Final exam notes
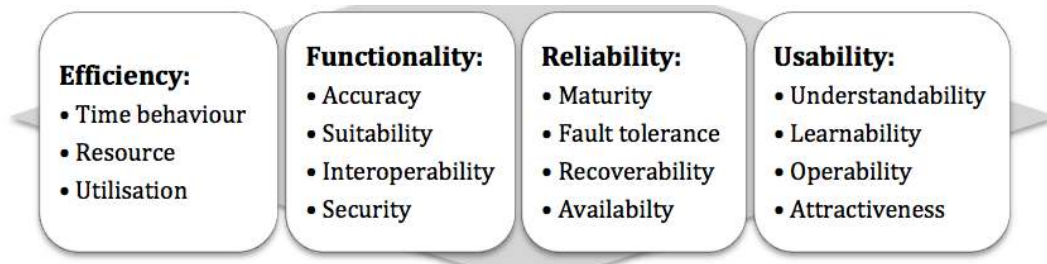
User-Centred Design (Swinburne University of Technology)

Software Quality: Software that meets the user needs in terms of functionality, efficiency, reliability, and usability.

Efficiency:	Functionality:	Reliability:	Usability:
• Time behaviour	• Accuracy	• Maturity	• Understandability
• Resource	• Suitability	• Fault tolerance	• Learnability
• Utilisation	• Interoperability	• Recoverability	• Operability
	• Security	• Availabilty	• Attractiveness

Usability: Is the product's quality that must be achieved so the users can be able to use it with effectiveness and satisfaction in their environment.

The principles of User-Centered Design:

- *The design is based on a clear understanding of users, tasks and environment:*

[By understanding the users characteristics, experience, tasks and environment]

- *Users are involved throughout the design and development:*

[By involving representative users, study /research the users and have them participate in design and evaluations]

- *The design is driven and refined by user-centered evaluation:*

[By asking users to participate in evaluations, take their feedback and evaluate real world tasks and situations]

- *The process is iterative.*

[Prototype > evaluation/feedback > prototype]

- *The design addresses the whole user experience.*

[Use technology to support users (not users to support technology)]

- *The design team includes multidisciplinary skills and perspectives.*

[Domain specialists, graphic designer and coders]

Usability is good value for money:

- *Influences sales and customer support calls.*

- *Influences productivity, errors and training.*

- *Prevents costly late design changes.*

The five main activities of the User-Centered Design Process:

1- *Plan the UCD process:*
[Plan to include UCD in development schedule and budget for UCD activities]

2- *Understand and specify context of use:*
[Consider who the users are, their goals and environment]

3- *Specify the user and organizational requirements:*
[Effectiveness accuracy and completeness, acceptable amount of effort and comfort and acceptability (usability quality goals)]
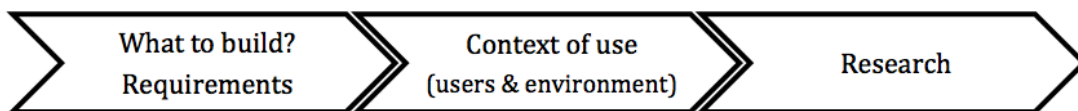
4- *Produce design solutions to meet requirements.*
[Refine requirements with feedback from users and explore designs with prototyping]

5- *Evaluate design against requirements.*
[Evaluate early and often, usability evaluation methods and compare results with requirements]

Software development:

Step 1 [vision statement]:
Before researching, write a vision statement by explaining the system to outsiders in short paragraph that contains name of the system, type of users, what it will do, what problems it will solve, design vision and emotional impact.

Step 2 [background research]:
Background research is a quick research to prepare you and become familiar with the vocabulary, work domain and get a competitive analysis.

Step 3 [user research]:
- *Research the users by conducting interview, survey, questionnaire, and observation.*
- *Plan a good research strategy: What do you to know? What type of data gathering to use?*
- *Consider the available resources and the stage of project.*
- *Write a research report and include all the details and procedures were used.*

Step 4 [interviews**]:**

1- Aim of the interview and whom do we want to interview?

2- Give the participants Consent Information Sheet that tells them:
- *What will be happening in the study*
- *What data will be collected and what will happen to it*
- *That they have the right to withdraw at anytime.*

3- Hand a Consent Sheet to the participant:
- *Declaration of over 18 etc.*
- *Explicit consent for data recording methods.*
- *Signature of agreement.*

4- Conduct the interview (make sure to follow the user consent).

Step 1: Warm up:
- *Get participant comfortable.*
- *Start by short easy 'get to know you' questions.*
- *Demographic questions (make sure they match user group).*

Step 2: Body of Interview:
- *Main questions of interview*
- *Mostly open, or asking for elaboration*
- *Take care with sensitive topics*

Step 3: Wrap up:
- *Check if there is anything they think is important that hasn't been mentioned.*
- *Let them know the interview is at an end.*
- *Thank them for their time; make them feel good about helping you.*

Requirement extraction:
- *Elicit: Collect data from users in context (empirical process).*
- *Analyze: Organize and interpret data (inductive process).*
- *Extract: Based on data and knowledge of interface design.*