Assessment of Learning Report
Computer Science CPM
Fall 2012 – Spring 2014

AAS DEGREE: Multimedia and Web Design

I. Introduction and Background

Mission Statements

St. Charles Community College:
St. Charles Community College enriches our community by providing life-changing educational and cultural opportunities focused on personal growth and student success in a global society.

Computer Science:
The Computer Science Program's mission is to offer both academic and vocational computer science programs that are responsive to the information technology needs of business and industry, as well as responsive to the personal and professional objectives of our students. We are committed to excellence in instruction and will recruit and retain a professional faculty imbued with real world, cutting edge experience and expertise.

Progress since the last report

- Implemented recommendations from advisory board
  - CPM 260 Content Management Systems teaching WordPress is now required for AAS degree and certificates
  - CPT 160 Mobile Apps Development has been added to the program
  - Implemented web page design for mobile applications in web development courses
  - HTML5 and CSS3 are now being taught
  - Project Management has been added to the capstone class
  - Panel of advisory board members invited to CPM 251 capstone class to advise on and critique student portfolios
  - jQuery is now a part of the JavaScript course CPM 280
  - Students created LinkedIn accounts to help them with their job searches and for SCC to help track graduated students
  - Emphasis on Search Engine Optimization within web based classes
- Changed CPM 280 JavaScript back to on-line
- Updated all degrees and certificates to reflect the program changes.
- Software and hardware in the Multimedia/Web Design program has been updated to the most recent versions used within the industry
- CPM 240 Advanced Web Design students created web pages for non-profit organizations supporting our surrounding community

- CPM 230 Social Media Marketing created social media for non-profit organizations
- All courses in the program implemented with Moodle/Canvas, our LMS for the college
- CPM 260 Social Media Marketing is now offered online

Program Goals

The Multimedia and Web Design program will prepare students with the necessary skills to develop and create multimedia projects and web pages using a variety of resources, hardware and application programs. Integration of concepts, program applications, programming skills, hardware components, research tools and design will be focused creating real-life projects.

The student will:

- create multimedia presentations and web pages using a variety of program applications implementing the concepts of web development including goals, flowcharts, mockups, scripting and design techniques
- define terms, identify file types, download files, use hardware and compression techniques used in multimedia
- identify concepts and patent laws related to copyrighted materials used in multimedia
- create, edit, capture and import graphics, video, sound, and animations both for multimedia presentations and the web
- integrate a variety of scripting languages to enhance interactivity within multimedia and web design projects
- implement CSS, database integration, web page usability rules, Search Engine Optimization (SEO), content management and social marketing techniques within their web projects
- create a responsive design website to be viewed on all platforms
- identify concepts on Section 508 of the American Disabilities Act and incorporate methods of accessibility within their projects

Program Objectives

The student will:

- Create an interactive, non-linear web site to serve as their portfolio of projects they have completed in the Multimedia and Web Design program during their academic pursuits at SCC
- Have a set preparation of goals, objectives, stated target audience and style prior to working on projects.
- Create a flowchart, script and mockup of proposed project that includes file formats, navigation and scripting
- Integrate within a project at least two other multimedia software applications to create their own artwork, video, photographs or animations
- Know and abide by copyright rules and restrictions
- Create a project with some form of scripting included
- Test and debug a project
- Integrate CSS, databases, SEO techniques, web page usability, responsive design and social marketing techniques within student developed web sites

- Implement processes and rules of Section 508 Accessibility Act
- Save project files within an HTML file as a portfolio to display on the Internet for potential employers to review
- Present their portfolios to advisory board members for feedback

Skills Assessment

Students in the Multimedia and Web Design program were assessed in the capstone class CPM 251 E-Learning Development. This course is designed for both students completing the AAS degree and the certificates but is only required for students obtaining the degree. Students designed a web page portfolio that implemented the theories and applications learned not only in this course but other courses within the program. It serves to display their work produced as a student at SCC. The project was to design and create an interactive, web portfolio including all projects produced as a student at SCC, contact information, social media components, and their resume. The students were required to use concepts taught within the course and integrate a variety of software applications/scripting learned during their coursework within the Multimedia/Web Design program. Also required was mockup production along with stated goals, objectives and target audience; observance of copyright and Section 508 accessibility laws; design theory; debugging and beta-testing; incorporating Search Engine Optimization Techniques (SEO); use of Cascading Style Sheets (CSS); usability guidelines, uploading to a server; and saving as a validated HTML document. Advisory board members were invited prior to student's creating their portfolios to give advice on what potential employers are seeking within portfolios. The students then presented their portfolios to the advisory board members during finals week for critique and evaluations. The final project was graded for the skills assessment. The course is only offered in the spring semester intended to be one of the final classes the student takes prior to graduation.

Since spring 2013, under Perkins IV, a separate assessment of General Education skills was no longer required. The emphasis was solely placed on assessing completer's technical skills. Although we continue to required students to take separate general education course work, those knowledge and skills areas are integrated into the program specific courses. Thus mastery of those general education knowledge and skills areas are reflected in the students' ability to demonstrate mastery of the technical skills.

Scoring Rubric

Project objectives, goals and target audience are clearly stated	65%	75%	85%	95-100%
Use of Social Media in Portfolio web site	65%	75%	85%	95-100%
Detailed mockups and planning documents	65%	75%	85%	95-100%
Incorporated Multimedia elements (Graphics, Audio, Video, Animation)	65%	75%	85%	95-100%
Applied Design techniques including layout, web safe colors, optical centers, appropriate font types and sizes, and proof-reading	65%	75%	85%	95-100%
Effective Web Site Management Techniques	65%	75%	85%	95-100%
Used Cascading Style Sheets (CSS) to control page elements and layouts	65%	75%	85%	95-100%
Applied usability guidelines including clear navigation, easy to read content, able to locate information	65%	75%	85%	95-100%
Abided by copyright and accessibility laws	65%	75%	85%	95-100%
Integration of various scripting languages (PHP, MySQL, JavaScript, jQuery)	65%	75%	85%	95-100%
Integration of multiple application programs (Photoshop, Illustrator, Premiere, After-Effects, Flash)	65%	75%	85%	95-100%
Implemented Search Engine Optimization (SEO) techniques including appropriate titles, metatags, use of head tags, appropriate alt tags and content with key words	65%	75%	85%	95-100%
Saved as validated HTML files	65%	75%	85%	95-100%
Demonstrated uploading of files to a ftp server	65%	75%	85%	95-100%
Appropriately views well in multiple browsers	65%	75%	85%	95-100%
Responsive design—views in all platforms including mobile	65%	75%	85%	95-100%

II. Data and Results 2012-2014

ACAD Program	SCC Student ID	Skills Assessment Score %
AAS.CPM	XXXXXX	95%
AAS.CPM	XXXXXX	100%
AAS.CPM	XXXXXX	90%
AAS.CPM	XXXXXX	90%
AAS.CPM	XXXXXX	100%
AAS.CPM	XXXXXX	100%
AAS.CPM	XXXXXX	95%
AAS.CPM	XXXXXX	95%
AAS.CPM	XXXXXX	90%
AAS.CPM	XXXXXX	100%
AAS.CPM	XXXXXX	90%
AAS.CPM	XXXXXX	90%
AAS.CPM	XXXXXX	85%
AAS.CPM	XXXXXX	90%

III. Data analysis and interpretation

The web-based portfolio skills assessment reflects the skill sets potential employers are seeking from our graduates as recommended and critiqued by our advisory committee.

- Multimedia students' use of quality software and scripting skills in their capstone course persists.
- The development of capstone project portfolios are based on content needs to be within the students portfolio to seek potential employment
- The students are using updated technologies, software and new skill sets to create projects
- Students are displaying more energy and interest in teamwork projects.
- Project management skills have been implemented within the program.
- The students are able to integrate a variety of software, scripts and technology to create projects
- With the advent of various web based platforms the students are creating responsive design sites
- Presentation skills are enhanced with the students presenting their final portfolios to the advisory board members

IV. Multimedia/Web Design Advisory Committee and faculty discussions

Per the **Multimedia and Web Design Advisory Board** meetings over the past two years, the following are some of topics that have been discussed **and implemented** as applicable within SCC computer courses

- Recommendations for classes/ concepts that need to be offered
  - Recommended implementing a Responsive design course (designing web pages for multiple platforms)
  - Project management needs to be implemented within the program
- Recommendations for classes that need to be dropped from degree
  - Drop CPM 250 Web Animation(Flash) as a required class for the degree
- Recommended Skill Sets
  - CMS (Content Management Systems—WordPress and Joomla)
  - Project Management
  - HTML5 and CSS3
  - SEO (Search Engine Optimization) and Internet Marketing
  - jQuery
  - Need clean code—Validate all web pages at w3.org
  - Working together within a team – creatives/developers; developers/creatives
  - Learn to be creative—both in design and development
  - Technical ability
  - Communication skills – an employee must be able to articulate intelligently why and what they are doing
  - Problem solving
  - Understanding theory, whys, and hows
  - Branding yourself
  - IT should support business goals & objectives
  - 25% of IT employee time is spent on learning new software…**lifelong learning skills** are critical
  - Planning is a critical part of development
  - Security should be part of application development, especially when databases are involved
- CMS (Content Management Systems)
  - Emphasize this class—in high demand
  - Make it a required class for the degree
  - Blurs lines between sales and marketing so businesses don't have to rely on an IT person
  - WordPress must know some PHP to create "non-template" looking sites (same for Droopla and Joomla)
  - .net CMS is in high demand, focuses more on programming (Expression Engine, Magento, Site Core

    - Consider developing a .net class in the programming department

- HTML5 and CSS3
    - Start teaching it instead of XHTML
    - Start teaching responsive web sites and use of mobile technology
    - Market this course heavily, no school currently teaches it

- SEO (Search Engine Optimization) and Internet Marketing
    - Teach local SEO concepts and what tools are available to business, i.e. Google Places, Bing business portal, use of directory tools
    - Focus on marketing people—use analytics
    - Consider developing an Internet Marketing Certificate of Specialization in conjunction with the business department and market it to marketing professionals currently in the field

- Projects and Project Management
    - Do group projects earlier than later
    - Use Project Management software—most are open source, also Microsoft Project to keep students accountable
    - Use agile methodology, everyone gets to be in a different role for various stages of a project
    - Give presentations on projects explaining why they did what they did and what methods they employed
    - Have advisory board members act as a client, sell an idea, present project and explain reasons why
    - Cross classes to develop a project, i.e. Photoshop students develop the images and photos for a web project—another person to answer to
    - See thing in "real-life" on resumes, projects, roles played

Per the **Computer Science Advisory Board** meetings over the past several years, the following are some of topics that have been discussed **and implemented** as applicable within SCC computer courses

- Recommendations for classes/concepts that need to be offered
    - Implemented Project Management with the capstone course CPM 251
    - Social Media is now incorporated with CPM 251 within student portfolios
    - CPM 160 HTML now teaches HTML5 and CSS3 along with responsive design
    - Teaching SEO with an emphasis on business

Faculty

- Change CPM 230 JavaScript back to on-line course
- Looking at all the course offerings within the program, possibly over-saturating the number of courses that may result in low enrollments within some classes.
- Keep developing web pages for non-profits in CPM 240 as a team project. Serves as a community service and gives students experience working with a "client" and creating a "real-life" project
- Made changes to the AAS degrees and certificates to reflect changes within the program
- Marketing the program to increase enrollments to improve assessment and student learning especially towards the AAS degrees—recommendations from advisory group
    - Have a booth at user group meetings
    - Advertise on LinkedIn
    - Advertise at libraries
    - Present to Chambers of Commerce.
    - Open House geared to Business.
- Develop a course on responsive design using bootstrap
- All fulltime and adjunct faculty should be utilizing Canvas, our LMS, in their courses
- Develop articulation agreements with 4 years schools
- Possibly cross list some of our classes with graphic arts department
- Ensure all students create a LinkedIn account to enable future tracking of employment

V. Implications for improvement or changes

There are still many students of the Multimedia/Web Design students are opting for certificates versus an AAS degree but we have seen an increase in degrees the last two years. More than half or our students are returning learners. Many of our students already have a Bachelor's degree and are updating their skills. Other students are unemployed and are looking for the quickest way to gain a new set of skills towards employment. The students who are receiving an AAS degree tend to be a traditional student although we are seeing an increase in non-traditional students obtaining the AAS degree. There is a need to encourage students to see the value of an AAS degree (for those who don't currently have a degree) versus a certificate. By creating articulation agreements with area 4 years schools it may help enable students to pursue a 4 year degree.

Changing CPM 230 JavaScript back to an online course was the result of low enrollment. The instructor will hold some on-campus meetings to help students who may be struggling with the material.

Changing to HTML5 and CSS3 in our web design classes (CPM 160 and CPM 240) along with adding jQuery in the JavaScript class (CPM 280) has proven to be very successful

and will help students obtain employment knowing the latest features and skills of web development.

CPM 260 Content Management Systems is now a required class for the degree and certificates in web design as recommended by the advisory board.

Students continue to see the value of creating detailed mockups, project development and storyboards; with working in a team environment in creating professional projects to be added to their portfolios.

Project management using the open-source online software Asana was implemented in the capstone class CPM 251 spring 2014 for a team project involving the entire class with multiple projects to be completed within a specific time range.

Having advisory board members advise and critique portfolios in the capstone class CPM 251 has been very beneficial for the students. They receive advice on what and what not employers are seeking within web based portfolios. Since students do a presentation on their portfolios to the advisory board members during finals week it resulted in a higher quality student portfolio than in the past and enhances their presentation skills.

CPM 230 Social Media Marketing is now an online class. Since all concepts developed for this course is online (Facebook, LinkedIn, blogs, twitter, etc.) it made since to create an online option possibly increasing enrollment within the class.

A new course on responsive design is being considered for the CPM program. Courses with consistently low enrollment may need to be dropped from the program.

In conjunction with other computer science programs an articulation agreement is in the process with Webster University.

All fulltime and adjunct instructors within the CPM program utilize the LMS system, currently Canvas, within all their classes.

VI. Action steps

- Display the benefits of a degree versus a certificate for the student's long term career goals
- Persist with teamwork/project activities in the classrooms possibly using project management
- Continue enforcing deadlines for coursework, especially projects
- Actively market program and degree, to increase enrollments (to better assess student success)
- Contact non-profit organizations within the area for obtaining real-life student/team projects

- Re-evaluate what current courses need updating or eliminated based on current technology trends
- Continue to stay up-to-date with software and hardware to better service our students and meet employer expectations
- Pursue articulation agreements with area four year colleges
- Ensure graduating students create a LinkedIn account and "friend" insturctors and the college to help track their employment progress
- Cross-list some courses with the graphics art program