McCormick Integrated Engineering Studies
Human-Computer Interaction

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Purpose

The major I designed is Human-Computer Interaction. HCI is the study of how humans are interacting with technology. In order to study HCI, one needs to study both design and the applications of computers. UX and UI are growing fields that require knowledge of technology and design. This is a call for a whole-brain engineer. Therefore, I have taken on the task of using the offered courses at Northwestern University to design a major that would prepare me to enter the world of HCI.

After consulting with both my advisor, Professor Peter Dinda, and computer science professor Sara Sood at Northwestern, I began to design my education. Based on the HCI programs at Carnegie Mellon University and Georgia Institute of Technology, this major collects what is readily available at Northwestern University. Both the Computer Science Department and the Segal Institute of Design are growing rapidly in size here at Northwestern, and the goal of my major is to combine these two departments. By taking courses in computer science, I am creating a foundation in learning the backend to how computers work. The design courses focus on the process of human-centered design. There are also a handful of courses that address the direct topic of Human-Computer Interaction. The final part of this major is a capstone. The course Design, Technology, and Research is a project course that combines the essential aspects and processes of this major. The result of this major is a student who is equipped with the knowledge to create a product that is well designed and beneficial for humanity.

This major is built using the ABET rating of courses at Northwestern University. The total ABET score is currently an 18.2, which surpasses the minimum score of 18. However, there is one special design class that I do not have the ABET rating on yet. I have reached out to Professor Kim Hoffmann to investigate the ABET rating for Design 395: Special Topics: Design Innovation Practicum.

McCormick Basic Engineering Requirements

32 Credits, 6.9 ABET Engineering

Mathematics, 4 units

MATH 220-0 Differential Calculus of One-Variable Functions 1.0 MS

MATH 224-0 Integral Calculus of One-Variable Functions 1.0 MS

MATH 230-0 Differential Calculus of Multivariable Functions 1.0 MS

EECS 212-0 Mathematical Found of Comp Science 1.0 MS

Basic sciences, 4 units

PHYSICS 135-2 1.0 MS

PHYSICS 135-3 1.0 MS

CHEM 151-0 1.0 MS

PHYSICS 136-2 (.3 credits MS)

PHYSICS 136-3 (.3 credits MS)

CHEM 161-0 (.3 credits MS)

Engineering analysis, 4 units

GEN_ENG 205-1 0.2 Eng

GEN_ENG 205- 2 0.5 Eng

GEN_ENG 205-3 0.2 Eng

EECS 111 1.0 Eng

Design and Communication, 3 units

DSGN 106-1,2 Design Thinking and Communication (.5 units each) 1.0 Eng

ENGLISH 106-1,2 Writing in Special Contexts (.5 units each)

PERF_ST 203-0

Basic engineering, 5 units

EECS 211-0 Object-Oriented Programming in C++ 1.0 Eng

IEMS 201-0 Introduction to Statistics 1.0 MS

EECS 202 Introduction to Electrical Engineering 1.0 Eng

EECS 203 Introduction to Computer Engineering 1.0 Eng

CIV_E 205 Econ & Finance for Engineers 1.0 Eng

Theme, 7 units

German 101-1 Beginning German

German 101-2 Beginning German

German 101-3 Beginning German

German 201-0 Focus Reading

PRDV 335-1 Engineering Improv I (.5 credits)

PRDV 335-2 Engineering Improv II (.5 credits)

GNDR_ST 232-0 Sexuality and Society

GNDR_ST 341-0 - 21 Dao of Sex

Unrestricted electives, 5 units

JOUR 390 News at the Speed of Silicon

JOUR 390 Media Innovation in Silicon Valley: The Good, the Bad, and the Ugly

JOUR 390 Media Innovation and Chicago's Startup Culture

ART 240 Introduction to Sculpture

ART 210 Introduction to Drawing

Major Proposal

16 Credits, 11.3 ABET Engineering

Computer Science

The fundamental skills of computer science to aid in understanding the technical foundation of technology.

EECS 101 Introduction to Computer Science for Everyone

EECS 295 Intermediate Topics in EECS

EECS 213 Introduction to Computer Systems 1.0 Eng

EECS 214 Data Structure and Management 1.0 Eng

Human-Centered Design

The process of learning how to develop a design, whether a physical product or an application, for human use.

DSGN 305-0 Human-Centered Service Design 1.0 Eng

DSGN 308-0 Human-Centered Product Design 1.0 Eng

DSGN 395: Special Topics: Media Design 0.5 Eng

DSGN 395: Special Topics: Design Innovation Practicum 1.0 Eng

DSGN 395-0-2 Service Design Studio II 1.0 Eng

Human-Computer Interaction

Classes that specifically address the concept of human-computer interaction.

EECS 330-0 Human-Computer Interaction 0.8 Eng

EECS 314 Technology and Human Interaction 1.0 Eng

PSYCH 110 Introduction to Psychology

DSGN 306-0 UX Design 0.75 Eng

Capstone Design Project

The conclusion that ties together all the products and skill sets that I have learned over my course at Northwestern.

DSGN 370-0 Portfolio Development and Presentation 0.25 Eng

DSGN 384-1 Interdisciplinary Design Projects 1 1.0 Eng

DSGN 384-2 Interdisciplinary Design Projects 2 1.0 Eng