

# Human Interface

## Wrap-up topics

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## Human system's input

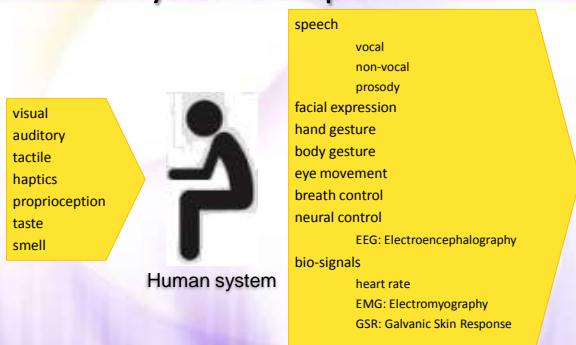


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## Human system's output



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## Human Interface vs. User Interface

### Human Interface (HI)



Information exchange and interaction (operation methodology, operation procedure, method of information display, etc.) between the human and the system

### User Interface (UI)



System operation (actual terminal button, etc.) to actuate information exchange and interaction with the system

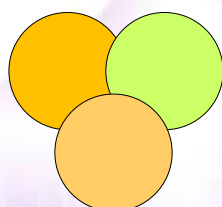
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## Design

Art + Engineering



## Computer Science

Science + Engineering

## Psychology

Natural + Social Science

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## Course Description

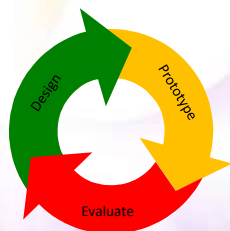
**Objective: Create usable and attractive human interfaces**

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## Course Description



- Develop an interface between human (user) and computer:
  - Design: principles, process, methods
  - Evaluation: qualitative, quantitative methods
- Design practices of human interfaces
  - included by modern interactive systems
  - fitting for the purposes of their diverse users in a variety of contexts:
    - Web system
    - Ubiquitous system
    - Universal system
    - Retrieval systems

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## Course Description

Expected results:  
Understand concepts  
and terminologies  
used in human  
interface design  
Understand the  
human information  
processing models.

- Develop an interface between human (user) and computer:
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## Concepts & Terminologies

Class/ Week	Topic
1	Introduction and Overview
2	Interactive system development process
3	<b>Students Presentation about interactive system development process</b>
4	Interface Design
5	Testing & Evaluation

- Develop an interface between human (user) and computer:
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## Concepts & Terminologies

Class/ Week	Topic
6	Web Interface
7	Ubiquitous Interface
8-9	<b>Student Presentation about Human Interface References</b>
10	Universal Design
11	Retrieval Interface
12	Design Engineering
13-15	<b>Student Presentation about New Interface Proposal</b>

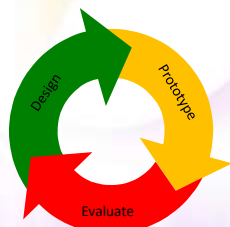
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## Course Description



Skills developed: Apply the basic design and evaluation methods to modern interactive systems

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## HIGH CONCEPT STATEMENT FOR PRODUCT

- What is product name?
- Who are product users?
- What will product do?
- What problem will product solve?

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## USER CLASS CHARACTERIZATION MATRIX

Characteristic	User Class A	...	User Class N
Education/skill level			
Computer knowledge/Experience			
Application domain knowledge			
Usage frequency, duty cycle			
Complexity of domain content			
User interaction with others			
Discretionary or captive			
Training needs/opportunities			
Culture			
Receptive/resistant			

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## HIERARCHICAL USER TASK STRUCTURE

- What tasks will users perform with this system?
- Hierarchical task decomposition  
Task names: <action object>

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## DESIGN: Construct usage scenarios

- Create usage scenario for each task and for each user class in order to gain understanding of tasks, user roles, actions, objects :
  - Determine application objects, their properties, and relationships among them
  - How objects will be viewed conceptually (not necessarily details of appearance) in interaction design ?
  - How user will access those objects ?
  - Operations to be performed on the objects as a result of user tasks ?
  - How users will invoke and carry out those operations, including navigators ?

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## DESIGN: conceptual design

- Create a conceptual design from scenario
  - How objects are represented conceptually in user interaction design ?
  - Access methods: How users get at objects ?
  - Invoking and carrying out operations on objects ?
    - Menu? Pull-down?
    - Small, fixed number of commands
    - Implication for interaction style: Buttons or icons?
    - Etc.

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## DESIGN: Screen design

- Develop together initial screen designs, from conceptual information & scenarios
  - Draw screen pictures, including menus, buttons, icons, application objects, links
    - Start with home page design to show broad functionality and user tasks.
    - Design one main task thread over a few more screens/pages.
  - Label and note objects with behavior as appropriate
  - Do intuitive evaluation of design
  - Iteration

→ Representative screen designs

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## HOW TO EVALUATE ?

Graphics of work	Ugly	Okay	Looks Great.
Packaging (cover, etc)			
Typography			
Illustrations, if any			
Use of white space			
Overall appearance			
Length	(too short or long)		

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HOW TO EVALUATE ?

Literary Quality	Poor: get help	Ok, but proof read	Great
spelling/typos			
grammar			
paragraph structure	(sloppy)		
section structure	(poor flow)		(natural flow)
clarity of writing	(hard to read)		(easy to read)
style and interest	(boring)		(interesting)
verbooseness	(far too wordy)		(every word counts)

Web Design: Inspect the availability and the accessibility of needed information

- Availability and accessibility of needed information
  - Is important information available to the user?
  - Is important information easy to find by the user?
  - Are pages/frames organized into good "sight bites"?
  - Are frames used effectively and efficiently?
  - Is text laid out attractively and effectively?
  - Are color/graphics/animation used appropriately?
  - Are layout, graphic, and text components easily "scan-able" by user?
- User-centered wording
  - Speak user's language
- User-centered control
  - Keep user feeling in control
- Consistency
  - Use similar design for similar concepts, terminology, graphics
- Error prevention
  - Make it goof-proof; recognition vs. recall
- Feedback
  - Let user know what has happened, to determine where in site they are.