

# HCDE 598 B Voice IxD Syllabus

## Spring 2019

### **INSTRUCTOR TEAM**

Instructor: Damien Dabrowski

Email: [damiend@uw.edu](mailto:damiend@uw.edu)

Office Hours: By appointment.

TA: Himanshu Zade

Email: [himanz@uw.edu](mailto:himanz@uw.edu)

Office Hours: By appointment

### **Class Times:**

Thursdays 6:00-9:50pm, SAV 132

### **Important Links:**

Canvas: <https://canvas.uw.edu/courses/1273539>

Slack:

## COURSE DESCRIPTION

This course will introduce you to voice user interface (VUI) design as a human-centered design discipline. Through readings, discussion, and in-class exercises, as well as the analysis and evaluation of a speech interface of your choice you will get a feel for what voice interaction design is, its limits, and the tradeoffs it entails when designing such a system. You will begin to learn how to research and design a simple user interaction with a system via a VUI, and have an idea how to iterate on it, then test, evaluate and tune one.

## LEARNING OBJECTIVES

At the end of HCDE 596 you should be able to:

- understand core concepts of VUI design and processes, including what it's ideally suited (and when it's not)
- understand users' underlying cognitive and linguistic needs when using a VUI as well as the tradeoffs and challenges of the technology
- have an idea of the technical components and aspects of speech interfaces

## IMPORTANT

### WHAT THIS COURSE WILL NOT DO

- discuss chatbots
- discuss details or elements of specific VUI design tools (developer consoles, prototyping tools, etc) or teach you how to make a skill, action, etc
- discuss details of or teach you how to build or use speech recognition software, systems or devices
- discuss details of multimodal/screen integration and design

## FORMAT

The course is conducted as a series in-class lectures, in-class activities and discussions, and outside of class assignments. You will find the schedule of assignments, readings, and activities in [Canvas](#). The course is organized via Modules corresponding to each week of the course. It is your responsibility to be prepared for class each day. Assignments are due Tuesday 11:59 PM of each week (excepting Week 1).

The material will be very dense so you should expect it to be difficult to keep up if you miss a week or are not able to complete the readings or assignments! (see Participation for more info).

## GRADING

Each assignment is worth a number of points that contributes to your overall score. Assignments are grouped by assignment type. Your score out of 100% maps to your GPA according to the conversion below.

Assignments - 20% (2 points each)  
Reflections - 20% (2 points each)  
Class Participation - 10% (1 point each week)  
Group Reading Presentation – 5%  
Design Iterations - 20%  
Final Presentation - 5%  
Final Design Deliverables - 20%

## REQUIRED MATERIALS

- A farfield smart device with a VUI as the primary interface (one that has Google Assistant, Amazon Alexa, Apple Siri etc built in), preferably **without** a screen
- Required readings found in Canvas in the module for each week

We will read significant portions of these two books that generally are the two best references for VUI design.

- Pearl, Cathy (2016) Designing Voice User Interfaces. O'Reilly. [UW Library Link](#)
- Cohen, M, Giangola, J & Balough, J (2004) Voice User Interface Design. Addison-Wesley. [UW Library Link](#)

*Note: It is **very difficult** (I'd say impossible) to design for and understand a VUI without ready access to a device. Phones and PC devices, and browser/app integrations are quite different in functionality than all other devices and are not suitable for evaluation. If you do not have a farfield VUI smart device several are available from the HCDE office. If none are available and it is beyond your means to acquire one please contact me. I have never used (or even seen in person!) any of the smart speakers that aren't available in the US e.g. Tmall Genie, Baidu Raven, Wave, etc so I can't comment on their suitability for this class, but if you happen to have one let me know.*

[This is a living document](#)

This will be a dynamic learning community. Expect the syllabus and discussion to change based on emergent needs of the class.

You are responsible for all materials, updates and announcements covered during class sessions. The course calendar will most likely change over time due to unforeseen circumstances; please be sure you are using the most recent version.

### [Communication Policy](#)

Use the course Slack channel for general questions that your fellow students may be able to answer (link to Slack can be found on Canvas). My preferred method of contact (for quick questions, to let us know you will miss class, to schedule a meeting, etc.) is email. I (Damien) don't check voicemail or Canvas messages regularly. Please put "[HCDE 598B]" in the subject line.

We try to reply to all email as quickly as possible, but please allow up to 48 hours. Please email both Damien and Himanshu unless it is a private concern. If you don't, you may wait considerably longer than 48 hours for a reply. We (and you) get a lot of email. Please use proper punctuation and capitalization. Please make any questions clear (or we may not answer, thinking it is just an "FYI" message).

Courtesy and professionalism are expected in all interactions, in class, outside of class, and to all members of the class (see communication etiquette below). I encourage face-to-face communication during office hours. Electronic correspondence should be limited to questions or clarification about course assignments or content. By law professors

cannot discuss grades via email. Students should never send professors emails, which contain wording you would not feel comfortable saying in person. Nasty, disrespectful emails are considered a violation of student conduct and will be reported to the proper authority.

ASSUME I WILL NOT SEE SLACK DISCUSSIONS OR CANVAS MESSAGES. EMAIL IS BETTER. TRUST ME.

## EVALUATION, ASSIGNMENTS, AND GRADING

### **(Individual assignment descriptions and rubrics can be found on Canvas)**

Evaluation is comprised of several elements, including your grades on individual assignments, individual participation, group assignments and group participation. Each assignment is worth a certain number of points and these are aggregated to determine your final score out of 100%. See the Assignment List for a detailed breakdown of how each one contributes to your grade.

## PARTICIPATION

VUI design is based much more in iteration, feedback and discovery than it is with knowledge or skill in any particular tool or domain. As with all courses, participation is an essential component of this course. Because of the pedagogical approach to the material -- one emphasizing experiential and active engagement with the concepts we read about, i.e., in-class activities and many smaller assignments -- your presence in class is extremely important. While you will not be graded on your attendance, you cannot participate if you don't attend.

You are not graded on attendance, but you are graded on participation. We will track attendance to help us evaluate your participation grade. Consistent and frequent absences are not professional or acceptable. If you frequently miss class, for the reasons explained above and because of your lack of professional engagement with the course, your participation grade will be negatively impacted.

If you are clearly dedicating more of your attention to your laptop than to the activities of the class, your participation grade may be affected. Please understand your technology use in the classroom impacts not only your educational experience, but the other students in the class. Read this scholarly paper by [Sana, Weston, and Cepeda \(2013\)](#) to learn more about how your technology use impacts you and others.

In-class activities will take the form of individual and group activities. The individual activities are meant to push forward both your understanding of VUI design as well as

your insight into your own cognitive and linguistic judgements as a speaker of language. Both are meant to help you make progress on your group project. If you are not present in class to participate in the group activities, you will not receive full credit for the assignment to which the in-class activity contributed.

## ABSENCES

If you are sick and need to stay home, or need to see a doctor, then please do so. Inform both the instructor and TA before class and you will be excused for that day. Missing more than 2 excused days of class will affect your participation grade negatively, unless you have special circumstances that cannot be avoided.

## LATE ASSIGNMENTS

Because each assignment lays the foundation for the next assignment and all assignments that follow, turning in assignments on time is extremely important. If you will be late, or need an extension, contact both the instructor and the TA. We are here to help you learn, not give you a low grade. Let's figure out what we can do, together. In most circumstances late assignments will be graded down by 5% for each day that it is late.

## GRADING

Correspondence between number grades and letter grades is as follows (rounded up to the nearest percentage):

<b>Numeric Grade-Point Equivalent</b>	<b>%</b>	<b>Letter Grade</b>
4.0	98	A
3.9	97	
3.8	96	A-
3.7	95	
3.6	94	
3.5	93	
3.4	92	B+
3.3	90	
3.2	89	
3.1	88	
3.0	87	B
2.9	86	
2.8	85	B-
2.7	84	
2.6	83	
2.5	82	
2.4	81	C+
2.3	80	
2.2	79	
2.1	77	
2.0	75	C
1.9	73	
1.8	71	
1.7	70	
1.6-0.0	<70	E

## How to succeed in this class

### DO THE WORK

There are a number of assignments as part of your class, many of which are low-stakes (not graded) assignments meant to help you learn the technical aspect of this course. Failure to turn assignments in on time will be reflected in your grade.

At times we will discuss readings (readings are assignments). Read and come prepared to discuss the ideas and practices in the readings. I have tried to source readings by designers and researchers that detail industry practice, including the history thereof. They are meant to help you develop essential skills for the next stage of your careers. (Your career has already started!)

### COME TO CLASS!

Attendance in class is one of the best ways for you to succeed in class. As mentioned above, critique is the backbone of this course (arguably, all design). If you are not here, you cannot participate. Come to class.

### THIRST FOR KNOWLEDGE

There is so much to learn! As with much else in life, VUI design is about incorporating core learning from all of your life, work and personal experience. Learning to learn is a lifelong skill, so in addition to class, keeping an open eye for resources that will help you grow as a designer is an excellent way to augment your experience in this class. I encourage you to learn about linguistics, cognitive science, computational approaches, and much more!

## Student Mental Health and Safety

Being a student can be a stressful experience. If you need support or are feeling overly stressed, you are welcome to reach out to the instructional team at any time. We will do our best to listen and support you, but you should also realize that we are not trained professionals in counseling.

The UW Counseling Center (<http://www.washington.edu/counseling/about/how-to-get-help/>) provides a number of options for receiving support, including self-help, workshops, and short-term and long-term counseling. If you are experiencing a crisis situation please call the Crisis Clinic at (206) 461-3222 or toll-free at 1-866-427-4747. If you are experiencing a life-threatening emergency, dial 911. If you feel unsafe, please contact UW Safe Campus at (206) 523- 7233 (SAFE). See the resources section of Canvas for stress relieving activities.

## Other Useful Information

### STUDENT CONDUCT AND ACADEMIC INTEGRITY

All University of Washington students are expected to conduct themselves as responsible members of the academic community. Among the standards of conduct for UW students includes the responsibility to practice "high standards of academic and professional honesty and integrity." WAC 478-120-020(2) (a).

Academic misconduct includes but is not limited to cheating, facilitation, plagiarism, and fabrication in connection with any exam, research, course assignment, or other academic exercise that contributes, in whole or in part, to the satisfaction of requirements for courses or graduation.

For further information read the HCDE Student Conduct Code:

<https://www.hcde.washington.edu/policies/plagiarism-and-academic-conduct>

### RESPECT FOR DIVERSITY

It is our goal to create a classroom environment in which everyone feels comfortable sharing thoughts, opinions, and writing so that we can learn from one another. Diverse backgrounds, embodiments and experiences are essential to the critical thinking endeavor at the heart of university education. Students in this class are expected to: respect individual differences which may include, but are not limited to: age, cultural background, disability, ethnicity, family status, gender presentation, immigration status, national origin, race, religion, sex, sexual orientation, socioeconomic status, and veteran status. engage respectfully in discussion of diverse worldviews and ideologies embedded in course readings, presentations, and artifacts, including those course materials that are at odds with personal beliefs and values.

### ACCESS AND ACCOMMODATIONS

Your experience in this class is important to me. If you have already established accommodations with Disability Resources for Students (DRS), please communicate your approved accommodations to me at your earliest convenience so we can discuss your needs in this course. If you have not yet established services through DRS, but have a temporary health condition or permanent disability that requires accommodations (conditions include but not limited to; mental health, attention-related, learning, vision, hearing, physical or health impacts), you are welcome to contact DRS at 206-543-8924 or uwdrs@uw.edu or disability.uw.edu. DRS offers resources and



coordinates reasonable accommodations for students with disabilities and/or temporary health conditions. Reasonable accommodations are established through an interactive process between you, your instructor(s) and DRS. It is the policy and practice of the University of Washington to create inclusive and accessible learning environments consistent with federal and state law.

## INCLEMENT WEATHER

Please check if the campus may be closed due to weather. Information on suspension of operations will be made public and available through the media. You may also sign up with an alert system that will contact you via email or text message if classes are canceled. For more information on the alert process, please see <https://www.washington.edu/safety/alert/>

## TECHNOLOGY IN THE CLASSROOM

Bring your laptop to class every day. Since technology is profoundly linked to education, there will be many times when I ask that you employ different tools in the gathering and expression of knowledge. Since, however, education is also more than technology, at times I will ask you to close your laptops and focus your attention in class.