Introduction to *Inclusive* Human-Computer Interaction Design

Eli Blevis, Professor of Informatics
Victor Zitao Zhang, Associate Instructor (W3-W13)
Zaiqiao Ye, Associate Instructor (W1-W3)
Luddy School of Informatics, Computing, & Engineering
Indiana University at Bloomington

Important Special Note: Course Modality

Please read all of these instructions carefully.

This class is offered in two sections:
> 39085 in person
> 4418 synchronous online

The meeting times are 20:00-22:30 Tuesdays
> 39085 FA 015
> 4418 Zoom

Even if you are enrolled in 39085, please do not attend class in-person if you feel unwell or unsafe in any way or for any reason. You do not need to state a reason. Physician's notes are not required. Attending by Zoom is equivalent to attending in person for the purposes of evaluation in all ways.

This applies to the instructors and invited speakers as well as all participants.

In the event that neither instructor is physically present for a particular class of the in-person section, one of the participants in attendance should set up the equipment so that everyone in FA 015 and everyone on Zoom can meet together.

Associate Instructor Zaiqiao Ye and/or Victor Zhang will also hold in-person meetings for the 39085 section: 15:30 – 16:30 Thursday afternoons in the Design Studio, third floor of the Bridge Building of Myles Brand Hall

International students who must attend the in-person sections must attend these meetings too, to be sure that we are meeting the in-person requirements for the course. Others in either section may attend space permitting, and/or by Zoom.

Instructor Eli Blevis will also attend the Thursday meetings by Zoom.

We will discuss the times on the first class meeting and change the times to suit individual schedules if need be.

Associate Instructor Zaiqiao Ye and/or Victor Zhang will also offer Zoom meetings 10:00-11:00 (AM) Tuesdays for any who choose to attend

For all in attendance in FA 015 or in the Design Studio, if any person in the space is not observing social distancing or face covering or any safety rules, all should leave the space immediately without confrontation of any kind and report the incident according to the instructions in the section title Safety towards the end of this document.

The first class on 25 August will meet entirely by Zoom, so that we can discuss these plans and be sure that everyone understands and commits to compliance.

Calendar

August			September			October			November		
24	Mo		1	Tu	W2	1	Th		1	Su	
25	Tu	W1	2	We		2	Fr		2	Mo	
26	We		3	Th		3	Sa		3	Tu	W11
27	Th		4	Fr		4	Su		4	We	
28	Fr		5	Sa		5	Mo		5	Th	
29	Sa		6	Su		6	Tu	W7	6	Fr	
30	Su		7	Mo		7	We		7	Sa	
31	Mo		8	Tu	W3	8	Th		8	Su	
			9	We		9	Fr		9	Mo	
			10	Th		10	Sa		10	Tu	W12
			11	Fr		11	Su		11	We	
			12	Sa		12	Mo		12	Th	
			13	Su		13	Tu	W8	13	Fr	
			14	Mo		14	We		14	Sa	
			15	Tu	W4	15	Th		15	Su	
			16	We		16	Fr		16	Mo	
			17	Th		17	Sa		17	Tu	W13
			18	Fr		18	Su		18	We	
			19	Sa		19	Mo		19	Th	
			20	Su		20	Tu	W9	20	Fr	
			21	Mo		21	We				
			22	Tu	W5	22	Th				
			23	We		23	Fr				
			24	Th		24	Sa				
			25	Fr		25	Su				
			26	Sa		26	Mo				
			27	Su		27	Tu	W10			
			28	Mo		28	We				
			29	Tu	W6	29	Th				
			30	We		30	Fr				
						31	Sa				

Goals

Practice creative and reflective response to a broad range of invited speakers on themes in HCI/d and/or themes synergistic with HCI/d research and practice.

Teaching Philosophy

Over years, my teaching philosophy has become increasingly minimalist. The core tenet is:

> *Make sure that everyone in a class—that is each and every one—has equal time, invitation, and opportunity to speak, present, critique, facilitate, question, answer, and fully participate in every way in every detail.*

Format of Weekly Classes

Class meets online and/or in-person each Tuesday night 20:00-22:30, FA 015 and Zoom. Synchronous. 13W.

> 20:00-20:50 An invited Speaker will present and/or lead a discussion relating to HCI/d in the perspective of their areas of expertise. Participants learn about different aspects of HCI and Design to inform individual future areas of focus, elective choices, and career paths.
>
> 20:50-21:00 Break
>
> 21:00-21:20 Participants meet in breakout rooms (around 3 per room modulo class size) and present and discuss projects inspired by the previous week's discussion.
>
> 21:20-22:30 Six participants present and discuss their projects in the entire assembly, facilitated by the Instructors according to the teaching philosophy. Each presentation and discussion will be alotted about ten minutes in total. The six presenters will be assigned in a cycle that gives each particpant equal opportunity to present modulo the class size. The discussion is managed to ensure that every participant is called upon to comment on one of these presentations at least once per class session. The presentation must be three minutes or less with the remainder of the time alotted to comments from the participants and instructors.

Thursdays, 15:30-16:30 in the HCI/d Design Studio and on Zoom

> Optional discussion section (recorded for partipants overseas) for anyone who did not present to the entire class on Tuesday to present her or his or their work. We may also use this time to share instruction about design skills and tools.

Format of Weekly Classes

Class meets online and/or in-person each Tuesday night 20:00-22:30, FA 015 and Zoom. Synchronous. 13W.

>20:00-20:40 An invited Speaker will present and/or lead a discussion relating to HCI/d in the perspective of their areas of expertise. Participants learn about different aspects of HCI and Design to inform individual future areas of focus, elective choices, and career paths.
>
>20:40-21:10 Travel home from FA 015 or Break
>
>21:10-21:30 Participants meet in breakout rooms (around 3 per room modulo class size) and present and discuss projects inspired by the previous week's discussion.
>
>21:30-22:30 Six participants present and discuss their projects in the entire assembly, facilitated by the Instructors according to the teaching philosophy. Each presentation and discussion will be alotted about nine minutes in total. The six presenters will be assigned in a cycle that gives each particpant equal opportunity to present modulo the class size. The discussion is managed to ensure that every participant is called upon to comment on one of these presentations at least once per class session. The presentation must be three minutes or less with the remainder of the time alotted to comments from the participants and instructors.

Schedule of Invited Speakers

Subject to revisions and substitutions
(Month.Day)

1. 08.25 Eli Blevis, Design for Respect (HCI/d)
2. 09.01 Jeff Bardzell, Models of Design in HCI/d
3. 09.08 Christina Chung, Design for Social Personal Tracking
4. 09.15 Travis Brown, Design Strategy and Product Management in HCI/d
5. 09.22 Patrick Shih, ACI and Health in HCI/d
6. 09.29 Kate Wehner, Information Architecure and Professional Practice in HCI/d
7. 10.06 Sameer Patil, Security and HCI/d
8. 10.13 Akesha Horton, Race, Culture, and Technology for HCI/d
9. 10.20 Norman Makoto Su, Ethnography and HCI/d
10. 10.27 Erik Stolterman, Design Theory
11. 11.03 Shaowen Bardzell, Feminist HCI/d
12. 11.10 Richard Brath, Visualizations for HCI/d
13. 11.17 Final Presentations

Invited Speaker Talk and Discussion Frames

Each of the invited speakers has been asked to respond to the following framing invitation:

What do researchers and practitioners in your area[1]

    a) believe that they *should* be doing as a matter of ethics, values, or philosophies?
    b) believe that they *can* do as a matter of strategies and tactics, approaches, and so forth[2]
    c) believe that they can and need to *know* as a matter of collecting, understanding, or creating knowledge to inform what they should do and can do?
    d) consider to be the main *forms* or results of their work[3]

Invited speakers were also instructed:

Of course, we are also interested in learning your unique perspectives on these questions in balance. The balance in your presentation between your personal perspectives and your account of general perspectives is entirely up to you. Moreover, you don't strictly need to focus on these questions—they are a guide and a suggested structure.

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[1] {e.g. Health, Enterprise, ACI, HRI, …}

[2] {e.g. promote individual behavioral change, inform and improve community practices, promote better policies, …}

[3] {e.g. publications, prototypes, (digital) products, experiences, services, strategies, …}

Individual Weekly Projects

Participants will do the following:

In response to each invited talk

a) record notes about the talk, mindful of the italicized categories above, namely *should, can, know,* and *forms:* Should, can, know, and forms are categories that taken together are a Design frame, a way of explaining Design

b) create one or more *creative reflections* relating to the theme of the talk from the perspective of a(n interaction or experience or strategic) designer

c) be prepared to present your reflections the following week and discuss the reflections of others.

By *creative reflection*, I mean that you may do one or more of the following not limited to the following:

a) describe some aspect of the theme as presented

b) speculate on a design concept in terms of *should, can, know,* and *forms* inspired by the speaker

c) speculate on a design concept in alternative terms inspired by the speaker

d) create a diagram that summarizes some aspect of the theme as inspired by the speaker

e) annotate a photograph of your own or one that is in the public domain to illustrate some aspect of the themes as presented

f) create a collage or another form of arrangement of associated forms as a means to insights, mood, design language, or another prompt to design

g) any other form of reflection you think has value for yourself and others

A creative reflection is a form of a design component. A design component is a representation of a chunk of design knowledge that is part of a design plan or explanation. There are many different terms to describe this. We will discuss the variety of terminology and semantics in class.

Participants enrolled in the MS HCI/d program are likely also taking the required class I542 concurrently. I542 presents a broad overview of the HCI literature with projects familiar to a survey class format. I541 asks you to respond to a speaker series with individual creative reflective responses that we will use as prompts to discussion in class and for which production values—especially visual production values—matter deeply. The two classes scaffold one another.

The most important point of form is that your creative reflections fit on a single page in landscape mode, so that they are easily shared and projected. We have a few rules for the form of your creative reflections, namely
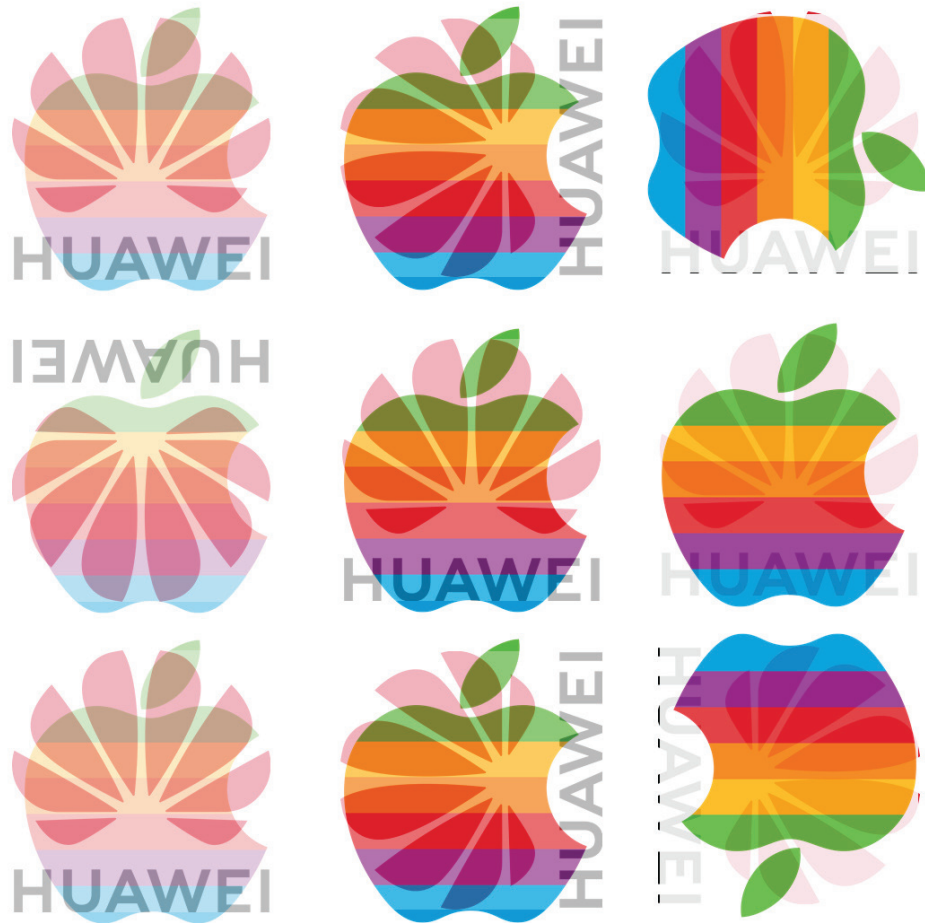
a) They fit on a single 8.5x11 sheet of paper (the US standard similar to A4) in *landscape* mode so that they can be easily projected (66p0 by 51p0 in picas)
b) You do not need to fill the page
c) You may use any software at all to create them
d) Submit these in both PDF and JPG formats exported as 300dpi—one copy each using the case-sensitive file naming convention:
   a. <FAMILY NAME>.<given name>.<familiar name>.W<week number>.I541FALL2020.jpg and
   b. <FAMILY NAME>.<given name>.<familiar name>.W<week number>.I541FALL2020.pdf
e) They contain reference information in the form
   a. *i*HCI/d Fall 2020 | <your name> | *theme:* <weekly presentation theme> | *speaker:* <speaker name> | <source types and attributions>
f) They are visually interesting representations of creative reflections
g) They have high production values
h) They are rigorous scholarship as appropriate

Your weekly creative reflections are due at 18:00 on the Tuesday following each class. You may submit more than one reflection but no more than three. Each reflection must fit on a single page—minimalism is the soul of this format. Only quality matters and quantity is of no consequence.

During the first week, I will present myself on the notion of design for respect and sustainability. On the next page, I give an example of a creative reflection that could be a response to my lecture. Please note that these should be in landscape mode, rather than portrait mode as this example is. This example is by no means meant to constrain the form of your creative reflections. Pushing at boundaries in this class is a good thing. The weekly projects are both forms of sharing design knowledge and practice at thinking like a designer.

Collective *Quilting* Project

As an initial plan, we will aggregate the reflections you create into one or more collective interactive forms for presenting our design reflections and make these available online. Metaphorically, we will *quilt* your projects together. The idea that we will aggregate our individual work into a commonly created whole can be understood to be a form of constructivist learning as well as a designerly device to build our community.

*i*HCI/d Fall 2020 | Eli Blevis | *theme:* Design for Respect | *speaker:* Eli Blevis
| collage (satire), source elements: Huawei Logo, Apple Logo, www.wikipedia.org accessed 08.23.2020

Reflection on:

"The notion of design for respect I propose here, with an emphasis on inter-cultural, inter-national design politics and economics is highly related to the work of Avle and Lintdner [⁴]. The phrase design for respect is distinct from the phrase respectful design (cf. Sheehan [⁵], Tunstall [⁶]) in anthropology. I mean the phrase design for respect more broadly. I mean it to represent the idea that the details of what we design may influence global political sustainability between large forces, rather than the specific meaning of respecting indigenous and under-represented cultures. Both senses are valid, and both are valuable.

*It can be frustrating to work in the area of SID/SHCI. It seems that to be of real influence, we need to operate at the policy level, rather than at the individual or even community levels. Yet, there are many ways that the influence of design extends well beyond product orientation, especially in the details of how we label things. **Designers may not be policy makers, but designers are responsible for how their designs shape attitudes that influence economic policies and practices. Designing for respect may even help safeguard the world from economic misunderstanding, war, or worse.***"
Blevis [⁷]:Paper 370, page 10.

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⁴ Seyram Avle and Silvia Lindtner. 2016. Design(ing) 'Here' and 'There': Tech Entrepreneurs, Global Markets, and Reflexivity in Design Processes. In *Proceedings of the 2016 CHI Conference on Human Factors in Computing Systems* (CHI '16). ACM, New York, NY, USA, 2233-2245.

⁵ Norman W. Sheehan. 2011. Indigenous knowledge and respectful design: An evidence-based approach. *Design Issues*, *27*(4), pp.68-80.

⁶ Elizabeth (Dori) Tunstall. 2013. Decolonizing design innovation: Design anthropology, critical anthropology, and indigenous knowledge. *Design anthropology: theory and practice*, pp.232-250.

⁷ Eli Blevis. 2018. Seeing What Is and What Can Be: On Sustainability, Respect for Work, and Design for Respect. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems (CHI '18).* ACM, New York, NY, USA.

Grading

Weekly projects: 70%
Participation: 30%

Note that there is no specific grade for attendance. You may attend by Zoom or in-person. If you are unwell or suspect you may be unwell, do not attend in-person. Attending by Zoom or attending in-person count the same apropos of the participation grade.

As a matter of ensuring that all voices are heard, I will call on participants in a random but systematic order to present, comment, or ask questions. If you attend regularly and learn the names of all participants because you have listened to them carefully as well as having thoughtful things to say yourself, your participation grade should be high.

Each weekly project will be graded on a 100 point scale and used to calculate 70% of your final grade. The standard for an A grade is excellence. The standard for an A+ grade is publishable and professional in every detail.

Important Note about Third Party Materials

In this class, your use of third party materials must conform to ACM policy:

> *Third party material Fair use*
> *https://www.acm.org/publications/authors/guidance-for-authors-on-fair-use*

> *Sample permission request letter*
> *https://www.acm.org/binaries/content/assets/publications/permissionsformtemplate.odt*

The reason for this policy is to underscore the goal of producing professional quality, publishable work, as you will be expected to produce in real-world practice. In your professional career, you will be expected to adhere to copyright laws. It is also a matter of ethics and respect for the work of others.

Moreover, since this class emphasizes visual thinking, most of your evidence of such thinking must be your own original work.

Reference Formats

You must use ACM referencing formats: *https://www.acm.org/publications/authors/reference-formatting*

Reference Texts about HCI and Design

Most texts will be shared on the class Slack Channel and only a few of the texts that appear there will appear on the list below. I will add readings in the Slack Channel and may add to the list below throughout the semester.

Selected Reference Texts

Christopher Alexander. *The nature of order*. Berkeley: Taylor & Francis, 2004.

Eli Blevis, Kenny Chow, Ilpo Koskinen, Sharon Poggenpohl, and Christine Tsin. 2014. Billions of interaction designers. *interactions* 21, 6 (October 2014), 34-41.

Eli Blevis. 2012. The PRInCiPleS Design Framework. In John M. Carroll (ed.). *Human-Computer Interaction Series, 1, Volume 20, Creativity and Rationale,* Springer, Pages 143-169.

Eli Blevis. 2010. Design challenge based learning (DCBL) and sustainable pedagogical practice. *interactions* 17, 3 (May 2010), 64–69.

Hugh Dubberly, and Shelley Evenson. "Designing for service: Creating an experience advantage." *Introduction to service engineering* (2010): 403-413.

IBM. *IBM Design Language*. *https://www.ibm.com/design/language/* accessed 09.29.2020.

Yuhan Luo, Peiyi Liu, and Eun Kyoung Choe. 2019. Co-Designing Food Trackers with Dietitians: Identifying Design Opportunities for Food Tracker Customization. In *Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems* (*CHI '19*). Association for Computing Machinery, New York, NY, USA, Paper 592, 1–13.

Bella Martin and Bruce Hannington. 2012. *Universal Methods of Design*. Beverly, MA:Rockport.

Nielsen Norman Group *Information Architecture Articles, Videos, Reports, Training Courses, and Online Seminars by NN/g* accessed 09.29.2020.

Harold Nelson and Erik Stolterman. *Design Way: Intentional Change in an Unpredictable World.* Englewood Cliffs: Educational Technology Publications, 2003.

Donald A. Norman. 2019. The Four Fundamental Principles of Human-Centered Design and Application. *Essay*. JND.org (23 July 2019).

Donald A. Norman, and Pieter Jan Stappers. "DesignX: complex sociotechnical systems." *She Ji: The Journal of Design, Economics, and Innovation* 1, no. 2 (2015): 83-106.

Yvonne Rogers. "HCI theory: classical, modern, and contemporary." *Synthesis lectures on human-centered informatics* 5, no. 2 (2012): 1-129.

Pedro Sanches, Axel Janson, Pavel Karpashevich, Camille Nadal, Chengcheng Qu, Claudia Daudén Roquet, Muhammad Umair, Charles Windlin, Gavin Doherty, Kristina Höök, and Corina Sas. 2019. HCI and Affective Health: Taking stock of a decade of studies and charting future research directions. In *Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems* (*CHI '19*). Association for Computing Machinery, New York, NY, USA, Paper 245, 1–17.

Edward R. Tufte, Nora Hillman Goeler, and Richard Benson. *Envisioning information*. Vol. 126. Cheshire, CT: Graphics press, 1990.

Edward R. Tufte, Susan R. McKay, Wolfgang Christian, and James R. Matey. "Visual explanations: Images and quantities, evidence and narrative." (1998): 146-148.

Edward R. Tufte, *Beautiful evidence*. Graphis Pr, 2006.

Huaxin Wei, Jeffrey C. F. Ho, Kenny K. N. Chow, Shunying An Blevis, and Eli Blevis. 2019. Should Do, Can Do, Can Know: Sustainability and Other Reflections on One Hundred and One Interaction Design Projects. In *Proceedings of the Fifth Workshop on Computing within Limits* (LIMITS '19). ACM, New York, NY, USA, Article 6, 18 pages.

Patrick Whitney. "Design and the Economy of Choice." *She Ji: The Journal of Design, Economics, and Innovation* 1, no. 1 (2015): 58-80.

Here is a very good place to find all of the papers considered by the various ACM CHI subcommittees in 2020 for 2021 to be exemplary within their special arenas of interests (the lists at the bottom of each section links to the papers in the ACM DL):

- *User Experience and Usability*
- *Specific Applications Areas*
- *Learning, Education, and Families*
- *Interaction Beyond the Individual*
- *Games and Play*
- *Privacy and Security*
- *Visualization*
- *Health*
- *Accessibility and Aging*
- *Design*
- *Interaction Techniques, Devices, and Modalities*
- *Understanding People: Theory, Concepts, Methods*
- *Engineering Interactive Systems and Technologies*
- *Critical and Sustainable Computing*
- *Computational Interaction*

Safety

We are all in this together, and need to work together to keep each other healthy.

Masks and Physical Distancing Requirements

All students signed the Community Responsibility Acknowledgement (CRA). Your agreement to the public health measures in the CRA is a condition of physical presence on the campus this fall. Included in that commitment were requirements for wearing masks in all IU buildings and maintaining social distancing in all IU buildings. Both are classroom requirements.

Both requirements are necessary for us to protect each other.

- Therefore, if a student is present in a class without a mask, the student will be asked to put on a mask and I will report the student to the Division of Student Affairs: Office of Student Conduct.
- If a student refuses to put a mask on after being instructed to do so, the instructor may end the class immediately, and contact the Office of Student Conduct. Violation of the mask rule is a threat to public safety within the meaning of the *Summary Suspension Policy* .
- If a student comes to class without a mask twice, the student's final grade will be reduced by one letter (e.g., from an A to a B, for instance).
- If the student comes to class without a mask three times, the student will be withdrawn from the class without refund of tuition and reported to the Office of Student Conduct.
- If Student Conduct receives three cumulative reports from any combination of instructors or staff members that a student is not complying with the requirements of masking and physical distancing, the student *will be summarily suspended* from the university for the semester.

Student Rights

Any student who believes another person in a class is threatening the safety of the class by not wearing a mask or observing physical distancing requirements may leave the class without consequence.

Attendance

The CRA requires that you take your temperature every morning and that you refrain from attending class if you have a temperature of 100.4 or other symptoms of illness. In order to ensure that you can do this, attendance will not be a factor in the final grade. Attendance may still be taken to comply with accreditation requirements.

Summary Suspension Policy

"A student may be summarily suspended from the university and summarily excluded from university property and programs by the Provost or designee of a university campus. The Provost or designee may act summarily without following the hearing procedures established by this section if the officer is satisfied that the student's continued presence on the campus constitutes a serious threat of harm to the student or to any other person on the campus or to the property of the university or property of other persons on the university campus."

Accommodations & Feedback

We welcome your feedback. We will do our best to accommodate specific requests if they are reasonable and have merit.

Academic Misconduct

The class is morally and procedurally bound by IU's policies on academic misconduct, the details of which you can read about at the following website: www.indiana.edu/~code/code/index.shtml

Religious Observance

In accordance with the Office of the Dean of Faculties, any student who wishes to receive an excused absence from class must submit a request form available from the Dean of Faculties for each day to be absent. This form must be presented to the course professor by the end of the second week of the semester. A separate form must be submitted for each day. The form must be signed by the instructor, with a copy retained by instructor, and the original returned to the student. Information about the policy on religious observance can be found here: www.indiana.edu/~vpfaa/holidays.shtml

English

If English is not your native language or you are otherwise shy about speaking in class, please do not worry. You will not be penalized in any way for making contributions to the class in less than perfect English or for taking time to compose your answers. You are welcome to say what you want to say in your language of choice first and then ask for help from others to translate to English. I will frequently emphasize to the class the need for all of us to be supportive of each other when it comes to contributing to the discussions. There is no need to feel rushed when responding to questions in class—an important part of the class is the construction of a feeling of community with the faculty and your peers.

Important Notice

As your instructor, one of my responsibilities is to help create a safe learning environment on our campus. Title IX and our own Sexual Misconduct policy prohibit sexual misconduct. If you have experienced sexual misconduct, or know someone who has, the University can help. I encourage you to visit http://stopsexualviolence.iu.edu/ to learn more. If you are seeking help and would like to speak to someone confidentially, you can make an appointment with a Mental Health Counselor on campus (contact information available at http://stopsexualviolence.iu.edu/employee/confidential.html).

It is also important that you know that federal regulations and University policy require me to promptly convey any information about potential sexual misconduct known to me to our Deputy Title IX Coordinator or IU's Title IX Coordinator. In that event, they will work with a small number of others on campus to ensure that appropriate measures are taken and resources are made available to the student who may have been harmed. Protecting a student's privacy is of utmost concern, and all involved will only share information with those that need to know to ensure the University can respond and assist.