

Module Title Distributed Systems Keywords Operation of Distributed Systems, Communication protocols, Computer Security.	Reference CMM502 SCQF SCQF Level 11 SCQF Points 15 ECTS Points 7.5 Created August 2002 Approved August 2002 Amended September 2012 Version No. 5
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This Version is No Longer Current

The latest version of this module is available [here](#)

Prerequisites for Module

In addition to course entry requirements, students must have attended or be attending CMM504 Object Oriented Programming or an equivalent.

Corequisite Modules

None.

Precluded Modules

None.

Aims of Module

To provide students with an understanding of the general principles of distributed systems, their design and implementation.

Learning Outcomes for Module

Security and integrity issues including encryption, authentication and authorisation.

Indicative Student Workload

<i>Contact Hours</i>	Full Time
Assessment	3
Laboratories	12
Lectures	24
Tutorials	12

Directed Study

Assessment	15
Directed Study	35

Private Study

Private Study	49
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Mode of Delivery

Key concepts are introduced and illustrated through lectures. The necessary practical skills are

On completion of this module, students are expected to be able to:

- 1.Design distributed computer systems to specification.
- 2.Implement distributed systems using relevant technology.
- 3.Analyse the practical and theoretical problems which exist in distributed computer systems.
- 4.Describe security and encryption measures which can be applied to distributed systems.

Indicative Module Content

Architectures, models and characteristics of distributed systems.

Client-server paradigm and typical applications.

Inter-process communications using sockets, RPC and RMI.

Distributed systems services (naming, synchronisation, coordination and agreement, replication and consistency, transaction processing, fault tolerance).

developed through a series of laboratory exercises.

Assessment Plan

	Learning Outcomes Assessed
Component 1	1,3,4
Component 2	1,2

Component 2 - Coursework

Component 1 - This is a closed book examination.

Indicative Bibliography

- 1.COULOURIS,G.,
DOLLIMORE, J.,
KINDBERG,T., 2005.
Distributed Systems, Concepts and Design. 4th Ed. Addison Wesley.
- 2.TANENBAUM, STEEN, M.,
2007. Distributed Systems: Principles and Paradigms. 2nd Ed. Prentice Hall
- 3.Heffelfinger D.,2011. Java EE 6 Development with NetBeans 7. Packt Publishing.
- 4.GONCLAVES, A., 2010.
Beginning Java EE 6 with Glass Fish 3 2nd Ed. (Expert's Voice in Java Technology) Packt Publishing. Apress.