Software Engineering Course Descriptor

Course Title	Software Engineering	Faculty	EDGE Innovation Unit (London)
Course code	NCHNAP688	Course Leader	Dr Yu-Chun Pan
Credit points	15	Teaching Period	This course will typically be delivered over a 6-week period.
FHEQ level	6	Date approved	June 2020
Core	Business Analyst specialism or Cyber Security Specialist or Software Engineer Specialism		
Prerequisites	None		

Course Summary

This course covers the foundations of software engineering, including software development life cycle models (e.g., waterfall, spiral, agile); requirements analysis; user-centred design; software design principles and patterns; testing (functional testing, structural testing, testing strategies); code refactoring and debugging; software architecture and design; and integration and deployment.

Course Aims

- Train learners in the design principles of software engineering.
- Provide learners with the tools to engage with software project management.
- Train learners to understand risk management, software testing, professional practice and documentation.

Learning Outcomes

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

Knowledge and Understanding

K1c Have critical knowledge and understanding of the design principles behind software development and be able to describe and comment on the state-of-the art developments in the discipline.

K2c Have a systematic understanding of the principles behind effective software project management, including planning, requirements gathering, cost-time analysis, resource constraints, regulations, scale-up, deployment, organisation goals and working in teams.

K3c Critically understand the role of verification and validation in software engineering.

Subject Specific Skills

S1c Apply effective design principles for the development of analytical algorithms and/or software systems and be able to critically evaluate a design approach.

S2c Apply in-depth knowledge and understanding to plan, evaluate, test and document a software design.

S3c Devise and sustain arguments to solve problems and apply professional project management techniques to plan a project, including people, cost, resources and risk management.

Transferable and Professional Skills

T1ci Demonstrate project management skills and a professional approach.

T1cii 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

T2c Effectively communicate to a range of stakeholders through professional documentation.

T3c Exercise initiative and personal responsibility to analyse a problem specification and design a solution.

Teaching And Learning

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

Teaching and learning strategies for this course will include:

- Online learning
- Online discussion groups
- Online 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 students with developmental feedback.

Summative

Assessment will be in two forms:

AE	Assessment Type	Weighting	Online submission	Duration	Length
1	Report (workplace case study)	60%	Yes	-	2,000 words +/- 10%, excluding data tables
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 summative 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 Guide or other documentation provided to learners; the indicative reading list provided below is used as part of the approval/modification process only.

Books

- Sommerville, I., (2010), *Software Engineering*, Wokingham: Addison-Wesley
- Pezze, M., and Young, M., (2007), *Software Testing and Analysis: Process, Principles and Techniques*, Hoboken, N.J.: Wiley
- Fairclough, J., (1996), *Software Engineering*, London; New York : Prentice Hall

Journals

Learners are encouraged to read material from relevant journals on software engineering as directed by their course leader.

Electronic Resources

Learners are encouraged to consult relevant websites on software engineering.

Indicative Topics

Learners will study the following topics:

- Software design principles
- Software project management
- Software documentation

Title: NCHNAP688 Software Engineering **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**
2.2	September 2022	September 2022	Dr Yu-Chun Pan	June 2025	Category 1: Corrections/clarifications to documents which do not change approved content.
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	