

## CSC7426: Software and Data Engineering Sample Exam 2023

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**Answer only 1 question** – if you answer more than 1 question then only the first answer will be evaluated and awarded a mark.

You are allowed access to any secondary material (notes/books/web). Please correctly cite/reference any material that you use in your answer that is not your own work. (Plagiarism of secondary material will be punished and may lead to disciplinary action.)

I suggest you spend **2 hours** to answer your question. However, there is *no strict time limit* and I will permit you extra time if you require it.

The evaluation criteria are: 1) correct use of technological terms from the module, 2) evidence of progress you have made during the module, 3) reference to working on problems (or other software engineering projects).

Please submit your answer electronically – email [paul.gibson@telecom-sudparis.eu](mailto:paul.gibson@telecom-sudparis.eu) - as a .pdf (or plain text).

### Question 1:

In 1990, Mary Shaw published a controversial paper [1] in *IEEE Software* entitled “Prospects for an engineering discipline of software”. In it she states that: “*Software engineering is not yet a true engineering discipline, but it has the potential to become one*”. In your opinion, has this potential been fulfilled?

(Note: a copy of this article is downloadable from the module web site :

[1] <http://www-public.imtbs-tsp.eu/~gibson/Teaching/Teaching-ReadingMaterial/Shaw90.pdf> )

### Question 2:

It is very important that engineers learn from their failures. What is the biggest failure that you have experienced as a software engineer and what did you learn from this experience?

### Question 3:

The module has covered a lot of material and included many problems. What has been the most valuable thing (or things) that you have learned? Reference specific aspects of the module.

### Question 4:

Choose any piece of software which you use regularly. Briefly describe the requirements that the software meets (for you as the user). Suggest three ways in which the software could be improved (for you), and estimate the amount of resources that would be required to make the improvements.

### Question 5:

Write a review of your favourite book (or article, or film, or ..) that has helped you to become a better software engineer.

### Question 6:

Does the general public place too much faith in the reliability of software? Should they trust intelligent systems, where the software is a fundamental part?

## References

[1] Shaw, Mary. "Prospects for an engineering discipline of software." *Software, IEEE* 7.6 (1990): 15-24.