

Blending computer science and liberal arts in a multi-disciplinary graphics design program

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Abstract

The University of Jamestown is a small liberal arts school with a Department of Computer Science and Technology that offers Bachelor of Arts degrees in technology based disciplines. This paper details the decisions taken to build a unique addition to our program offerings. In the fall of 2015, we developed a curriculum plan with support from the departments of Art, Business and Communication to bring forth a new major in graphic design. The major combines the application of visual art, communication, marketing, and computer technology skills, all of which are needed to aid current business and industry. In the fall of 2016 we began to build depth to this program with various course revisions and the addition of new courses. The attitude of the students and entire campus community has been very positive as we continue to build and promote this exciting program.

1 Introduction

The University of Jamestown is a small liberal arts school with a Department of Computer Science and Technology (CS&T) that offers Bachelor of Arts degrees in computer science, information technology, and management information science. This paper details the determination and decisions taken to build a unique addition to our program offerings. In the fall of 2015, we developed a curriculum modification plan to bring our new program forward in our faculty governance system. With the support and consultation from the departments of Art, Business and Communication we developed a new major in graphic design. The major combined the application of visual art, communication, marketing, and computer technology skills, all of which are needed to aid current business and industry. This major is offered for students whose interests and future endeavors may involve the creation or implementation of computer developed visual communications. The proposal did not include the development of new courses, but instead was developed from a unique combination of existing courses from four departments.

Our efforts in this area began in 2013 when we developed a minor in computer graphic design to meet the interest students had expressed in pursuing graphic design coursework beyond what was currently offered with our Information Technology degree. There were also students from other majors that completed the graphic design courses to help enhance their degree programs. These students indicated a desire to formalize their academic interest into a minor program. Student interest has been continually building since 2013, and that provided the impetus to proceed with the development of a major program.

With minimal notice to the student body, we began with approximately 10 students as declared majors in the fall of 2016 and have been steadily bringing majors into the program since then. Although we began this program with the addition of no new courses or faculty, we expected there would be some necessary course additions and modifications after the program was implemented. In the fall of 2016 we began to build depth into this program with various course revisions and the addition of new courses. The attitude of the students and entire campus community has been very positive as we continue to build and promote this exciting program.

2 Program Design

For over two decades, the University of Jamestown has offered a degree in information technology. This degree includes all the standard technology coursework like networking, database, computer troubleshooting, and sever operating systems. In addition to those items, there are technology based design courses like web development, graphic design using photoshop, page layout, and video editing. In the past few years, numerous students expressed an interest in pursuing graphic design coursework beyond what was currently offered with the information technology degree. Students from other majors completed the graphic design courses that were offered to help improve their

degree program, and they also indicated a desire to formalize their academic interest into a minor program.

2.1 Graphic Design Minor 2014

A minor program was developed to create an avenue for students to learn to creatively and effectively communicate in a visual medium in the business world. Since most of the information we receive today is visual in nature, the graphic design student is trained to communicate effectively in such a visual world. This minor was intended for students who may be interested in entering a graphic design profession or seek career opportunities that utilize these graphic design skills in their chosen field.

The graphic design minor is offered for students whose interests and future endeavors may involve the creation or implementation of computer developed visual communications. The minor would complement a major in fine arts, business, computer science, information technology, communication and others

2.1.1 Course Requirements for the Computer Graphic Design Minor

REQUIRED COURSES

ART 111	Drawing I	or	3
ART 212	Drawing II		
ART 112	Design		3
BUSN 320	Marketing		3
CS 232	Video and Publication Development		3
CS 251	Graphics Development		3
CS 341	Introduction to Web Development		<u>3</u>
TOTAL	REQUIRED		18

ELECTIVES (Choose one of the following)

ART 390/490	Special Topics		3
BUSN 430	Advertising		3
COMM 215	Introduction to Media Writing		3
COMM 216	News in a Multimedia World		3
EE 350/450	Internship in Graphic Design		3
CS xxx	Other course with Dept. Approval		<u>3</u>

TOTAL FOR MINOR **53**

2.2 Major in Graphic Design for E-Commerce 2016

In the fall of 2015 the University of Jamestown presented a new major titled Graphic Design for E-Commerce. The major combines the application of visual art, communication, marketing, and computer technology skills, all of which are needed to

aid current business and industry. The proposal did not include the development of new courses, instead it was developed from a unique combination of existing courses from four departments. The courses offered for the Graphic Design major derive from the Art, Business, Communication, and Computer Science departments.

This major program expanded upon the minor's goal to create an avenue for students to learn to creatively and effectively communicate in today's visual world. At the University of Jamestown, the graphic design major is set up to teach students to communicate effectively in a visual aspect in the business environment.

2.2.1 Course Requirements for the Graphic Design for E-Commerce Major

REQUIRED COURSES

ART 111	Drawing I	3
ART 112	Design	3
ART 103	Art Appreciation or	
ART 211	Art History II	<u>3</u>
	Total ART	9
BUSN 320	Marketing	3
BUSN 410	Global Marketing	3
BUSN 430	Advertising	<u>3</u>
	Total BUSN	9
COMM 218	Computer Mediated Communications	3
COMM 314	Publicity and PR	3
COMM 338	Photojournalism	<u>3</u>
	Total COMM	9
CS 232	Video and Publication Development	3
CS 251	Graphics Development	3
CS 341	Introduction to Web Development	3
CS 342	Database Development	3
CS 441	E-Commerce Web Development	3
CS 481	Senior Seminar I	1
CS 482	Senior Seminar II	1
	Total CS	<u>17</u>
TOTAL	REQUIRED	44

ELECTIVES (Choose at least 9 credits below, maximum of 6 from any department)

ART 302	Printmaking	3
ART 309	Painting	3
ART 390/490	Special Topics	3
BUSN 390/470	Special Topics in Marketing	3
BUSN 475	Marketing Research	3
BUSN 490	Community Alliance for Mgmt. Consulting	3-4
COMM 340	Film Analysis	3

COMM 390/490 Special Topics	3
CS 390/490 Special Topics	3
EE 350/450 Internship in Graphic Design	<u>3-6</u>
TOTAL FOR MAJOR	53

2.3 Updates to Major in Graphic Design for E-Commerce 2017

In the fall of 2016, various updates to courses and programs offered by the department of Computer Science and Technology were proposed. These updates were designed primarily to enhance the graphic design offerings. Both students and faculty supported the proposed developments.

2.3.1 Course Additions

- CS 317 – 3 Digital Audio and Video Development – This course examines multiple aspects of digital video and audio technologies, including creating graphics for video, camera and lighting techniques, capturing video, non-linear editing, and compression of audio/video media.
- CS 361 – 3 Advanced Computer Graphic Design - This course engages upper-level design students in designing content for multimedia and interactive communication. Emphasis is placed on designing for computers, tablets and phones. Students will create digital portfolios that demonstrate competency in graphic design. Prerequisites: CS 232, CS 251
- CS 371 – 3 Computer Animation – This course is an introduction to basic animation principles as they are applied to both 2D and 3D environments. Includes basic principles of character animation and expressive form in motion utilizing open source computer software. Students will also develop static 3D models. Prerequisites: CS 251
- CS 471 - 3 Game Development - Students will use an open source game engine and computer programming to experiment with games in various genres. Students will also develop game design skills needed for level editing and design, prototyping, and working in game engines. Prerequisites: CS 272, CS 371

2.3.2 Course Revisions

- CS 232 – The video production content has been shifted to the new course, CS 317, allowing this course to focus more heavily on typography. The new description is as follows: Digital Design and Typography - Students will primarily focus their efforts towards developing a greater understanding of typographic form through exercises based on the setting of words, phrases, sentences and short

paragraphs. Students will also learn how to incorporate type successfully with graphics and backgrounds to create a variety of digital and print publications.

- CS 481 - This course has been expanded from 1 credit to 2 credits. The new description is as follows: Senior Seminar I - This course provides discussion and reflection on professionalism and ethics within the computer technology fields. Job search skills, including resume preparation and interviewing, will be covered. This course will also involve selection and approval of a student project that will be continued in CS 482. Prerequisite: senior standing. Fall

2.3.3 Changes to the Major in Graphic Design for E-Commerce

- Added CS 130, CS 173, CS 317, CS 361, and CS 371 as required courses
- Reduced the core ART requirements to 6 credits
- Reduced the core COMM requirements to 6 credits
- Removed BUSN 410 as a requirement; it may still serve as an elective
- Changed CS 481 to 2 credits
- Reduced elective credits to 6 and added more flexibility in choices
- Increased total credits from 52 to 57

2.3.4 Requirements for the Graphic Design for E-Commerce Major

REQUIRED COURSES

CS 130	Introduction to Computer Principles	3
CS 173	Introduction to .NET Programming	3
CS 232	Digital Design and Typography	3
CS 251	Graphics Development	3
CS 317	Digital Audio and Video Development	3
CS 341	Introduction to Web Development	3
CS 342	Database Development	3
CS 361	Advanced Computer Graphic Design	3
CS 371	Computer Animation	3
CS 441	E-Commerce Web Development	3
CS 481	Senior Seminar I	2
CS 482	Senior Seminar II	<u>1</u>
Total CS		33

CORRELATIVE REQUIREMENTS

ART 111	Drawing I	3
ART 112	Design	3
BUSN 320	Marketing	3
BUSN 430	Advertising	3
COMM 314 or	Publicity and PR	3
COMM 318	Computer Mediated Communications	
COMM 338	Photojournalism	<u>3</u>

Total Correlative	18
Plus six upper division credits from ART, CS, BUSN, COMM or Internship	6
TOTAL FOR MAJOR	57

3. Expected Outcomes and Student Perception

We believe students in the Graphic Design for E-Commerce major will meet the learning outcomes detailed below. Students will learn to utilize technology tools and techniques and effectively use information management tools to facilitate visual communications across various aspects of a business. Some of the objectives of the major are as follows:

- Design effective and usable technology-based solutions and integrate them into the user environment.
- Communicate effectively and efficiently with clients and peers both verbally and in writing.
- Collaborate in teams to accomplish a common goal by integrating personal initiative and group cooperation.
- Describe the impact of technology on individuals, organizations, and society, including ethical, legal, and policy issues.
- Utilize computer graphics and visual arts tools related to web design.
- Accurately determine client needs, audience, purpose, and media capabilities in the development and execution of graphic communication projects.
- Develop and communicate creative ideas to colleagues and clients through oral, written, and visual communication during the completion of individual and team projects.
- Investigate opportunities for professional growth.
- Incorporate professional ethics on projects.

4. Conclusion

The paper details the University of Jamestown’s efforts to develop a new program in graphic design. Our efforts formally began in 2013 when we instituted a minor in

computer graphic design to meet the interests that students had expressed in pursuing graphic design coursework beyond what was currently offered with our degrees. The excitement and interest in this new minor grew among students, as well as among faculty in other departments. With the support and consultation from the departments of Art, Business and Communication we created a new major in graphic design in 2015. Initially this new major did not include the development of new courses, but instead was developed from a unique combination of existing courses from four departments. We began with approximately 10 students as declared majors in the fall of 2016 and have been steadily bringing more students into this program. In the fall of 2016 we began to build depth into this program with various course revisions and the addition of new courses. The attitudes of the students and entire campus community have been very positive throughout the development of the University of Jamestown's graphic design major. These attitudes remain encouraging as we continue to build and promote this exciting program.

References

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