



Big Data Course Descriptor

Course Title	Big Data	Faculty	EDGE Innovation Unit (London)
Course code	NCHNAP694	Course Leader	Professor Scott Wildman (interim)
Credit points	15	Teaching Period	This course will typically be delivered over a 6-week period.
FHEQ level	6	Date approved	June 2020
Compulsory/ Optional	Compulsory		
Pre-requisites	None		
Co-requisites	None		

COURSE SUMMARY

This course explores the challenges associated with interrogating, storing and analysing big (typically unstructured) data. Learners will conceptually explore how to build large-scale information storage structures using distributed storage facilities and data warehouses. The challenges of data quality assurance, storage reliability, and working with very large data volumes will be examined in detail. Learners will study how to model big data and use analytic services provided by host institutions. This course uses NoSQL to interrogate unstructured data sets and tools such as Candela and Chart Studio to visualise analytics for big data.

COURSE AIMS

- Train learners in how to store, interrogate, model and visualise big (unstructured) data.
- For learners to understand the challenges and opportunities of working with big (unstructured) data.
- Train learners with the skills required for modern data science in the real-world.

LEARNING OUTCOMES

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

KNOWLEDGE AND UNDERSTANDING

- K1c Systematically understand the principles and concepts of big data architecture, data warehousing, online analytical services and big data storage, including the limitations of each.
- K2c Critically understand the security, regulatory and ethical considerations regarding big data storage, access and modelling and be able to advise and comment on how these considerations affect real-world problems.

SUBJECT SPECIFIC SKILLS

- S1c Interrogate big datasets using a range of techniques, such as NoSQL and Talend to solve a range of complex data problems.
- S2c Visualise big (unstructured) datasets using software such as Candela and Chart Studio, draw and communicate conclusions using professional storytelling techniques.

TRANSFERABLE AND PROFESSIONAL SKILLS

- T1c Demonstrate advanced conceptual thinking and analytical skills.
- T2c Evaluate and interrogate data at a high level.
- T3ci Engage in a thorough methodological approach to problem solving.
- T3cii Utilise an advanced level of technical proficiency of written English, while effectively applying scholarly terminology, to critically evaluate, analyse and make judgements and apply these appropriately to a range of diverse contexts.

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 using workplace datasets	60%	Yes	Requiring on average 20-30 hours to complete	-
2	Written assignment	40%	Yes	-	1,500 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

- Buyya, R., Calheiros, R.N. and Dastjerdi, A.V., (2016), *Big Data Principles and Paradigm*, Morgan Kaufmann (imprint of Elsevier)
- Inmon, W.H., (2011), *Building the unstructured data warehouse : architecture, analysis, and design*, Technics

JOURNALS

Learners are encouraged to consult relevant journals on big/unstructured data.

ELECTRONIC RESOURCES

Learners are encouraged to consult relevant electronic resources on big/unstructured data.

INDICATIVE TOPICS

- Big data, focussing on unstructured data
- Big data storage, data warehousing and NoSQL
- Online analytical services and software for visualisation

Title: NCHNAP694 Big Data					
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 2026	Category 3: Changes to Learning Outcomes
1.0	June 2020	June 2020	Scott Wildman	June 2025	