Cover/Signature Page

Institution Submitting Request: University of Utah

Proposed Title: Bachelor of Science Multi-Disciplinary Design School or Division or Location: College of Architecture + Planning

Department(s) or Area(s) Location: School of Architecture

Recommended Classification of Instructional Programs (CIP) Code¹: 50.0404

Proposed Beginning Date: 08/20/2013

Institutional Board of Trustees' Approval Date:

Proposal Type (check all that apply):

R401-	
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Items submitted will be reviewed by the Office of the Commissioner of Higher Education (OCHE), then forwarded to the Chief Academic Officers (CAO) and Program Review Committee (PRC) before being presented to the Regents. K-12 Personnel Programs are also reviewed by appropriate officials and faculty of the schools and colleges of education. See R401-4.2.2 for all programs requiring specialized reviews.

Section #	Item
4.1.1	Non-Credit Certificate of Proficiency Eligible for Financial Aid
4.1.1	Credit Certificate of Proficiency Eligible for Financial Aid
4.1.1	Non-Credit Certificate of Completion
4.1.1	Credit Certificate of Completion
4.1.9	Fast-Tracked Certificate
4.1.2	Associate of Applied Science Degree
4.1.3	Associate of Science Degree
4.1.5	Associate of Arts Degree
4.1.5	Bachelor's Degree
4.1.6	K-12 School Personnel Programs
4.1.7	Master's Degree
4.1.8	Doctoral Degree

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I certify that all require	ed institutional approvals	have been obtained	prior to submitting	this request to the	Office of the
Commissioner					

Signature	Date:	
Printed Name: Mike Hardman		

¹ CIP codes must be recommended by the submitting institution. For CIP code classifications, please see http://nces.ed.gov/lipeds/cipcode/Default.aspx?y=55.

Program Description

University of Utah Bachelor of Science Multi-Disciplinary Design Major 4/10/2012

Section I: The Request

University of Utah requests approval to offer a Bachelor of Science in Multi-Disciplinary Design effective Fall Semester 2013. This program has been approved by the institutional Board of Trustees on .

Section II: Program Description

Complete Program Description

The College of Architecture and Planning proposes to introduce a new undergraduate Bachelor of Science in Multi-Disciplinary Design. The course of study will use product design as a vehicle to investigate design research, human centered design principles, interface development, articulation of product forms, materials and digital manufacturing principles. After successfully completing 20 credit hours in specified pre-major courses, students accepted into the major will focus on one of two tracks: one that is more related to form giving closely related to Industrial Design and the other that is more digitally related.

In the modern world the boundaries that exist between applied design disciplines often aren't as easily defined. The adherence to siloed solutions is breaking down. Bridges are being built between specialties in order to cultivate a shared understanding, synergistic collaboration and a common vocabulary – all of which are essential to solving complex problems. Those versed in the language of design and critical thinking will be essential voices in such dialogues. Therefore, it is absolutely critical that we not only educate our future designers with a strong foundation in the fundamentals of design and design thinking, but to begin cultivating collaborative environments that reflect contemporary paradigms.

This idea of cross-fertilization is not new. It has, perhaps, just been inadvertently forgotten due to the complexities of the university structure. The Bauhaus which operated in Germany from 1919–1933 (and subsequent new Bauhaus at the Illinois Institute of Technology) was/is a model of inter-disciplinary study that purposefully ignored arbitrary and artificial boundaries and provided a common approach to design and art-making across divergent disciplines. This union of art, craft and technology led to innovations in architecture, graphic design, product design, furniture design and materials that continue to reverberate.

In the last number of years many private institutions and design practices have taken up this theme through the linkage between different disciplines through the common language of design. The d.school at Stanford, the New School at Parsons, IIT Institute of Design and MIT Media labs are modern equivalents of the Bauhaus that bring together a diverse set of specialties across the common framework of design and using community based complex problems at their core.

Purpose of Degree

As Buckminster Fuller noted, the designer "is an emerging synthesis of artist, inventor, mechanic, objective economist, and evolutionary strategist." The discipline of design is very broad including the design of architecture, products, digital media, fashion, crafts, industrial methods, print media, and so on. At this juncture in time, design and design thinking have evolved into a dominant framework for creative and

interdisciplinary problem solving. This new interdisciplinary program will train our students to compete in an ever increasingly complex work environment and a thorough understanding of ethical conduct and social responsibility through these specific concepts:

- inquiry and project-based learning
- critical thinking skills
- experimentation with multiple ways of problem solving
- visual literacy
- innovation and invention
- team building and collaboration
- identifying authentic real-world tasks and challenges
- design research
- human centered design principles

The Multi-disciplinary Bachelor of Science in Design encompasses a curriculum with four substantive areas applicable to all design education: Studio, Technical, History/Theory and Practice. In addition to the classes and faculty from the Design program, the proposed curriculum leverages and has been developed with existing University of Utah faculty and courses from Architecture, Fine Arts, Communication, Business, Bio-Engineering, Mechanical Engineering, Computer Science and Psychology.

This program has at its core the shared fundamental understanding of the language, process and application of design and design thinking. This proposes to use design as a verb for activities rooted in 4 cornerstones: Engagement, Community, Collaboration and Responsibility. This broad perspective allows for students to see the connections between these design specialties and focus on the process of design as a creative idea and development framework. It expands students' horizons by engaging with other design disciplines in strategic and collaborative ways. This approach can lead to exciting new design engagement that can deeply engage the world as it is and as it is becoming.

Practically this program will manifest itself in a problem driven curriculum that merges and unifies the expertise of the College and University as a whole and examines problems at a product scale founded along a human experiential perspective. The curriculum will map design's future through production, research, strategy, entrepreneurship and applied futurism, preparing students to be multi-disciplinary product designers, design researchers, product development experts, directors, practitioners, visionaries and leaders.

Students will be required to have excellent knowledge of computers, computer graphics, and standard software packages. Competencies in design and computer software, as demonstrated through a portfolio will be an admission requirement for the major. Admission will be restricted to qualified applicants in the second half of their sophomore year. The components of the major include 74 credit hours of electives and core requirements, as well as the general education requirements for the university, many of which can be satisfied through the interdisciplinary requirements of the major.

Institutional Readiness

This major builds upon the successful Multi-Disciplinary Minor that is currently being offered by the College of Architecture + Planning. The organizational structure, administrative support and facility considerations

have been put in place already to support the minor and therefore no expected changes are needed. Thus, the proposed program will not impact the delivery of either undergraduate or lower-division education.

Faculty

The design faculty will consist of three full-time regular faculty plus 5 FTE of adjunct professional faculty (six to 10 individuals). Currently there are two dedicated faculty lines for the program. Director Jim Agutter fills one and the other will be filled by a national search later this year. The university administration has committed an additional faculty line the following year. The adjunct faculty are particularly important since the field of design is rapidly evolving and those who practice are often on the forefront on changes in software, tools and processes. In addition, the faculty teaching in the design program will be drawn from several departments and coordinated by the faculty appointed to the Design program of the College of Architecture + Planning. These are experienced faculty who specialize in theory and criticism (Communication), computer applications and computer science (CS), bio-medical engineering (Bio-Med) mechanical engineering (ME), media arts (Art & Art History), marketing and innovation(Business) and human factors (Psych).

Faculty Category	Faculty Headcount – Prior to Program Implementation	Faculty Additions to Support Program	Faculty Headcount at Full Program Implementation
With Doctoral Degrees (Including MFA and other			
terminal degrees, as specified by the institution)			
Full-time Tenured			
Full-time Non-Tenured	1	3	4
Part-time Tenured			
Part-time Non-Tenured			
With Master's Degrees			
Full-time Tenured			
Full-time Non-Tenured			
Part-time Tenured			
Part-time Non-Tenured	1	2	3
With Bachelor's Degrees			
Full-time Tenured			
Full-time Non-Tenured			
Part-time Tenured			
Part-time Non-Tenured	2	2	5
Other			
Full-time Tenured			
Full-time Non-Tenured			
Part-time Tenured			
Part-time Non-Tenured			
Total Headcount Faculty			
Full-time Tenured			
Full-time Non-Tenured	1	3	4
Part-time Tenured			
Part-time Non-Tenured	3	2	5

Total Department Faculty FTE (As reported in the	1.5		8
most recent A-1/S-11 Institutional Cost Study for			
"prior to program implementation" and using the A-		Χ	
1/S-11 Cost Study Definition for the projected "at full			
program implementation.")			

Staff

The Design program for the first 5 years will not need any additional staff and will leverage existing resources in the College of Architecture + Planning.

Library and Information Resources

The institution currently has the needed library resources and support from the library.

Admission Requirements

Admission applications/review process will be made each Spring and be based on a portfolio of previous design work that applicants have carried out in the pre-admittance course work. These portfolios will be reviewed by at least 3 full and part-time faculty members in the program. They will look for completeness, capability, craftsmanship and aesthetics. In addition, students will be required to have at least a 2.8 GPA. Following the review of the material students will be admitted into the program for the following Fall.

Student Advisement

The students will be advised by the academic advisor for the College of Architecture + Planning. The College will support this additional activity for this individual.

Justification for Graduation Standards and Number of Credits

Students will be able to apply for graduation after completing their fall semester of their senior year or after completing or nearly completed all required coursework for the major and for the university requirements.

External Review and Accreditation

Outside consultants were utilized to help shape the direction and the coursework of the program to ensure that the proposed curriculum meets with the needs of the design profession and other academic units on campus. These outside consultants included professional industrial designers both in state and out of state, professional design engineers, and business leaders. In addition, an interdisciplinary advisory board has been organized to oversee curriculum issues and provide ongoing feedback on trajectory of the program.

Robert Hitchcock, Ph.D., Assistant Professor Bio-Engineering, Director of Bio-Design John Langell, M.D., M.P.H, Assistant Professor General Surgery, Director of Bio-Innovate Carol Sogard, MFA, Associate Professor Graphic Design, Director of Graphic Design Frank Drews, Ph.D., Associate Professor Psychology, Director of Human Factors Program Abbie Griffin, Ph.D., Presidential Professor Marketing, Presidential Chair in Marketing Mark Minor, Ph.D., Associate Professor Mechanical Engineering

Ann Darling, Ph.D., Associate Professor Communication, Senior Associate Dean Undergraduate Studies Mariah Meyer, Ph.D., Assistant Professor School of Computing

Theodore Espiritu, Visiting Lecturer in Design, Espiritu Design

Randall Smith, Visiting Lecturer in Design, Modern8

Matthew Kressy, Senior Lecturer MIT, Adjunct Faculty RISD, Designturn Inc.

Because this is a hybrid program that merges expertise from across different fields, accreditation will not be sought.

Projected Program Enrollment and Graduates; Projected Departmental Faculty/Students:

Data Category	Current – Prior to New Program Implementation	Projected Year 1	Projected Year 2	Projected Year 3	Projected Year 4	Projected Year 5
Data for Proposed Program						
Number of Graduates in Proposed Program	X		15	30	40	50
Total # of Declared Majors in Proposed Program	X	15	30	60	70	90
Major Data - For All Programs Wit	hin the Major					
Total Major Faculty FTE (as reported in Faculty table above)	1.5	3.5	5	6	7	8
Total Major Student FTE (Based on Fall Third Week)		15	30	60	70	90
Student FTE per Faculty FTE (ratio of Total Major Faculty FTE and Total Major Student FTE above)		4.28:1	6:1	10:1	10:1	11.24:1
Program accreditation-required ratio of Student FTE/Faculty FTE, if applicable: (Provide ratio here:)						

Expansion of Existing Program

This is an expansion of the existing Multi-Disciplinary Design Minor, which has been in place for 2 academic years. There are currently over 60 students enrolled in the design minor whom come from a variety of departments across campus.

Section III: Need

Program Need

As outlined below, there is a significant labor market demand for professionals trained in multi-disciplinary design. There are however, currently no academic programs in Utah that provide this type of training, other than the University of Utah's Multi-Disciplinary Design Minor, which provides only a limited introduction to the field.

The multi-disciplinary design major will train students to gain a broad perspective allowing to see the connections between various design specialties and focus on the process of design as a creative idea and development framework. It will expand students' horizons by engaging with other disciplines in strategic and collaborative ways.

The program will be unique and will collaborate with established programs such as Human Factors, Bioengineering, Business and Medicine. The program will serve as a creative bridge across these different entities and provide students with a truly remarkable experience. In addition, because of the relationship between these different programs and the focus on product development, it is anticipated that the program will generate intellectual property that could lead to commercialization revenue.

Labor Market Demand

Due to the increased awareness of design thinking strategies to solve difficult and complex problems in a variety of fields, there has been an increased demand for individuals who are trained designers. Based upon research conducted for this proposal, it is estimated that multi-disciplinary designers will see job opportunities grow at a rate significantly faster than other fields nationwide over the next 10 years. A recent search on the design specific job board Design Observer (www.designobserver.coroflot.com) indicated several hundred recent job offerings in the area of product design, design management and design research. This trend will also be seen locally with many firms in the area expanding and offering positions in the area of product design and development.

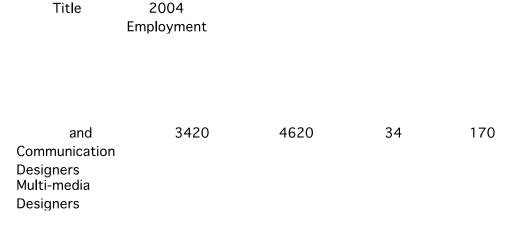


Table 1. Long term employment projections in Utah. Source Utah Labor Market Information System

At a recent strategic meeting with Utah design business leaders it became apparent that there is a need for individuals with a broad understanding of design thinking strategies as well as specific technical skills. In fact, several design firms have resorted to partnering with out of state universities for internship opportunities due to the lack of local quality students.

Student Demand

There has been a recent increase in student demand for design related programs throughout the country due to the growth of design related services and businesses. In addition, there has been an acknowledgment in the business community that design thinking is a valuable strategy for solving complex problems. As a result many new design programs have been established such as the d.School at Stanford and established programs such as the Rhode Island School of Design and Harvard's Design School have seen significant enrollment increases.

Currently we have a Multi-Disciplinary Design minor offered in the College. In the second year of the program we have seen a dramatic increase in the number of students taking courses. All 3 courses offered in the College for the minor are exceeding capacity and many students are on waiting lists wanting to take

the classes. Over 60 students have signed up for the design minor and many more have expressed an interest. Six students are currently pursuing a Bachelor of University Studies degree with a focus on design. It is estimated that we would have 15 to 20 declared majors enrolled in the first year and subsequently add 30-50 majors each year in the different areas of study. At full enrollment we conservatively estimate that we would have 90 - 150 declared majors.

Similar Programs

While there are several design related programs already in existence at Utah colleges and universities, the programs tend to focus on individual design fields such as graphic design rather than a holistic "design thinking" and product design based curriculum.

At Utah State University there is a three-faculty graphic design/digital design department, which offers BFA and MFA degrees. Alan Hasimoto has been responsible for the development of the Utah State program and he has been consulted about the development of the new Multi-Disciplinary Design Program at the University of Utah. Utah State has also developed a certificate for undergraduate students focused on "Design Thinking" in collaboration with Art and Business but their enrollment numbers are limited due to the programs structure.

Brigham Young University has a small industrial design program housed in the recently approved Engineering's School of Technology. This program currently has 4 faculty members and graduates approximately 15 students per year. This is a traditional industrial design program that is not multi-disciplinary in nature. However, BYU does offer a "Design Thinking Bootcamp" that introduces students to a broader set of design issues but this falls outside their traditional course curriculum.

At Weber State University there is the visual communication/design focus in the Visual Art Department. This department has 12 full time faculty members who primarily focus on traditional study of design in art. In addition, they have a strong program in interior design.

Utah Valley University has a BFA program focusing on Graphic Design and some more technical work is begin done in their Engineering program with digital media and serious gaming.

Salt Lake Community College has several degree programs in their Visual Art and Design program. These include animation, graphic design, illustration, photography and electronic publishing. It is anticipated that the Design program at the University of Utah could work with SLCC to prepare students who are interested in this program to transfer academic credits to the University.

Southern Utah University offers two degrees associated with design. One is a Bachelor of Arts in Art History or Studio Arts. The other is a BFA in Graphic Design, Art Education or Studio Arts.

Snow College has a visual arts program and is focused on the creation more traditional art objects through areas of emphasis such as ceramics, graphic design, drawing, painting and printmaking.

Many two-year design programs have recently been developed. These programs such as ITT Technical Institute's Multimedia Design program and the Art Institutes offerings focus on mastery of software and techniques. They do not include teaching a broad understanding of design thinking and the application to complex problems. Nor do they focus on product development and design.

Collaboration with and Impact on Other USHE Institutions

We have a friendly and collegial relationship between the design faculty at the University of Utah, Utah State, UVU, Art Institute and BYU. Faculty members from all the institutions have participated in reviews of students work and have been consulted about the proposed program. It is not anticipated that the new program will have any adverse impact on existing programs. Because of the multi-disciplinary nature of the proposed program it is anticipated that students graduating will fill positions that are different from those filled by graduates of the existing programs. However, a few students' positions may overlap with some of BYU's students. We will continue to have a relationship with BYU to ensure minimal conflict.

Benefits

The University of Utah and existing programs primarily Bio-Engineering, Medicine and Business will benefit from collaborating with students trained in creative product design. These students will work collaboratively with these departments to cross-fertilize expertise. Currently an R-25 grant with NIH has been funded that is a collaboration with Bio-Engineering and Design Students for a summer intensive workshop. We believe that we can expand on these opportunities and obtain additional funding to support the program.

Consistency with Institutional Mission

The mission statement of the University of Utah emphasizes the (1) "highest standards of scholarship and professional practice" as well as (2) "the mutual relevance and interdependence of teaching and research." It seeks to (3) "foster the discovery and humane use of knowledge and artistic creation" and to (4) "facilitate the application of research findings to the health and well-being of Utah's citizens through programs and services available to the community." The proposed degree is designed to encourage the highest standard of professional practice and at the same time interject an emphasis on interdisciplinary study and research. It will focus on the Utah community directly, increasing artistic and technology knowledge in the profession and in business. The ultimate mission of the Bachelor of Science in Multi-Disciplinary Design is to allow students to engage, anticipate, and research the profound changes in technology and design, leading to a greater capacity in the future. It fits within the broader mission of the University of Utah to provide excellent multidisciplinary and engaged education.

Section IV: Program and Student Assessment

Program Assessment

The proposed Design program will combine broader critical thinking skills with specific skills related to the practice of Design. By combining these two broad objectives the programs goals are attempting to ensure that students have a broad perspective and specific knowledge that can be applied in the workplace as well as life. The proposed Design program will utilize the Essential Learning Outcomes that have been adopted by the University of Utah. These outcomes will help drive specific goals within the program. They include:

- Knowledge of Human Cultures and the Physical and Natural World.
 - The students will understand through design research and development the understanding of a variety of different cultures. In addition, will be given an understanding of design implications on the natural world.
 - o The students will learn intellectual empathy with the ability to put themself in another's shoes to understand their needs, wants beliefs and viewpoints in the effort to genuinely understand them.
- Intellectual and Practical Skills.
 - o The students will develop specific skills related to intellectual activities such as perseverance, courage and humility.

- Students will learn practical skills associated with the research, design and development of products.
- Personal and Social Responsibility.
 - o Students will learn intellectual humility that can be described as the awareness of you're their biases, prejudices and the limitations and extent of their viewpoints and ignorance.
 - Students will learn how to take responsibility for their actions through independent work projects.
- Integrative and Applied Learning.
 - o Students will have the ability to work with others in a synergistic and positive way to accomplish a shared goal.

To measure the effectiveness of the program and to see how well the mission is fitting with the outcomes, members of the interdisciplinary advisory board will selectively meet with students at the end of each year to understand qualitatively what is working and what needs to be refined to ensure maximum learning. In addition, a design program specific survey will be given to each student to gain insight into their perceived performance across a number of dimensions. The results of that survey will be compared to a similar survey given to reviewers of the student projects and the advisory board on their perception of the student's performance to spot trends and patterns. The department will also utilize the standard university based student feedback surveys administered at the end of each semester to understand how well we are meeting the needs of the students. In addition, the advisory board will review the programs goals and mission three times throughout the year to modify trajectory and course curriculum.

Expected Standards of Performance

Specifically each student will be accessed on his or her acquired competencies through course work that is clustered together by year.

Pre-major year 1 and 2 competencies: Basic design capabilities, design process understanding, basic visual communication techniques, theoretical understanding of visual language and an understanding of the profession of design.

Year 3 competencies: More detailed design competency and the ability to move from research to finalized product, the process of design from research to manufacturing, detailed and in-depth digital communication skills, understanding of manufacturing processes and a thorough understanding of design research.

Year 4 competencies: Very detailed design exercises that culminate in real world products, specific understanding of techniques and expertise from different departments, team collaboration, business understanding and knowledge of design practice through internship.

These competencies will be measured through class outcomes and a detailed assessment from the advisory board to see if the finalized projects exhibit the competencies that have been outlined.

Section V: Finance

Budget

5-Year Budget Projection						
Departmental Data	Current Budget— Prior to New Program Implementation	Year 1	Year 2	Year 3	Year 4	Year 5
Personnel Expense						
Salaries & Wages	242,000	242,000	342,000	450,000	500,000	530,000
Benefits	72,600	72,600	102,600	135,000	150,000	159,000
Total Personnel Expense	314,600	314,600	444,600	585,000	650,000	689,000
Non-personnel Expense						
Travel	5,000	5,000	9,000	12,000	13,000	14,000
Capital	2,000	2,000	3,000	4,000	4,000	4,000
Library	0	0	0	0	0	0
Current Expense	3,000	3,000	5,000	7,000	7,000	7,000
Total Non-personnel Expense	10,000	10,000	17,000	23,000	24,000	25,000
Total Expense (Personnel + Current)	\$324,600	\$324,600	\$461,600	\$600,800	\$674,000	\$714,000
Departmental Funding		Year 1	Year 2	Year 3	Year 4	Year 5
Appropriated Fund	264,600	264,600	394,600	527,000	542,000	551,000
Other:						
Special Legislative Appropriation						
Grants and Contracts	50,000	50,000	90,000	100,000	100,000	100,00
Special Fees/Differential Tuition	780	2,280	3,250	6,725	7,850	11,125
Total Revenue	\$315,380	\$316,880	\$487,850	\$633,725	\$649,850	\$662,125
Difference						
Revenue - Expense	\$(9,220)	\$(7,720)	\$26,250	\$32,925	\$(24,150)	\$(51,875)
Departmental Instructional Cost/Student Credit Hour* (as reported in institutional Cost Study for "current" and using the same Cost Study Definition for "projected")	\$31,000	\$47,350	\$61,000	\$63,900	\$65,350	\$66,750

^{*} Projected Instructional Cost/Student Credit Hour data contained in this chart are to be used in the Third-Year Follow-Up Report and Cyclical Reviews required by R411.

Funding Sources

The university administration has agreed to support the Multi-Disciplinary Design major through the addition of 2 new faculty lines over the next 2 years. In addition, this program will generate revenue with tuition and grants through funded studios and multi-disciplinary program grants such as the one that is place with Bio-Engineering.

Reallocation

There will be no reallocation.

Impact on Existing Budgets

There will be no impact on existing budgets.

Section VI: Program Curriculum

All Program Courses

Course Prefix and Number	Title	Credit Hours
Core Courses	Title	Credit Hours
	Desire Comings	1
Design 2000	Design Seminar	1
Design 2615	Introduction to Design Thinking	3
Design 3000	Visual Communications	3
Design 3400	Design Research	3
Design 3600	Design Studio 1	5
Design 3601	Design Studio 2	5
Design 3650	Introduction to Typography	3
Design 4000	History of Design	3
Design 4600	Design Studio 3	5
Design 4601	Design Studio 4	5
Design 4650	Business & Design	3
Design 4800	Design Internship	1
	Sub Total	40
Core Courses Outside Dept.		
Physics 2010	Physics 1	4
Arch 2630	Arch Design Workshop	3
Arch 2632	Adv Design Workshop	3
Mktg 4450	Marketing Research	3
Mktg 4770	Consumer Behavior	3
Mgt 5770	Fundamentals of Entrepreneurship	3
	Sub Total	19
Electives		
Art 1060	Basic Drawing	3
Arch 1630	Architectural Graphics	3

	Total Number of Credits	122
	Sub Total	48
	International	3
	Quantitative Intensive	3
	Quantitative Intensive	3
	Diversity Course	3
	Upper Division University Writings	3
	Quantitative Reasoning	3/4
	Quantitative Analysis Math	3/4
	Life Sciences	3
	Life Sciences	4
	Writing 2010	3
	American Institutions	3
	Fine Arts	3
	Fine Arts	3
	Humanities	3
· / - · / · · · · · · · · · · · · ·	Humanities	3
University Requirements		
	Total Major Courses	74
+ Physical/Form Track	340 10441	
* Digital Track	Sub Total	15
INIT 2100	Must take 1 class	3
+ME 5100	Ergonomics	3
*Design 4900	Advanced Interaction Design	3
*CS 5650	Perception for Graphics	3
1 3yell 1 000	Must take 1 class	3
*Psych 4000	Human Factors and Ergonomics	3
Comm 3550	Principles of Visual Communication	3
+Design 5370	Digital Fabrication Must take 2 classes	6
+Design 4700	Principles Digital Cabrication	3
- Docion 4700	Material and Manufacturing	າ
*Art 4455	Kinetic Sculpture	3
*Design 3700	Animation Modeling	3
*5	Must take 1 class	3
FA 3700	MultiMedia Graphics	4

New Courses to Be Added in the Next Five Years

It is anticipated that no new courses will be added over the next five years. However, based upon feedback from students, faculty and the advisory board this may be adjusted.

Program Schedule

Students who are interested in participating in the proposed program will first be required to take a series of Pre-Design courses. These Pre-Design courses are structured to provide an understanding of design principles and build basic skills. These courses will also allow a student to develop a portfolio of design work that will be used to apply for the full program. Once the student has been accepted into the program, they will move through a sequence of courses that allow them to focus on more traditional industrial design track or one that is more focused on digital products. These courses comprise 6 to 9 credit hours of the program and allow a detailed focus on one of the areas. The students will complete their studies with an intensive capstone studio and an internship at area design firms.

Year 1 and 2

PRE-DESIGN - Requirements (20 Credits)

Goals: Basic Design competency, design process understanding, basic visual communication skills, theoretical introduction to visual language and exposure to the profession of design.

Studio Both workshops are required. 6 credits.	Arch Design Workshop Arch 2630 (3 credits) Fall Semester An exploration of the fundamentals of design elements and principles as they relate to design thinking and process. A series of studio exercises will be introduced by employing various physical materials and visual ordering systems. Two dimensional design process and digital tools will be empha- sized. (Retooled course)	Faculty Adjunct
	Advanced Design Workshop Arch 2632 (3 credits) Spring A continued exploration of the fundamentals of design elements and principles as they relate to design thinking and process. A series of studio exercises will be introduced by employing various physical materials and	
Technical Physics	Physics 1 Physics 2010 (4 credits) Fall Three lectures and two recitations weekly. Mechanics and heat.	Physics
required. 4 credits. One course	Basic Drawing ART 1060 (3 credits) Fall/Spring Fundamentals of drawing. Many exercises will engage the student in the various aspects of line as it relates to texture, contour, and form. Design awareness will be	Art
from these	developed. Architectural Graphics Arch 1630 (3 credits) Fall/Spring Fundamentals of 2d and 3d drawing techniques.	Arch
	Graphics for MultiMedia Fine Arts 3700 (3 credits) Fall/Spring Explore	Art
History/Theory Required.	Introduction to Design Thinking DES 2615 (3 credits) Fall/Spring An introduction and survey of various facets of the field of design.	Fac
6 credits.	Introduction to Typography Book Layout DES 3650 (3 credits) Fall An introduction to the theory of typography and book layout.	Adjunct
Practice Seminar required. 1 credit.	Design Seminar DES 2000 (1 credit) Spring Current topics of interest in international design. This course is primarily based on a series of guest speakers presenting seminars in their areas of design specialization.	Adjunct

Year 3

DESIGN (Year 3) - Requirements (28 Credits)

Goals: More specific design competency, practice of design process from research to production, detailed digital communication skills, understanding of manufacturing processes, detailed understanding of design

Studio Both workshops are required. 10 credits.	Design Studio DES 3600 (5 Credits) Fall Semester Studio problems in design at a foundation level. Basic elements of design and applications of design will be explored. Design projects will be researched, visualized, and constructed to demonstrate student competencies and level of understanding. Emphasis is placed on design process as a system of inquiry concerning formal and programmatic requirements.	Faculty
	Design Studio II DES 3650 (5 Credits) Spring Semester NEW COURSE Spring Semester. Emphasis on the interrelationships among design process, target audience, historical precedent, structural and virtual elements, and technology of communications and construction as design	Faculty
Technical Visual Comm. required. 3 credits.	Visual Communications DES 3000 (3 credits) Fall Semester Fundamentals of visual communication. Solve design problems visually using a variety of drawing mediums and techniques. This would include infographics, diagramming and visual storytelling.	Adjunct Art Adjunct Adjunct Computer
Two courses from these	*Animation/Modeling DES 3700 (3 credits) Fall +Digital Fabrication DES 5370 (3 credits) Fall +Materials & Manufacturing Principles DES 4700 (3 credits) Spring Exploration of different materials and manufacturing principles in context of designed artifacts.	
	*Kinetic Sculpture (3 credits) Spring Exploration of programming using Processing and developing interactive systems.	Sci.

Year 3 cont.

DESIGN (Year 3) - Requirements (28 Credits)

Goals: More specific design competency, practice of design process from research to production, detailed digital communication skills, understanding of manufacturing processes, detailed understanding of design

History/Theory History of Design required. 3 credits One courses from these options. 3 credit	History of Design DES 4000 (3 Credits) Spring An introduction to the discipline of design through a selective survey of designs from prehistoric culture to the contemporary society.	Fac
	The Principles of Marketing MKTG 3010 (3 credits) Fall Introduction to the core concepts of effective marketing, and discussion of the various factors that influence marketing decision-making.	Bus
	Principles of Visual Communication COMM 3550 (3 credits) Spring Survey course that looks at physic-psychological bases of perception of cognition, semiotics, aesthetics and historical references that lead to realization of visual messages. Includes discussions of ethical dimensions of visual image making and criticism of contemporary visual images across all mass media.	Comm
	*Human Factors and Ergonomics PSYCH 4000 (3 Credits) Spring An introduction to human factors, ergonomics, and engineering psychology. The course examines the history of ergonomics, human-machine relations, displays and controls, human-computer interaction, industrial and aviation	i ayon
Practice Both courses required. 6 credit.	Design Research Des 3400 (3 Credits) Fall Understanding of design research practices and human centered design principles.	Adjunct
	Marketing Research MKTG 4450 (3 Credits) Spring Different sources of business data will be studied. Skills will be developed to help students design and perform business research leading to solid answers supporting good decision-making.	Bus

Year 4

DESIGN (Year 3) - Requirements (28 Credits)

Goals: More specific design competency, practice of design process from research to production, detailed digital communication skills, understanding of manufacturing processes, detailed understanding of design

Studio Design Studio III Design Studio IV are required. (10 credits).	Design Studio III DES 4000 (5 credits) Fall Semester Design studio projects introducing issues of user need, usability, marketplace and social interaction as they relate to design process. Attention to analysis, criticism, and communications will be emphasized. Original and individual design projects will be researched, defined, and solutions created addressing design in one or a combination of the following areas of interest centered around product design: package and interface design.	
	Design Studio IV DES 4010 (5 credits) Spring Semester Capstone undergraduate studio involving projects that integrate design systems, technological and theoretical issues to create design solutions to more complex design problems. Emphasis on synthesis, process, and intention that results in the development of the students' own methodology. Strong emphasis on interdisciplinary, cooperative working environment.	Faculty
Technical Two courses from these options.	*Perception for Graphics CS 5650 (3 credits) Spring This course provides an introduction to human visual perception intended for those studying or working in the fields of computer graphics and visualization.	Comp Sci.
6 credit minimum.	+Ergonomics ME 5100 (3 credits) Fall Introduction to study of humans at work; disability and accident prevention, and productivity improvement. Human musculoskeletal system as a mechanical structure.	ME
	*Advanced Interaction Design Design 4000 (3 credits) Fall Exploration of user interactions with systems, products and environments.	Fac.
History/Theory Required.	Consumer Behavior MKTG 4770 (3 credits) Fall Study of psychological, sociological, and anthropological bases of behavior as they relate to purchase and consumption of industrial and	Bus
6 credits	consumer goods and services. Fundamentals of Entrepreneurship MGT 5770 (3 credits) Spring Exploration and discussion of the principles of entrepreneurship.	Bus
Practice Business & Design required 3 credits	Business & Design DES 4650 (3 credits) Fall Intellectual Property, Copyright Laws & Practices (3)	Adjunct
Internship required 1 credit	Design Internship DES 4000 (1 credit) Spring Required design internship with participating professional, individual, studio, company or corporation.	Faculty

Section VII: Faculty

James Agutter M. Arch, Director, Design Program Assistant Professor College of Architecture + Planning University of Utah

New faculty line hire to be conducted this Fall

Another new faculty line to be hired in Fall 2013.

Keith Findling B.S. in Industrial Design Adjunct Assistant Professor

Theodore Espiritu B.S. in Industrial Design Visiting Lecturer

David Wolske, MFA in Graphic Design Visiting Lecturer Creative Director Red Butte Press University of Utah

Additional Faculty for Auxiliary positions will be brought in to cover coursework.

Section VIII: Letters of Support

Numerous letters of support have been received. Other letters will be sent upon receipt.

Dean Brenda Scheer

Marriot Library

Frank Drews, Human Factors

Robert Hitchcock, Bio-Engineering

Dean Taylor Randall, Business

Dean Raymond Tymas-Jones, Fine Arts

Kathy Hajeb, Innovation Scholars

Robert Avery, Communication

Dean Richard Brown, Engineering



April 8, 2011

To Whom It May Concern:

I am very pleased to be a part of and support the Interdisciplinary Design major. We have hosted the minor for a little over two years and it has been a very successful program, attracting students from all over campus. The minor has allowed Jim Agutter, director of the Interdisciplinary Design Program, to form alliances with appropriate counterparts in medicine, bioengineering, business, communication, and art. There are few opportunities on this campus that provide a greater likelihood of true interdisciplinary education. This kind of education is in great demand, not only from our students, but from the business world that is seeking problem-solving and creative people.

The College of Architecture + Planning is proud to be the "home" of this major, but I think it is very important to acknowledge that the resources, creativity and teaching will come not only from us, but from multiple units on this campus. Because of this level of cooperation and the support of the Sr. Vice President, we will be adding two new faculty lines to support the program over the next two years. We expect that others will also be working with us to establish joint appointments. We envision a major that will really weave together a talented group of faculty and students.

If you have additional questions or would like more information, please do not hesitate to contact me.

Sincerely

Brenda Scheer

Bmdn Schur

Dean



April 3, 2012

295 South 1500 East Salt Lake City, Utah 84112-0860 801-585-9521

James Agutter
Design Program Director
College of Architecture and Planning
375 S. 1530 E. RM 235
University of Utah

Dear Dr. Agutter:

The University of Utah Libraries appreciate the opportunity to comment on our role in supporting the new Bachelor of Science in Multi-Disciplinary Design which encompasses the disciplines of architecture, art, business, communication, computer science, mechanical engineering, physics, psychology, and design. The libraries are committed to supporting the university and its faculty as they develop programs needed by our students.

Most courses that will comprise the multi-disciplinary design major are currently being taught at the university and are therefore covered by our collection development activities. The Marriot Library's longstanding approval plan for the purchase of English language scholarly books published in the U.S., provides excellent material for all areas of research. The library maintains subscription to core journals covering the areas underlined in the major and also subscribes to databases such as JSTOR, ARTstor, Art Full-Text, Art Index, Arts & Humanities Citation Index, Avery Index to Architectural Periodicals, Business Source Premier, PsycInfo, ComAbstracts, Computer Source, Compendex, Institute of Physics Journals, Engineering Village, Inspec, Image Quest and others. Our Fine Arts Library and audiovisual materials should satisfy most undergraduate needs.

Our Katherine W. Dumke Fine Arts and Architecture Library is fully committed to support the diverse informational needs of the university students and faculty. Thanks to state-wide allocations to the Utah Academic Library Consortium and the availability of campus computer surcharge funds, our electronic collection is strong in indexes, abstracts, and full-text online databases. Our Fine Arts and Architecture Library collection also has artists books, international architecture magazines, boxed sets of Asian art books, catalog raisonnes for visual artists, print collection of current art and architecture journals, graphic novels and other resources for users. The Marriott Library also accepts suggestions for new material to improve and update our research collections.

We encourage faculty to work with liaison librarians to build up specific sub-disciplines where our collection needs supplementing. Despite budget constraints, we are usually able to order any materials necessary to directly support classes. We modify our journal subscriptions to reflect current teaching and research. As the scholarly communication landscape evolves, new options may exist to supplement traditional print book purchases and conventional subscriptions.

We would like to work with faculty to evaluate the formats that work the best for their teaching and research.

We offer library instruction sessions, and one-to-one research consultations with library specialists who will help students find the most relevant works and suggest the most appropriate search strategies. The Knowledge Commons Desk is open for technical and reference questions and we also accept inquiries via email and online reference to help our students and faculty.

We look forward to working with the faculty and students in this new degree.

Yours truly,

Rick Anderson Acting Dean

J. Willard Marriot Library

Catherine Soehner

Associate Dean, Research and Learning Services

J. Willard Marriott Library



4/12/2012

James Agutter
Director of the Design Program
University of Utah

Dear Jim,

It is my great pleasure to express my strongest support for the Bachelor of Science Multi-Disciplinary Design Major. As a Director of the Human Factors Program at the Department of Psychology I see a great need for such innovative program. I am convinced that once in place this program will allow our students to become more competitive in the high-tech job market, but as well help them to prepare more effectively for post graduate studies.

In addition, I see a significant level of synergy between your program and the Human Factors program. I am convinced that because of the similarities, students form the Multi-Disciplinary Design Major program will be able to benefit from some of the classes that are part of the Human Factors curriculum, as well as Human Factors students will benefit from course offerings out of your program.

Again, let me express my strongest support for your proposal.

If there are questions, I can be reached at Drews@psych.utah.edu, or at 801-585-1977.

Sincerely,

In 1 K

Frank A. Drews, PhD

Associate Professor Cognitive Psychology, University of Utah.

Director of the Center for Human Factors in Patient Safety at the VAMC Salt Lake City Director of the Human Factors Certificate Program, University of Utah Adjunct Assistant Professor, Department of Anesthesiology, University of Utah. Adjunct Assistant Professor, Educational Psychology, University of Utah Adjunct Assistant Professor, Department of Biomedical Informatics, University of Utah Adjunct Assistant Professor, Internal Medicine, University of Utah



April 13, 2012

To Whom It May Concern:

I am writing to convey my full support for the Interdisciplinary Design Major being proposed by the College of Architecture + Planning. The development of an Interdisciplinary Design Major is an important step at the University of Utah and acknowledges the importance of design in today's economy as well as the role that design thinking plays in many disciplines. The proposed program of study for the major builds on a successful pilot program as a minor degree that has already connected many different disciplines including Bioengineering and Medicine.

Jim Agutter has been a tireless champion for the field of design at the University of Utah and his efforts have had a positive effect that reaches across disciplines and connects students, faculty, clinicians and community. The design major will not only train students in the discipline of design but also impact the University community as a whole by percolating design through many of the initiatives and values that we embrace. I applaud this proposal and look forward to further interactions with Jim and the future students of the University of Utah Design Major program.

Very Sincerely,

Robert W. Hitchcock

Robert W Mitchenk

Assistant Professor



April 13, 2012

Jim Agutter Assistant Professor Design Program Director College of Architecture & Planning University of Utah

Dear Professor Agutter,

Please accept this letter in support of the Multi-Disciplinary Design Major Initiative. I think this program, created to bring the expertise of several programs across campus together, is an exciting concept that will provide students a truly remarkable educational experience. The Business School sees this as an exciting partnership between colleges and will work with Professor Agutter and the Advisory Board to help identify relevant course work in Business.

I believe that the creative product design focus fills a gap in our current University major offerings and has many synergistic aspects that will tie in with our programs such as Marketing and Entrepreneurship and the Sorenson Innovation Center.

If you have any questions please do not hesitate to contact me.

Sincerely,

Taylor Randall

Dean

David Eccles School of Business



Office of the Dean

April 13, 2012

To Whom it May Concern:

I am writing to offer my support for the proposed Bachelor of Science in Multi-Disciplinary Design through the College of Architecture + Planning. I have had several conversations with Professor Agutter and believe that this program of study is well conceived and thoroughly developed. It will be a welcome addition to other interdisciplinary degree offerings at the University of Utah.

I am appreciative of the evident interdisciplinary design of the curriculum, which draws on the strengths of multiple units and individual faculty members from across campus. The College of Fine Arts is excited to be an integral part of this new degree. As is cited in the proposal, interdisciplinary learning is a proven model for a more holistic educational experience. I am confident that the students in this program will benefit not only from the expertise of their faculty, but also from the experience of working and learning in an interdisciplinary environment.

In reading the proposal I am impressed with the fundamental elements upon which the degree is fashioned—"understanding of the language, process and application of design and design thinking." In our contemporary society it is no longer prudent to solely imbue our students with an understanding of specific techniques and skills, but rather to instill in them a desire to continually learn, explore and discover. Interdisciplinary curricula based on creative problem solving that requires the students – and faculty alike – to think outside of their comfort zones and familiar paradigms will better prepare our graduates for the world that awaits them. Such a program also meets the expectations of a Research Extensive University that concurrently holds the distinction of being a Community Engaged Campus.

Again, I offer my full support of the Multi-Disciplinary Design major through the College of Architecture + Planning. I am anxious to see the curriculum realized and faculty in the College of Fine Arts engaged in this process.

Sincerely,

Raymond Tymas-Jones

Dean, College of Fine Arts

Assistant Vice President for the Arts

Raymond Tymas



May 17, 2012

James Agutter
Assistant Professor
Design Program Director
College of Architecture + Planning
University of Utah
375 S. 1530 E. Room 235
Salt Lake City, UT 84112

Dear Professor Agutter:

I am writing to offer my enthusiastic support for the proposed Bachelor of Science Multi-Disciplinary Design Major. The proposal has been carefully reviewed by my Visual Communication colleagues, and they are unanimous in their endorsement.

This is a well-conceived instructional program that maximizes existing academic strengths and provides for the development of new faculty resources. The new major is genuinely interdisciplinary and addresses a definite void in the State's undergraduate program offerings. The proposal accurately assesses the growing range of career opportunities for future graduates. Indeed, the success of the Multi-Disciplinary Design Minor in attracting students from across campus speaks well for an immediate student clientele who are anxious to broaden their educational experiences.

We concur that the proposed interdisciplinary program will prepare students to compete in an increasingly complex professional work environment that not only requires a high level of technical competence but the ethical standards and critical thinking skills that enable graduates to make thoughtful judgments that are marked by integrity. The program is also consistent with the University's move toward more community-engaged scholarship that allows students to grapple with real world problems that will generalize to the professional workplace.

The Department of Communication welcomes the opportunity to be directly involved in this educational initiative and we are committed to providing the kind of high quality instruction that the Multi-Disciplinary Design students need and deserve. From our perspective, the time for mounting this important program could not be more fortuitous as the University is well-positioned to make this interdisciplinary effort a model for other institutions to follow.

We wish you and your advisory group every success in establishing the Bachelor of Science Multi-Disciplinary Design Major.

Sincerely.

Robert K. Avery

Professor and Interim Chair



Richard B. Brown
Dean of Engineering
1692 Warnock Engineering Building
72 S. Central Campus Drive
Salt Lake City, Utah 84112
PH: (801) 585-7498 FAX: (801) 581-8692
brown@utah.edu
http://www.coe.utah.edu/~brown

June 6, 2012

Jim Agutter
Assistant Professor
Design Program Director
College of Architecture + Planning
University of Utah
Salt Lake City, Utah

Dear Prof. Agutter:

I am pleased to write a letter of support for the proposed Bachelor of Science in Multi-Disciplinary Design. I know that you have been running a minor in Multi-Disciplinary Design for a couple of years, which has had a great deal of interest from students, including Engineering students.

This program will be synergistic to the degrees we offer in the College of Engineering. Some courses taught in Engineering could fit comfortably into your program, and many Engineering students will benefit from taking courses taught through the Multi-Disciplinary Design program that cover creative product design, investigate design research, human centered design principles, interface development, articulation of product forms, materials and digital manufacturing principles, innovation and entrepreneurship.

A design degree of this type will fill a need in the University of Utah's offerings. We have strong Engineering degrees and strong degrees in Architecture and the Arts, but there is a need for something closer to the center of these disciplines, which many places is called Industrial Design. I believe that there will be much interest in the degree, and that graduates of the program will find good job opportunities. BYU has a program in this area, but to my knowledge, none of the state institutes of higher education in Utah have such a program.

In addition to the academic merits of the program, the establishment of this degree program will have the desirable effect of pulling several colleges into a closer collaboration. I am happy to support this proposal and look forward to working with you to make it a strong degree.

Sincerely,

Richard B. Brown Dean of Engineering

Richard B Bo



April 11, 2012

James Agutter
Design Program Director
College of Architecture + Planning
375 S. 1530 E. RM 235
University of Utah

Dear Jim:

Thank you for the opportunity to support the Multi-Disciplinary Design major. Every day as I work with our University Innovation Scholar students, I see the need and expressed desire of these students to work on projects and problems that don't fall under traditional academic majors at the University. They want to work on better transportation systems, improved health care products and processes, sustainable business practices and many other non-traditional fields of study.

These students are looking to the University and their choice of major to prepare them to solve real interdisciplinary problems in the world. Our students will benefit from the Multi-Disciplinary Design program because it will provide the tools to explore ways to solve these problems. They will be exposed to the human factors as well as the scientific demands and impacts related to their ideas. Equally important, they will be challenged to explore the business and market impacts of their ideas.

We know that great innovation comes from an interdisciplinary approach to problem solving. The Multi-Disciplinary Design major will be a comprehensive study program for many creative and innovative students. I applaud the variety of faculty who will be involved in teaching in the program.

I look forward to continued collaboration with your students and extend my enthusiastic support for the Multi-Disciplinary Design major.

Sincerely,

Kathy Hajeb

Chief of Staff, Technology Venture Development

Director, Innovation Scholar program

Carly Hajel



195 S. Central Campus Drive Salt Lake City, UT 84112-0511 (801) 581-3811 FAX (801) 585-3581

June 8, 2012

TO: N

Michael L. Hardman

Interim Senior Vice President for Academic Affairs

FR:

Ann L. Darling

Chair, Undergraduate Council

RE:

New Undergraduate Major, B.S. in Multi-Disciplinary Design

At its meeting on Tuesday, April 17, the Undergraduate Council voted to approve a proposal from the College of Architecture + Planning for a new Bachelor of Science degree in Multi-Disciplinary Design. The proposal, with supporting materials, is attached.

We ask, if you also approve of the proposal, that it be forwarded on to the Executive Committee of the Academic Senate for their consideration.



Office of the Dean

April 13, 2012

To Whom it May Concern:

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Dean, College of Fine Arts

Assistant Vice President for the Arts

Raymond Tymas



April 13, 2012

Jim Agutter Assistant Professor Design Program Director College of Architecture & Planning University of Utah

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Dean

David Eccles School of Business



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Robert W. Hitchcock

Robert W Mitchenk

Assistant Professor