

## Faculty of Science and Technology - Department of Computing and Informatics

Unit Title: Computer Fundamentals	
<b>Assessment Title:</b> Computer Fundamentals Report and Presentation	
<b>Unit Level:</b> 4	<b>Assessment Number:</b> 1 of 2
<b>Credit Value of Unit:</b> 20	<b>Date Issued:</b> 09/11/2020
<b>Markers:</b> Natalia Chechina, Periklis Chatzimisios	<b>Submission Due Dates:</b> Part A: 20/11/2020 Time: 12.30pm Part B: 04/12/2020 Time: 12.30pm
	<b>Submission Location:</b> Turnitin
<b>Quality Assessor:</b> Reza Sahandi	<b>Feedback method:</b> Brightspace

**This is a portfolio assignment which carries 50% of the final unit mark.**

### ASSESSMENT TASK

Study the article titled "A Short Survey at the Intersection of Reliability and Security in Processor Architecture Designs" by Lake Bu et.al. (Bu, 2018).

#### Part A: Group presentation.

Small groups of 4 or 5 students per group will be created by the teaching team during the week commencing the 12<sup>th</sup> of October 2020. Each group will collaborate online using various tools to prepare the presentation, such as Slack, Trello, Google Docs, Teams. Each group is expected to present the main findings from the article titled "A Short Survey at the Intersection of Reliability and Security in Processor Architecture Designs" by Lake Bu et.al. (2018) in a coherent manner. The presentations will be strictly timed.

The presentation should contain the following parts:

- 1) Introduction.
  - A brief overview of the presentation.
  - Why is the topic important?
- 2) Background.
  - A brief overview of core concepts and related work.
- 3) Main contributions of the paper.
  - What are the key issues discussed in the paper and the main findings?
- 4) Conclusion.
  - What are the main things you want the audience to remember from your talk and why?

#### Part B: Individual report.

Write a report of 1,250 words (maximum) excluding references. State the word count at the end of the report.

The report should investigate security issues associated with Smart Cities and address the following questions.

- Q1) Describe a threat in the current threat landscape that can occur when any installed computing systems are exploited in order to impair the security (confidentiality, integrity, availability) in a Smart City application/environment.
- Q2) Describe a recent incident that has occurred due to the realisation of this type of threat that you have selected. Your description should include information regarding: i) the attacker, ii) the victim, iii) details of the attack, and iv) the impact of the attack.
- Q3) Describe how an organisation can proactively defend against the threat that you have described.

Smart Cities is a well-studied topic with lots of information available in the Internet. You are expected to find and study the security characteristics of Smart Cities independently.

The section should include the following structure and length.

A1. Brief description of the threat of your selection. (approx. 300 words)

A2. Description of a recent incident for the selected threat (approx. 550 words).

A3. Description of countermeasure(s) against the threat that you have selected (approx. 400 words).

The provided references that will be utilized for the report should be at least seven (7).

### Professional Approach

Lectures and labs will include knowledge and exercises to help you to develop understanding of the assignment tasks. You will demonstrate a professional approach by systematically completing lab tasks each week, regularly contributing to the development of the individual and group tasks, collaborating with your teammates using appropriate and relevant means.

### SUBMISSION FORMAT

- Part A.
  - Electronic submission. Each group to submit their slides through Turnitin on Brightspace as either a Microsoft PowerPoint file or a PDF.
  - Oral presentation. Each group to give a presentation on their report during their weekly CF lab slot starting from week commencing **23rd of November 2020**. Each group will be allocated **22min** (14min for presentation + 8min for set up, questions and answers).
- Part B.
  - Electronic submission. Everybody to submit their individual report through Turnitin on Brightspace as either a Microsoft Word file or a PDF.

### MARKING CRITERIA

The following criteria will be used to assess the assignment. Please, refer to the generic assessment criteria at the end of this document that will guide you regarding the expected quality of your assignment. The assignment tests your ability to understand the basics of computer architectures (ILO-1) and understand the principles of securing computing systems (ILO-3).

#### Part A. Group presentation (50%)

- 1) A coherent discussion regarding the main findings presented in the article titled "A Short Survey at the Intersection of Reliability and Security in Processor Architecture Designs" by Lake Bu et.al. (2018) (30%)
  - You are expected to understand all terms you operate with in your presentation.
  - You are expected to conduct additional reading (e.g. journal articles, conference proceedings, books) to develop a clear understanding of the concepts discussed in the paper.
  - You are expected to demonstrate knowledge and understanding of what you talk about during the presentation.
- 2) Structure of the presentation (7%)
- 3) Time management (3%)
- 4) Peer assessment (10%) – via uGrade during the week commencing **23rd of November 2020**. The announcement and instructions will be posted on Brightspace.

#### Part B. Individual report (50%)

- 1) Brief description of the threat of your selection (5%).
- 2) Description of a recent incident for the selected threat (17%).
- 3) Description of countermeasure(s) against the threat that you have selected (20%).
- 4) Contents, structure, style, referencing (8%).

### INTENDED LEARNING OUTCOMES

This assignment tests your ability to:

ILO-1. Understand the basics of computer architectures.

ILO-3. Understand the principles of securing computing systems.

## **QUESTIONS ABOUT THE BRIEF**

Your questions regarding the brief will be handled during lecture slots and at Piazza of this unit by Dr Natalia Chechina and Dr Periklis Chatzimisios.

**Signature Marker**      *Natalia Chechina and Dr Periklis Chatzimisios.*

## HELP AND SUPPORT

- If a piece of coursework is not submitted by the required deadline, the following will apply:
  1. If coursework is submitted within 72 hours after the deadline, the maximum mark that can be awarded is 40%. If the assessment achieves a pass mark and subject to the overall performance of the unit and the student's profile for the level, it will be accepted by the Assessment Board as the reassessment piece. The unit will count towards the reassessment allowance for the level; This ruling will apply to written coursework and artefacts only; This ruling will apply to the first attempt only (including any subsequent attempt taken as a first attempt due to exceptional circumstances).
  2. If a first attempt coursework is submitted more than 72 hours after the deadline, a mark of zero (0%) will be awarded.
  3. Failure to submit/complete any other types of coursework (which includes resubmission coursework without exceptional circumstances) by the required deadline will result in a mark of zero (0%) being awarded.

The Standard Assessment Regulations can be found on **Brightspace**.

- If you have any valid **exceptional circumstances** which mean that you cannot meet an assignment submission deadline and you wish to request an extension, you will need to complete and submit the Exceptional Circumstances Form for consideration to your Programme Support Officer (based in C114) together with appropriate supporting evidence (e.g, GP note) normally **before the coursework deadline**. Further details on the procedure and the exceptional circumstances form can be found on **Brightspace**. Please make sure that you read these documents carefully before submitting anything for consideration. For further guidance on exceptional circumstances please see your Programme Leader.
- You must acknowledge your source every time you refer to others' work, using the **BU Harvard Referencing** system (Author Date Method). Failure to do so amounts to plagiarism which is against University regulations. Please refer to <http://libguides.bournemouth.ac.uk/bu-referencing-harvard-style> for the University's guide to citation in the Harvard style. Also be aware of Self-plagiarism, this primarily occurs when a student submits a piece of work to fulfill the assessment requirement for a particular unit and all or part of the content has been previously submitted by that student for formal assessment on the same/a different unit. Further information on academic offences can be found on **Brightspace** and from <https://www1.bournemouth.ac.uk/discover/library/using-library/how-guides/how-avoid-academic-offences>
- Students with **Additional Learning Needs** may contact Learning Support on [www.bournemouth.ac.uk/als](http://www.bournemouth.ac.uk/als)
- You should not be conducting any primary research (i.e. carrying out an investigation to acquire data first-hand, for example, where it involves approaching participants to ask questions or to participate in surveys, questionnaires, interviews, observations, focus groups, etc.) unless otherwise specified in the brief. However, if there is a genuine requirement to collect primary research data you will require ethical approval before doing so. In the first instance, please discuss with the Unit Leader. The collection of primary data without appropriate ethical approval is a serious breach of Bournemouth University's Research Ethics Code of Practice and will be treated as Research Misconduct.

**Disclaimer:** The information provided in this assignment brief is correct at time of publication. In the unlikely event that any changes are deemed necessary, they will be communicated clearly via e-mail and Brightspace and a new version of this assignment brief will be circulated.

## REFERENCES

Bu, L. M. M. a. K. M., 2018. *A short survey at the intersection of reliability and security in processor architecture designs*. s.l., IEEE, pp. 118-123.

Level 4 Grade Range		Subject knowledge and understanding	Intellectual skills - including analysis, evaluation, and critical judgement	Subject-specific skills - including applications and problem solving	Transferable skills - including communication and presentation
<b>High First</b> <b>80% +</b>  Exceptional work overall	Feedback	The work demonstrates an exceptionally broad factual and conceptual understanding of the subject informed by extensive reading.	The work demonstrates exceptional analysis and evaluation of information. Ideas and information are fluently, insightfully and critically selected and collated in support of analysis, evaluation and a sustained coherent argument.	The work demonstrates a range of very effective responses to given problems, some of which may demonstrate innovation and considerable insight	Exceptionally well-organised work in which the argument is well-structured and communicated very well. Sentence structure and grammar indicate a high level of skill.
	Feedforward	Future work could offer even broader and deeper understanding.	Future work could offer an even deeper and more extensive critical approach with deeper analysis and evaluation.	Future work could demonstrate even further innovation and insights.	Future work could offer even greater flow with the argument.
<b>First</b> <b>70 - 79%</b>  Excellent work overall	Feedback	The work demonstrates excellent factual and conceptual understanding informed by extensive reading.	There is clear evidence of analysis and evaluation using defined techniques and principles. Ideas and information are selected and collated in support of analysis, evaluation and argument. The work demonstrates an early critical approach to information.	The work demonstrates the generation of a very effective range of appropriate responses to given problems, some of which may be innovative.	Excellent well-organised work in which the argument is structured and communicated well. Sentence structure and grammar are well developed.
	Feedforward	Deeper reading and research would help develop knowledge and understanding further.	Future work could offer a fluent and critical stance in relation to information and its evaluation and analysis.	Future work could demonstrate deeper insight and innovation.	Future work could offer flow and progression across well-structured arguments.
<b>Upper Second</b> <b>60 - 69%</b>  Very good work overall	Feedback	The work demonstrates very good understanding of the subject. There is evidence of wider reading which goes beyond unit contact and draws on independent research.	The work demonstrates very good analysis and evaluation of information. Well argued with appropriate amount of evidence, substantiated opinions are given.	The work demonstrates the application of knowledge to different contexts and generates a range of responses.	The structure is clear and logical showing progression of the argument. There may be some minor mistakes in presentation or referencing.
	Feedforward	Future work should demonstrate wider reading and more developed understanding.	Future work should offer more detailed analysis and criticality.	Future work should demonstrate deeper insight along with innovative responses.	Future work should demonstrate additional flow and progression, well developed sentence structure and accurate referencing.
<b>Lower Second</b> <b>50 - 59%</b>  Good work overall	Feedback	The work demonstrates some good evidence that understanding has been enhanced through wider reading, but is still limited to basic texts.	The work demonstrates some good understanding of the subject and some analysis of the information using simple reasoning. On balance the work is descriptive.	The work demonstrates a reasonable, if limited, attempt to apply understanding to other contexts.	Structure would benefit from more accurate communication and presentation.
	Feedforward	Future work should demonstrate wide reading and more developed understanding.	Future work should contain more clearly developed arguments, backed up with appropriate references from the literature.	Future work should demonstrate a more detailed application of knowledge to other contexts.	Future work should offer a clearer structure and/or more accurate references and language use.
<b>Third Class</b> <b>40 - 49%</b>  A basic level of work overall	Feedback	The work demonstrates a basic level of factual and conceptual understanding of the subject. Reading/research appears limited to that gained through unit materials.	The work is mainly descriptive with opinions rather than academic argument. Logical development of an argument is lacking.	The work demonstrates only a limited attempt to apply knowledge across situations and/ or limited understanding of how to do so.	The structure of the work is weak. There are mistakes in grammar or sentence structure. References are not presented in the BU referencing style.
	Feedforward	In future work further reading and research beyond the material covered in the unit materials is needed to develop knowledge and understanding.	In future work more clearly developed arguments, backed up with appropriate references from the literature are required.	In future work clearer links between theory and practice are required beyond the limited range presented here.	A clearer structure is needed, along with a more appropriate use of English. Developing skills in referencing is strongly recommended.

<b>Fail</b> <b>30-39%</b> Insufficient level of work overall	Feedback	The work shows an insufficient level of factual and conceptual understanding of the subject. There is little or no evidence of reading and research beyond unit contact.	The work is almost entirely descriptive, showing little or no evidence of analysis and unsubstantiated opinions are present.	The link between theory and practice is limited or absent.	The structure is very weak or lacking. There are many mistakes in grammar or sentence structure and the academic style is undeveloped. The references are not presented in the BU referencing style.
	Feedforward	In future work the level of factual and conceptual understanding needs to be strengthened. Further reading and research beyond unit contact is needed.	Future work needs to demonstrate less description and a greater level of analysis, backed up with the use of appropriate literature.	Future work needs to demonstrate clearer links between theory and practice.	A much clearer structure is needed, along with a more appropriate use of English. Developing skills in referencing is strongly recommended.
<b>Poor Fail</b> <b>0-29%</b> A very insufficient level of work overall	Feedback	The work is largely inaccurate and/or contains much irrelevant material. There is little or no evidence of knowledge or understanding of the subject, or of reading/research.	The work shows little or no evidence of analysis and contains unsubstantiated opinions.	The work demonstrates little or no evidence of relating theory to practice.	The work is unstructured and is written in inappropriate English. The references are presented incorrectly or are missing. The work may be incomplete or too brief.
	Feedforward	In future work, reading introductory texts will help to develop basic understanding which can then be built on.	Future work should demonstrate understanding through appropriate use of references.	Future work needs to demonstrate links between theory and practice.	A much clearer structure is needed, along with a more appropriate use of English. Developing skills in referencing is strongly recommended.