TEST DESIGN TECHNIQUES

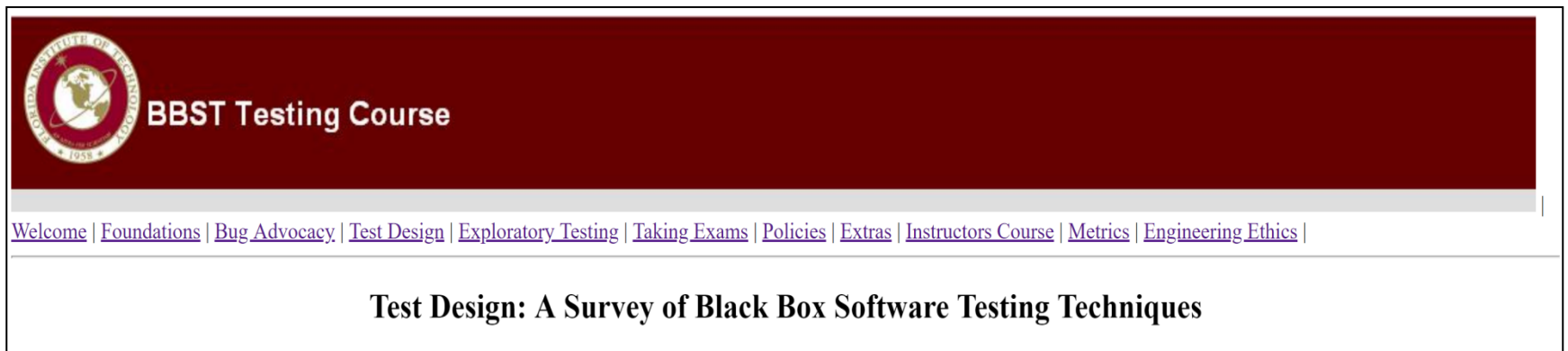**Course Presentation**
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Elective Course, 2021-2022, Spring Semester

Camelia Chisăliţă-Creţu, Lecturer PhD
Babeş-Bolyai University

Acknowledgements

The course Test Design Techniques is based on the Test Design course available on the **BBST Testing Course** platform.

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Course Goals

- this course introduces
  - particular **black-box testing concepts**;
  - **test design techniques categories and dimensions**;
  - **test attributes**;
- facilitates practical work on:
  - specific test automation tool – **Selenium WebDriver** + **Serenity**;
  - **real life software project testing**.
- various **skills improvement** related to
  - **team communication** and **team working**;
  - test design techniques use.

Main intent: understand concepts and apply them.

Activities. Details

- **Lecture (W): 2 hours/week; 12 weeks;**

- **Laboratory (L): 2 hours every 2 weeks;**

- **Project (TDTP): turn in during week 12.**

All activities will be held online.

Final Grade

- **Final Grade (G) is:**

  - **30% L + 10% W + 60% TDTP**

Activity Planning (1)

Week	Lecture	Laboratory
[S01] February 21 – February 25	**Lecture 01.** Testing Concepts. Techniques Taxonomy	**Lab 01.** Testing Concepts
[S02] February 28 – March 04	**Lecture 02.** Coverage-based Techniques I	
[S03] March 07 – March 11	**Lecture 03.** Coverage-based Techniques II	**Lab 02.** Coverage-based Techniques
[S04] March 14 – March 18	**Lecture 04.** Risk-based Techniques I	
[S05] March 21 – March 25	**Lecture 05.** Risk-based Techniques II	**Lab 03.** Risk-based Techniques
[S06] March 28 – April 01	**Lecture 06.** Activity-based Techniques	

Activity Planning (2)

Week	Lecture	Laboratory
[S07] April 04 – April 08	**Lecture 07. Evozon: Load Testing. Theory and Practice (Workshop)**	**Lab 04.** Tools for Test Automation - Demo: **Selenium WebDriver + Serenity BDD**
[S08] April 11 – April 15	**Lecture 08.** Tester-based Techniques	
[S09] April 18 – *April 22*	**Lecture 09.** Bug Reporting (RIMGEN)	**Lab 05.** TDTP preparation
[S--] April 25 – May 01	**Easter Break**	
[S10] May 02 – May 06	**Lecture 10.** Evaluation-based Techniques. Desired-based Techniques	**Lab 05.** TDTP preparation
[S11] May 09 – May 13	**Lecture 11.** TDTP Preparation	**Lab 06.** TDTP Delivery
[S12] May 16 – May 20	**Lecture 12. TDTP Delivery**	

Used Platforms

- **MS Teams**
  - students are added to **TDT2021** MS Teams team by the teacher after filling in a form with their details;
- communication over channels:
  - *General*
    - events, announcements, news;
    - **Class Materials** (lecture notes, lab rules and assignments, TDTP details, references);
  - *Lectures*
    - course presentations, demos;
    - workshop;
  - *Lab01, Lab02, Lab03, Lab04*
    - lab activities;
    - demos;
  - *TDTP*
    - test design techniques project details.

Lab Activities

- **goals:**
  - Acquire knowledge on various test design techniques discussed during lectures;
- **assignments:**
  - **week 01-02: Lab 01.** Testing Concepts;
  - **week 03-04: Lab 02.** Coverage-based Techniques;
  - **week 05-06: Lab 03.** Risk-based Techniques;
  - **week 07-08: Lab 04. Tools for Test Automation - Demo: Selenium WebDriver + Serenity BDD**
  - **week 09-10: Lab 05. TDTP Preparation;**
  - **week 11-12: Lab 06. TDTP Delivery.**

- **Lab01 ---> Lab03 are graded;**
  - tasks should be delivered during lab (max. grade 10), no later than next lab (max. grade 8);
  - work on tasks individually or in team.

- **Lab activity (L) = 30% of the final grade (G)**

Load Testing Workshop (W)

- **IT company presentation on Testing topics:**
  - **week 07:** **Load Testing. Theory and Practice (Evozon Systems);**
    - **students should attend the workshop, otherwise W=0.00.**

- **Load Testing Workshop (W) = 10% of the final grade (G)**

TDTP

- **TDTP = Test Design Techniques Project**
  - each student enrolled in Test Design Techniques elective course must register, elaborate and deliver TDTP as part of a **team (max. 5 students)**.
  - the registration to TDTP means filling the required data in the **TDTPTeams** file available at this **link**.
  - the project that will be investigated will be announced no later than week 03.
  - **The registration deadline is the end of week 06.**
  - **TDTP will be delivered during week 12.**
- **TDTP Grade = 10% Project Preparation (week 09/10/11) +**
  - **70% Project Elaboration (week 12) +**
  - **20% Project Presentation (week 12).**

TDTP Grade = 60% of the final grade (G).

TDTP. Details

- Students will elaborate the a document consisting of

    1. **Short description of the application and the tested functionalities;**

    2. **Testing objectives; Testing mission; Testing strategy;**

    3. **Test design techniques selected (three techniques/student, emphasizing different test *attributes* and *dimensions*;** *the investigation of the same technique following two dimensions counts as distinct techniques***);**

    4. **Reasoning for choosing specific test design techniques to test the product;**

    5. **Test design, Test implementation, test execution;**

    6. **Test reporting (report should include #TCs run = #TCs passed + #TCs failed);**

    7. **Description of at least one issue found, i.e., coding bug or design issue, using RIMGEA;**

    8. **Conclusions/lessons learned.**

- **Time allocated for the TDTP presentation: 20 minutes/team.**

Final Grade

- **Final Grade (G) is:**
  - **30% L + 10% W + 60% TDTP**

References

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