EXAM SOFTWARE MANAGEMENT (192340041)
Date: June 26, 2017, 13:45 – 16.45

Instructions:

This is an open book exam regarding the slides in this course – it is allowed to consult any slides provided by the teacher.

Be sure to switch mobile phones off and store them in a closed bag. Be sure to indicate name, program and student number on each sheet. Grade for the exam is Round and is calculated as follows:
(Sum of Points / 10)+1.

Concise yet complete answers are better than long-winded answers.

Note: *whenever you have to motivate your answer, 1 point goes for simply writing the answer and the rest of the points go for writing the motivation. Do not forget the motivation!!*

Success!!

Question 1 *(25 points)*

1.1 Assume an outsourcing project between the insurance company Menzies and Accenture, a big IT consulting company. Menzies is the client and Accenture the supplier. The particular solution in this outsourcing project is the development of an integrated complaint management system. This is an information system that would allow clients to enter their complaints from their mobile devises, or online by using for example, a web browser and a laptop. The complaints would be regarding the insurance services that Menzies offers to their clients. Menzies wants later to use data mining algorithms to understand all those aspects of their business that clients complain most about. Suggest the most appropriate generic software process model that might be used as a basis for managing the development of this system.
Motivate your choice and write the assumptions that you make. (10 points)

1.2 Accenture is preparing a fixed-price contract for the project with Menzies. In that contract, Accenture offers a fixed price to complete the development of the system discussed in Question 1. Menzies knows that such a contract is generally used to move project risk from client to contractor. If anything goes wrong, the contractor has to pay. Suggest how the use of such a contract may increase the likelihood that product risks will arise.(8 points)

1.3 Menzies trusts very much Accenture in terms of expertise, dedication and project execution. Accenture has been engaged also in the past and Menzies never was disappointed. Generally, Menzies is convinced that **a high quality software process should lead to a high quality software product**. Explain why a high quality software process should lead to a high quality software product? (7 points)

Question 2 *(20 points)*

2.1 Menzies is an old and traditional insurance business. We can say that Menzies is very conservative. However, the IT management team wants to improve their internal software development processes and the processes of managing projects with outsourcing partners. What approach to software process improvement (among those approaches that we discussed in this course) would you suggest for Menzies? Write your assumptions and motivation. **Hint:** There are important differences between e.g. the agile approach to software process improvement and the process maturity approach to software process improvement. Think what these differences mean for Menzies. (7 points)

2.2 Imagine the Menzies Director of the Complaint Management department wants to use an agile approach for the project in Question1. This director has heard that agile is focused on business value. He thinks that Menzies should take advantage of agile and asked Accenture to make a proposal for an agile project. The project of Menzies is very big and Accenture will implement a Scrum of Scrums. Would the project organization have a project plan for the project? Motivate your answer. (7 points).

2.3 Imagine you are the Project Contact at Accenture, responsible for talking with Menzies and negotiating the type of software process to be used. Under what circumstances would you recommend **against** the use of an agile method for developing the system (described in Question 1). (6 points)

Question 3 (32 points)

3.1 Menzies expects Accenture to offer a price for the outsourcing project described in Question 1. Accenture needs to provide some reasoning about their effort estimation regarding the time they anticipate to spend on the project. What functional size method would you recommend to the Accenture specialists to use, as part of preparing the offer to Menzies? Write your motivation. Write any assumptions you made. (8 points).

3.2. Accenture had past experience in building similar systems in other insurance companies – outside the Netherlands (in fact, these companies were in France, Germany and the United Kingdom). For the companies in those countries, they used algorithmic estimates. Give three reasons why algorithmic cost estimates prepared in different organizations are not directly comparable. (6 points)

3.3. Accenture decides to combine algorithmic estimation methods with expert-based estimation methods. Explain why is this combination is in fact the best approach? (6 points

3.4. Imagine you are the Menzies IT Outsourcing Director who receives the offer from Accenture, with the price on it. You want to check with colleagues what they think of the price. You invite a few experts in the Menzies organization and ask them to come up with their own estimation – based on the knowledge that they as Menzies employees have about the project. Would you ask them to use expert-based estimation or algorithmic estimation models? Motivate your answer. (12 points).

Question 4 (13 points)

4.1. Consider the moment when Accenture and Menzies sign the contract for their project (discussed in Question 1). Consider also that COCOMO 2 offers four models. Which one would you think will fit best for the context of the outsourcing project at the moment of signing the contract? Write the assumptions that you make and motivate your answer. (7 points)

4.2. Accenture makes a high level estimate of the Function Points for the complaint management system by using the requirements document for the project. They will use the programing language X for the development. They want to convert the Function Points number to the number of the lines of codes that it would take to implement the functionality by using the X programming language. For this conversion, Accenture will use a factor that Accenture received from a benchmarking agency (that analyses data from hundreds of projects done in various organization). What would be **the disadvantages** of using this conversion approach? Motivate your answer. (6 points)