



Cloud Computing Course Descriptor

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| Course Title | Cloud Computing | Faculty | EDGE Innovation Unit (London) |
| Course code | NCHNAP451 | Course Leader | Professor Scott Wildman (interim) |
| Credit points | 15 | Teaching Period | This course will typically be delivered over a 6-week period. |
| FHEQ level | 4 | Date approved | June 2020 |
| Compulsory/Optional | Compulsory | | |
| Prerequisites | None | | |

COURSE SUMMARY

This course offers an overview of practical aspects of distributed systems and cloud computing. Cloud computing and web services are an increasingly important tool for data scientists, allowing data storage, manipulation and analysis to occur on the cloud rather than on-premise systems. This course examines the key characteristics of cloud computing, cloud storage, cloud computing systems and online analytical processing. The topic of data warehousing is introduced and applications such as online analytical processing. This course additionally identifies and explores the risks and implications of cloud computing, including privacy, security and the protection of personal data. Learners will have the opportunity to apply their knowledge of cloud computing using industry standard cloud-based technology e.g. ServiceNow.

COURSE AIMS

- Train learners in the concept of cloud computing, cloud storage, cloud data warehousing and online analytical processing.
- To allow learners to explore cloud system resources and cloud storage.

- Train learners to understand and identify the risks and implications of cloud computing, including security, privacy and the protection of personal data.

LEARNING OUTCOMES

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

KNOWLEDGE AND UNDERSTANDING

- K1a Understand the key principles and underlying basic concepts of cloud computing, cloud services, cloud data warehousing and cloud storage applied to data science.
- K2a Have knowledge of how international regulations, ethics and compliance affect cloud computing services and the implications to the user.

SUBJECT SPECIFIC SKILLS

- S1a Use cloud technologies for data processing and storage.
- S2a Perform online analytical processing on the cloud.

TRANSFERABLE AND PROFESSIONAL SKILLS

- T1a Confidentially use modern, practical IT skills.
- T2a Obtain and use information from a variety of sources as part of self-directed learning.
- T3ai Analyse, evaluate and correctly interpret data.
- T3aii Display a developing technical proficiency of written English skills that demonstrates an ability to communicate clearly and accurately when producing structured and coherent pieces of text.

TEACHING AND LEARNING

This is an e-learning course, taught throughout the year.

This course can be offered as a standalone short course.

Teaching and learning strategies for this course will include:

- On-line learning
- On-line discussion groups
- On-line 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 (6 days x 7 hours) = 42 hours
- On-the-job learning (12 days x 7 hours) = 84 hours (e.g. 2 days per week for 6 weeks)
- Private study (4 hours per week) = 24 hours

Total = 150 hours

Workplace assignments (see below) will be completed as part of on-the-job learning.

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 | Set exercise | 50% | Yes | Requiring on average 15-25 hours to complete | N/A |
| 2 | Report (workplace case study) | 50% | Yes | N/A | 2,000 words +/- 10%, excluding data tables |

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

- Nayan, R., (2016), *Cloud Computing*, Cambridge, Massachusetts : The MIT Press
- Rountree, D., (2014), *The basics of cloud computing: understanding the fundamentals of cloud computing in theory and practice*, Amsterdam : Syngress, an imprint of Elsevier
- Kimball, Ross, (2008), *The Data Warehouse Lifecycle Toolkit*, Indianapolis, Ind. : Wiley

JOURNALS

Learners are encouraged to read material from relevant journals on Cloud Computing as directed by their course trainer.

ELECTRONIC RESOURCES

Learners are encouraged to consult websites on Cloud Computing.

INDICATIVE TOPICS

- Cloud computing services
 - Cloud storage and data warehousing
 - How data scientists can effectively use the cloud
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| Title: NCHNAP451 Cloud Computing Course Descriptor Approved by: Academic Board Location: Academic Handbook/Programme specifications and Handbooks/ Undergraduate Apprenticeship Programmes/BSc (Hons) Data Science 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 | September 2026 | Category 1: Corrections/clarifications to documents which do not change approved content. |
| 2.0 | January 2022 | April 2022 | Scott Wildman | September 2025 | Category 3: Changes to Learning Outcomes |
| 1.0 | June 2020 | June 2020 | Scott Wildman | June 2025 | |