

NETW C7022: Network Programming

Module Details	
Module Code:	NETW C7022
Full Title	Network Programming APPROVED
Valid From:	Semester 1 - 2019/20 (June 2019)
Language of Instruction:	English
Duration:	1 Semester
Credits:	5
Module Author	Michelle Graham
Departments:	Unknown
Module Description:	This module introduce students to the theory and practice of network programming.

Module Learning Outcome	
On successful completion of this module the learner will be able to:	
#	Module Learning Outcome Description
MLO1	Implement sockets for clients and servers (TCP and UDP).
MLO2	Describe a range of secure transmission protocols.
MLO3	Explain the structure of the Http protocol and use a range of http verbs to illustrate it's use.
MLO4	Incorporate threading in a network application.
Pre-requisite learning	
<p>Module Recommendations <i>This is prior learning (or a practical skill) that is strongly recommended before enrolment in this module. You may enrol in this module if you have not acquired the recommended learning but you will have considerable difficulty in passing (i.e. achieving the learning outcomes of) the module. While the prior learning is expressed as named DkIT module(s) it also allows for learning (in another module or modules) which is equivalent to the learning specified in the named module(s).</i></p>	
No recommendations listed	

Indicative Content
Basic Network Concepts TCP, and UDP, Client/Server Model, Internet Standards, Latency, Protocol Design.
Streams Input, Output, Filter, Readers & Writers.
TCP Protocol, Clients and Servers, Secure Sockets.
UDP Protocol, clients and servers, datagrams, IP Multicast.
Threads Running, Returning information, Synchronization, Deadlock, Scheduling, Pools.
Web Protocols WebSockets, HTTPn.

Module Content & Assessment

Assessment Breakdown	%
Course Work	50.00%
Final Examination	50.00%

Special Regulation

Assessments

Full Time

Course Work			
Assessment Type	Class Test	% of Total Mark	20
Marks Out Of	0	Pass Mark	0
Timing	Week 8	Learning Outcome	1,2,3
Duration in minutes	0		
Assessment Description Lab exam			
Assessment Type	Continuous Assessment	% of Total Mark	30
Marks Out Of	0	Pass Mark	0
Timing	Week 12	Learning Outcome	1,4
Duration in minutes	0		
Assessment Description Project : Client-Server Application			

No Project

No Practical

Final Examination

Assessment Type	Formal Exam	% of Total Mark	50
Marks Out Of	0	Pass Mark	0
Timing	End-of-Semester	Learning Outcome	1,2,3,4
Duration in minutes	0		
Assessment Description Written Examination			

Part Time

Course Work			
Assessment Type	Class Test	% of Total Mark	20
Marks Out Of	0	Pass Mark	0
Timing	Week 8	Learning Outcome	1,2,3
Duration in minutes	0		
Assessment Description Lab exam			
Assessment Type	Continuous Assessment	% of Total Mark	30
Marks Out Of	0	Pass Mark	0
Timing	Week 12	Learning Outcome	1,4
Duration in minutes	0		
Assessment Description Project : Client-Server Application			
No Project			
No Practical			
Final Examination			
Assessment Type	Formal Exam	% of Total Mark	50
Marks Out Of	0	Pass Mark	0
Timing	End-of-Semester	Learning Outcome	1,2,3,4
Duration in minutes	0		
Assessment Description Written examination			
Reassessment Requirement			
A repeat examination <i>Reassessment of this module will consist of a repeat examination. It is possible that there will also be a requirement to be reassessed in a coursework element.</i>			

Module Workload & Resources

Workload: Full Time					
<i>Workload Type</i>	<i>Contact Type</i>	<i>Workload Description</i>	<i>Frequency</i>	<i>Average Weekly Learner Workload</i>	<i>Hours</i>
Lecture	Contact	Fundamental concepts, techniques and paradigms for network programming	Every Week	1.00	1
Practical	Contact	Application of network programming techniques	Every Week	3.00	3
Directed Reading	Non Contact	Textbook readings, sample programs	Every Week	3.00	3
Independent Study	Non Contact	No Description	Every Week	1.00	1
Total Weekly Learner Workload					8.00
Total Weekly Contact Hours					4.00

Workload: Part Time					
<i>Workload Type</i>	<i>Contact Type</i>	<i>Workload Description</i>	<i>Frequency</i>	<i>Average Weekly Learner Workload</i>	<i>Hours</i>
Lecture	Contact	Fundamental concepts, techniques and paradigms for network programming	Every Week	1.00	1
Practical	Contact	Application of network programming techniques	Every Week	3.00	3
Directed Reading	Non Contact	No Description	Every Week	3.00	3
Independent Study	Non Contact	No Description	Every Week	1.00	1
Total Weekly Learner Workload					8.00
Total Weekly Contact Hours					4.00

Resources

Recommended Book Resources

Richard M Reese. (2015), Learning Network Programming with Java, 1. Packt Publishing, p.292, [ISBN: 978-178588547].

Supplementary Book Resources

James Kurose & Keith Ross. (2016), Computer Networking: A Top-Down Approach, 7. Pearson, [ISBN: 978-129215359].

Elliott Rusty Harold. (2013), Java Network Programming, 4. O'Reilly, [ISBN: 978-1-4493-5767-2].

Ciubotaru, Bogdan, Muntean, Gabriel-Miro. (2013), Advanced Network Programming – Principles and Techniques, 1. Springer.

This module does not have any article/paper resources

Other Resources

[Website], Java Tutorial: Network Programming,
<http://docs.oracle.com/javase/tutorial/networking/index.html>

statuslog

No Status Log Information