



Networks and Platform Technologies Course Descriptor

Course Title	Networks and Distributed Systems	Faculty	EDGE Innovation Unit (London)
Course code	NCHNAP554	Course Leader	Professor Scott Wildman (interim)
Credit points	15	Teaching Period	This course will typically be delivered over an intensive 2-week period.
FHEQ level	5	Date approved	June 2020
Compulsory/ Optional	Compulsory		
Pre-requisites	None		
Co-requisites	None		

COURSE SUMMARY

This course is a two-week, face-to-face, intensive bootcamp, introducing the fundamentals of computer networks. The course content includes network architectures, network topologies, network protocols, layering concepts (for example, ISO/OSI, TCP/IP reference models), communication paradigms (point-to-point vs. multicast/broadcast, connectionless vs. connection oriented), and networking APIs (sockets). Also covers the construction of distributed programs, with an emphasis on high-level protocols and distributed state sharing. Topics include design patterns, transactions, performance trade-offs, security implications, and reliability. Uses examples from real networks (TCP/IP, Ethernet, 802.11) and distributed systems (Web, BitTorrent, DNS) to reinforce concepts. This bootcamp will provide learners with the opportunity to apply their knowledge of networks and platform technologies using industry-standard cloud-based technology e.g. using ServiceNow training. Preliminary reading and preparation will be undertaken by learners before the bootcamp and learners

COURSE AIMS

- Train learners with the fundamentals of computer networks and platform technologies.

- Train learner with the design principles behind distributed systems that leverage the network.
- Train learners on the architecture, algorithms, and protocols of the Internet.
- Allow learners to engage in hands-on projects to learn how to build and understand Internet applications.

LEARNING OUTCOMES

On successful completion of the course, learners will be able to:

KNOWLEDGE AND UNDERSTANDING

- K1b Understand the underlying principles and concepts behind networking protocols, including protocol layering.
- K2b Have critical understanding of network routing, addressing, congestion control.
- K3c Have critical understanding of platform technologies and their applications.

SUBJECT SPECIFIC SKILLS

- S1b Critically evaluate the benefits and limitations of the current Internet and its service model.
- S2b Comprehensively understand the cause of network congestion, and the methods for alleviating congestion.
- S3b Evaluate the effective use of platform technologies in modern-day organisations.

TRANSFERABLE AND PROFESSIONAL SKILLS

- T1bi Evaluate computer systems in terms of organisational drivers: cost, function, performance and implementation.
- T1bii Demonstrate an effective technical proficiency of written English that uses a wide range of literacy skills and vocabulary selected appropriately to communicate to specialist and non-specialist audiences.
- T2b Identify organisational needs and suggest an IT solution.
- T3b Communicate detailed IT requirements and specifications to a specialist and non-specialist audience.

TEACHING AND LEARNING

This is a face-to-face bootcamp, of two weeks duration, taught once every year.

This course can be offered as a standalone short course.

Teaching and learning strategies for this course will include:

- Lectures
- Informal discussion groups
- Practical sessions

- Assessment

Course information and supplementary materials will be available on the College’s Virtual Learning Environment (VLE).

Learners are required to attend and participate in all the formal and timetabled sessions for this course. Learners are also expected to manage their self-directed learning and independent study in support of the course.

The course learning and teaching hours will be structured as follows:

- Off-the-job learning and teaching (12 days x 7 hours) = 84 hours
- On-the-job learning (10 days x 7 hours) = 70 hours

Apprentices will complete workplace activities before and after the bootcamp, as part of their on-the-job learning. Preliminary activities include reading and workplace research and post-bootcamp activities will include completion of the assignments (see below).

ASSESSMENT

FORMATIVE

Learners will be formatively assessed during the course by means of set assignments. These will not count towards the final degree but will provide learners with developmental feedback.

SUMMATIVE

Assessment will be in two forms:

AE	Assessment Type	Weighting	Online submission	Duration	Length
1	Written assignment	70%	Yes	-	2,500 words +/- 10%, excluding data tables
2	Presentation	30%	Yes	30 mins	-

FEEDBACK

Learners will receive formal feedback in a variety of ways: written (via email or VLE correspondence) and indirectly through online discussion groups. Learners will also attend a formal meeting with their Academic Mentor (and for apprentices, including their Line Manager). These bi- or tri-partite reviews will monitor and evaluate the learner’s progress.

Feedback is provided on summatively assessed assignments and through generic internal examiners’ reports, both of which are posted on the VLE.

INDICATIVE READING

Note: Comprehensive and current reading lists for courses are produced annually in the Course Syllabus or other documentation provided to learners; the indicative reading list provided below is used as part of the approval/modification process only.

BOOKS

- Peterson, L. and Davue, B., (2012), *Computer Networks: A Systems Approach*, Amsterdam; London: Morgan Kaufmann

- Kurose. J. and Ross, K., (2005), *Computer Networking: a top-down approach featuring the Internet*, Addison-Wesley
- Tanenbaum, A. S., (2002), *Computer Networks*, Prentice Hall

JOURNALS

Learners are encouraged to consult relevant journals on computer networks and platform technologies.

ELECTRONIC RESOURCES

Learners are encouraged to consult relevant electronic resources on computer networks and platform technologies.

INDICATIVE TOPICS

- Networks
- Distributed Systems
- Platform Technologies

Title: NCHNAP554 Networks and Platform Technologies					
Approved by: Academic Board					
Location: Academic Handbook/Programme specifications and Handbooks/ Undergraduate Apprenticeship Programmes/BSc (Hons) Digital & Technology Solutions Programme Specification/Course Descriptors					
Version number	Date approved	Date published	Owner	Proposed next review date	Modification (As per AQF4) & category number
2.1	May 2022	May 2022	Scott Wildman	June 2025	Category 1: Corrections/clarifications to documents which do not change approved content.
2.0	January 2022	April 2022	Scott Wildman	June 2025	Category 3: Changes to Learning Outcomes
1.0	June 2020	June 2020	Scott Wildman	June 2025	