PROPOSAL FOR DOUBLE DEGREE PROGRAM

Master of Industrial Design (MID) and
Master of Science in Human Computer Interaction (MS in HCI)

1. **Name of the programs or majors**

   Industrial Design

   Human Computer Interaction

2. **Name of the degrees**

   Master of Industrial Design - MID

   Master of Science in Human Computer Interaction – MS in HCI

3. **Name of the department(s) which administer(s) the program(s)**

   Industrial Design, College of Design and

   Human Computer Interaction, Interdepartmental Graduate Program

4. **Rationale for the double degree program**

   This Double Degree builds on the interdisciplinary nature of both degrees. Both degrees explore and build on the relationship between humans and technology with the aim to develop relevant artifacts. This Double Degree seeks to educate 21st Century cross-disciplinary designers and engineers who will be able to connect creative problem-solving techniques, design research methodologies and human centered design with analytical and pragmatic methods of engineering to create meaningful relationships between humans and technology.

   Graduates of the Double Degree MID & MS in HCI will apply divergent and convergent thinking and solve problems based on deductive, inductive and abductive reasoning in order to develop innovative and inclusive products, services, and systems connected through technologies.

   Two students previously graduated with this Double Degree. Currently we have 7 students who are pursuing the Double Degree and who are slated to graduate within the next 4 semesters.

   This Double Degree has found particular interest from international students who particularly seek the interdisciplinarity nature of the Double Degree and the ability to connect design and STEM.

5. **Admission procedures and requirements**

   Each program will follow their ongoing admission processes.

6. **Requirements of the program**

   Minimum total credits: 69

   33 credits for Master of Industrial Design (MID)

   6 shared credits used toward both degrees

   6 credits towards thesis or creative component (please note, students can choose either INDD 699 OR HCI 699 with 6 credits towards their thesis. However, for creative component both INDD 599

and HCI 599 are required, each at 3 credits.)
24 credits for Human Computer Interaction (MS in HCI)

Please see the full program of study planning document and suggested course sequencing for thesis and creative component at the end of this document.

7. Expected enrollment

We expect an average of 5 students per year applying for this degree.

8. Attached memos showing approval by appropriate department and college committees, faculty, and administrators.

9. Name(s) of the proposal contact(s)

Akshay Sharma
Department Chair
Industrial Design, College of Design
akshays@iastate.edu

Verena Paepcke-Hjetness
MID Director of Graduate Education (DOGE)
Industrial Design, College of Design
verena@iastate.edu

Stephen Gilbert
HCI Director of Graduate Education (DOGE)
Human Computer Interaction, College of Engineering
gilbert@iastate.edu

Tiffany Kayser
HCI Graduate Program Coordinator
Human Computer Interaction, Graduate College
tlkayser@iastate.edu

The proposal will be reviewed by the departments' curriculum committee, by the related college curriculum committees, by the Graduate Curriculum and Catalog Committee, by the Graduate Council, by the Graduate College, and by the Dean of the Graduate College.

DOUBLE DEGREE
MASTER OF INDUSTRIAL DESIGN & MASTER OF SCIENCE IN HCI

Program of Study Planning, total credits: 69

CURRICULUM OUTLINE

Industrial Design
MID core courses: 33 credits

Human Computer Interaction
HCI core courses: 12 credits
HCI suggested electives: 12 credits

Shared
Shared courses: 6 credits

Thesis OR Creative Component
Thesis (INDD or HCI): 6 credits OR
Creative Component: 3+3 credits

MID 33 cr

Industrial Design Studio I / 6 cr (F)
INDD 501

Industrial Design Studio II / 6 cr (S)
INDD 502 or
DSNS 546 or
INDD 505 AND INDD 510

Design Process Methods / 3 cr (F)
INDD 520 or
DSN S 501 or
ARCH 528

Industrial Design Studio III / 6 cr (F)
INDD 601

Disruptive & Systems Thinking / 3 cr (F)
INDD 560 or
INDD 570 or

Visual Thinking & Communication / 3 cr (S)
INDD 540 or

Advanced Digital Technologies / 3 cr (S)
INDD 640

INDD Elective / 3 cr
suggested for thesis:
INDD 515
Graduate Colloquium
(1 credit for 3 semesters)

SHARED 6 cr

Design Thinking / 3 cr
INDD 530

Human Factors/ 3 cr
INDD 550
or
IE 577 (fall)

OPTION 1 6 cr THESIS

OPTION 1
Grad Thesis / 6 cr
INDD 699
OR
HCI 699

OPTION 2 3+3 cr CREATIVE COMPONENT

OPTION 2
Creative Component
3 cr + 3cr
INDD 599
AND
HCI 599
(concurrently)

HCI 12 cr
One from each category

design
- **HCI 521 Fall** Cognitive Psychology of HCI
- **ART GR 530 Fall** User Engagement
- **HCI 595 Summer** Visual Design for HCI
- **IE 572 Spring** Design & Eval. of HCI Interaction

implementation
- **ME 557 Fall** Comp. Graphics & Geo.Mod
- **HCI 584x Summer** Phyton App. Develop. in HCI
- **HCI 575 Spring** Computer Perception
- **HCI 580 Spring** Virtual World Application

phenomena
- **HCI 655 Fall** Organ. & Social Implicat. of HCI
- **WLC 584 Fall** Tech, Globalization & Culture
- **JL MC 474 Summer** Comm. Tech. & Social Change
- **ART GR 589 Fall/Sp** Design & Ethics
- **ART GR 540 Spring** Graphic Design for Behavior Change
- **HCI 530x Varies** Perspectives in HCI

evaluation
- **HCI 504 Fall** Eval. Dig Learn. Environm.
- **PSYCH 501 Spring** Found. of Behavioral Research
- **STA 586 Spring** Intro Statist. Computing
- **HCI 522 Spring** Scientific Methods in HCI
- **HCI 523x Varies** Qualitative Research Methods in HCI
- **STAT 332 Varies** Vis. Comm of Quant. Info

HCI 12 cr suggested electives
But: Can be from entire ISU catalog

- **HCI 525 Fall** Optimization Methods of Complex Designs
- **HCI 596 Fall** Emerging Practices in HCI
- **HCI 681 Fall** Cognitive Engineering
- **IE 576 Fall** Human Factors in Product Design
- **EDUC 511 Summer** Tech Diffusion, Leadership, & Change
- **HCI 587 Summer** Models & Theories in HCI
- **STAT 587 Fall/Spring** Statistical Methods for Research Workers
- **ARTIS 508 Spring** Computer Aided Visualization
- **HCI 510 Spring** Foundation of Game-Based Learning
- **HCI 574 Sp. Even years** Computational Implementation & Prototyping
- **HCI 603 Spring** Advanced Learning Environments Design

November 2022 // Verena Paepcke-Hjeltness Director of Graduate Education Industrial Design, College of Design

DOUBLE DEGREE

MASTER OF INDUSTRIAL DESIGN & MASTER OF SCIENCE IN HCI

Suggested Program of Study 69 credits

Thesis and Creative Component

THESIS SUGGESTED SEQUENCE

Includes INDD 515 Graduate Colloquium.

Note: Year 1 spring semester will be 16 credits.

	FALL 1	SPRING 1	FALL 2	SPRING 2	FALL 3
MID 33 cr	**INDD 501** / 6 cr **INDD 520** / 3 cr	**INDD 502** / 6 cr **INDD 540** / 3 cr **INDD 515** / 1 cr	**INDD 601** / 6 cr **INDD 570** / 3 cr **INDD 515** / 1 cr	**INDD 640** / 3 cr **INDD 515** / 1 cr	
Shared 6 cr	**INDD 530** / 3 cr	**INDD 550** / 3 cr			
HCI 12 cr	**HCI design** / 3 cr	**HCI implemen.** / 3 cr	**HCI phenom.** / 3 cr	**HCI evaluation** / 3 cr	
HCI electives 12 cr				**HCI elective** / 3 cr **HCI elective** / 3 cr	**HCI elective** / 3 cr **HCI elective** / 3 cr
Thesis 6 cr					**INDD 699 / 6 cr** **or** **HCI 699 / 6 cr**
	15 cr	**16 cr**	**13 cr**	**13 cr**	**12 cr**
					TOTAL: 69

CREATIVE COMPONENT SUGGESTED SEQUENCE

INDD 515 Graduate Colloquium is advised for both Thesis and Creative Component, however, this suggested sequence excludes it for demonstration purposes.

Note: INDD 599x and HCI 599 will have to be taken concurrently.

	FALL	SPRING	FALL	SPRING	FALL
MID 33 cr	**INDD 501** / 6 cr **INDD 520** / 3 cr	**INDD 502** / 6 cr **INDD 540** / 3 cr	**INDD 601** / 6 cr **INDD 560** / 3 cr	**INDD 640** / 3 cr **INDD elective** / 3 cr	
Shared 6 cr	**INDD 530** / 3 cr	**INDD 550** / 3 cr			
HCI 12 cr	**HCI design** / 3 cr	**HCI implemen.** / 3 cr	**HCI phenom.** / 3 cr	**HCI evaluation** / 3 cr	
HCI electives 9 cr			**HCI elective** / 3 cr	**HCI elective** / 3 cr	**HCI elective** / 3 cr **HCI elective** / 3 cr
Creative Component 3+6 cr					**INDD 599x/ 3 cr** **AND** **HCI 599 / 3 cr**
	15 cr	**15 cr**	**15 cr**	**15 cr**	**12 cr**
					TOTAL: 69

November 2022 // Verena Paepcke-Hjeltness Director of Graduate Education Industrial Design, College of Design

ACADEMIC PROGRAM APPROVAL VOTING RECORD

This document is to be appended as the last page of the proposal for any new or revised academic program to record the successive votes of approval as the proposal moves through its required review and approval steps. Consult Faculty Handbook Section 10.8 or the Faculty Senate Curriculum Committee website for information regarding Committee review and voting requirements for each action.

Curricular Action: (check appropriate boxes below)

1. □ New Program □ Name Change □ Discontinuation □ Concurrent Degree for:
2. □ Undergraduate Major □ Graduate Major □ Undergraduate Minor □ Graduate Minor
□ Undergraduate Certificate □ Graduate Certificate **X Other: Dual-Degree**
3. **Name of Proposed Change:** Double-degree MID and MS in HCI
4. **Name of Contact Person:** Verena Paepcke-Hjeltness e-mail address: verena@iastate.edu
5. **Primary College:** College of Design, **Secondary College:** Graduate College
6. **Involved Department(s):** Industrial Design, College of Design and Human Computer Interaction, Graduate College

Voting record for this curricular action:

Voting Body	Votes			Date of Vote
	For	Against	Abstain	
Industrial Design Voting Faculty	8	0	0	11/15/2022
HCI Graduate Program Supervisory Committee Members	Please see support memo			12/5/2022
College of Design Curriculum Committee	4	0	1	12/6/2022
GCCC				
Graduate Council				

IOWA STATE UNIVERSITY
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December 5, 2022

To whom this may concern:

This memo is to notify the Graduate College and Curriculum Committee that the HCI Graduate Program Supervisory Committee Members are fully supportive of the Double Degree Program Proposal for the Master of Industrial Design and the Master of Science in Human Computer Interaction.

Sincerely yours,

Dr. Eliot Winer
Director
Virtual Reality Applications Center
Professor
Department of Mechanical Engineering
Department of Electrical and Computer Engineering
Department of Aerospace Engineering

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http://www.design.iastate.edu

December 6, 2022

To whom this may concern:

This memo is to notify the Graduate College and Curriculum Committee that I fully support the Double Degree Program Proposal for the Master of Industrial Design and the Master of Science in Human Computer Interaction.

Sincerely,

Akshay Sharma
Chair Department of Industrial Design