

# Software Testing Tutorial LO 2

There are *five* tutorial topics scheduled for the Software Testing course. Each of these will be discussed over two weeks. In the first week the group will work on a preparatory task without a tutor and in the second the group will work with the tutor. The goal is to use the software you are working with to demonstrate your capability in relation to the specific learning outcome.

Recall LO 2 is “*Design and implement comprehensive test plans with instrumented code*” so this section of your portfolio should take the set of requirements you identified in the section on LO 1 and consider issues in planning the analysis and testing of these requirements. Potentially this will involve the creation of scaffolding code to permit the testing of components and additional instrumentation to permit data gathering that will be used to assist in the analysis and testing process.

LO 2 relates to the overall quality assurance process for systems and so the aim here is to point out characteristics of your requirements, approaches to their validation and verification, and point out how these characteristics influence the testing process.

## Preparation session, week 4 (09 Oct-13 Oct)

**A good preparation for this activity is to revisit Chapter 4 of Y&P (or at least look at the slides) then read Chapter 17 (section on Scaffolding) and Chapter 20 (or look at the slides) of Y&P. Also, the chapter 20 material on planning and process is often motivated by some of the considerations in chapters 2-4 of Y&P so you should keep these in mind.**

**There is a video and slideset describing the activity for this week’s preparatory tutorial in the LO 2 section of the course materials on LEARN. Consult these for details of the preparatory session.**

Your portfolio section on LO 2 will refer to a **Test Planning** document that you will develop as you consider planning your test activity. This can be structured however you choose but should at least consider the following things you will consider in the preparatory meeting:

- The priority you put on the requirements and what they need to be adequately tested.
- Scaffolding and instrumentation that is necessary to analyse and test your chosen requirements adequately.
- Consideration of where testing activity could be inserted into a lifecycle of your choice.

**Note:** the test planning document does not need to be long because you only need to consider a few requirements. One or two pages at most. It can be longer if it arises from the development of software that is not specifically related to the Software Testing course. There is an example Test Planning document on the LO2 page.

## Tutored session, week 5 (16 Oct-20 Oct)

In this session you will consider the requirements and the potential test approaches you identified for your portfolio for LO 1. The goal of this tutorial is to consider what would be a good section on LO 2 for your portfolio. This involves considering the grading scheme. Here are the four sub-criteria LO 2 is graded on (recall each is graded in the range 0-5) with the interpretation provided in the Marking Scheme.

In the tutored session the tutor will briefly present a sample Test Planning Document and the groups will assess the document and consider the construction of a portfolio section for LO 2. Here are the four criteria for LO 2.

2. **Design and implement comprehensive test plans with instrumented code.** The course considers the use of Test-Driven development. If you plan to use Test-Driven Development (TDD) you should note this because the plan may evolve significantly during development. All plans change as they unfold but with TDD the plan may not be entirely clear at the start of development, but it should consider the requirements you have chosen to plan for.
  - 2.1. **Construction of the test plan.** The portfolio should refer to the Test Planning document. The Test Planning document should detail where testing for each of the chosen requirement fits into a lifecycle chosen from those considered in the slide for Chapter 20. The portfolio can use this as evidence of your capacity to plan for a larger collection of requirements.
  - 2.2. **Evaluation of the quality of the test plan.** The Test Planning Document should also identify any potential omissions or vulnerabilities of the plan and assess how well it will ensure adequate testing. The portfolio will refer to this section of the test plan and indicate how thoroughly the evaluation has been carried out.
  - 2.3. **Instrumentation of the code.** The Test Planning Document should indicate what instrumentation and Scaffolding will be necessary. The portfolio should refer to that and provide some justification that the proposed scaffolding is adequate.
  - 2.4. **Evaluation of the instrumentation.** How good is the instrumentation? Could it be improved to test the requirements more adequately? The Test Planning Document should contain some assessment of the adequacy of the instrumentation and scaffolding. The portfolio will refer to this and justify that the assessment in the Test Planning Document is adequate.