Competency	Essex Graduate	Skill	Skill Level	Evidence
<u>Professional</u>	Literacy, Communication, Language Skills	Express information effectively to technical and non-technical audiences	Proficient	TOPSIS Explanation, M2/Assignment_2/individual_work
		Create documents to aid your communication (reports, diagrams, legal descriptions, plans, manuals and charts)	Aware	TOPSIS Explanation, M2/Assignment_2/individual_work
		Keep current with tools of the industry, as well as emerging technology	Aware	Unit 12 Seminar, M2/Formative
		Seek opportunites to improve and share knowledge of tools and technology that may improve productivity	Trained	Eurostat & EM-DAT data analysis, M2/Assignment_2/individual_work
	Commercial Awareness	Participate in scientific and professional organisations	Trained	Bug Bounty community
		Emphasise quality, customer satisfaction and fair application of policies.	Aware	Plan: write a report concerning a found vulnerability on HackerOne and gage the response
		Demonstrate familiarity with codes of conduct for the Computing field.	Trained	To be completed: Module 7: Principles of Digital Forensics and Cyber Law
	Subject understanding, research, critical thinking, time management	Critically analyse complex ideas in concepts in the field of Computer Science	Trained	CLD_1, CLD_2, M1/summative; CLD_1, CLD_2, M2/formative
		Recognise inconsistencies and gaps in information, and search for additional information when needed	Trained	Eurostat & EM-DAT data analysis, M2/Assignment_2/individual_work
		Explore complex real-world problems in a Computing context	Aware	To be completed: Module 7: Principles of Digital Forensics and Cyber Law
Legal and Ethical	Ethical Awareness	Comply with the letter and spirit of applicable laws	Trained	GDPR; to be completed: Module 7: Principles of Digital Forensics and Cyber Law
		Maintain privacy and confidentiality of company, co-worker and customer information	Trained	GDPR; to be completed: Module 7: Principles of Digital Forensics and Cyber Law
<u>Social (inc. Teamwork)</u>	Cultural Awareness	Act in the best interest of the community at large - Social (Community) Responsibility	Proficient	Eurostat & EM-DAT data analysis, M2/Assignment_2/individual_work
	Teamwork, Leadership and Resilience, Time Management	Collaborate effectively in diverse teams to achieve team goals	Proficient	Assignment 1 & Assignment 2 group work, M2/summative/
		Meeting team objectives using teamwork skills	Proficient	Assignment 1 & Assignment 2 group work, M2/summative
		Demonstrate skills in leadership and team building	Proficient	Assignment 1 & Assignment 2 group work, M2/summative
		Give and receive constructive feedback	Proficient	Assignment 1 & Assignment 2 group work, M2/summative
	Creativity, Entrepreneurial, Problem solving, Initiative, Decision Making	Create, discuss and deliver strategies for sustainability for all stakeholders (company, community and environment)	Trained	Assignment 1 & Assignment 2, M2/summative
		Able to make a decision on a complex matter/scenario using multiple sources of information	Proficient	Assignment 2 M2/summative/assignment_2
Technical (Data Science)	IT and Digital, Numeracy	Technical skills relevant to Bug Bounty Hunting:  VirtualBox	Trained	Currently installed on OS; see
		pfSense	Aware	dissertation reading list In progress: see dissertation reading
		Metaspoitable	Aware	list In progress: see dissertation reading list
		Kali-Linux	Trained	In progress: see dissertation reading list
		Ubuntu	Proficient	Currently installed as OS; see dissertation reading list
		C/C++	Aware	In progress: see dissertation reading list
		Bash	Proficient	Currently in use on OS; see dissertation reading list
		Python	Trained	In progress: see dissertation reading list
		Javascript	Aware	To be completed: Module 4: Software Software Dvelopmen; Module 6: Secure Systems Architecture
		SQL/noSQL  Notworking	Aware	Module 1: LCYS Codio exercises  To be completed: Module 3: Network
		Networking	Aware	Security; in progress: see dissertation reading list In progress: see dissertation reading
		Web App exploitation and mitigation	Aware	list To be completed: Module 3: Network
		Network expoitation and mitigation	Aware	Security; in progress: see dissertation reading list
		API exploitation and mitigation	Aware	In progress: see dissertation reading list
		Cryptography	Aware	Module 1: LCYS; in progress: see dissertation reading list
		Shellcoding	Aware	In progress: see dissertation reading list
		Fuzzing	Aware	In progress: see dissertation reading list
		Vulnerability Report Writing	Proficient	Assignment 1 & Assignment 2, M2/summative
		Maths for Analysis	Trained	Assignment 2, M2/Assignment 2/individual work
<u>Subject Application</u>	Global Citizen, Teamwork, Leadership, Emotional Intelligence	Take into account other people's perspectives	Proficient	Assignment 1 & Assignment 2 group work, M2/summative/
		Work constructively with differences in viewpoints	Proficient	Assignment 1 & Assignment 2 group work, M2/summative/
		Actively participate in a range of community activities as an informed citizen	Expert	A lifetime of volunteering, both locally and abroad; see About Me
	Decision Making, Initiative, Emotional Intelligence, Ethical Awareness	Develop, articulate and clarify your personal values and ethics	Proficient	To be completed: Module 5: The Human Factor; Module 7: Principles of Digital Forensics and Cyber Law; Module 8: Research Methods and Professional Practice
Adapted from BCS guidelines and Essex graduate				

## Adapted from BCS guidelines and Essex graduate

## Skill Level Key

Aware General understanding and basic knowledge

**Trained** Able to apply knowledge, able to work independently under certain conditions

**Proficient** Broad and in-depth knowledge, able to work independently with very little supervision

**Expert** Seen as a subject matter expert, able to lead and train others.

## Action Plan (11/12/2022)

Focus will centre on Technical (Data Science) – IT and Digital Numeracy over the next 12 weeks. During the first four weeks, a proficient understanding of Linux – Ubuntu and

BASH scripting at the SysAdmin level will be undertaken by following the exercises and lessons in the *Linux Bible* (Negus, 2021). This will allow for future ease of growth in Kali Linux, as well as C/C++. Concurrently, intermediate lessons and exercises will be completed in *Beyond the Basics with Python* (Sweigart, 2019) for preparation of undertaking lessons in *Fluent Python* (Ramalho, 2015) and *Blackhat Python* (Arnold & Seitz, 2021).

During weeks five through eight. Kali Linux will be one of two main foci – lessons and

During weeks five through eight, Kali Linux will be one of two main foci – lessons and exercises in *The Kali Linux Pentester's Bible* (Khawaja, 2021) will be completed. Preparing for Bug Bounty Hunting will also commence with *Blackhat Python* (Arnold & Seitz, 2021) in preparation for the books *Bug Bounty Bootcamp* (Li, 2021) and *Ethical Hacking* (Graham, 2021). This will be in tandem with Module 3: Networking Security

In the last four weeks, Bug Bounty Hunting will continue to be a main focus. API and tool guides will comprise of the reading material (Allsopp, 2009; Crawley & Wylie, 2021) along with advanced Python tutorials (Ramalho, 2015). This will be in tandem with Module 3: Networking Security and Module 4: Secure Software Development. The coming focus will be on Javascript and C/C++.

## Resources

Allsopp, W. (2009) Unauthorized Access: Physical Penetration Testing for IT Security Teams. Indianapolis, USA: Wiley.

Arnold, T & Seitz, J. (2021) Blackhat Python: Python Programming for Hackers and Pentesters. 2<sup>nd</sup> Ed. San Francisco, USA: No Starch Press.

Crawley, K., Wylie, P. L. (2021) The Pentester Blueprint: Starting a Career as an Ethical Hacker. Indianapolis, USA: Wiley.

Khawaja, G. (2021) Kali Linux Penetration Testing Bible. Indianapolis, USA: Wiley.

Li, V. (2021) Bug Bounty Bootcamp: The Guide to Finding and Reporting Web Vulnerabilities. San Francisco, USA: No Starch Press.

Negus, C. (2020) Linux Bible: The Comprehensive Tutorial Servic. Indianapolis, USA: Wiley.

Ramalho, L. (2015) Fluent Python: Clear, Concise, and Effective Programming. Boston, USA: O'Reilly.

Sweigart, A. (2021) Beyond the Basic Stuff with Python: Best Practices for Writing Clean Code. San Francisco, USA: No Starch Press.