

RS210/115

DUBLIN INSTITUTE OF TECHNOLOGY
KEVIN STREET, DUBLIN 8.

MSc Computing (Information Technology)

Stage 2

SUPPLEMENTAL EXAMINATIONS 2009

UNIVERSAL DESIGN

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2 HOURS

ATTEMPT
**QUESTION 1 AND
ONE OTHER QUESTION**

ALL QUESTIONS CARRY EQUAL MARKS

1. (a) Identify and briefly explain each of the *Seven Principles of Universal Design*.
(10 marks)

- (b) The *FlyinAir* airline requires all passengers to check in online, or using an unmanned machine in the airport building.

Make ten recommendations to *FlyinAir* regarding the design and implementation of this service, considering the *Seven Principles of Universal Design*.

(20 marks)

- (c) With respect to a domain of your choosing, clearly describe the legislative requirements (if any) for *Universal Design* as they currently apply.

Suggest appropriate alternative legislation for this domain, and assess it based on the strengths and weaknesses of employing a legislative approach to enforcement of *Universal Design*.

(20 marks)

2. (a) Explain what is meant by *paper prototyping*, and evaluate its usefulness towards achievement of *Universal Design*.

(10 marks)

- (b) Explain, using examples, the meaning and role of *design patterns* in the context of software design.

Demonstrate how *pattern libraries* could better facilitate *Universal Design*, if employed during the design process.

How, in your opinion, could the *library* approach to pattern collection apply to the construction and collection of *personas* for the benefit of *Universal Design*?

(20 marks)

- (c) Propose a design methodology which fully supports *Universal Design*.

Clearly outline relevant roles, phases and deliverables.

Evaluate your methodology and relate it to competing methodologies.

(20 marks)

3. (a) Explain why separation of style and content is important for the development of accessible web resources. Show how this separation is achieved.

(10 marks)

- (b) According to the Web Content Accessibility Guidelines, version 2.0, web resources must be:

- Perceivable
- Operable
- Understandable
- Robust

Explain what is meant by each of these guidelines, using examples, and discuss whether you feel that adherence to these guidelines will ensure that a web resource is *Universally Designed*.

(20 marks)

- (c) Demonstrate how the designer of the *Dublin Institute of Technology's* website could employ *personas* towards ensuring that their website is *Universally Designed*.

Discuss the strengths, weaknesses and appropriateness of personas for such a design.

(20 marks)