

UiO : Department of Informatics
University of Oslo

IN3240 / IN4240

Software Testing

Introduction and practical information



Subject manager and lecturer

OSLOMET SEARCH MENU



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← People ← Academic staff

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Guest lecturer (and guru)

OSLOMET

SEARCH MENU

Norwegian version

< Employee directory



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Guest lecturer



BIOGRAPHY

Eva Hadler Vihovde (b. 1956) is an associate professor at the Department of Information Technology at OsloMet - the metropolitan university, where she has taught programming and programming-related subjects, artificial intelligence and discrete mathematics since 1992. She is also employed in a 20 percent position at the University of Oslo, where she has been teaching "Testing of software" at the Department of Informatics since 2017. Vihovde is a computer scientist from the University of Oslo and took the Cand.Scient degree (1989) in Program Verification with Professor Ole-Johan Dahl as supervisor. Vihovde is also a trained music teacher from the Norwegian Academy of Music (1979). In 2021, she was awarded status as a merited lecturer at OsloMet, and the same year, together with Harald H. Soleng, she received the University Publishers' Prize for best textbook idea.

Administrative contact person

UNIVERSITETET I OSLO

Det matematisk-naturvitenskapelige fakultet

Institutt for informatikk

← Personar ← Vitskapeleg tilsette

Yngve Lindsjørn

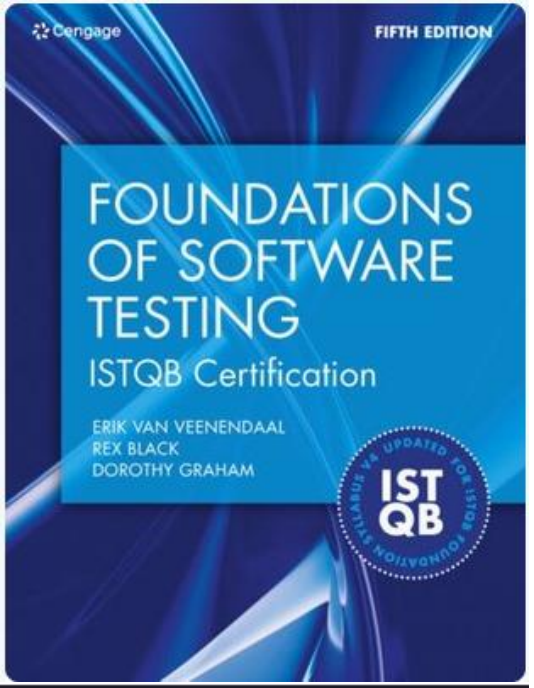
Førstelektor - Software engineering

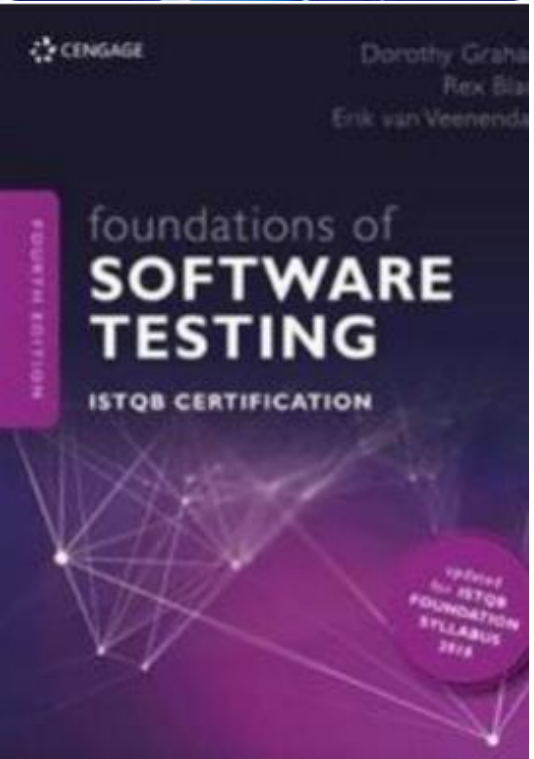


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Syllabus

Foundations of Software Testing:

ISTQB Certification

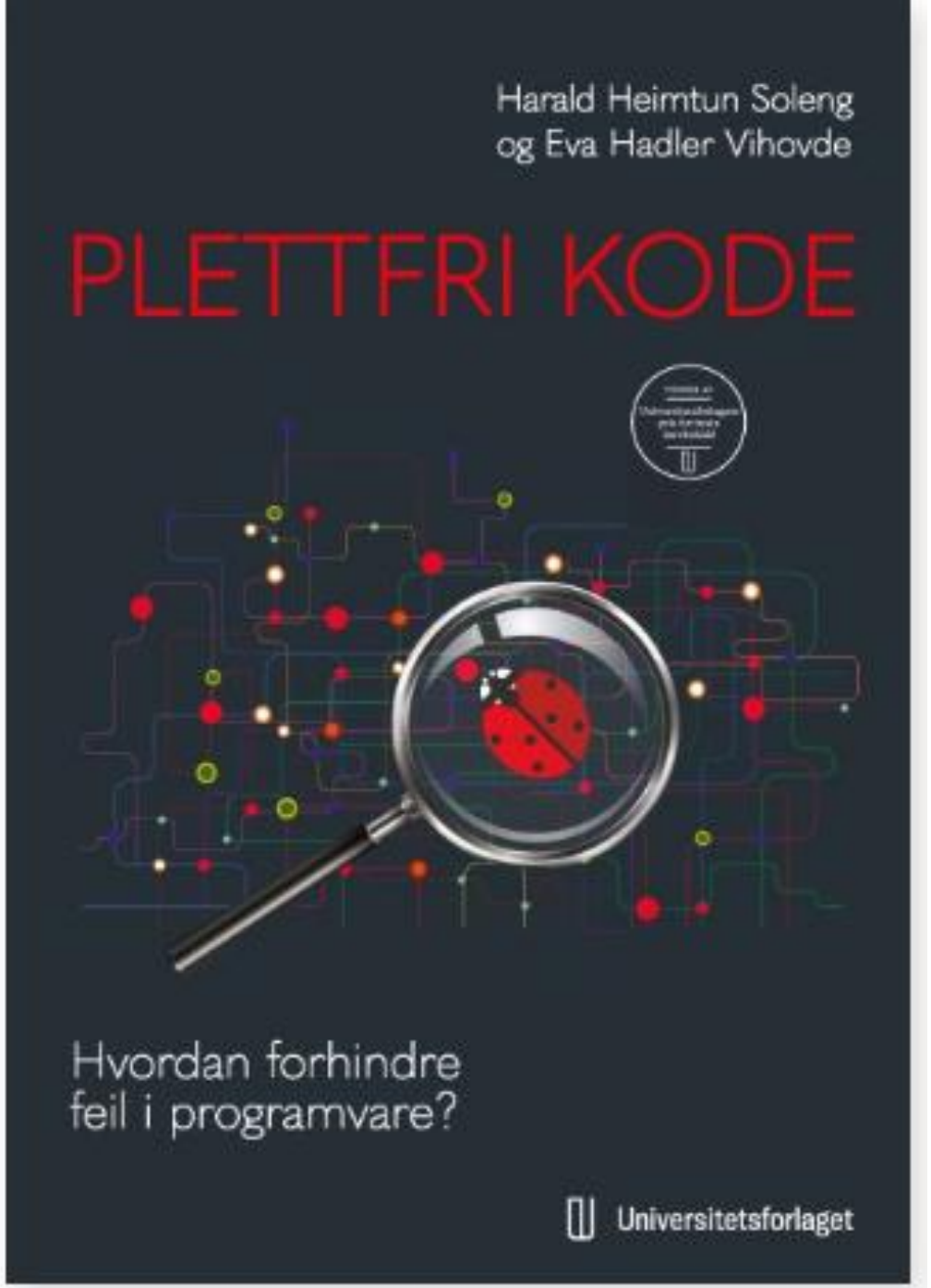
Slides from the lectures

4 guest lectures

Weekly exercises

2 Compulsory assignments

International Software Testing Qualifications Board



Recommended reading

Plettfri kode –

Hvordan forhindre feil i programvare?

- Harald H. Soleng
- Eva Hadler Vihovde

https://www.universitetsforlaget.no/lytefri-koding

Guest lecturers

- Testdriven development, TDD, by Mike Long, Kosli
- Test automation in Playwright, by Itera
- Exploratory testing, by Yulai De Meer Fjeld, Relato
- Continuous Integration & Continous Delivery, by SOCO

Need to be confirmed

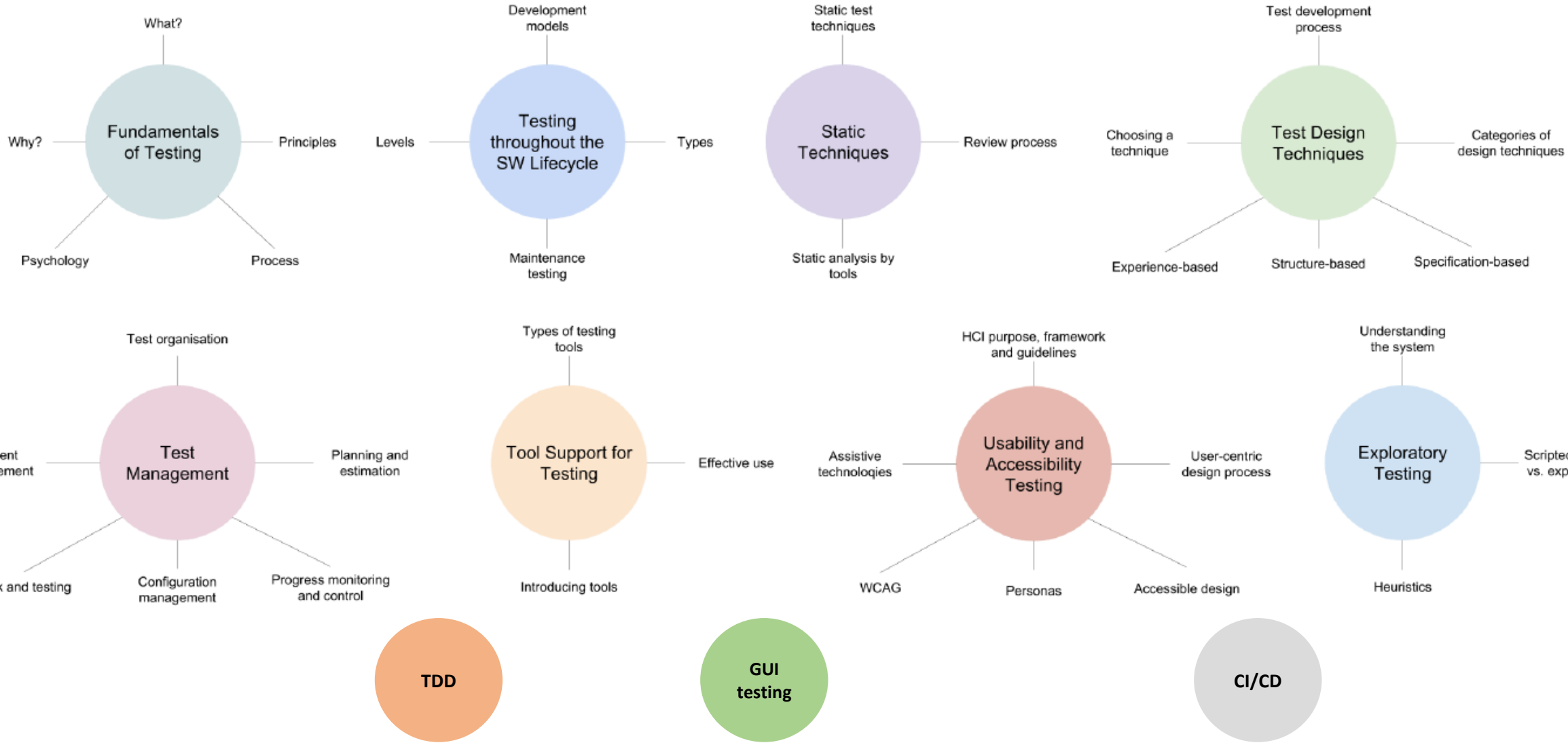
Practical information

Language

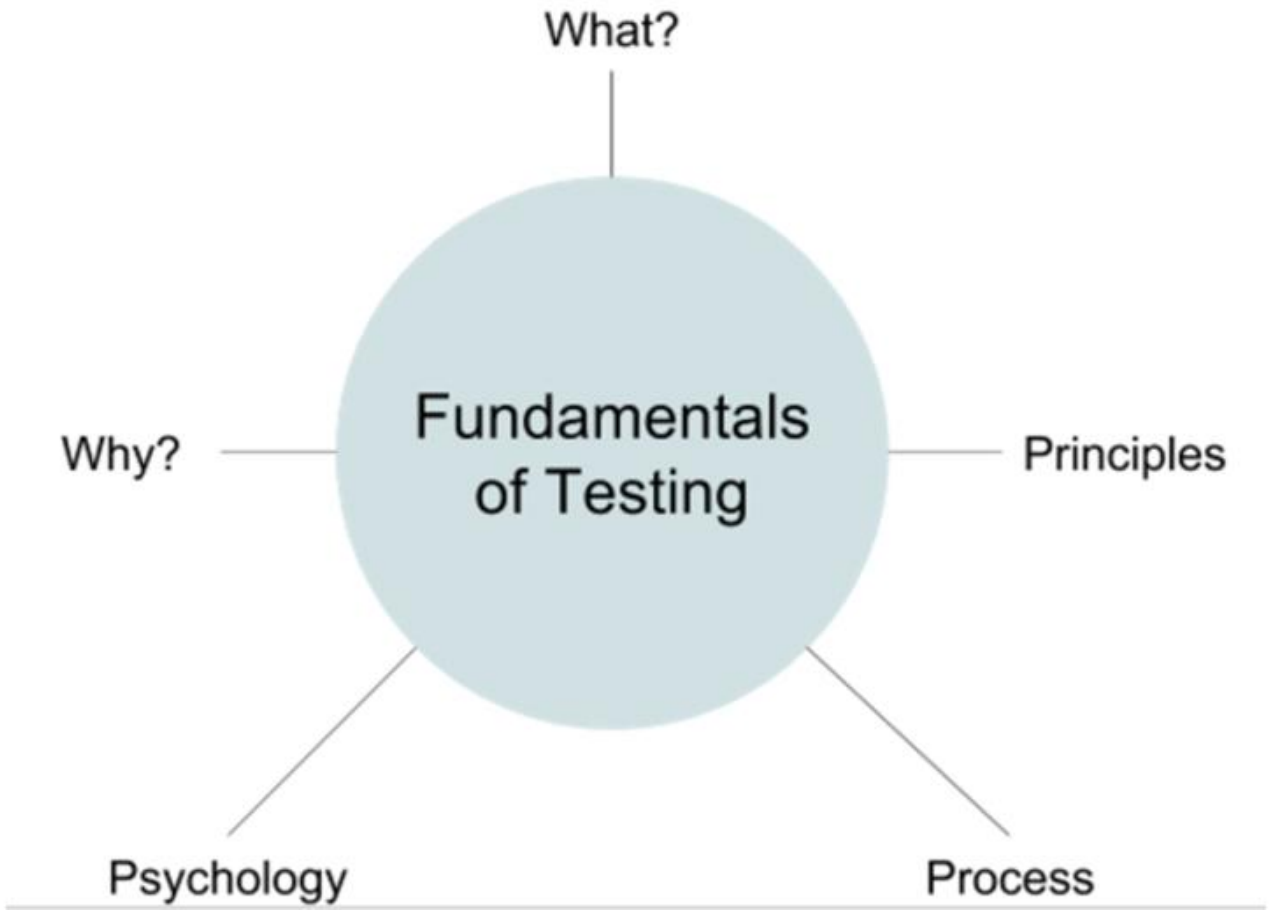
- Thursday lectures: Norwegian
- Seminars in English and Norwegian
- Written language materials will be in English

IMPORTANT! The guest lectures will be in English and will not be recorded.

An Overview


What?
Why?
Fundamentals of Testing
Principles
Psychology
Process
Development models
Levels
Testing throughout the SW Lifecycle
Types
Maintenance testing
Static test techniques
Static Techniques
Review process
Static analysis by tools
Test development process
Choosing a technique
Test Design Techniques
Categories of design techniques
Experience-based
Structure-based
Specification-based
Test organisation
Incident management
Test Management
Planning and estimation
Risk and testing
Configuration management
Progress monitoring and control
Types of testing tools
Tool Support for Testing
Effective use
Introducing tools
HCI purpose, framework and guidelines
Assistive technologies
Usability and Accessibility Testing
User-centric design process
WCAG
Personas
Accessible design
Understanding the system
Exploratory Testing
Scripted testing vs. exploratory
Heuristics
TDD
GUI testing
CI/CD

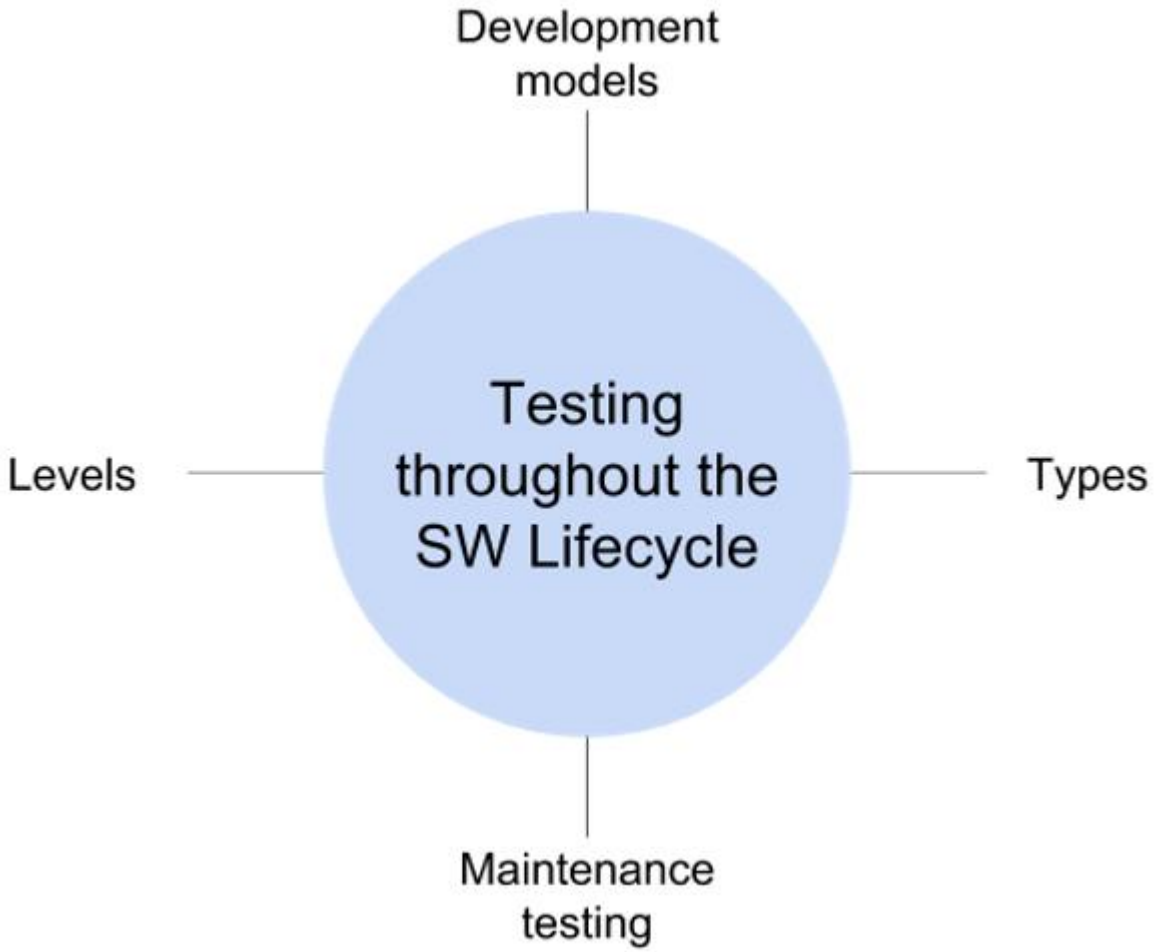
Chapter 1


What?
Why?
Fundamentals of Testing
Principles
Psychology
Process

Chapter 1
Fundamentals of testing

1. Why is testing necessary?
2. What is testing?
3. Test principles
4. Fundamental test process
5. The psychology of testing

Chapter 2


Development models
Levels
Testing throughout the SW Lifecycle
Types
Maintenance testing

1. Software development models
- *1.1 Sequential model*
- *1.2 Iterative-incremental model*
- *1.3 Testing within a life-cycle model*

2. Test Levels
- *2.1 Component testing*
- *2.2 Integration testing*
- *2.3 System testing*
- *2.4 Acceptance testing*

3. Test Types
- *3.1 Testing of function*
- *3.2 Testing of non-functional software characteristics*
- *3.3 Testing of software structure*
- *3.4 Testing related to changes*

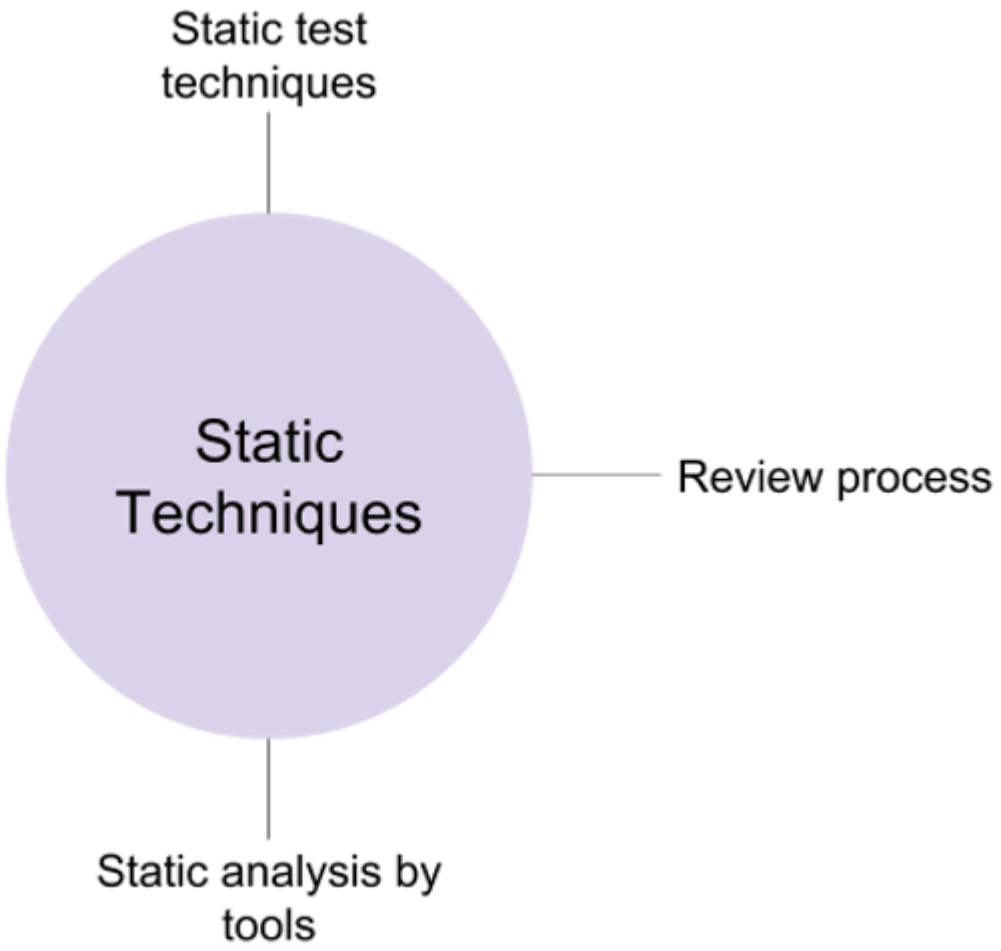
4. Maintenance testing

Chapter 2

Testing throughout the software life cycle

1. Software development models
2. Test Levels
3. Test Types
4. Maintenance testing

Chapter 3

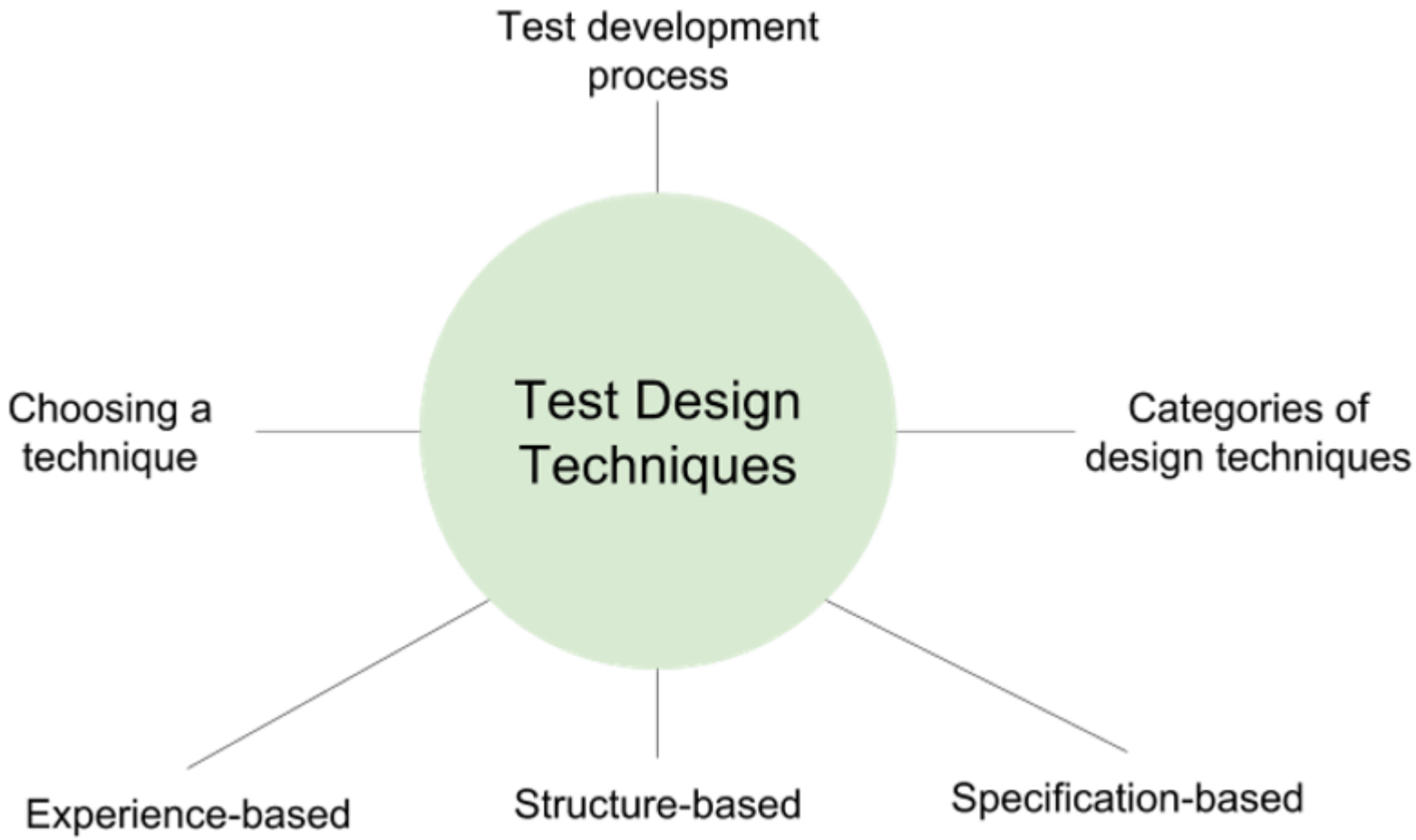

Static test techniques
Static Techniques
Review process
Static analysis by tools

Chapter 3

Static Techniques

1. Static techniques and the test process
2. Review process
3. Static analysis by tools

Chapter 4


Test development process
Choosing a technique
Test Design Techniques
Categories of design techniques
Experience-based
Structure-based
Specification-based

Chapter 4 – Part 1
Test Design Techniques

1. The test development process
2. Categories of test design techniques
3. Specification-based testing (Black-box)

Chapter 4 – Part 2
Test Design Techniques

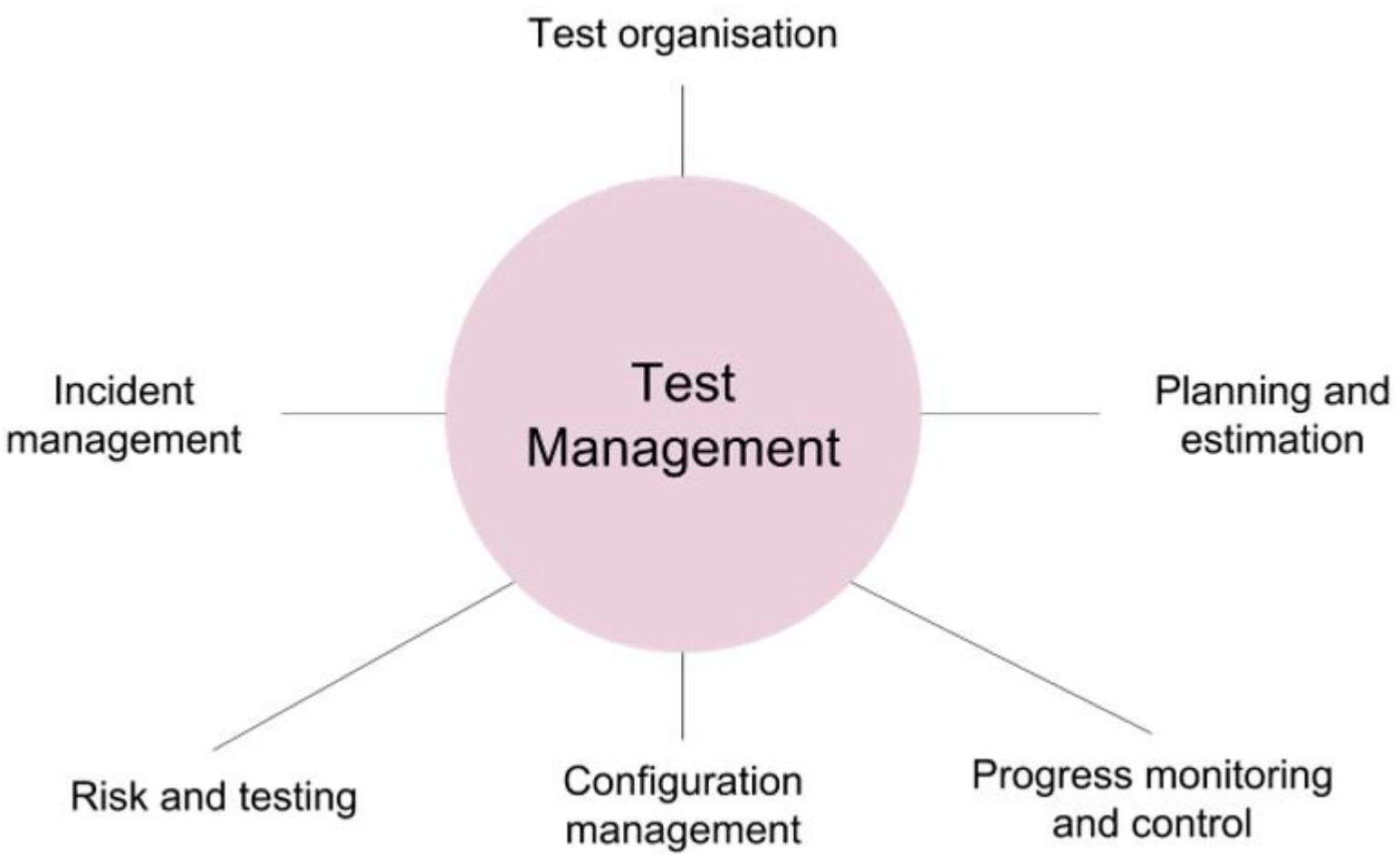
3. Specification-based testing (Black-box)

4. Structure-based testing (White-box)

5. Experience-based testing

6. Choosing test techniques

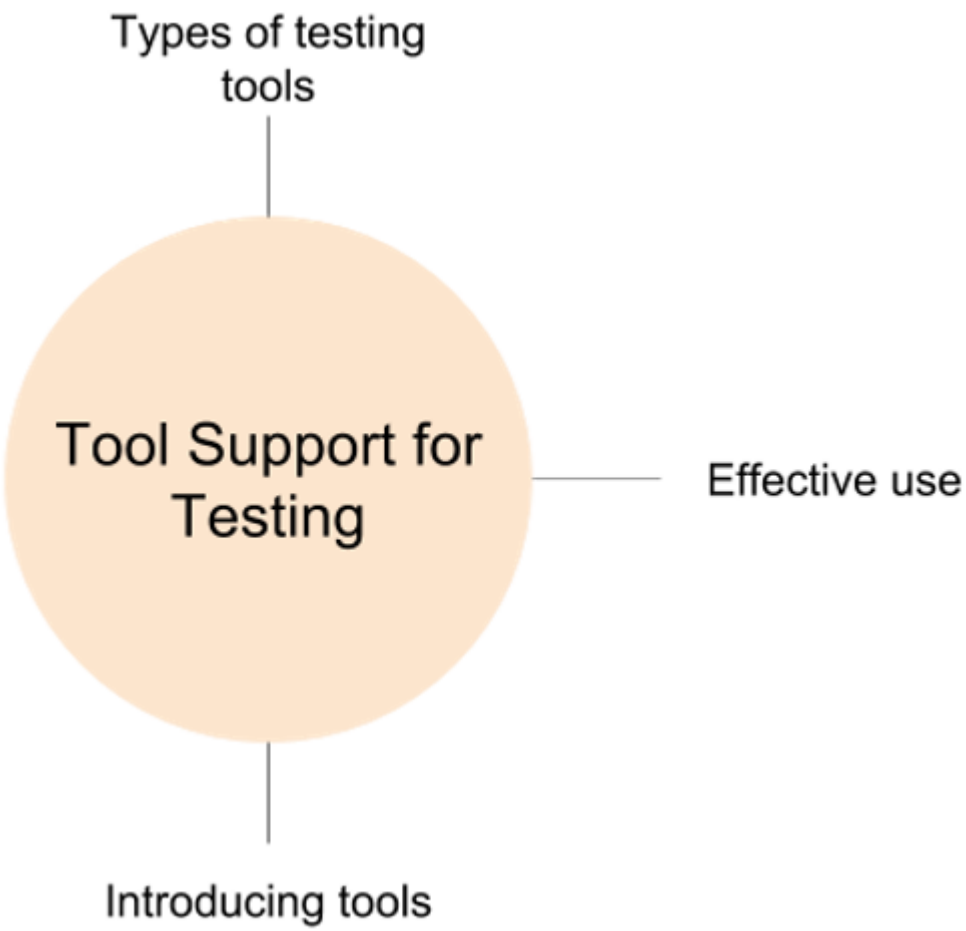
Chapter 5


Test organisation
Incident management
Test Management
Planning and estimation
Risk and testing
Configuration management
Progress monitoring and control

Chapter 5 – Part 1 and 2
Test management

1. Test organization
2. Test planning and estimation
3. Test progress monitoring and control
4. Configuration management
5. Risk and testing
6. Defect management

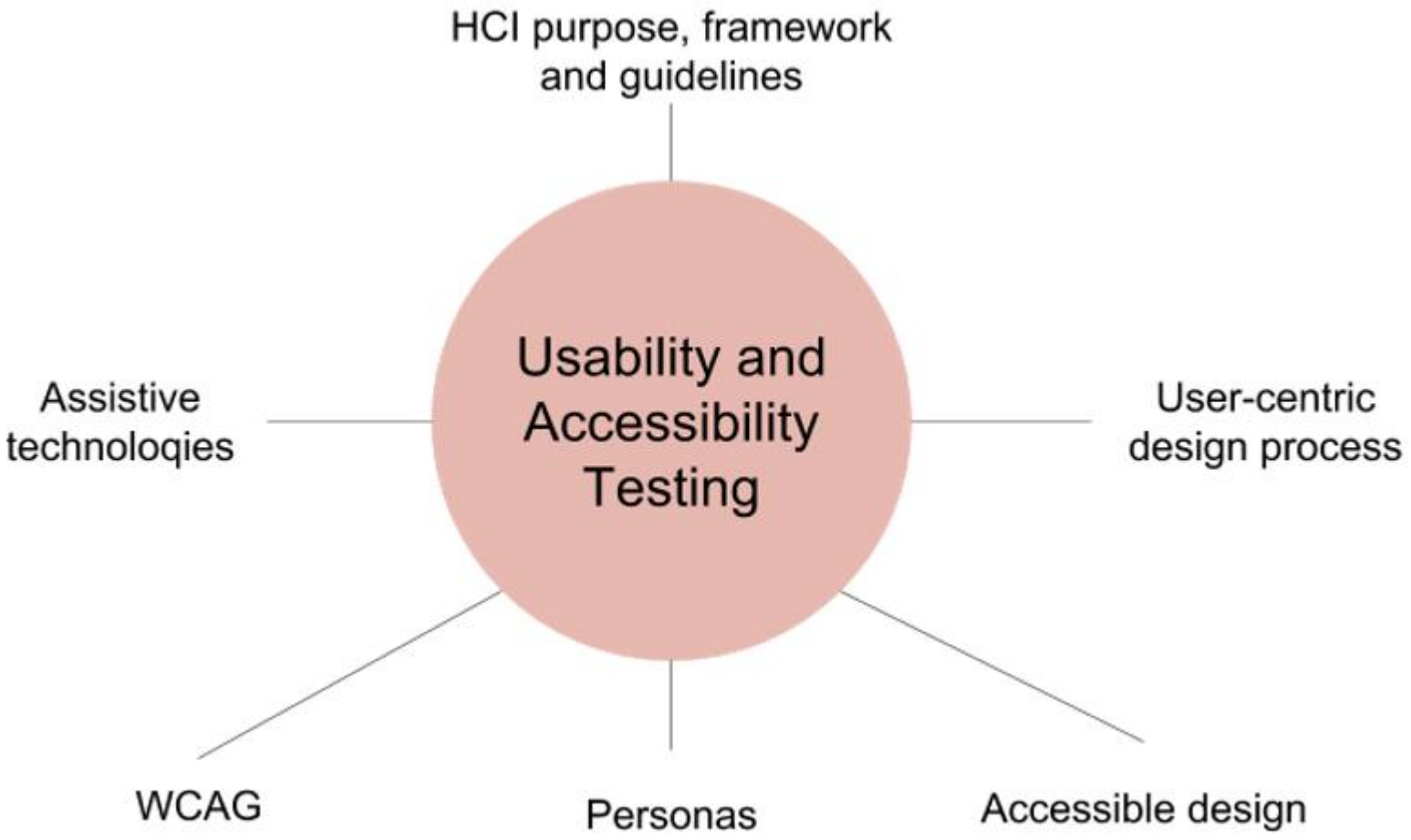
Chapter 6


Types of testing tools
Tool Support for Testing
Effective use
Introducing tools

Chapter 6
Tool support for testing

1. Test tool considerations and classification
2. Potential benefits and risks
3. Effective use of tools – introducing a test tool to an organization

Syllabus


HCI purpose, framework and guidelines
Assistive technoloqies
Usability and Accessibility Testing
User-centric design process
WCAG
Personas
Accessible design

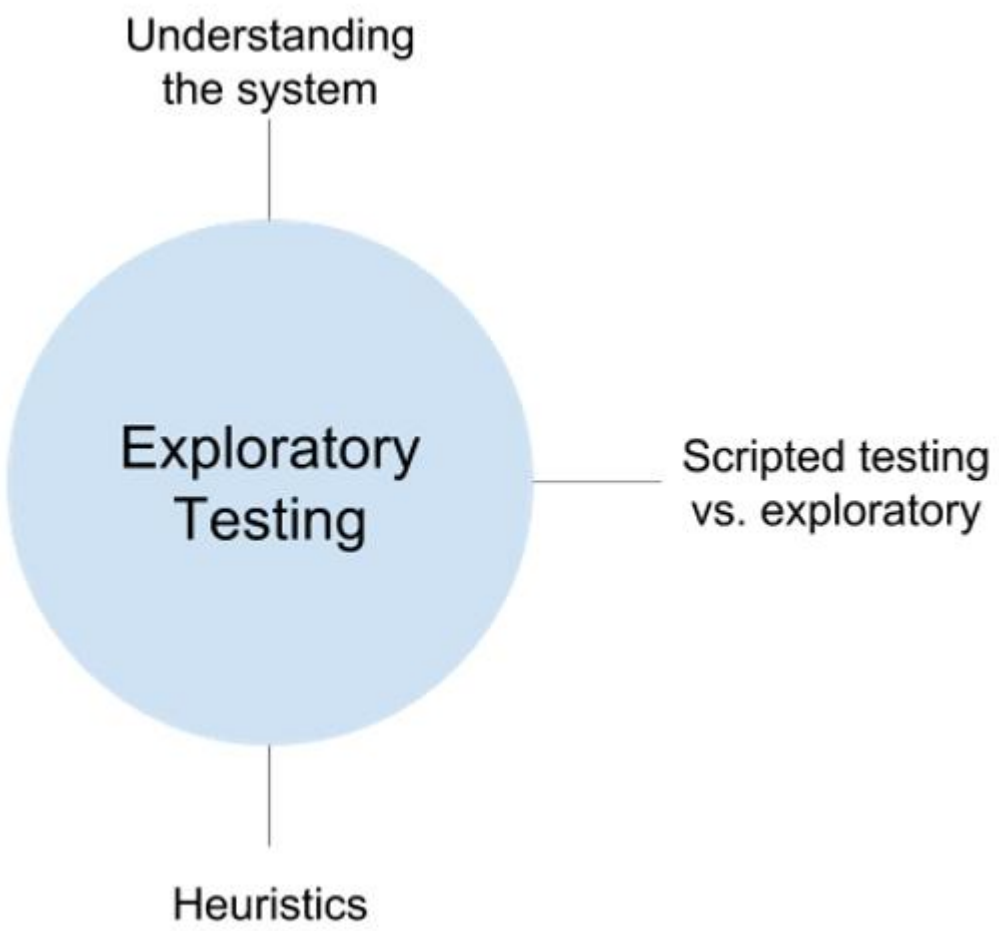
Usability Testing

1. HCI – definition and purpose
2. HCI framework
3. User-centric design process
4. HCI guidelines

Accessibility Testing

1. The context of accessibility
2. Accessibility personas
3. Accessible design
4. Web-content accessibility guidelines
5. Assistive technologies and tools

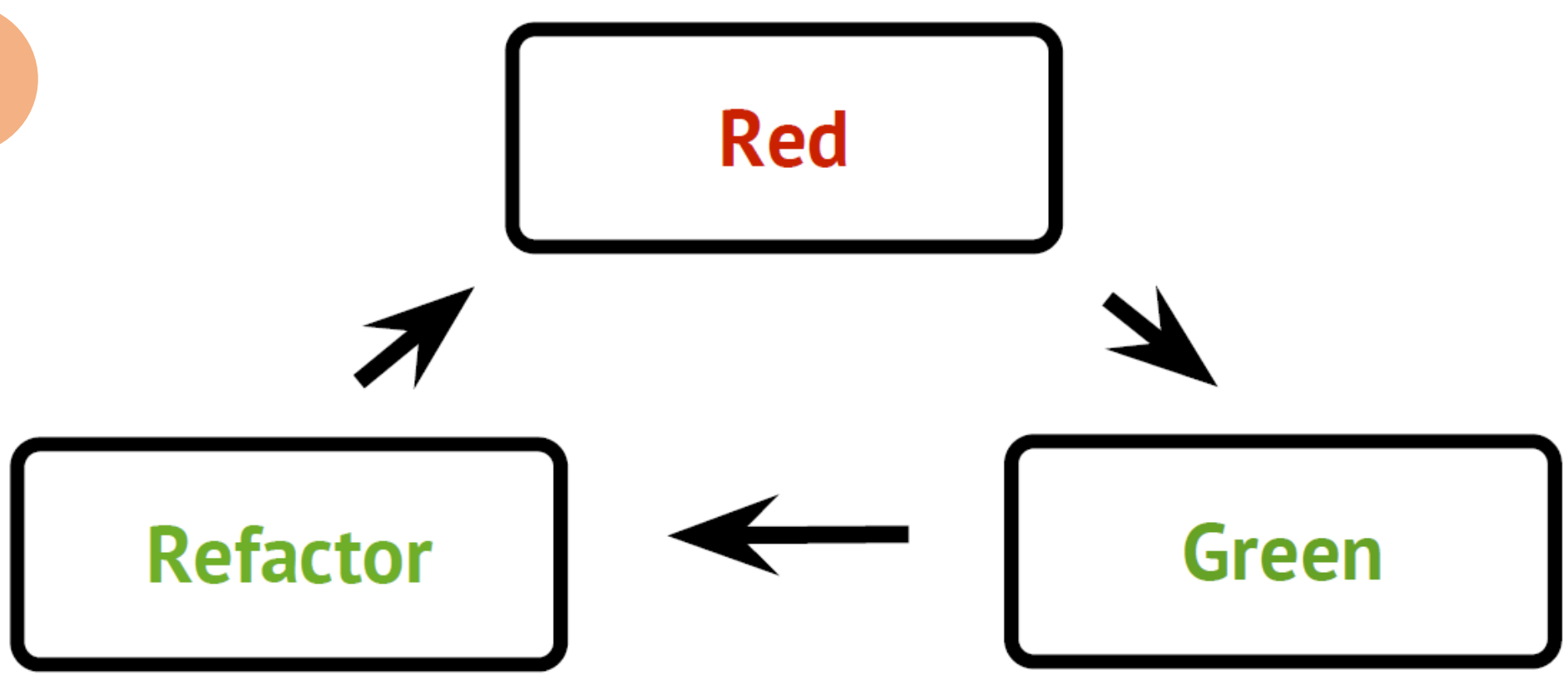
Syllabus


Understanding the system
Exploratory Testing
Scripted testing vs. exploratory
Heuristics

Syllabus

Test-Driven Development

TDD



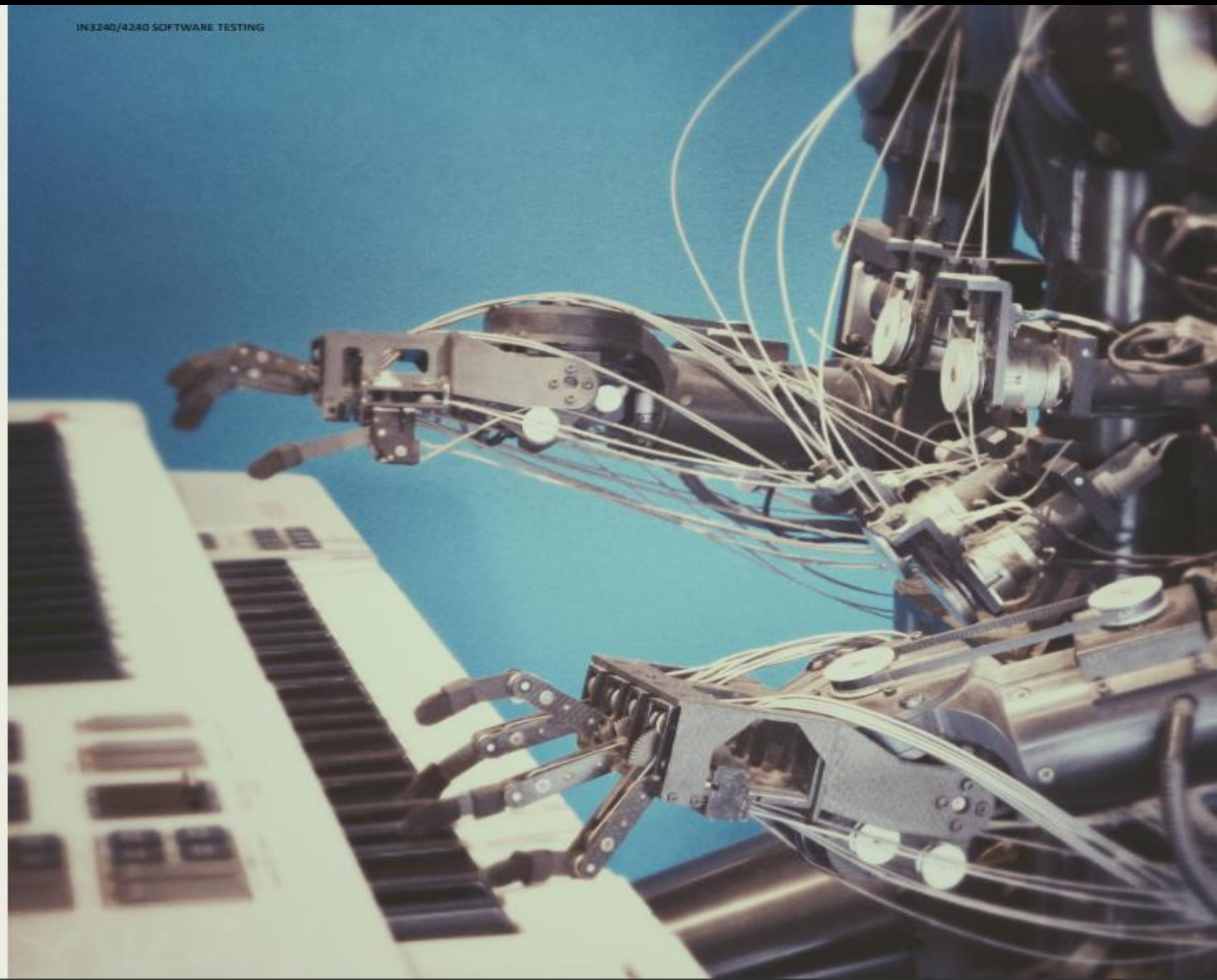
Syllabus

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GUI testing

Test Automation

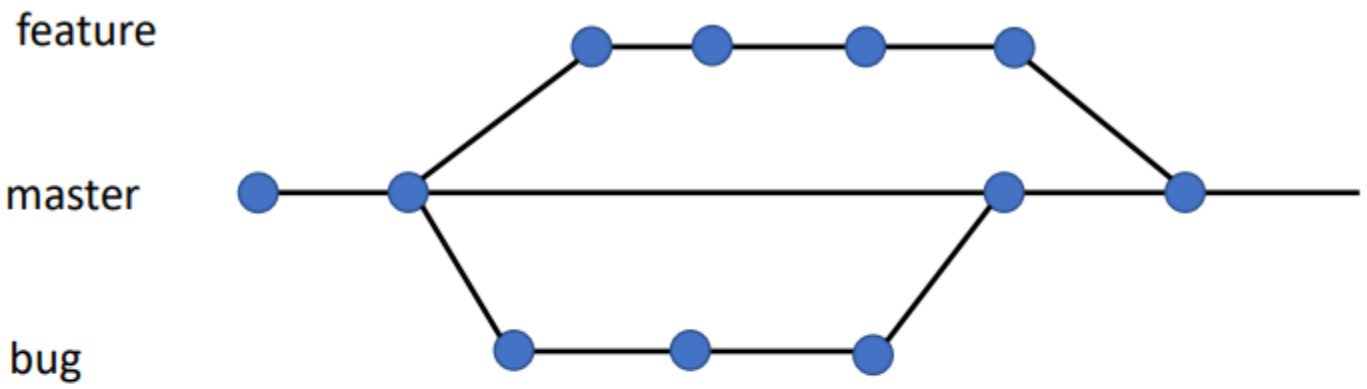
IN3240/4240 Guest lecture with Itera



Syllabus

Continuous Integration & Continuous Delivery

CI/CD





Testing throughout the lifecycle

