code** - Heading tags 1-6 can be added
  - `<h1> Heading 1 Text </h1>`
  - `<h2> Heading 2 Text </h2>`
Alt Text for Images

- Before you add an image to the website, you should make sure it is named well or with keywords.

- You can select the image if you are viewing the webpage as Split or Design.

- In the Properties box in the bottom of the screen, the box that says “Alt” is where you can add a description of the image.

- Or if you are editing the code, the Alt tag should be:
  - `<img src="images/aboutcbes.jpg" alt="image of the Swain Center in the CIS building" width="350" height="202">`