WSU Five-Year Program Review
Self-Study

Cover Page

Department/Program: School of Computing / Web and User Experience

Semester Submitted: Fall 2018

Self-Study Team Chair: Cody Squadroni

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Brief Introductory Statement

The Web and User Experience program is located within the School of Computing at Weber State University (WSU). Students have the following degree options:

- Bachelor of Science in Web and User Experience
- Associate of Applied Science in Web and User Experience
- Minor in Web Technology
- Minor in User Experience Design
- Emphasis in Bachelor of Integrated Studies

Students completing a major in Web and User Experience are prepared for independent or as part of a team in an organization. Graduates have found employment as web designers, front-end and back-end (full-stack) developers. Students learn a variety of web development and design skills, including programming, database, multimedia technologies, and user experience principles. Elective coursework covers various multimedia programs and technologies relating to graphics, illustration, video and audio editing, animation, and user experience. Students also gain competence in business communication and marketing, which are crucial elements for a successful business career. Students are also introduced to new management procedures for both people and technology to help meet the challenges of the ever-changing business environment.

Standard A - Mission Statement

The primary goal of the Web and User Experience program is to deliver students the highest quality undergraduate experience that will prepare students for employment in the areas of web development and user experience design, and to assume roles in decision making, leadership, research, and service to community and business.

These programs assist students in developing, communicating, and applying knowledge for the technical and professional world as well as gaining a desire for lifelong learning.

The primary goal of the College of Engineering, Applied Science and Technology is to implement the mission of Weber State University and to prepare students for employment upon graduation by ensuring that they are productive, accountable, and responsible individuals able to function effectively in today's workplace. This goal is achieved by developing in students a cohesive, solid theoretical foundation bolstered by practical, hands-on experiences. The learning environment is further enhanced by extensive contact between faculty and students both in and out of the classroom. In addition, the liberal education component present in all programs equips students for lifelong learning in a changing world.

The mission of the College is to serve the citizens of Northern Utah and the State of Utah by:

- Preparing students for employment upon graduation and ensuring that they are productive, accountable, and responsible individuals able to function effectively in today's workplace.
- Engaging in scholarly activities which expand the technological education our students receive and provide a service to business and industry.
- Utilizing the College's resources and faculty expertise to benefit students, business, industry, education, government and society in general.

Standard B - Curriculum

Curriculum Map

Core Courses in Department/Program	Department/Program Learning Outcomes				
	Effective Business Communication Skills	Technology Knowledge and Skills	Implementation of Effective Decision-Making and Problem-solving skills	Knowledge of Ethics and Professionalism	Produce industry-standard projects
WEB 1400 – Web Design and Usability		Artifact	E	I	E
WEB 1430 – Client Side Scripting	I	I	A	I	I
WEB 2200 – Image Editing		I	U	I	E
WEB 2210 – Computer Illustrations	U	E	U	U	E
WEB 2300 – Video Editing	U	E	U	I	E
WEB 2410 – Web Animation I		E			E
WEB 2500 – User Experience Design	E	U	U	E	A
WEB 2620 – Advanced CSS	I	U	U	I	A
WEB 2630 – Client Side Frameworks		U	E		E
WEB 2800 – Independent Projects / Research	U	E	E	E	A
WEB 2860 – Work Study	U	E	E	E	A
WEB 2890 – Client Side Portfolio	U	Artifact	E	E	A
CS 1030 – Foundations of Computing	I	U	U	I	I
CS 1400 – Fundamentals of Programming		U	U	I	I
CS 2550 - Introduction to Database Design and SQL		A	A		
WEB 3200 – Dynamic Languages for Web Development		I	E	E	I
WEB 3300 – Motion Graphics		E			U
WEB 3400 – LAMP Stack Web Development	I	U	U	I	A
WEB 3410 – Web Animation II		E			U
WEB 3430 – MEAN Stack Web Development	E	A	A	U	A
WEB 3500 – User Interface Prototyping & Design	U	E	U	E	E
WEB 3650 – Human-Computer Interaction	E	A	E	E	A
WEB 3700 – Web Development with .NET	E	A	A	E	U
WEB 4350 – Web Development Capstone	A	Artifact	A	U	A
WEB 4800 – Independent Research	U	E	E	E	A
WEB 4860 – Internship	U	E	E	A	A
WEB 4890 – Server Side Portfolio	U	E	E	E	A
CS 3550 – Advanced Database Programming		A	A		
CS 3620 – Server Side Web Architecture	E	U	E	E	A

I = Introduced, E = Emphasized, U = Utilized, A = Assessed comprehensively, Artifact = evidence of student learning collected

Students create websites in the Web 1400 course which is a prerequisite for most of the other courses. As students continue through the curriculum, they will be encouraged to save projects they have worked on for inclusion in the capstone projects – the portfolio for the Associates Degree (Web 2890) and the web dev course (Web 4350). The portfolio course will offer students a chance to reflect on their work and improve upon their previously completed projects with their more advanced skill set. Students in the web dev course will work with a client to create a fully functioning web site, also allowing students to apply their skills.

As suggested by the goals of the College, many courses are project based. The capstone courses include presentation to faculty. Students are evaluated by faculty as well as industry professionals. This evaluation provides meaningful feedback for students and encourages them to include their best work.

Standard C - Student Learning Outcomes and Assessment

Measurable Learning Outcomes

At the end of their study at WSU, students in this program will

1. Possess effective business communication skills
2. Possess knowledge and skills of technology
3. Implement effective decision-making and problem-solving skills
4. Possess knowledge of ethics and professionalism
5. Produce industry-standard websites and multimedia projects.

Five-year Assessment Summary

The Web and User Experience program comprehensively assesses student achievement. This assessment has assisted reflection on areas for improvement. Actions have been taken from items in the past five years of findings. We are committed to continue to improve the program for student success. Below is a summary of the past five years:

> *2012-2015,* The faculty remained confident in student's success and seeing them excel in the program learning outcomes. The majority of the ratings from the employers were in the highest category, and no student interns received a poor rating. During this time, the program was looking for additional funding for full-time faculty, building more advanced courses to increase students' knowledge, making artifacts more accessible to students, and finding a balance in lower- and upper- division courses to help student success. Also, they focused on evaluating scheduling to meet student needs better, looking into possible means to increase scholarship and internship opportunities for students, and finding additional ways to increase enrollments.
>
> *2015-2016,* The faculty started the process of moving the curriculum from a more general multimedia program to a new WEB/UX degree program which would begin in 2017. This new program would start a new assessment process as the curriculum changed. We worked towards assessing students with direct evaluations of portfolios at both AAS and BS levels. All graduating students were required to have an exit interview with a faculty member before being signed off for graduation. All graduates were also be invited back one year after graduation to serve on the program Alumni Advisory Board.
>
> *2016-2017,* We had more changes in curriculum and wanted to focus on helping the remaining 40 students graduate under the old Business Multimedia program. The transition of assessing the new WEB/UX curriculum and outcomes continued, as the older program assessment was phased out. We anticipated assessing students with a direct evaluation of portfolios and noticed deficiencies in several (current) web technology skills for students who graduated. The assessment again informed our decisions to adjust curriculum and outcomes beginning with the 2017 catalog.

The program has grown in the past five years. During this time we have made significant adjustments to the program to better prepare and assess our students for current technology. Technology in this area has changed dramatically in the past five years. Major curriculum changes reflect those changes. We have adjusted some content in continuing courses from the previous Business Multimedia program and have created new courses which cover more employable/advanced skillsets. We continue to see an increase in enrollments, and we continue to improve the way students are assessed as we prepare them for careers in the Web/UX industry.

Assessment of Graduating Students

During the past five years, a lot has changed with the program. When the program was Business Multimedia, students were assessed both at the AAS and BS level through the Internship. One decision made by faculty was to require all graduating students to create a portfolio. The internship has become an elective. This change explains the decrease in numbers located in Appendix G for learning outcomes. As we move forward with the revised Web and User Experience program student portfolios will be evaluated at both the AAS and BS level. All graduating students will continue to be required to have an exit interview with a faculty member before being signed off for graduation.

Standard D - Academic Advising

Advising Strategy and Process

With the inclusion of the Web and User Experience program into The School of Computing, we have gained resources to help our advising strategy and process. The School of Computing operates on three separate campuses, and each campus has designated advising personnel as well as assigned advising for each program. The Web and User Experience advising is primarily on the main campus in Ogden. We have three people responsible for advising: Ms. Pat DeJong, Mr. Cody Squadroni, and Dr. Laura MacLeod. Pat is the primary advisor for Computer Science, Web and User Experience, and Networking. Cody is the current Web and User Experience Program Coordinator and, with that role, advises students who are in the Web and User Experience program. Dr. Laura MacLeod is also available to advise new students but focuses on advising students who are finishing the Business and Multimedia program. Both Cody and Laura help students who wish to transition from the old degree to the new.

Effectiveness of Advising

We encourage students to set up advising appointments at least once a year to help with degree planning. We use a planned map for students to use to guide them on course selection and sequence. We work closely with students, both from Business Multimedia and Web and User Experience. We prefer to meet with the students in Business Multimedia more often to ensure we are offering the courses needed to graduate since the curriculum has changed. When we meet with a student, we create an individual plan that fits within the time frame the student wants to achieve graduation. The effectiveness of advising is shown by seeing students taking the courses in the sequence given and also seeing the older program students graduating. By following this process, we have noticed students who seek advising take courses in the correct sequence are able to graduate one semester sooner than students who run into prerequisite problems or other course sequencing problems which leads to more time to graduate.

Past Changes and Future Recommendations

Gaining an advisor from the School of Computing has helped with managing students and giving them the most efficient information early in their studies. The efficient and consistent use of the degree map, mentioned earlier, has also improved the advising process. As the Business Multimedia students graduate, we will be able to have all three advisors focus on the Web and User Experience students. When the current program coordinator or faculty members retire or move on, we will fill those spots of advisement as needed so students will be able to continue to succeed. Three advisors is sufficient at this time.

Standard E – Faculty

There are eight full-time faculty assigned primarily to the Web and User Experience program. In addition, one staff member supports the program and seven adjuncts who regularly teach for the program.

Programmatic/Departmental Teaching Standards

The Web and User Experience program utilizes the standardized student evaluation system used in college. All full-time faculty are also evaluated on goals set in the areas of teaching, research, and service. Faculty are expected to stay current in their field of expertise.

Faculty Qualifications

There are eight full-time faculty who support the Web and User Experience program. Of those seven, four are tenured or tenure-track and all four have doctorate degrees. Three of the instructors have masters and the fourth is in the last semester of a master's program.

In addition, the eight adjuncts who regularly teach for the program meet the college standard of bachelor's or master's degree, at least three years of related experience and/or endorsement in their respective area of expertise.

Faculty Scholarship

Dr. Abdulmalek Al-Gahmi

Collaborating with a colleague at New Mexico State University on the effect of playing teem building games on the performance of students in Software Engineering Projects. Initial data seams promising but more testing and evaluation are still needed

Collaborating with another colleague at New Mexico State University in Carlsbad on analyzing and studying the effect of weather conditions on the through-put of power-generating wind turbine. Got the equipment setup late this summer and now working on collecting and analyzing data.

Studying the effectiveness of small-teaching techniques on the performance of students taking basic programming classes.

Dr. Luke Fernandez

With Dr. Susan Matt, *Bored, Lonely, Angry Stupid: American Feelings and Technology From The Telegraph To Twitter* forthcoming from Harvard University Press, Spring 2019

Co-chair of DHU4 (The Fourth Annual Utah Digital Humanities Symposium), forthcoming 2019

"Should Wi-Fi be Disabled in College Classrooms*?"* *Educause,* April 2018 (invited article by editors)

With David Ferro, "Utah's Silicon Slopes Should Slant To Sociability," *Standard Examiner*, August 2016

With Susan Matt, "Home Invaders: From the Telegraph to the Internet of Things," in *Home: Concepts, Constructions, and Contexts*, ed. Kathy-Ann Tan and Cecile Sandten (WissenschaftlicherVerlag Trier, WVT, 2016)

"Studying Up: A Review of Alice Marwick's Status Update," *Digital Humanities Quarterly*, Fall 2015

"Sanctuaries for the Mind in the Digital Age: A Conversation With William Powers," *Weber: The Contemporary West*, Fall 2013

with Susan Matt, "Before MOOCS Colleges of the Air," *The Chronicle of Higher Education*, April 2013

A.I. and the History of Design, Guest Lecture in History of Design, Weber State University, Spring 2018

with Susan Matt, "Angry, Bored, Lonely, Stupid: American Emotions and Technology," *Utah Digital Humanities Conference*, Logan, UT, February 24, 2018

with Susan Matt, "Emotions, Technology, and the American Self*," American Historical Association*, Washington DC, January 7, 2018

with Susan Matt, "Loneliness and Technology in America," Seminar for Modern History at the University of Tübingen in Germany, June 2017

with Susan Matt, "The History of Boredom, from the Telegraph to Twitter," *Utah Digital Humanities Symposium*, Orem, Utah, February 2016

with Susan Matt, "Is the Telegraph Making Us Lonely?" *Theorizing the Web Conference*, Brooklyn, New York, April 2014

with Susan Matt, "Home Invasion: Family Life and the Threat of Technology," Poster Session, *Council on Contemporary Families*, Miami, April 2014

Dr. Richard Fry

"A 3D Simulation for teaching Renewable Energy and Smartgrid Management" *American Society for Engineering Education (ASEE)*, June 2018

with Chiou, F.,R., Gentle J., and McJunkin T., "3D Model of Dispatchable Renewable Energy for Smart Microgrid Power System" *Proceedings of the IEEE Conference on Technologies for Sustainability (SusTech)*, November 2017

Sethachuay, V. (edited by Fry, R), *The Legacy of a Superman* 2017 ISBN: 978-616-292-396-8

"Engaging Citizens: A Cross-Cultural Comparison of Definitions of Engaged Citizenship" *Presented to the Utah Campus Compact*, October 2014

"Re-thinking our teaching delivery: Blending technology and e-learning tools to create engaging student-centered learning environments". *Presented to Medical Faculty at the Dunedin School of Medicine, University of Otago,* Dunedin, New Zealand, February 2014

"Back to the Future: Setting a path forward based on experiences from the past" *Presented to WSU audience on occasion of receipt of Lindquist Award*, November 2017

"Experiences in Computer Science" *Code to Success Keynote speech for students and educators in Utah*, July 2017

with Laura Anderson, "Successes in the Classroom for International Students" *Presented at WSU International Symposium*, November 2016

"Experiences of integrating Adobe Connect into the online classroom" *13th Annual Adobe Digital Marketing Summit*, Salt Lake City, March 2015

Dr. Laura MacLeod

"Advancing Beyond Print with Desktop Publishing." coauthored with Allyson Saunders. *Business Education Forum*, April 2016

"InDesign Digital Publishing." *Presented at Career & Technology Education Summer Conference,* 2016

with Kristina Yamada, "Teaching Design Principles" *Presented at Career and Technology Education Summer Conference,* June 2012

"Photoshop-BYO Bad Image and We'll Give it a Makeover" *WBEA Regional Conference,* February 2012

Mentoring Activities

Dr. Abdulmalek Al-Gahmi

Oversee the Computer Literacy Center and provide guidance and feedback to the students that work there.

Gave a workshop on Web Application Development at a weber-state community center last May and plan to offer similar workshops next year.

I offer free online classes via the duroosi.com learning platform to disadvantaged students in my home country.

Ms. Laura Anderson

Advisor for Weber State University chapter of FBLA-PBL until 2014-2015 school year when the chapter was dropped.

Coordinator for the Teddy Bear Den, service to families in need until 2014-2015 school year when project was turned over to Midtown Clinic

Dr. Rich Fry

Coordinated and led study abroad service programs in Chiang Mai, Thailand, Phuket, Thailand, and Mozambique, Africa. July 2018, July 2017, February 2017, March 2016, December 2015, March 2014

Undergraduate Research Project – Augmented Reality – Eric Mathews (2018); Oscar Suarez - Content Management System (2016-2017)

Service Learning – Catholic Community Services Volunteer Timekeeping System and Homeless Shelter Volunteerism (2016-2017); Pioneer Adult Rehabilitation Center (PARC) - Intelligent Routing and Signage for the visually impaired (2016); Weber County Voting Office - "Weber Votes" Initiative (2015-2016); Pioneer Adult Rehabilitation Center (PARC) - Runway Ruby's Equip System; Catholic Community Services Food Pantry Work and Volunteerism (2013-2014)

Hemingway Collaborative Award - Interactive English Stories for Thai Orphans, 2016
Source America Ability One Design Challenge National Competition – 2nd Place, 2014

Dr. Laura MacLeod

Work closely with student interns to secure positions, establish and complete objectives.
Coordinator for concurrent enrollment instructors

Mr. Cody Squadroni

Supporting major upgrade to Weber States University secure online testing system called XAZM by working closely with Academic Software Design and Development programmers to help update software and capabilities.

Mr. Garth Tuck

First Lego League until February 2016. Mentored teachers and coaches to support students in robotics program.

2014-present, after-school First Lego League at Horace Mann Elementary school

First Lego League, Northern Utah Region, August 2016-present. Mentored teachers and coaches to support students in robotics program.

Diversity of Faculty

All 16 faculty members are Caucasian. There are nine females and seven males. In STEM fields, there is an ongoing awareness of gender imbalance. The gender balance of faculty is important to provide an environment which encourages enrollment of female students. Since the WebUX program is part of the School of Computing, none of the faculty or staff have been hired specifically for this program. We currently have an active search for hiring specifically for the WebUX program.

Ongoing Review and Professional Development

Dr. Abdulmalek Al-Gahmi

Actively involved in open-source projects such the open source learning platform curriculr.org or the manuscript book publishing project.
Continuously developing and improving the duroosi.com online learning platform.
Continuously attempting to learn new tools and/or languages and teach new courses.

Dr. Richard Fry

IEEE Conference on Technologies for Sustainability, Phoenix, Arizona – November 2017
An Event Apart WEB/UX Conference, San Francisco, California – November 2016
Utah Campus Compact Conference on Civic Engagement, West Valley, UT – May 2014
International Conference on Software Engineering, Bangkok, Thailand – March 2014
Annually attend workshops sponsored by WSU Online and WSU TLF

Dr. Laura MacLeod

Ongoing learning and keeping up to date with Lynda.com and Pluralsight online training video libraries. Completed eight series during Fall 2016 sabbatical.
Annually attend workshops sponsored by WSU Online and WSU TLF
Completed Master Online Teacher Certification, 2015

Mr. Garth Tuck

Special Interest Group Computer Science Education Conference, Spring 2016
Annually attend workshops sponsored by WSU Online and WSU TLF

As consultant, conduct research and development on current technology related to designing, building, maintaining web sites using current authoring and scripting languages, content creation tools, management tools, and digital media; new media design and development; database design and development; systems integration; server administration and design.

Evidence of Effective Instruction

The WEB/UX program does many things well and is constantly looking to improve itself. Most of the courses that are taught are hands on, with significant lab time where the students are working on projects individually or as groups. Virtually every senior-level student will work on a project for a community or non-profit organization, where they will develop software to improve a process for that organizations. These experiences provide students with real-world opportunities to work as a team, to interact with clients, to gather requirements, to develop and implement software in a new environment, to receive feedback, to debug and problem solve, and to experience the satisfaction that comes with the completion of a project. Faculty mentor students along the way, providing valuable feedback.

Anecdotally, many students talk about these experiences being among the most valuable of their education.

The WebUX program follows the EAST Promotion, Tenure, and Post-Tenure Review Policy regarding faculty evaluations.

All faculty are evaluated by students a minimum of once per semester, following college standards.
Regular Faculty

a. Tenured faculty are evaluated in one course per semester.
b. Tenure-track, untenured faculty and instructors are evaluated for each unique course taught each semester. That is, if an instructor is teaching multiple sections of the same course, only one needs to be evaluated.

ii. Adjunct Faculty

a. Adjunct faculty are evaluated once a semester for each unique course offered. In addition, adjunct instructors are visited at least once per semester by a regular, full-time faculty. This visit gives the faculty the opportunity to discuss any issues that might be apparent.

All faculty evaluations are given to the School of Computing chair who shares them with the faculty member after the semester is concluded and grades have been submitted. Faculty are expected to review evaluations and consider student feedback when revising a course to be offered in the future. All faculty submit course syllabi to the School of Computing for review and archiving. The syllabus is the primary contract between the university and the student and should include improvements made by the faculty.

Standard F – Program Support
Support Staff, Administration, Facilities, Equipment, and Library

Adequacy of Staff
We have an administrator who has taken on added responsibilities, Ms. Angela Christenson. Angie manages student registrations, course offerings, helps program coordinators, and manages the hourly staff for the front desk and those in the Computer Literacy Center (CLC). She also provides guidance to students and staff who call/email for information regarding the program or those who come in person to gather additional information. She also helps coordinate and schedule Industry Advisory Council meetings. With these responsibilities, she supervises two office assistants who assist faculty and staff with office duties. These office assistants also act as receptionists for the School of Computing office located in Elizabeth Hall.

Angie also supervises the seven digital media specialists in the CLC who provide customer service and support to students. They are responsible for the basic operations of the CLC which include administering exams. They assist the CLC director as needed and they have created online learning modules for some of the introductory courses. They will continue to work on new learning modules as needed.

Adequacy of Administrative Support
The college dean and department chair are very supportive of our program. They have worked closely with us as we have transitioned from the Business Multimedia program to the Web and User Experience program. They have helped provide support in promotion and advertising. The Web and User Experience program was selected as a focus for marketing in the College of Engineering, Applied Science & Technology (EAST) as a spotlight for the University. We continue to work together to make the program more visible and increase student awareness and enrollments by adjusting the program to meet the needs of industry and our students. In addition, the dean is supportive of professional development for faculty and staff.

EAST also provides personnel to manage the technology in the program. Staff and student employees are well-equipped to prevent problems, maintain equipment, install new software and hardware, and are responsive when problems arise.

Adequacy of Facilities and Equipment
The Web and User Experience program has a centralized area in Elizabeth Hall for faculty and staff. Having everyone in a centralized area brings a better sense of community and allows faculty and staff to work closely together.

The Web and User Experience classrooms and labs are also in Elizabeth hall, near the offices which makes it easy for faculty as well as students who have easy access to faculty. EAST has a system in which faculty computers are replaced on a five-year basis. The School of Computing has been able to accommodate faculty requests for new technology and hopes to be able to continue this support. Regarding classroom technology, the School of Computing provides the hardware and software needed for each classroom to run successfully and to give the students the best experience as possible.

Adequacy of Library Resources
The library collection, staff and support services meet the needs of the WebUX program. We have ready access to the electronic technology, periodicals, publications and video sources that we need. The library staff is responsive to any requests that our program might have.

Standard G - Relationships with External Communities

Description of Role in External Communities

We have cultivated a relationship with local businesses who are interested in hiring our graduates. Many provide internships for graduates, interview students on campus, present to our students about their companies, and help improve the program to stay current with industry trends. We have over 50 companies that come to campus and recruit students who are in our program. These companies consist of leaders in the tech industry but also Utah native companies like Pluralsight and Instructure. With our program being new we continue to grow more relationships with our local, national, and international companies.

Summary of External Advisory Committee Minutes

Web and User Experience Industry Advisory Committee
Wednesday, October 3, 2018
Elizabeth Hall Room 373

Our Goal:
The goal of the Web and User Experience program is to prepare students in technology related to web development, user experience, and designed to meet industry's needs.

Agenda:

- Welcome, Cody Squadroni
- Committee Introductions
- Curriculum Review / Learning Outcomes
- Industry Trends, Technology, and Skills
- Web and User Experience Name
- Opportunities /Campus Visits

Outcome:
When reviewing the curriculum, the newer members liked what was on there, and they stated the program covers essential areas. The members who have participated before enjoyed seeing that changes were made from suggestions in the past, they said they liked seeing that their input was taking place. A few areas came up that the members would like to see and this consisted of interaction, information architecture, and research. These three skills are essential for students to have, they recommended that we don't go as in-depth with the backend frameworks which there are currently three classes and introduce the students to the topics above. A discussion started about the current name or the program, and there have been suggestions of dropping Web and just going with User Experience. Lastly, the committee discussed job opportunities for students and getting campus visits set for our students to come to watch presentations on the company and job possibilities.

The outcome of this meeting was that the progress we have made had satisfied industry partners and they are excited to see the future development of the program.

Community and Graduate Success

The demand for all areas of Web Development (Front End, Back End, and Full Stack) continues to grow throughout the world. In Utah, many companies are continually looking at students earlier and earlier in their education to meet hiring needs. As such, the Web and User Experience program significantly revised their degrees (AAS, BS, and both minors) and course offerings in 2017 to better prepare students

for this increased demand. A new emphasis in "Full Stack Web Development" and stackable credentials was introduced into all four degrees. In 2018, the program also created a Certificate in Web Essentials, where students can take five courses (17 hours) to gain proficiency in Web development and design to obtain entry-level jobs. Also, in 2018 the Web and User Experience program has worked with the Department of Foreign Languages to propose a localization minor which will consist of a select few of our web courses. Working with other departments is a great addition because it prepares students to build web applications for multiple languages and different cultures. The department is currently in the process of working with the local high schools, tech colleges, and industry representatives on the current Tech Pathways initiative to create clearer pathways for students who are interested in achieving success.

The Web and User Experience program currently has a robust Industry Advisory Council with approximately 9 industry members and growing. The entire council meets together with faculty twice a year to discuss industry needs. During these discussions, we have our industry leaders look at our courses and the learning outcomes. We take the suggestions and, as appropriate, incorporate them to help improve student skill sets, and better prepare them for employment. The information gleaned at these meetings has proven to be invaluable and has contributed to shaping the direction of the program on many occasions to help Web and User Experience graduates achieve success.

Standard H – Program Summary
Results of Previous Program Reviews

Problems identified in site report from 2012		
Problem Identified	Action Taken	Progress
Issue 1 Too small faculty size	Previous 5 Year Program Review:	Hired one additional tenure-track faculty member Fall 2012
	Year 1 Action Taken:	Integrated department into the School of Computing to better utilize faculty in support of Web/UX program. Many faculty teach in both Computer Science and Web/UX.
Issue 2 Reevaluate faculty responsibilities: FBLA-PBL Student advising Faculty preps	Previous 5 Year Program Review:	FBLA-PBL student organization dropped 2015
	Year 1 Action Taken:	Graduation map has been revised to reflect changes in curriculum. The program coordinator advises incoming students and another faculty advises students finishing in the previous Multimedia program.
	Year 2 Action Taken:	Integrated department into the School of Computing to better utilize faculty time. Crossovers in curriculum between WebUX and Computer Science allows multiple sections of one class to be offered. This allows for fewer preps for faculty.

Action Plan for Ongoing Assessment Based on Current Self Study Findings

Action Plan for Evidence of Learning Related Findings

Problem Identified	**Action to Be Taken**
Issue 1 Multimedia program needs to offer additional advanced coursework.	Current 5 Year Program Review
	Year 1 Action to Be Taken (2012): Determine through the advisory committee what additional advanced courses need to be added to the curriculum.
	Year 2 Action to Be Taken (2013): Add one additional advanced course. **Done:** Two courses added in 2013: NTM 2335 Intro to User Experience Design for Web/Mobile and NTM 3645 Advanced User Interface Design. User Experience Minor was created including Computer Science and Business Multimedia courses
	Year 3 Action to Be Taken (2014): Add one additional advanced course. **Done:** Additional support courses were added to give students a choice in areas they want to pursue. These courses included PS 2703 Internet Sales and Service, COMM 2250 Essentials of Digital Media, and BSAD 3000 Small Business Management. In addition, several of the Computer Science courses have been added to the list of support course electives including CS 1010 Intro to Interactive Entertainment, CS 1030 Foundations of Computer Science, CS 2400 Project Management, and CS 2550 Intro to Database Design and SQL.
	Year 4 Action to Be Taken (2015): Add one additional advanced course. **Done:** CS 3650 – Human Computer Interaction was introduced as an elective to focus more on the User Experience as it relates to Web Design.
	Year 5 Action to Be Taken (2016): Retire the NTM program and transition to a brand-new WEB/UX program beginning in 2017. Existing multimedia courses will be offered as support courses within the new degree program.
	2017 – Web/UX degrees – associates, major, and minor all offered in full.

The coursework for the major has changed significantly. The multimedia program which was reviewed 5 years ago has been replaced with a new program in Web and User Experience. Many of the courses from the multimedia program are offered as part of support courses in the new degree.

Action Plan for Staff, Administration, or Budgetary Findings

Problem Identified	Action to Be Taken
Issue 1: Add an additional faculty member for the Web and User Experience Major.	Current 5 Year Program Review: Hire another new faculty member to support the growing WEB/UX program as student enrollments continue to increase since inception of the revised program. Position is currently open and we plan to start the hiring process Spring 2019.**Ongoing**
	Year 1 Action to Be Taken (2012): Request a tenure-track faculty position for the Business/Multimedia Technologies major. **Done**
	Year 2 Action to Be Taken (2013): Hire additional faculty. **Done** Succeeded in hiring one additional tenure-track faculty member who started Fall 2013.
	Year 4 Action to Be Taken: Hire new faculty member to support the new WEB/UX program, as NTM faculty are retiring. **Done**

APPENDICES

Appendix A: Student and Faculty Statistical Summary

	2013-14	2014-15	2015-16	2016-17	2017-18
Student Credit Hours Total*	14,680	15,882	16,059	10,344	7,399
Student FTE Total	489.33	529.40	535.30	344.80	246.63
Student Majors	88	87	81	85	104
Program Graduates					
Associate Degree	7	4	4	4	6
Bachelor Degree	7	11	13	7	8
Student Demographic Profile					
Female	38	38	41	44	48
Male	50	49	40	41	56
Faculty FTE Total	43.77	42.14	50.08	51.18	N/A
Adjunct FTE	23.41	21.65	24.35	26.64	N/A
Contract FTE	20.36	20.49	25.73	24.54	N/A
Student/Faculty Ratio	22.57	25.78	22.82	22.91	N/A

*During the 2015-2016 school year, the university made the decision to drop Computer Literacy from General Education requirements for all students.

Appendix B:

Faculty (current academic year)

	Tenure and Tenure-Track	Contract	Adjunct
Number of faculty with Doctoral degrees	4	0	0
Number of faculty with Master's degrees	0	3	3
Number of faculty with Bachelor's degrees	0	1	5
Other Faculty	0	0	0
Total	4	4	8

Contract/Adjunct Faculty Profile

Name	Rank	Tenure Status	Highest Degree	Years of Teaching	Areas of Expertise
Anderson, Laura	Instructor	N/A	M	>20	Productivity Software (Google and Microsoft), Business Communications, Technology Ethics and Current Issues
Bell, Thomas	Adjunct	N/A	M	5-20	Full Stack Development, User Experience and Design
Christensen, Angela	Adjunct	N/A	B	5-20	Microsoft Office Suite
Fernandez, Luke	Instructor	N/A	D	5-20	Full Stack Development
Halford, Scott	Adjunct	N/A	B	5-20	Video Editing Software
Keel, Christy	Adjunct	N/A	B	5-20	Microsoft Office Suite
Lleverino, Sara	Adjunct	N/A	B	5-20	Frontend Development, User Experience and Design.
Marriott, Naloni	Adjunct	N/A	B	5-20	Microsoft Office Suite
Porter, Joyce	Adjunct	N/A	M	>20	Microsoft Office Suite
Satterthwaite, Faith	Instructor	N/A	M	5-20	Full Stack Development, User Experience and Design
Squadroni, Cody	Instructor	N/A	B	<5	Full Stack Development, User Experience and Design
Tuck, Garth	Instructor	N/A	M	5-20	Full Stack Development, User Experience and Design
Webster, Amanda	Adjunct	N/A	M	5-20	Microsoft Office Suite

Tenure Track Faculty Profile

Name	Rank	Tenure Status	Highest Degree	Years of Teaching	Areas of Expertise
Al-Gahmi, Abdulmalek	Assistant Professor	Not Tenured	D	5-20	Full Stack Development
Fry, Rich	Professor	Tenured	D	5-20	Back End Development (ASP.NET, C#, SQL Server), UML, and Project Management
MacLeod, Laura	Associate Professor	Tenured	D	>20	Adobe Creative Suite and Front End Development

Appendix C: Staff Profile

Name	Job Title	Years of Employment	Areas of Expertise
Angela Christensen	Computer and Information Literacy Exam (CIL) Administrator/Lab Manager	9	Microsoft Office Suite

Appendix D: Financial Analysis Summary
(This information is provided by the Provost's Office)

School of Computing: NMT, Web and User Experience, and Computer Science					
Funding	**13-14**	**14-15**	**15-16**	**16-17**	**17-18**
Appropriated Fund	2,721,749	3,155,801	3,443,896	3,757,447	3,052,541
CE – IW Wage	479,690	513,597	553,787	610,470	569,865
Other:					
Special Legislative Appropriation					
Grants or Contracts	479,690	513,597	553,787	610,470	569,865
Special Fees/Differential Tuition	988	1,087	1,143	1,173	1,111
Total	$2,721,749	$3,155,801	$3,443,896	$3,757,446	$3,052,541

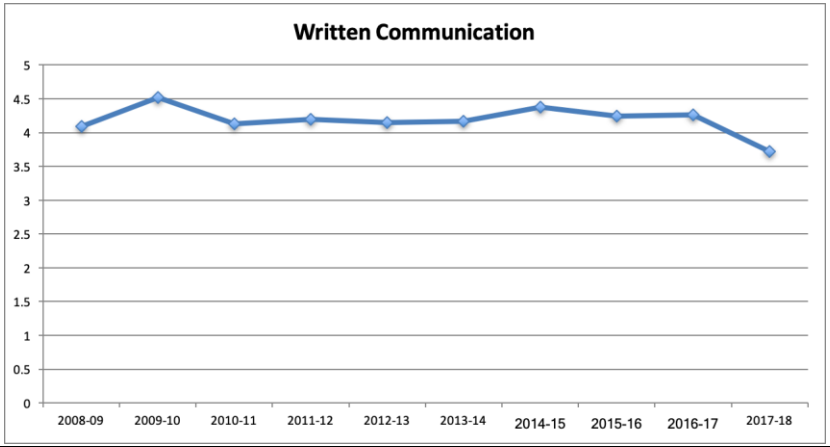
Appendix E: External Community Involvement Names and Organizations

Name	Organization
Jon Anderson	BYU
Tom Bell	Pluralsight
Justin Carmony	DDM
Frank Eddy	Collecting Arts
Zarin Ficklin	HQ
Frank Ouimette	MRM/Mccann
Matt Robbins	O.C. Tanner
Ray Dahl	LDS Church
Rick Fielding	LDS Church

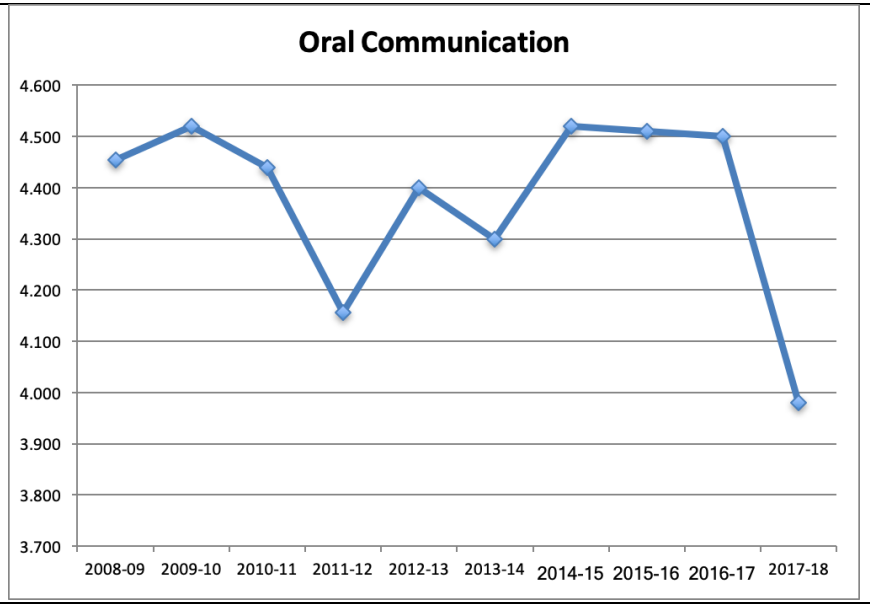
Appendix F: Site Visit Team (both internal and external members)

Name	Position	Affiliation
Jo Ellen Jonsson	Associate Professor	WSU College of EAST
Kim Brown	Associate Professor	UVU Digital Media

Appendix G: Evidence of Learning Courses within the Major

Evidence of Learning: Courses within the Major					
Program Learning Goal	Measurable Learning Outcome	Method of Measurement Direct and Indirect Measures*	Findings Linked to Learning Outcomes	Interpretation of Findings	Action Plan/Use of Results
Goal 1: Students will possess effective business communication skills.	Learning Outcome 1: Students will maintain a score of 3.5 or above on the writing assessment.	Measure 1: Writing Assessment Rubric	Measure 1: Written Communication 	Measure 1: Since Fall 2008 when collection of this data began, students have maintained an average score of 4.18 on the written communication assessment.	Measure 1: To evaluate annually the individual element scores on the writing rubric to improve the sub scores.
	Learning Outcome 2: Students will maintain a score of 3.5 or above on the oral communication assessment.	Measure 2: Oral Communication Assessment Rubric	Measure 2: Oral Communication	Measure 2: Since Fall 2008, when collection of this data began, students have maintained an average score of 4.38 on the oral communication assessment.	Measure 2: To evaluate annually the individual element scores on the oral communication rubric to improve the sub scores.

<table>
<tr><td colspan="6">Evidence of Learning: Courses within the Major</td></tr>
<tr><td>Program Learning Goal</td><td>Measurable Learning Outcome</td><td>Method of Measurement

Direct and Indirect Measures*</td><td>Findings Linked to Learning Outcomes</td><td>Interpretation of Findings</td><td>Action Plan/Use of Results</td></tr>
<tr><td></td><td></td><td></td><td> 
</td><td></td><td></td></tr>
<tr><td colspan="6">Goal 2: This goal is not assessed for this major.</td></tr>
<tr><td>Goal 3:
Student will possess effective knowledge and skills.</td><td>Learning Outcome 3:
At least 75% of students will work on level comparable to or beyond the level of educational background.</td><td>Measure 1:
Internship Employer and Student Forms</td><td>Measure 1:
Knowledge and Skills
<table>
<tr><td>Academic Year</td><td>Works beyond level of educational background

Employer</td><td>Works on level comparable to educational background

Employer</td><td>Works on level below educational background

Employer</td></tr>
<tr><td>2009/2010</td><td>11</td><td>4</td><td>0</td></tr>
<tr><td>2010/2011</td><td>4</td><td>2</td><td>0</td></tr>
<tr><td>2011/2012</td><td>4</td><td>3</td><td>0</td></tr>
<tr><td>2012/2013</td><td>3</td><td>5</td><td>0</td></tr>
<tr><td>2013/2014</td><td>2</td><td>2</td><td>0</td></tr>
<tr><td>2014/2015</td><td>11</td><td>6</td><td>0</td></tr>
<tr><td>2015/2016</td><td>14</td><td>16</td><td>0</td></tr>
<tr><td>2016/2017</td><td>16</td><td>8</td><td>0</td></tr>
</table></td><td>Measure 1:
Since Fall 2009, when collection of this data began, 100% of the employers rated student's work on a level comparable to or beyond the level of educational background.</td><td>Measure 1:
Evaluate higher level software tasks and skills.</td></tr>
</table>

<table>
<tr><td colspan="6">Evidence of Learning: Courses within the Major</td></tr>
<tr><td>Program Learning Goal</td><td>Measurable Learning Outcome</td><td>Method of Measurement

Direct and Indirect Measures*</td><td colspan="2">Findings Linked to Learning Outcomes</td><td>Interpretation of Findings</td><td>Action Plan/Use of Results</td></tr>
<tr><td></td><td></td><td></td><td colspan="2"><table>
<tr><td>2017/2018</td><td>4</td><td>3</td><td>0</td></tr>
</table></td><td></td><td></td></tr>
<tr><td rowspan="2">Goal 4:
Students will possess effective decision-making and problem-solving skills.</td><td>Learning Outcome 4a:
At least 75% of students will make appropriate decisions most of the time.</td><td>Measure 1:
Internship Employer and Student Forms</td><td colspan="2">Measure 1:
Decision Making<table>
<tr><td>Academic Year</td><td>Makes appropriate decisions most of the time

Employer</td><td>Makes appropriate decisions some of the time

Employer</td><td>Unable to make appropriate decisions

Employer</td></tr>
<tr><td>2009/2010</td><td>15</td><td>0</td><td>0</td></tr>
<tr><td>2010/2011</td><td>6</td><td>0</td><td>0</td></tr>
<tr><td>2011/2012</td><td>7</td><td>0</td><td>0</td></tr>
<tr><td>2012/2013</td><td>6</td><td>2</td><td>0</td></tr>
<tr><td>2013/2014</td><td>3</td><td>1</td><td>0</td></tr>
<tr><td>2014/2015</td><td>16</td><td>1</td><td>0</td></tr>
<tr><td>2015/2016</td><td>22</td><td>0</td><td>0</td></tr>
<tr><td>2016/2017</td><td>21</td><td>3</td><td>0</td></tr>
<tr><td>2017/2018</td><td>4</td><td>3</td><td>0</td></tr>
</table></td><td>Measure 1:
Since Fall 2009, when collection of this data began, 100 out of 110 or 91% of employers rated students in the highest level.</td><td>Measure 1:
N/A</td></tr>
<tr><td>Learning Outcome 4b:
At least 75% of students will identify most problems and implement solutions.</td><td>Measure 2:
Internship Employer and Student Forms</td><td colspan="2">Measure 2:
Problem-Solving Skills<table>
<tr><td>Academic Year</td><td>Identifies most problems and implements solutions

Employer</td><td>Identifies some problems and implements some solutions

Employer</td><td>Unable to identify problems and implement solutions

Employer</td></tr>
<tr><td>2009/2010</td><td>14</td><td>1</td><td>0</td></tr>
<tr><td>2010/2011</td><td>4</td><td>2</td><td>0</td></tr>
<tr><td>2011/2012</td><td>4</td><td>3</td><td>0</td></tr>
<tr><td>2012/2013</td><td>7</td><td>1</td><td>0</td></tr>
<tr><td>2013/2014</td><td>3</td><td>1</td><td>0</td></tr>
<tr><td>2014/2015</td><td>13</td><td>4</td><td>0</td></tr>
<tr><td>2015/2016</td><td>20</td><td>2</td><td>0</td></tr>
<tr><td>2016/2017</td><td>23</td><td>1</td><td>0</td></tr>
<tr><td>2017/2018</td><td>4</td><td>3</td><td>0</td></tr>
</table></td><td>Measure 2:
Since Fall 2009, when collection of data began, 92 out of 110 or 84% of employers rated student as identifying and implementing solutions for most of the problems.</td><td>Measure 2:
Follow-up with internship employers to determine types of problems not being identified and solved.</td></tr>
</table>

<table>
<tr><td colspan="6">Evidence of Learning: Courses within the Major</td></tr>
<tr><td>Program Learning Goal</td><td>Measurable Learning Outcome</td><td>Method of Measurement

Direct and Indirect Measures*</td><td>Findings Linked to Learning Outcomes</td><td>Interpretation of Findings</td><td>Action Plan/Use of Results</td></tr>
<tr><td colspan="6">Goal 5: This outcome is not assessed for this major.</td></tr>
<tr><td>Goal 6:
Students will possess knowledge of ethics and professionalism.</td><td>Learning Outcome 6:
At least 75% of students will demonstrate good or excellent work ethics.</td><td>Measure 1:
Internship Employer and Student Forms</td><td>Measure 1:
Ethics
<table>
<tr><td>Academic Year</td><td>Demonstrates excellent work ethics

Employer</td><td>Demonstrates good work ethics

Employer</td><td>Demonstrates poor work ethics

Employer</td></tr>
<tr><td>2009/2010</td><td>13</td><td>2</td><td>0</td></tr>
<tr><td>2010/2011</td><td>5</td><td>1</td><td>0</td></tr>
<tr><td>2011/2012</td><td>7</td><td>0</td><td>0</td></tr>
<tr><td>2012/2013</td><td>7</td><td>1</td><td>0</td></tr>
<tr><td>2013/2014</td><td>3</td><td>1</td><td>0</td></tr>
<tr><td>2014/2015</td><td>15</td><td>2</td><td>0</td></tr>
<tr><td>2015/2016</td><td>22</td><td>0</td><td>0</td></tr>
<tr><td>2016/2017</td><td>23</td><td>1</td><td>0</td></tr>
<tr><td>2017/2018</td><td>6</td><td>1</td><td>0</td></tr>
</table></td><td>Measure 1:
Since Fall 2009, when collection of this data began, 100% of employers rated students work ethics as good or excellent.</td><td>Measure 1:
N/A</td></tr>
</table>

*At least one measure per objective must be a direct measure. Indirect measures may be used to supplement evidence provided via the direct measures.

Since 2009, we have used this structure to measure learning outcomes within the program. Since the program has changed significantly, we will be working on a new approach to measuring learning outcomes. You will see from above that the numbers have dipped and this is due to the program changes and making the course that normally assess the outcomes optional. As we move forward, we will be focusing the measurement of learning outcomes in the associate-level portfolio class and the upper division capstone.