WINTER 2022

UX FUNDAMENTALS AND USER EXPERIENCE RESEARCH

DEI 626

Instructor: Lennart Nacke, Ph.D.
ASSOCIATE PROFESSOR

UX FUNDAMENTALS AND USER EXPERIENCE RESEARCH

COURSE DESCRIPTION

This course will cover the fundamentals of UX design and provide the students with insights into the "real-life" processes, challengers, considerations, tools, teams, models, etc. of a user experience designer. Students will be introduced to the UX principles, designing, evaluating, implementing and measuring of UX.

LEARNING OUTCOMES

Upon completion of this course, students should be able to:

- Plan field visits to
    - run interviews and analyze responses, and
    - observe users and take helpful notes.
- Create
    - research questions (art of asking the right questions)
    - personas
    - user stories

- - user journey maps
- Choose appropriate means of
  - classifying information, and
  - organizing an information architecture.
- Design and conduct online and offline card sorting sessions
- Gather knowledge of and be able to select user interface design patterns
- Develop inexpensive, throwaway prototypes to receive quick and constant feedback from your users
- Create user interface designs based on principles of visual design
- Design usability tests to measure time-on-task, error and success rates, user satisfaction (and more measures of user experience)
- Moderate a usability test and prioritize your observations
- Evaluate the usability of a systems by applying usability heuristics

COURSE SCHEDULE

Important: **ALL TIMES EASTERN** - Please see the [University Policies](#) section of your Course Outline for details

Week	Module	Readings	Activities and Assessments	Weight	Due Date
Week 1 (January 5-9, 2022)	Module 1: Introduction and What is UX Research and Design?	Garrett: Ch. 1 Goodman, Kuniavsky, Moed: Chs. 1 & 2	Introduce yourself in Miro	ungraded	Sunday, January 30, 2022 at 11:55 PM
			Module 1 [Quiz](#)	3%	
			Module 1-4 Discussion. Choose 1 of the 4 discussion options to complete before due date.	2%	

			Module 1-4 Exercise. Choose 1 of the 4 exercise options to complete before due date.	6%	
Week 2 (January 10-16, 2022)	Module 2: UX Research Planning	Garrett: Ch. 2 Goodman, Kuniavsky, Moed: Chs. 4 & 5	Groups for [Final Project] will be created by Instructor		Check after Friday, January 14, 2022 at 4:30 PM
			Module 2 [Quiz]	3%	Sunday, January 30, 2022 at 11:55 PM
			Module 1-4 Discussion. Choose 1 of the 4 discussion options to complete before due date.	2%	
			Module 1-4 Exercise. Choose 1 of the 4 exercise options to complete before due date.	6%	
Week 3	Module 3: UX	Garrett: Ch. 3	Module 3 [Quiz]	3%	Sunday,

(January 17-23, 2022)	Strategy: User Needs, Personas, Business Objectives	Goodman, Kuniavsky, Moed: Ch. 17	Module 1-4 Discussion. Choose 1 of the 4 discussion options to complete before due date.	2%	January 30, 2022 at 11:55 PM
			Module 1-4 Exercise. Choose 1 of the 4 exercise options to complete before due date.	6%	
Week 4 (January 24-30, 2022)	Module 4: UX Scope: Functional Specification and Content Requirements	Garrett: Ch. 4 Goodman, Kuniavsky, Moed: Ch. 9	Module 4 [Quiz]	3%	Sunday, January 30, 2022 at 11:55 PM
			Modules 1-4 Discussion. Choose 1 of the 4 discussion options to complete before due date.	2%	
			Module 1-4 Exercise. Choose 1 of the 4 exercise options to complete before due date.	6%	

Week 5 (January 31- February 6, 2022)	Checkpoint 1: Field Observation of a Twitch Gamer	Goodman, Kuniavsky, Moed: Ch. 9	Checkpoint 1	15%	Sunday, February 6, 2022 at 11:55 PM
Week 6 (February 7-13, 2022)	Module 5: UX Evaluation: Research Methods	Goodman, Kuniavsky, Moed: Chs. 6, 7, 9, 10, 11	Module 5 Quiz	3%	Sunday, Feb 20, 2022 at 11:55 PM
			Module 5-6 Discussion. Choose 1 of the 2 discussion options to complete before due date.	2%	
			Module 5-6 Exercise. Choose 1 of the 2 exercise options to complete before due date.	6%	
Week 7 (February 14-18, 2022)	Module 6: UX Evaluation: Data Analysis	Goodman, Kuniavsky, Moed: Chs. 15 & 16	Final Project Topic	Ungraded	Sunday, Feb 20, 2022 at 11:55 PM
			Module 6 Quiz	3%	
			Module 5-6 Discussion. Choose 1 of the 2 discussion options to complete before due date.	2%	

			Module 5-6 Exercise. Choose 1 of the 2 exercise options to complete before due date.	6%	
Reading Week (Saturday, February 19, to Sunday, February 27, 2022)					
Week 8 (February 28 - March 6, 2022)	Checkpoint 2: Research Questions and User Research Plan		Checkpoint 2	16%	Sunday March 6, 2022 at 11:55 PM
Week 9 (March 7-13, 2022)	Module 7: UX Structure: Information Architecture and Card Sorting	Garrett: Ch. 5 Goodman, Kuniavsky, Moed: Ch. 8	Module 7 Quiz	3%	Tuesday, April 5, 2022 at 11:55 PM
			Module 7-9 Discussion. Choose 1 of the 3 discussion options to complete before due date.	2%	
			OPTIONAL Module 7-9 Exercise. Choose 1 of the 3 exercise options to complete before due date.		
Week 10	Module 8: UX	Garrett: Ch. 6 &	Module 8 Quiz	3%	Tuesday,

(March 14-20, 2022)	Skeleton: Wireframing, Prototyping, Visual Design	7	Module 7-9 Discussion. Choose 1 of the 3 discussion options to complete before due date.	2%	April 5, 2022 at 11:55 PM
Week 11 (March 21-27, 2022)	Module 9: Communicating UX Findings	Goodman, Kuniavsky, Moed: Ch. 17	Module 9 [Quiz]	3%	Tuesday, April 5, 2022 at 11:55 PM
			Module Discussion. Choose 1 of the 3 discussion options to complete before due date.	2%	
Week 12 (March 28-April 5, 2022)	Team Project: Real World Online Study and UX Report	Garrett: Ch. 8	Final Project	25%	Monday, April 19, 2022 at 11:55 PM

There is no final examination for this course.

CONTACT INFORMATION

ANNOUNCEMENTS

Your instructor uses the Announcements widget on the Course Home page during the term to communicate new or changing information regarding due dates, instructor absence, etc., as needed.

You are expected to read the announcements on a regular basis.

To ensure you are viewing the complete list of announcements, you may need to click Show All Announcements.

DISCUSSIONS

Discussions for this class will happen in the DEI 626 - Winter 2022 Microsoft Teams Team only. Your instructor is available in MS Teams.

CONTACT US

Who and Why	Contact Details
Instructor • Course-related questions (e.g., course content, deadlines, assignments, etc.) • Questions of a personal nature	**Post your course-related questions** to the *Ask the Instructor* Teams channel. This allows other students to benefit from your question as well. **Questions of a personal nature** can be directed to your instructor. Instructor: Dr. Lennart Nacke • Schedule online appointment: <u>Calendly - Office Hours</u> • Email: <u>lennart.nacke@uwaterloo.ca</u> ✦ I prefer to be contacted using **Microsoft Teams** for anything related to the course that is urgent. I use email only for non-urgent (slow-response) communication.
Miro, Doodle, Calendly, MS Teams • Questions about Third-Party Tools	For instructions on how to use the tools, please contact your instructor or visit: Miro - <u>miro support and help centre</u> Calendly - <u>Calendly Help Center</u> MS Teams - <u>Microsoft Office 365</u>

Technical Support, Centre for Extended Learning • Technical problems with Waterloo LEARN	learnhelp@uwaterloo.ca Include your full name, WatIAM user ID, student number, and course name and number. Technical support is available during regular business hours, Monday to Friday, 8:30 AM to 4:30 PM (Eastern Time). IST Knowledge Base: For Students
Learner Support Services, Centre for Extended Learning • General inquiries • Examination information	Student Resources extendedlearning@uwaterloo.ca Include your full name, WatIAM user ID, student number, and course name and number.

GRADE BREAKDOWN

The following table represents the grade breakdown of this course.

ASSESSMENT TYPE	ASSESSMENT ITEM	GRADE WEIGHT
Discussions	3 Discussion Posts (2% each)	6%
Exercises	2 Exercises (6% each)	12%

Module Quizzes	9 Quizzes (3% each)	27%
Assignments	Checkpoint 1	15%
	Checkpoint 2	15%
	Final Project	25%

DISCUSSIONS

Throughout the term, you have to submit 3 discussion posts in the module discussion channels in Microsoft Teams, where you can discuss your modules. To make this easier, the instructor has provided discussion prompts in your **Content** section in Learn under **Activities and Assessments** > **Discussions**. You can take these prompts as inspiration for your discussion but you can also choose to focus on your own topic, which you should then outline in the discussion post at the beginning. Pass/fail criteria for a successful discussion post to count on Teams are (all criteria need to be met for a pass):

- Minimum 100 words.

- Maximum 400 words.

- Reflective of the module topic.

- Thoughtful. A good faith effort counts more than absolute precision.

- Respectful and non-repetitive of other people's posts.

- Error-free (no grammatical, spelling, or punctuation errors).

EXERCISES

Each module will provide at least one possible exercise for you to do as an individual. Out of all available exercises, you can choose 2 exercises and submit them in an exercise dropbox. Make sure to label the exercise submission with the exact module number and exercise number when submitting it to the Dropbox.

MODULE QUIZZES

Each module has a quiz attached to it. You will need to complete each module quiz with 100% correct answers to advance to the next module quiz (i.e., it will only become available once you have completed the previous one). You have infinite attempts for each quiz until you get all the answers right. However, quizzes also have due dates (before the checkpoints), so to make sure your quizzes receive full marks at the end of the course, make sure to not submit them late.

- Complete a quiz with 100% correct answers for each module.

- Redo a quiz as often as necessary to advance.

- Make sure to submit quizzes before their due date.

GROUP ASSIGNMENTS

This class will have three larger group assignments, two checkpoints during the term and then one final project at the end of the term. Checkpoint 1 and Checkpoint 2 are video-based assignments submitted to a Dropbox in Learn to allow you to record your check-ins and assignment feedback using video. In the same way, you will be using video to present your final term project assignment.

OFFICIAL GRADES AND COURSE ACCESS

Official Grades and Academic Standings are available through [Quest](#).

Your access to this course will continue for the duration of the current term. You will not have access to this course once the next term begins.

ABOUT THE COURSE AUTHOR/INSTRUCTOR

COURSE AUTHOR — DR. LENNART NACKE

Professor Nacke is an Associate Professor of UX Research and Design in Games and the Associate Director, Graduate Studies, at the Stratford School of Interaction Design and Business at the University of Waterloo. He is also part of the Department of Communication Arts, and the Games Institute, where he is researching player experience in video games, immersive VR environments, and gameful applications. Together with co-researchers, he published the PXI—player experience inventory, gamification user types hexad scale, guidelines for biofeedback and sound design in games, and a book on games user research. He is one of the world's top three leading gamification scholars (on Google Scholar), one of the world's top three leading UX researchers (on Google Scholar) and was named among the top 10 Most Influential Scholars in HCI over the past ten years (2009–2019, AMiner) and one of Canada's Top 200 and the world's Top 4,000 Computer Scientists (Guide2Research). His h-index is 51 (i-10 index: 132; Google Scholar), making him one of the world's most prolific mid-career HCI researchers and putting him among the top 2% of scientists globally (in the areas of Human Factors, Artificial Intelligence & Image Processing, and Psychology & Cognitive Sciences).
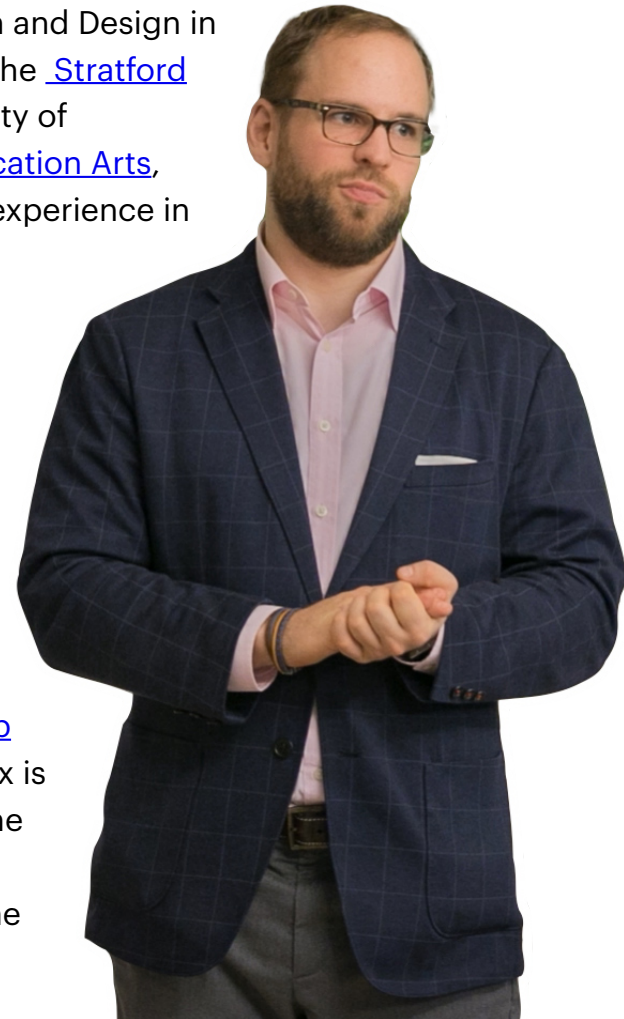
WATCH: DR. NACKE, DIRECTOR OF THE HCI GAMES GROUP, PROFILE VIDEO (~5 MINS)

HCI Games. (2017, February 15). *Dr. Nacke, Director of the HCI Games Group, Profile Video*. [Video]. YouTube. https://www.youtube.com/watch?v=6k12M0IHo3I

CURRENT RESEARCH AREAS

Gamification: Involves the use of game design principles in systems that primarily support non-game tasks, with the goal of increasing fun, engagement and motivation. Dr. Nacke has been involved in the definition of the term and leading the academic movement in workshop and conference settings.

Games user research: Developing new methods and tools for improving player testing and user research in games and entertainment systems.

Games for human health and fitness: Making sports, physiological exercise, and health applications more playful has become one of Dr. Nacke's recent research focus areas, especially in light of the recent increase in sensor use and the quantified self movement. As part of this, he has investigated how to foster healthy habits, such as sticking to fitness routines and engaging older adults with technology. His students have developed their own apps and his research team has worked with companies such as Ayogo Health, Inc. in Vancouver, British Columbia, to analyze social health games on Facebook. A recent

Engage grant with Vintage Fitness in Toronto supported a project to develop a gamified online fitness service to keep older adults fit and healthy.

HCI for games: Finding novel sensors and interaction paradigms that drive the manner in which we interact with computers in a meaningful
and engaging way.

Affective gaming: Research using psychophysiological analysis and physiological sensors to track player sentiments when gauging engagement, cognition and player emotions.

Social relationship-building games: Developing games and installations that can be used in public spaces to build relationships and foster social interaction in groups.

Dr. Nacke is cross-appointed with the Cheriton School of Computer Science and the Department of Systems Design Engineering. He can also be found working at the Stratford School and The Games Institute. For more information, please see Dr. Nacke's research profile and publication links.

MATERIALS AND RESOURCES

TEXTBOOK(S)

REQUIRED

1. Observing the User Experience: A Practitioner's Guide to User Research, 2nd Edition by Elizabeth Goodman, Mike Kuniavsky, Andrea Moed, Morgan Kaufmann, 2012.

2. The Elements of User Experience: User-Centered Design for the Web and Beyond, 2nd Edition by Jesse James Garrett, New Riders, 2010.

For textbook ordering information, please contact the W Store | Course Materials + Supplies.

For your convenience, you can compile a list of required and optional course materials through BookLook using your Quest userID and password. If you are having difficulties ordering online and wish to call the Waterloo Bookstore, their phone number is +1

519-888-4673 or toll-free at +1 866-330-7933. Please be aware that textbook orders **CANNOT** be taken over the phone.

RESOURCES

- Library services for <u>Co-op students on work term and students taking online courses</u>

COURSE AND DEPARTMENT POLICIES

E-MAIL POLICY

I do not use email for urgent communication and answers are always delayed. If you have urgent communication, please send me a direct message in Microsoft Teams, which is available to you through the University. If you must send an email, please put DEI 626 in the subject line.

LATE WORK

Individual assignments submitted late without approved extensions will be subject to late penalties. 5% will be deducted for projects that are handed in within 24hrs after the deadline and an additional 5% per day thereafter (including weekends) up to a maximum of 50%. After that time a grade of 0% will be assigned for the late work. Late penalties are not recoverable.

For group work: If one of you happens to be sick, the rest of your team members will be there to present for you or to upload your work. Ensure that you use your MS Teams channel for sharing your slides, research, design, other documents and media so that any team member can theoretically present all material involved, and a backup plan is in place if your key presenter cannot be present in the final week of classes.

DEADLINES

Assignments are due by the date given in the schedule at the time of day specified. Extensions to assignment deadlines will be granted only in cases of illness or emergency. Extensions are granted based on the discretion of the instructor. Students should contact the instructor as soon as possible to make their requests and provide credible documentation (such as a doctor's note or a Verification of Illness Form).

UNIVERSITY POLICIES

SUBMISSION TIMES

Please be aware that the University of Waterloo is located in the **Eastern Time Zone** (GMT or UTC-5 during standard time and UTC-4 during daylight saving time) and, as such, the time that your activities and/or assignments are due is based on this zone. If you are outside the Eastern Time Zone and require assistance with converting your time, please try the <u>Ontario, Canada Time Converter</u>.

ACCOMMODATION DUE TO ILLNESS

If your instructor has provided specific procedures for you to follow if you miss assignment due dates, term tests, or a final examination, adhere to those instructions. Otherwise:

MISSED ASSIGNMENTS/TESTS/QUIZZES

Contact the instructor as soon as you realize there will be a problem, and preferably within 48 hours, but no more than 72 hours, have a medical practitioner complete a <u>Verification of Illness Form</u>.

Email a scanned copy of the Verification of Illness Form to your instructor. In your email to the instructor, provide your name, student ID number, and exactly what course activity you missed.

Further information regarding Management of Requests for Accommodation Due to Illness can be found on the <u>Accommodation due to illness</u> page.

MISSED FINAL EXAMINATIONS

Your faculty determines academic accommodation; therefore we advise you to speak with your professor if you anticipate being unable to fulfill academic requirements due to illness or other extenuating circumstances.

Further information about Examination <u>Accommodations</u> is available in the Undergraduate Calendar.

ACADEMIC INTEGRITY

In order to maintain a culture of academic integrity, members of the University of Waterloo community are expected to promote honesty, trust, fairness, respect, and responsibility. **If you have not already completed the online tutorial regarding academic integrity you should do so as soon as possible.** Undergraduate students

should see the [Academic Integrity Tutorial](#) and graduate students should see the [Graduate Students and Academic Integrity](#) website.

Proper citations are part of academic integrity. Citations in CEL course materials usually follow CEL style, which is based on APA style. Your course may follow a different style. If you are uncertain which style to use for an assignment, please confirm with your instructor or TA.

For further information on academic integrity, please visit the [Office of Academic Integrity](#).

TURNITIN

Turnitin.com: Text matching software (Turnitin®) may be used to screen assignments in this course. Turnitin® is used to verify that all materials and sources in assignments are documented. Students' submissions are stored on a U.S. server, therefore students must be given an alternative (e.g., scaffolded assignment or annotated bibliography), if they are concerned about their privacy and/or security. Students will be given due notice, in the first week of the term and/or at the time assignment details are provided, about arrangements and alternatives for the use of Turnitin® in this course.

It is the responsibility of the student to notify the instructor if they, in the first week of term or at the time assignment details are provided, wish to submit the alternate assignment.

Turnitin® at Waterloo

DISCIPLINE

A student is expected to know what constitutes [academic integrity](#) to avoid committing an academic offence, and to take responsibility for his/her actions. A student who is unsure whether an action constitutes an offence, or who needs help in learning how to avoid offences (e.g., plagiarism, cheating) or about "rules" for group work/collaboration, should seek guidance from the course instructor, academic advisor, or the undergraduate Associate Dean. For information on categories of offences and types of penalties, students should refer to [Policy 71 - Student Discipline](#). For typical penalties, check [Guidelines for the Assessment of Penalties](#).

APPEALS

A decision made or penalty imposed under [Policy 70 - Student Petitions and Grievances](#), (other than a petition) or [Policy 71 - Student Discipline](#), may be appealed if there is a ground. A student who believes he/she has a ground for an appeal should refer to [Policy 72 - Student Appeals](#).

GRIEVANCE

A student who believes that a decision affecting some aspect of his/her university life has been unfair or unreasonable may have grounds for initiating a grievance. Read [Policy 70 - Student Petitions and Grievances](#), Section 4. When in doubt please be certain to contact the department's administrative assistant who will provide further assistance.

FINAL GRADES

In accordance with [Policy 46 - Information Management](#), Appendix A - Access to and Release of Student Information, the Centre for Extended Learning does not release final examination grades or final course grades to students. Students must go to [Quest](#) to see all final grades. Any grades posted in Waterloo LEARN are unofficial.

ACCESSABILITY SERVICES

[AccessAbility Services](#), located in Needles Hall, collaborates with all academic departments to arrange appropriate accommodations for students with disabilities without compromising the academic integrity of the curriculum. If you require academic accommodation to lessen the impact of your disability, please register with AccessAbility Services at the beginning of each academic term and for each course.

ACCESSIBILITY STATEMENT

The Centre for Extended Learning strives to meet the needs of all our online learners. Our ongoing efforts to become aligned with the [Accessibility for Ontarians with Disabilities Act (AODA)](#) are guided by University of Waterloo accessibility [Legislation](#) and policy and the [World Wide Web Consortium's (W3C) Web Content Accessibility Guidelines (WCAG) 2.0](#). The majority of our online courses are currently delivered via the Desire2Learn Learning Environment. Learn more about [Desire2Learn's Accessibility Standards Compliance](#).

USE OF COMPUTING AND NETWORK RESOURCES

Please see the [Guidelines on Use of Waterloo Computing and Network Resources](#).

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OTHER SOURCES

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Anishinaabe, Haudenosaunee, and the Ojibway/Chippewa peoples. This territory is covered by the Upper Canada Treaties.

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