



SKILLS CITY

Fair Access to Technology Futures

funded by



Department for Education



AI-DRIVEN SOFTWARE ENGINEERING

SKILLS BOOTCAMP

UNLOCK YOUR POTENTIAL WITH CUTTING-EDGE TECH TRAINING

Course Structure

You will engage in a variety of activities each week, including taught classes, workshops, personal learning and group projects. Throughout the bootcamp, you will gain knowledge and support in the following areas:

Software Development

Python Programming

Artificial Intelligence

Machine Learning

Databases

Microsoft Azure

CV & Job Application Support

Personal Development

Careers & Employability Workshops

Web Development

Capstone & Industry Projects

Interview Preparation



This 12-week course offers a broad understanding of the fundamental building blocks needed to work on web development, Microsoft Azure, Machine Learning, and other aspects of programming, using industry-relevant technologies and languages.

Sample Timetable

Day	09:30 - 15:00	15:00 - 16:30
Monday	Cloud Computing	Self-Study Time
Tuesday	Cloud Computing	Self-Study Time
Wednesday	Project Work	Self-Study Time
Thursday	Careers Session & Project Work	Self-Study Time
Friday	Personal Development: Interview Ready	Self-Study Time

Week 1

Bootcamp Induction

Introductions and managing expectations

Software Development Life Cycle

- Gain an understanding of the software development life cycle (SDLC) and the various roles in software engineering teams
- Deepen your knowledge of Python, focusing on its use in software engineering

Week 2

Python Fundamentals via GitHub

- Continue learning Python, with a focus on version control and collaboration using GitHub
- Learn Git workflows and best practices for managing code repositories

Week 3

Databases

- Explore databases, including basic concepts and how to interact with them
- Learn SQL for data manipulation and querying
- Understand database structures and relationships

Week 4

Front-end - HTML, CSS

- Dive into front-end development, learning HTML and CSS to create web pages
- Understand the basics of web design and styling

Week 5

Front-end - JavaScript, React, Github Pages

- Learn JavaScript, a key language for frontend development
- Explore GitHub pages for hosting static websites
- Attend a workshop on React, a popular JavaScript library for building user interfaces

Week 6

Back-end Technologies

Explore advanced back-end web development concepts using Flask or Django:

- Flask
- Django

Understand the concepts of full stack development:

- Full stack development
- Integration of front-end and back-end
- Database integration
- APIs

Week 7

AI/ML - Supervised Learning

- Explore the fundamentals of supervised learning in machine learning
- Learn about supervised learning algorithms, such as linear regression, decision tree, and random forest
- Understand how labelled data is used to train models
- Work on practical projects to build supervised learning models and evaluate their performance

Week 8

AI/ML - Unsupervised and Reinforcement Learning

- Dive into unsupervised learning, focusing on clustering and dimensionality reduction techniques like k-means and principal component analysis (PCA)
- Learn about reinforcement learning, exploring how agents interact with environments to maximise rewards
- Understand real-world applications of unsupervised and reinforcement learning
- Work on practical exercises to implement unsupervised learning algorithms and reinforcement learning scenarios

Week 9

AI/ML - Prompt Eng, GH Copilot, Kaggle

- Learn about prompt engineering and its importance in AI/ML applications
- Explore GitHub Copilot, an AI-based coding assistant
- Engage with Kaggle, a platform for data science competitions and projects

Week 10

Cloud Computing

Understand hosting applications, storing data, and managing and securing cloud networks using Cloud:

- Introduction to Cloud
- Hosting applications
- Storing data
- Managing and securing Cloud networks project work

Week 11

Technical Interview Prep

- Prepare for technical interviews, including assessments and practice questions
- Focus on building interview skills, such as problem-solving and communication

Week 12

Industry Project Presentations



CAREERS SUPPORT TO SKILLS CITY STUDENTS

Qualifications



Bootcamp graduation credly badge offered by Skills City on successful completion of the bootcamp

[Find out more](#)



Python Essentials 1 credly badge offered by Cisco on successful completion of the bootcamp

[Find out more](#)



We can also add the Python Essentials 2, in addition to Python Essentials 1. They are both optional.

[Find out more](#)

Job postings

We communicate regularly with our clients and share their job postings with our students. We also find jobs from external job posts suitable for graduates from each bootcamp pathway and at the correct level for them to secure.

CV/application support

We ensure students' CVs are up to standard and provide feedback, support, and guidance on improving their applications. This includes reviewing their CVs and applications and providing feedback on how to tailor them to specific job opportunities.

Interview preparation

We offer advice on researching the company and hiring manager, preparing examples using the STAR method, practising timings and answers, choosing appropriate attire, and arriving on time. We also advise how to make a positive first impression and prepare 2-3 questions to ask at the end of the interview.

Mock interviews

Our mock interview sessions are designed to provide general interview practice and help students improve their confidence and communication skills. We also share online resources for technical interviews to help students prepare for them.

Networking opportunities

We help students connect with potential employers when the opportunity arises.

Personalised team calls

We arrange team calls with students who are particularly struggling and would like support or encouragement through their career change process. It is not a common occurrence, but we offer support where we can.

Follow-up

Additionally, we follow up with students after learning they have had an interview to see how it went and if we can offer further support. We aim to empower students to succeed in their career journey while providing support on a case-by-case basis as needed.



SKILLS CITY

Fair Access to Technology Futures

[SKILLS-CITY.COM](https://www.skills-city.com)

funded by

