# DUBLIN INSTITUTE OF TECHNOLOGY

# DT228 BSc. (Honours) Degree in Computer Science

## Year 4

# DT282 BSc. (Honours) Degree in Computer Science (International)

## Year 4

## SUMMER EXAMINATIONS 2017/2018

### ENTERPRISE SYSTEMS & ARCHITECTURE [CMPU 4025]

MR CIARAN. CAWLEY
DR. DEIRDRE LILLIS
DR. MARTIN. CRANE

WEDNESDAY 9$^{TH}$ MAY          2.00 P.M. – 4.00 P.M.

TWO HOURS

INSTRUCTIONS TO CANDIDATES

ANSWER **THREE** QUESTIONS OUT OF **FOUR**.

ALL QUESTIONS CARRY EQUAL MARKS.
ONE COMPLIMENTARY MARK SHALL BE AWARDED.

1. Considering *Information Technology (IT)* as a component of an Enterprise's infrastructure - use the following headings to discuss the use of IT within such an Enterprise:

   - The business environment / challenges facing the enterprise
   - The strategies that an enterprise can leverage to address those challenges
   - The IT systems / components and how they would support those strategies

   [3 x 11 Marks]

2. (a) Using a typical sales order business process as an example, answer the following questions:

   (i) Describe **three** potential issues that may arise due to the situation where an enterprise is not using a centralised business system such as an Enterprise Resource Planning (ERP) system.

   [3x3 Marks]

   (ii) Discuss how using an ERP system would address each of the three issues from part (i) of this question.

   [3x4 Marks]

   (b) Poor supply chain management within a business organisation can result in a number of issues. Discuss **three** such issues and for each one, explain how the use of a supply chain management software system could help address the problem.

   [3x4 Marks]

3. (a) Explain what is meant by the term *Customer Relationship Management (CRM)* in the context of a business organisation. In your answer ensure you explain what a customer *touchpoint* is.

   [9 Marks]

   (b) Explain what is meant by *consolidation* in relation to the architecture of a CRM system, in your answer briefly describe **three** functional modules that you would expect a *CRM* system to provide.

   [12 Marks]

   (c) Explain how a CRM system provides business value to an Enterprise.

   [12 Marks]

4. (a) Describe, using a clearly labelled diagram, what is meant by *publish and subscribe* in the context of *Message Oriented Middleware*.

[6 Marks]

(b) The *Java Message Service (JMS)* API is a Java API that allows applications to create, send, receive, and read messages using reliable, asynchronous, loosely coupled communication. Illustrate, using a clearly labelled diagram, the JMS API programming model that allows developers to write code to utilise JMS Service Providers.

[9 Marks]

(c) Describe what an *Enterprise Service Bus (ESB)* is and discuss how JMS might be utilised as part of an ESB implementation.

[9 Marks]

(d) The *Scatter-Gather* is an enterprise application integration design pattern. Describe the pattern using a diagram to illustrate your answer. Provide an example of how the pattern might be used.

[9 Marks]