

Edinburgh Napier University ONLINE EXAM

School of Computing, Engineering & the Built Environment

Academic Session: 2022/3

Diet: Trimester 2 FIRST diet

Module Title: Software Engineering Methods

Module Number: SET08103

Exam Duration: 2 hours

Total Time Available on the Exam Server: 3 hours

Total number of pages (incl. coversheet): 5

Number of Questions: 4

INSTRUCTIONS TO CANDIDATES: You must answer 4 questions.

SPECIAL INSTRUCTIONS (PLEASE READ CAREFULLY)

1. This exam will be available for **ONE and HALF times** the exam duration to provide an inclusive approach to ensure that the requirements of those students who need additional exam time are already accommodated within this time period.
2. It is also intended to allow sufficient time for all students to upload materials and as mitigation for any temporary network problems during the exam.
3. No additional time can be added and late submissions cannot be accepted. Students should be able to complete the exam within the expected exam time period.
4. In your answer file you must ensure that all questions and pages are clearly numbered and that you include the module code and your student matriculation number.

If you have any issues with accessing the exam or uploading your answer paper, please contact the Exams Team at exams@napier.ac.uk 0131 455 6500.

If you cannot upload your answer paper, please make sure to send a copy of your answer paper to the Exams Team email address before the deadline of the exam.

If you have technical issues, the Exams Team can then manually submit on your behalf. Please note no late submission beyond the deadline of the exam can be submitted.

You should also retain copy of your answer file in case of queries. Please be aware that examination answer paper will be subject to plagiarism checks.

SPECIAL ITEMS attached to Exam Question Paper NONE

EXAMINER(S) NAME: Kevin Sim / Andreas Steyven

Question 1

The Three Ways of DevOps are:

1. Flow.
2. Feedback.
3. Continual Learning and Experimentation.

In the module we have examined the following techniques:

- Scrum.
- Version Control.
- Kanban.
- User stories.
- Use cases.
- UML.
- Unit testing.
- Continuous Integration and Delivery.

Pick any **five** of the techniques, **describe** what the technique is, and **specify** what value it can support in DevOps and **how** it does so.

[4 marks per technique]

[20 marks total]

Question 2

a) Name and define the three CIA assurances.

[2 marks each - 6 marks total]

b) Name and define the three types of attacks against the CIA assurances.

[2 marks each - 6 marks total]

c) Describe each of the following security terms, using a software development example to illustrate what is meant.

[2 marks each - 8 marks total]

- Asset.
- Threat.
- Vulnerability.
- Risk.

[20 marks total]

Question 3

- a) There are several bodies for computing that define ethical principles, for example, the BCS, ACM, IEEE and IET.

Although different criteria exist depending on the domain, there are some core engineering ethical principles:

- Obligation to Society.
- Reporting Misconduct.
- General Conduct.

Define these three core principals of engineering ethics using an example to illustrate your answer (2 marks each)

[6 Marks]

- b) Define the term Intellectual Property (IP) and two categories of IP covered in the module using a real-world example to clarify your answer

[6 marks]

- c) Describe each of the following security terms, using a software development example to illustrate what is meant. (2 marks each).

- Asset.
- Threat.
- Vulnerability.
- Risk.

[8 marks]

[20 Marks Total]

Question 4

The seven principles of Lean Software Development are:

- Eliminate waste.
- Amplify learning.
- Decide as late as possible.
- Deliver as fast as possible.
- Empower the team.
- Build integrity in.
- Optimize the whole.

In the module we have examined the following techniques:

- Scrum.
- Version Control.
- Kanban.
- User stories.
- Unit Testing
- Continuous Integration and Delivery.

Describe four of the techniques. **Specify** what value(s) it can support in Lean and **how** it does so.

[5 marks per technique]

[20 Marks Total]

[End Of Paper]