The Proposal for the Major

Major Title: User Experience in Technology

Student: Harry Solovay

Fall 2014	Spring 2015
PSY 100 (Introduction to Psychology)	ANT 102 (Material Legacies: Archeological Anthropology)
FYS 104G (Writing Stories: Fiction & Non-fiction)	PHI 101 (Introduction to Philosophy)
COM 291 (Independent Study of Social Media Web-app Development)	COM 214 (Web Technologies & Mobile Computing)
BIO 103 (Evolution)	COM 292 (Independent Study of Online Data-mining Technology and its implications)

Fall 20215	Spring 2016
DAN 107 (Introduction to Improvisational Dance)	ENG 365 (Shakespeare's Tragedies)
HIS 101 (Big History: Big Bang to Future)	ENG 340 (Writing Poetry: Intermediate)
COM 325 (Introduction to Cybersecurity)	AT 201 (History of Arts & Technology)
ENG 240 (Reading & Writing Poems)	SPA 121 (Intermediate Spanish Language Review)

Fall 2016	Spring 2017
ENG 217 (Writing the Short Story)	PSY 315 (Psychology of Emotion)
AT 310 (Arts & Technology Junior Seminar)	AT 3220 (Arts and Technology Junior Seminar)
SOC 209 (Sociology of Social Movements)	COM 496 (Research Seminar)
ENG 129 (Modern Media Culture)	ART 214 (Video Installation)
HIS 491 (Independent Study of Technological Futurism)	

Summer 2017
PSY 202 (Psychological Statistics)

Fall 2018	Spring 2019
COM 250 (Mobile App Development)	PSY 205 (Psychology of Personality)
PHI 251 (Philosophy of Art)	PSY [TBA] (Research on Technology Addiction)
PSY 202 (Research Methods in Psychology)	HIS [TBA] (Independent Study on Creating Successful Online Stores and Content Channels)
PSY 307 (Cognitive Processes)	

Insert below an introduction describing your proposed major, include: why you are interested in pursuing this major and what are the questions that it will allow you to explore?

The design of user experience (UX) in technology has a profound impact on the quality of its users' lives. UX, as the interface between human beings and our technology, facilitates interactions with other human beings, technological systems and all of our collective learning. Given the rate at which our technological capabilities grow, new UX is made possible with each passing day. To create the most successful new UX, designers must have the following:

A) an understanding of user psychology and research methods that can be applied to and built into the UX, thereby enabling it to predict and adapt to its users

B) consideration for the ethics of the products they create (what is healthy vs. what is addictive)

C) artistic sensibilities that can be defended not only as beautiful, but also as enhancing functionality (form follows function)

D) experience in tackling a range of UX challenges and creating solutions through design

E) computer science and other technical skills that make it possible to execute on the UX (this includes both doing the programming and having the capacity to communicate with and direct the energies of other programmers)

I've been drawn to user experience in technology since before I can remember. As a three year old, my favorite pastime was drawing computers and cell phones in crayon (creating what I described as prototypes). As I grew, this passion grew with me. Now, I need to learn the technical background to execute on UX ideas and the artistic and human behavioral side to properly evaluate those ideas. I need to become a more holistic and innovative designer, as opposed to having an eye that is purely-passion driven. The questions I'll explore address these goals through both project-based and analytical studies in psychology, art and computer science.

How does your proposal for this major display the "overall coherence or unity in the form of a central topic, theme, or problem" that is required of all majors (as outlined in the Connecticut College catalog)?

While this major involves developing technical skills and producing designs, code and other deliverables, the underlaying goal is to understand the ideological significance of interactions between the user and technology. Studying the effects of UX on human psychology will provide me with insights for tweaking it to make us healthier, happier and more efficient.

Many consumer technologies (and the UX through which we use them), result in problems ranging from mental illness to the loss of self-identity. The new ways in which we communicate often

clash with our innate psychological makeup (at Connecticut College, for example, most of my friends are glued to their phones and find it immensely difficult to give attention to activities such as reading). While solutions stem from more than design alone, good UX has the potential to help reconcile the differences between our technology and ourselves.

How does this major allow for intellectual/personal development that would not be possible by pursuing an existing major?

Using psychology methodology and theory as the basis for computer science projects will allow me to create feedback loops that describe user needs and create better UX. Where majoring in computer science or psychology would force me to choose between focusing on human behavior or the underlaying mechanics of software creation, this major would allow me to more readily bridge the gap between the user and the technology. This is critical to my career path–a path along which I'll be designing UX that is meant to mold to the lives of its users. User experiences in technology are meant to enrich human experience in the real world as well as in virtual worlds.

The design side of the major will help me create UX that is not only functional, but also attractive. After all, users are drawn to products that appeal to their own design sensibilities. Although form follows function, form is essential to the creation of successful products; I must further develop myself as a designer. I need to develop the vocabulary and skill set to express and discuss designs and their approaches to problem-solving.

Finally, this SDM would allow me to pursue my proposed Senior Integrative Project under the supervision of Dr. Joseph Schroeder in the Psychology department. As a Computer Science major, I would have other research requirements which would keep me from pursuing studies about addiction in UX.

Given the restrictions of each major, I could not pursue an existing major, achieve my academic goals and still graduate on time.

Explain how your the course list provides an appropriate curriculum to meet the goals of the major outlined in the catalog by forming "a solid core of study in a closely articulated group of courses in two or more disciplines" (as described in the Connecticut College catalog).

Computer science courses will give me the vocabulary to manage developers and to develop software on my own. Web Technologies and Mobile Computing helped me further develop my technical skill set for web-app development. My independent study of the implications of online data-collecting

technologies helped me to realize the impact of web-apps in general. Cybersecurity was key to how I think about safeguarding against harmful advancement. As I work on technology products, considerations about safety and about being respectful of the user are at the forefront.

Psychology courses help me establish a connection between the raw code and the user's unique experience (technological needs, emotional state and unconscious processing). Psychological Statistics and Research methods in Psychology will help me establish tangible feedback loops for understanding behavior. This gives me an ability to refine products based on metrics, as opposed to my own biases. Psychology of Emotion will show me how user experiences strengthen or weaken mental health. This course focuses on the sociocultural factors that result in any given psychological makeup. The Cognitive Processes course goes over topics such as perception and models for human learning. It teaches the language for describing and the tools for measuring mental processes. While Psychology of Emotion will help me understand what makes a user happy, Cognitive Processes will help me understand what is useful to and efficient for a user. Through understanding how people learn and retrieve learned information, I can break down complex technological systems into simpler user experiences. These psychology courses will also provide even more methodology for pursuing my research and SIP.

Art courses that use technology as a medium will help me develop the design skills I need for creating attractive and problem-solving UX. While Computer Science and Psychology courses will focus primarily on functionality, art courses will help me understand the form that follows functionality. I will learn about current trends and standards in the design and art world. Exposure to this world will provide me guidance and inspiration. Understanding how design can solve problems will tie into the theories and frameworks I learn about in psychology courses. I'll need to connect these understandings to my projects and communicate them with others through design language. For example, I'm interested in designing for VR (Virtual Reality) but lack the vocabulary or spatial thinking practice to properly describe my VR ideas. I'd like to engage with other design and technology projects that require substantial learning (time that I couldn't spend if not for my coursework).

The Ammerman center and its coursework help me establish a bridge between Computer Science, Psychology and Design. These three areas of focus will help me become more capable of designing and streamlining attractive products that improve lives.

A one-paragraph summary of the major proposal signed and dated by the adviser-to-be.

As the interface between human beings and our rapidly-evolving technology, user experience (UX) facilitates our interactions with other human beings, technological systems and a world of information. UX in technology has a tremendous impact on how we live and undergoes a continuous radical transformation. To understand and then correctly guide this transformation means drawing on

knowledge in Psychology, Computer Science and Design. The coursework for this major, "User Experience in Technology," includes a combination of these three areas. Providing the background for understanding past and present UX and for creating future UX, the coursework facilitates innovation rooted in psychological research and user-testing. Beyond its focus on the process of creating attractive, functional, market-viable UXs, this major is designed to concern itself with responsibility in technological advancement (and therefore paving the way for a brighter future).

Insert a brief description of the integrative project.

Mobile computing technology is widely applicable in our lives and empowers users to create, share and access a world of information. Simultaneously, this technology is very addictive and can create psychological dysfunction. The human brain and mind did not evolve alongside the technologies which crowd it as of the last decade. Under the supervision of Dr. Joseph Schroeder, I will research addiction to social media networks such as Facebook, Instagram and Snapchat. One aim of this research is to determine the main addictive properties of the various user experiences (UXs). The other aim is to study the consequences of the addiction, attempts to break the addiction, and alternative UXs that satisfy user needs without compromising mental health. The resulting analytical piece is intended to help designers toe the line between creating ethical vs. "sticky" products.

Briefly describe the objectives of the study and the questions you will examine.

My primary objective is to acquire the skill set necessary for understanding and providing for the users of my products. In doing so, I hope to learn how to make addictive UXs that also benefit user mental health. I'll research whether these two goals conflict (is it possible to create technologies that are both addictive and healthy?). My broader objective is to place findings within a narrative of our technological and sociological past, as well as our future. Some of the questions I plan to ask include but are not limited to the following:

- What makes social networking platforms addictive?
- How might those user experiences create problems for users?
- How does one go about designing ethical yet addictive UX?
- What personality types are (on average) most addicted to mobile computing?
- What data provides insight into creating addictive UX and supporting user mental health?
- How do I collect and interpret that data?

- What is the positive impact of UX?
- Are the positives inextricably linked to the negatives?
- What is the larger context in which social media has emerged as a ubiquitous force in contemporary society?

Please provide the committee with a brief description of the broader context of this project.

In the 1970s, manufacturers such as Cadbury Schweppes and General Mills engineered foods to addict consumers. They created what's now known as the "bliss point," or the perfect combination of salt, sugar and fat that increases future cravings for the given food. This resulted in the obesity epidemic, which affects almost 70% of Americans. Similarly to bliss point food research, data collected by technology companies is used to optimize services to support user retention. Facebook describes this effort in its data policy as an effort to "provide, improve and develop services." This is accurate, yet it leaves out the likelihood that Facebook is being made increasingly addictive and that its use can have unforeseen consequences. Mobile computing technologies are ubiquitous and while they are indeed helpful, they also create addiction, anxiety, depression and other problems. For now, the benefits seem to outweigh the consequences and it is unrealistic to think that severing our attachment to mobile computing is a reasonable solution. So instead we must find ways to live with the addiction and to tweak it in our favor. Technology companies looking to help users will have to create increasingly addictive UX that also supports user mental health. This project is an opportunity to learn ways of creating such UXs.

Describe your anticipated methodology for carrying out this project. Be sure to include in this answer whether or not you will need to have your research approved by Connecticut College's Institutional Review Board. Please discuss this matter with your adviser.

I will need IRB approval to work with human subjects. I'll be collecting data through psychological batteries (questionnaires) as well as through directly measuring subject vitals. Dr. Annie Brown has ordered a set of Electrodermal Activity Sensors (EDA), which will allow me to measure the extremes of emotional activation. This will allow me to identify what part of the target is most stimulating. I can run a comparison between different UXs to see which result in the greatest activation. The questionnaires will allow me to determine what kinds of activation I measure (whether it was a pleasurable UX or whether it caused anxiety). I'll study whether it is possible to elicit specific emotional responses with different UXs. Some of this experimentation will happen over long periods of time, during which subjects will self-document and report about their technology withdrawals (or lack thereof).

I'm going to take Psychological Statistics this Summer, and Research Methods in Psychology and Cognitive Processes next semester. I'll also take a design course in the Fall. This will allow me to make connections between the visual side of UX and its underlaying cognitive effect. I expect that these courses will help me further develop my methodology before my SIP in the Spring. My computer science coursework has informed how I will approach selecting UXs for testing. My independent studies with Professors James Lee and Frederick Paxton have prepared me to study the context and many of the implications of these UXs. This important coursework, paired with the guidance of Professor Schroeder will allow me to smooth out the details of the project. This project integrates what I've learned and am learning from my key areas of study.