

# WEB 1100: Web Development & HCI

Mohammad Tafiqur Rahman, Ph.D.  
Assistant Professor



# Agenda for today

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- Course Syllabus
- Introduction to HCI
- PACT framework



# Course Syllabus

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- Literature
- Course Outline
- Assignments
- Evaluation

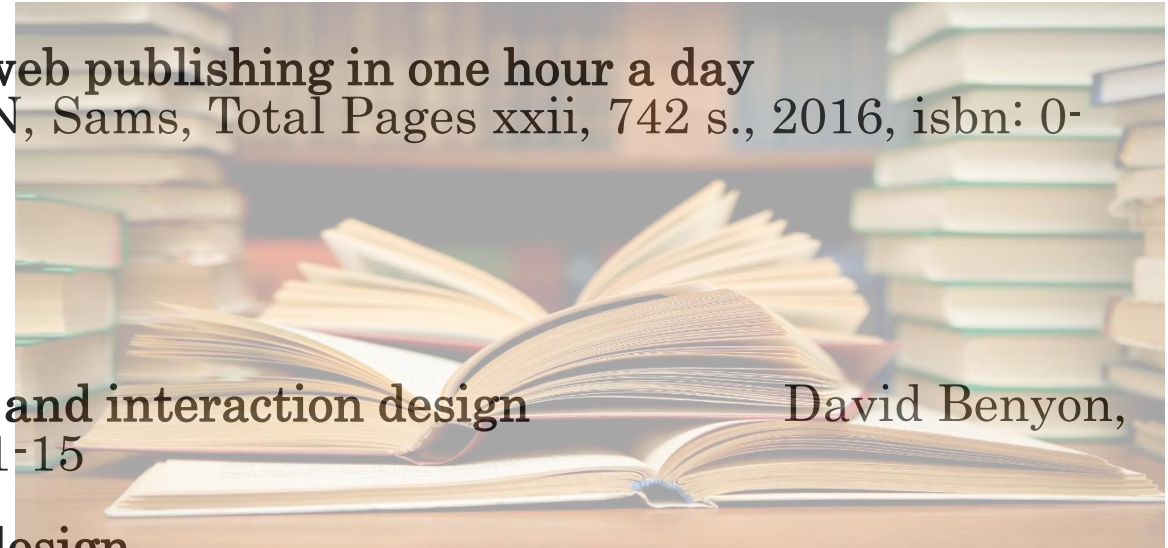


## Mandatory Literature:

- **Universal design of ICT systems: user interface for all**  
Sandnes, Frode Eika, Oslo, Universitetsforl, 2018, isbn: 9788215030333
- **Sams teach yourself HTML, CSS & JavaScript web publishing in one hour a day**  
Lemay, Laura, Kyrnin, Jennifer, Indianapolis, IN, Sams, Total Pages xxii, 742 s., 2016, isbn: 0-672-33623-5

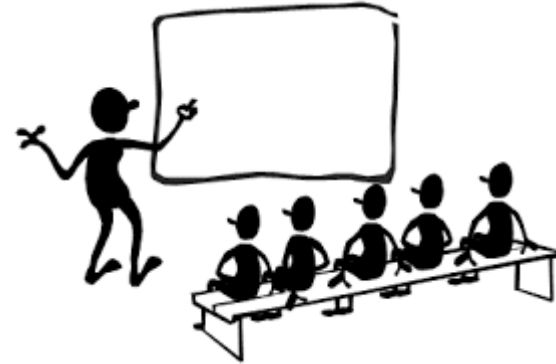
## Supportive Literature:

- **Designing User Experience: A guide to HCI, UX and interaction design** David Benyon,  
Fourth edition., GB, Pearson Education, 2019-01-15
- **Web style guide foundations of user experience design**  
Lynch, Patrick J., Horton, Sarah; Marcotte, Ethan, New Haven, Conn., Yale University Press,  
Total Pages XV, 387 pp., 2016, isbn: 9780300211658; 0300211651,  
*Chapters 7 and 8. The book is freely available online via USN.*



## Study Materials:

- Part 1: Understanding HCI
- Part 2: Web Development



## Laboratory:

- Coding HTML, CSS, & JavaScript
- No database

```
1 <!doctype html>
2 <html lang="en">
3   <head>
4     <meta charset="utf-8">
5     <title>Hello, world!</title>
6   </head>
7   <body>
8     <h1>Hello, world!</h1>
9     <p>My first web page.</p>
10  </body>
11 </html>
```



## Group Works:

- Working on assignments
- Group discussion
- Problem solving
- Supporting each other



## Quizzes:

- Kahoot



# Course Syllabus

## Assignments

### Assignments' Theme:

- Design a website for timebanking
- Work within a group of 6 max
- Participants can be
  - USN students
  - Your neighbors
  - Kids' parents of kindergartens
  - Inhabitants of elderly houses/nursing homes
  - Foreigners/locals who want to learn new languages
  - Match-making/service-swapping platform



**Start**  
a Timebank in your area

# Course Syllabus

# Assignments

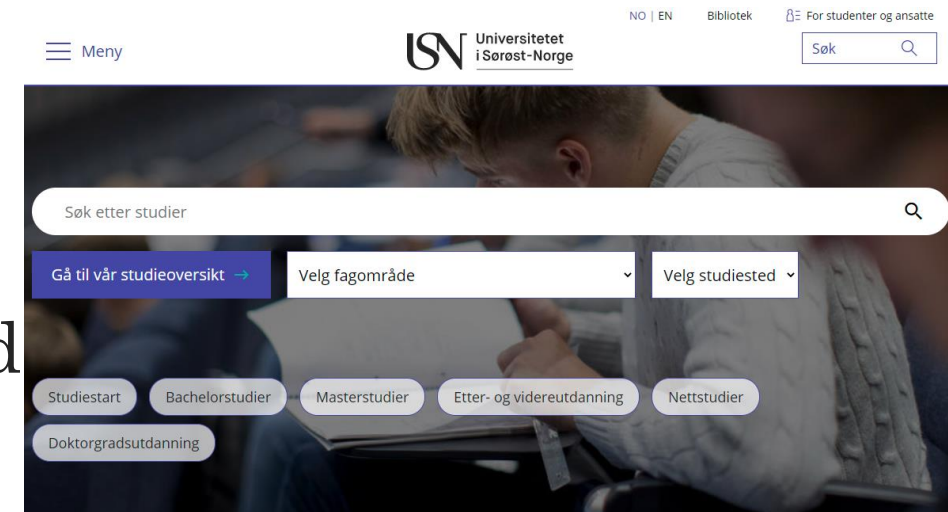
## Assignment 1:

- Prototype development
  - PACT scoping, understanding, initial design, prototyping, evaluation, & report writing
  - Group submission of the report



## Assignment 2:

- Web development
  - Coding HTML, CSS, & JavaScript
  - Group submission of the website and report





## Assignments:

- Mandatory to pass both assignments
- No copy
- No late submission
- No assignments, no examination
- No grading - just pass/fail
- No assessment if not meeting formal requirements
- No planning forward for taking examination next semester



## Examination:

- Passing assignments
- A 4-hour long examination
- Individual examination
- Individual grading
- No assistance is allowed
- English is the preferred language
- Total marks: 100



# Course Syllabus

# Evaluation

## Question format:

Category	Type	Percentage
Theory	Multiple choice questions (MCQ)	30%
	Descriptive Questions	
Analysis/evaluation	Case/task analysis	30%
	Web content evaluation	
	Problem solving	
Coding	Writing codes	40%
	Finding outcomes	
	Finding and correcting errors in code execution	

## Grading:

Score	Grade
90-100	A
75-89	B
60-74	C
50-59	D
40-49	E
00-39	F



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# Introduction to HCI & its principles



# HCI

# Introduction



**Human**



**Interaction**



**Computer**

## Digital Interaction in everyday life





# Good design is becoming critical

Hyperspace - FAMILY MEDICINE - Training - PLV - PAT L

Epic - Home Schedule In Basket Chart Patient Lists Send Letter Remind Me

Northstar, Ian  
Male, 9 y.o., 01/31/2003

MRN: 202417 Code: None Allergies: No Known Allergies Overdue Health Maintenance: Primary Ins.: None Secondary Payer: None

0/27/2012 visit with Pat Limestone, MD for OFFICE VISIT - ear ache

Images References Media Manager Preview AVS Print AVS Outside Records

Charting

Visit Info

Vital Signs

**Detailed Vitals**

Allergies

Verify Rx Benefits

Outpatient Meds

History

Progress Notes

Problem List

Goals

Well Child

Hearing/Vision

Orders

Best Practice

SmartSets

Visit Diagnoses

Meds & Orders

Discharge

LOC

Pt Instructions

Follow-up

Charge Capture

Close Encounter

More Activities

DP

BP Location: Right arm Left arm Right leg Left leg Other (Comment)

BP Method: Machine Manual Doppler Other (Comment)

BP CUFF SIZE: Neonate Infant Child Child Long Small Adult

Patient Position: Lying Sitting Standing

Heart Rate

Heart Rate Source: Monitor Apical Right Left Brachial Dorsalis pedis Femoral Radial

Resp

Tomp

Tomp Source: Oral Tympanic Rectal Axillary Temporal

SpO2

Weight

Height

Waist Circumference

Chest Circumference

Arm Circumference

Peak Flow

Pain Score: Zero-0-No pain One-1 Two-2 Three-3

PAT I Results Rx Request Patient Cells My Open Charts Transcription Cosign - Chart Pt Advice Request

1 40 PM

## What is HCI?

- A research discipline
- Researches the design and use of computer technology
- Focuses on the interfaces between people and digitally enabled devices
- Takes users at the center-stage in the design

## Human-centered design

- Putting people at the first place
- What people want to do, not the technology
- Connecting people
- Taking users on board
- Designing for diversity





## Concerns of human-centered design

- Expensive
- Time consuming
- Worthwhile
- Significant benefits
- Minimized system errors

## What does it require?

- Better understanding of peoples' activities
- Contextual understanding
- Possibilities of technological offerings
- Defining technical solutions
- Evaluating design alternatives

## Digital interaction

- Interactive systems
- Responds to peoples' actions
- Requires creative design process
- Involves iterative and explorative design processes
- Example: computer/mobile apps, smart home and smart city solutions



# Digital interaction example



## What is an interface?

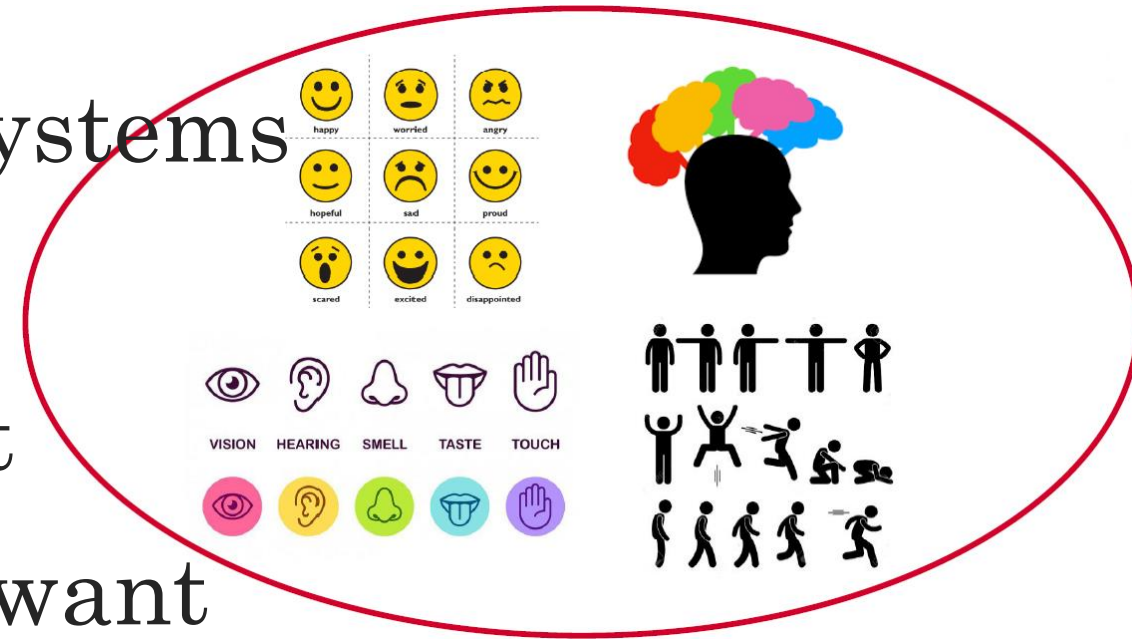
- A system that brings people into contact:
  - physically
  - perceptually
  - conceptually
- Provides mechanisms for:
  - input
  - output
  - feedback





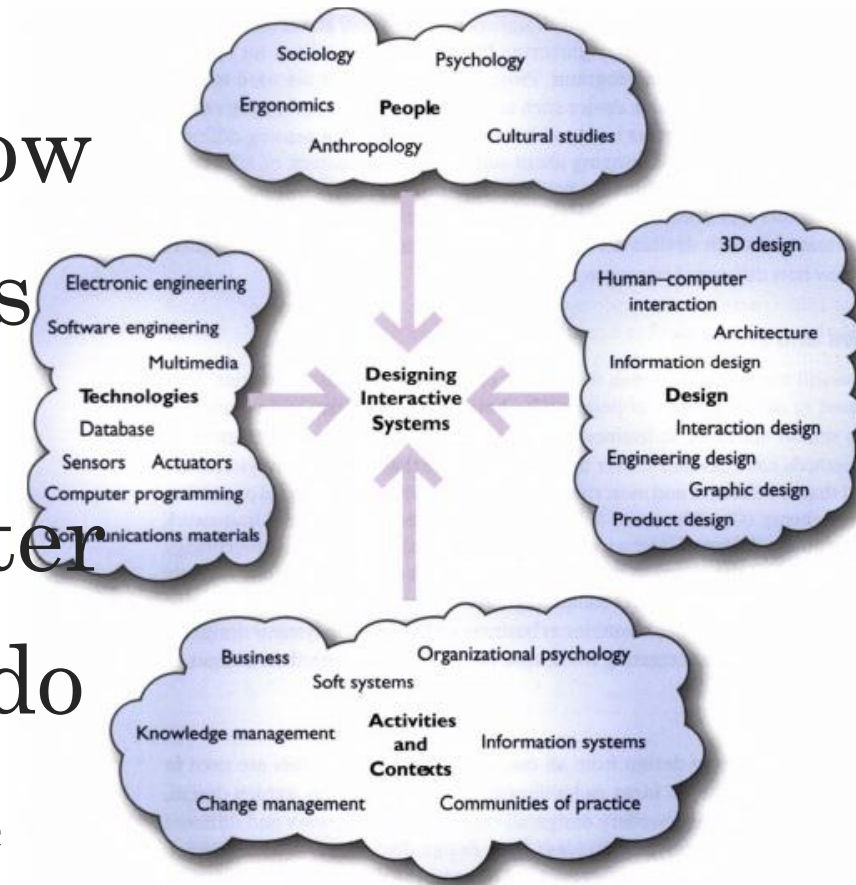
# What is user experience (UX)?

- UX focuses on:
  - developing interactive systems
  - fitting with people
  - responding as they want
  - acting in the ways they want



## UX designers' key concerns

- Design: what is to design and how
- Technologies: which technologies to use
- People: whose lives to make better
- Activities: what people want to do
- Contexts: where people do those activities



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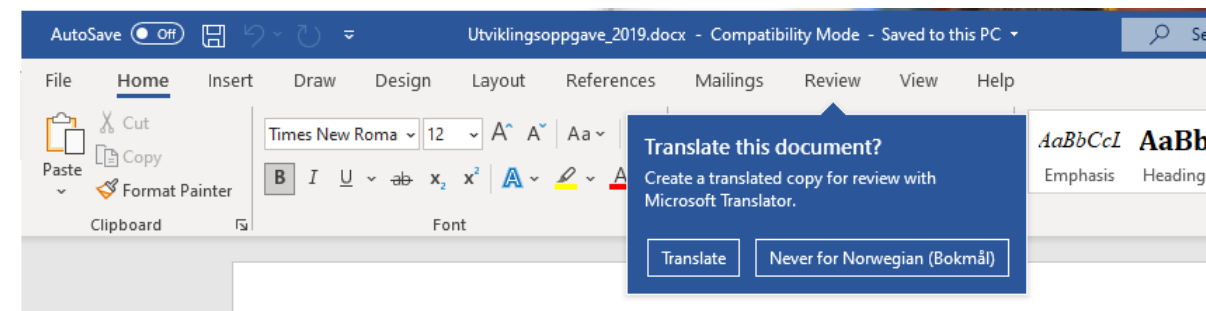
# **PACT framework for interface design**

PACT stands for:

- People: who
- Activities: what
- Contexts: where
- Technologies: how

### People:

- Physical differences
- Psychological differences
- Mental models
- Social differences
- Attitudinal differences





### Activities:

- Overall purpose
- Temporal aspects: how frequent/infrequent
- Cooperation: alone or with other
- Complexity: simple step-by-step design
- Safety-critical: error tolerance
- The nature of the content: data requirement of the activity



### Contexts:

- Physical context: physical environment
- Social context: societal norms
- Organizational context: occupational effects

PLEASE SILENCE  
YOUR MOBILE PHONE



### Technologies:

- Change rapidly
- Input technologies: data entry
- Output technologies: display desired content
- Communication: wired or wireless
- Content: good content is desired



### Scoping a design problem with PACT:

- Multiple Ps, As, Cs, and Ts
- Helps focusing
- Brainstorming can be applied initially

