Modular Provision Specification

Pathway Summary Information		
1	**Pathway Title and Credits**	Ai Futures: Artificial Intelligence, Data and Intelligent Systems (40 Credits)
2	**Course Code**	CP1030-02
3	**Awarding Institution**	Birmingham City University
4	**Teaching Institution(s)** (if different from point 3)	
5	**Professional Statutory or Regulatory Body (PSRB) accreditation** (if applicable)	

6	**Modular Provision Description**
	AI Futures: Artificial Intelligence, Data and Intelligent Systems is a 40-credit modular programme designed to provide an accessible introduction to the technologies shaping the future of business, industry and society. Combining Computer Programming and Introduction to Artificial Intelligence, this modular programme develops the fundamental skills required to design software solutions, work with data and understand the principles behind modern AI systems. You will explore how intelligent technologies are developed, the challenges and opportunities they present, and how programming underpins today's data-driven world. Through practical activities and real-world examples, you'll gain hands-on experience while developing the knowledge needed to engage with emerging technologies confidently and responsibly. Eligible for Lifelong Learning Entitlement (LLE) funding, this flexible modular offer provides an ideal route for learners looking to upskill, retrain or build foundations for further study in computing, data science and artificial intelligence. Artificial intelligence, programming and data skills are increasingly valuable across every sector of the economy. These modules provide a strong foundation in the technical and analytical capabilities sought by employers operating in digitally enabled environments. During your studies you will develop skills in: • Computational thinking and problem solving. • Software design and development. • Programming using modern development tools. • Data analysis and interpretation. • Understanding AI systems and intelligent technologies. • Critical evaluation of technology and its ethical implications. • Communication and collaborative working. • Independent learning and digital literacy. These transferable capabilities prepare learners for both technical and non-technical roles where digital innovation, automation and intelligent systems are becoming increasingly important.

7	**Module Titles and Credits Awarded:** ***In order to complete this provision a student must successfully complete the following CORE modules (totalling 40 credits):***	
	Computer Programming	20 credits
	Introduction to Artificial Intelligence	20 credits

8	**Variation from the University Regulations**
	This course has approved variations to the University's Academic Regulations. These can be accessed via the student contract page: https://www.bcu.ac.uk/student-info/student-contract

9	**Delivery Patterns**		
Mode(s) of Study	**Location(s) of Study**	**Duration of Study**	**Code(s)**
Part time	Steamhouse, City Centre	4 months	CP1030-02

10	**Entry Requirements**	
	Home:	Our typical academic entry requirement is 48 UCAS tariff points or above. However, we recognise that applicants may have gained skills and knowledge through a range of routes and will also consider applications from those who do not meet this requirement but can demonstrate achievement at Level 2 and/or Level 3, together with relevant experience. If you are returning to study and have previously completed a degree or other higher education qualification, we will accept a qualification in any discipline.

11	**Learning, Teaching and Assessment Strategy**
	Teaching takes place via lectures, practical workshops, laboratory activities and independent study to help you develop both technical knowledge and applied skills. You will learn how to design, develop and test software while building confidence in using modern programming tools and techniques. Alongside this, you will explore the key concepts that underpin artificial intelligence, including knowledge representation, machine learning, data analysis and the responsible use of AI technologies. Practical learning forms a central part of our curriculum. Through programming exercises, software development activities, data-driven investigations and AI case studies, you will build experience in tackling real-world challenges using digital technologies.

Module Specification

Module Summary Information

1	**Module Title**	Computer Programming
2	**Module Credits**	20
3	**Module Level**	4
4	**Module Code**	CMP4266

5	**Module Overview**

Within the module of Computer Programming you will learn the key skills of Programming and how this relates to technology and communications. Programming is an engineering tool that plays a vital role to drive most of the modern technologies surrounding us, including the technological devices for communication, transportation and entertainment. In other words, it can be said that our modern lifestyles are heavily dependent on programming. Moreover, businesses increasingly rely on computers and the software run on them. Programming skills and a broader and deeper understanding of programming are therefore becoming increasingly important to the jobs market.

This introductory computer programming module provides the underpinning knowledge and practice for computing students to design, build and test software components. The module will make use of practical sessions primarily to allow you to apply programming principles and constructs in order to creatively solve problems by means of developing small programs.
Module content and assessment enables learners to acquire programming skills in a modern imperative language.

6	**Indicative Content**

Topics that will be covered include:

- Input/Output
- Built-in Data Structures
- Iterations
- Functions and Parameters
- Objects and Classes
- Documentation
- Unit Testing
- Graphical User Interfaces
- Events and event handling

7	**Module Learning Outcomes** **On successful completion of the module, students will be able to:**	
	1	Apply problem solving skills in order to design solutions to programming problems.
	2	Implement those solutions in an imperative programming language by using common programming tools (such as editors and interpreters).
	3	Use common programming tools and techniques (e.g. IDE, testing APIs and theories) to test, evaluate programs and document findings effectively in appropriate format.

8	Module Assessment			
Learning Outcome				
	Coursework	**Exam**	**In-Person**	
1-3	**X**			

9	Breakdown Learning and Teaching Activities
Learning Activities	**Hours**
Scheduled Learning (SL) includes lectures, practical classes and workshops, peer group learning, Graduate+, as specified in timetable	48
Directed Learning (DL) includes placements, work-based learning, external visits, on-line activity, Graduate+, peer learning, as directed on VLE	90
Private Study (PS) includes preparation for exams	62
Total Study Hours:	200

Module Specification

Module Summary Information

1	**Module Title**	Introduction to Artificial Intelligence
2	**Module Credits**	20
3	**Module Level**	4
4	**Module Code**	CMP4294
5	**Semester Taught**	2

6	**Module Overview**

From tech vendors to governments to small and medium enterprises (SMEs), Artificial Intelligence (AI) is being increasingly used as an enabling technology. Therefore, broad guidelines on how AI systems should be responsibly developed, trained, tested, and deployed are essential. At first glance, this is a positive update, as it reveals an awareness of the fact that AI unleashed on the world with limited consideration could have devastating societal and economic consequences. In an enterprise context, this means evaluating the risks and benefits of AI adoption carefully.

Teaching and Learning:
This module covers the basic principles of AI systems, techniques and the types of problems that can be solved by such techniques. This module will also evaluate the risks and benefits of AI adoption in different domains. You will learn about the philosophy of AI and how knowledge is represented. The module also offers an introduction to machine learning.

This module will utilise a hands-on approach to teaching. Teaching sessions will include individual/team based experiential activities such as critique of example scenarios; these scenarios will include situations tailored to make a point as well as real world case studies. Lectures will be interactive, and you will apply the lessons learnt on problem scenarios by employing suitable software tools. The contact sessions will be a relationship between theory and practice, which will inspire you to investigate taught material further through post-session activities.

The module provides the opportunity for formative assessment and feedback.

Inclusivity
To support inclusivity, in a welcoming environment for students from a wide variety of backgrounds, our approach to curriculum design, assessment design, as well as regular teaching and learning of the curriculum will be guided by the following concepts:

- Encouraging collaborative learning and discussion as well as coverage of relevant, real-life examples/case studies drawn, not only from various industries/sectors, but also from a varying array of life experiences (e.g., cultures, countries, genders, geographies, socio-economic classes, etc).
- Adopting literature/models of authors from diverse backgrounds when considering theoretical concepts and solving practical problems within the curriculum and in the field in general.
- Exploring specific ethical and legal issues associated with the storage and processing of data belonging to people from diverse groups, with particular care and attention placed on developing our understanding of the related ethical issues that may arise from naïve approaches to developing solutions in an increasingly data-driven world, and how we, as Data Scientists / Machine Learning Engineers, might tackle these problems.

Accessibility

To ensure accessibility to the curriculum for students with a diverse array of accessibility requirements / preferences, the course team will provide materials that meet the following criteria:

- Face-to-face lectures for the core content that can also be delivered online will be designed and provided to you.
- Any online supplementary lectures will be recorded for future use/reference and transcripts will be recorded.
- Written materials will be provided while giving specific attention to the official accessibility guidelines for producing word and PDF documents
- Appropriate adjustments for students when engaging with day-to-day curriculum content and assessments will be guided by the University's "Student Disability and Mental Health" policy, the module team will also regularly engage with the support team during periods where curriculum content is being transformed (created/updated) to help ensure an appropriate approach to holistic curriculum design is adopted.

Sustainability

By adopting the inclusivity practices set out in this guide, this module contributes to goal number 4 of the UN Sustainable Development Goals (SDGs). This module also contributes to SDG goal number 9 by way of providing relevant tools and skills to enhance transformation in AI, and subsequently enhance industry investment in AI. Details on the UN SDG goals is here.

Employability

This module will allow you to reflect upon your learning styles and develop relevant transferable skills and proficiencies pertinent for personal development, employability, as well as contribution to society and community. Going on from this module, you will have opportunities to develop the crucial skills such as problem-solving skills, analytical skills, research skills, collaborative skills, and communication skills, which will strengthen their employability opportunities and career enhancements. The module will align with IBM content, which will offer the students industrial badges to increase their ability to operate in an independent and self-directed manner leading to greater employability and connectivity with industry as well as opportunities of engaging in industry-mentored projects that would lead to enhanced relevance for students in the employment market.

7	Indicative Content

- Evolution of AI
- Principles of AI
- AI Systems, Tools, and Techniques
- Ethical consideration on the adoption of AI systems
- Time Series Prediction

8	Module Learning Outcomes On successful completion of the module, you will be able to:	
	1	Describe foundational principles of Artificial Intelligence.
	2	Recognise risks and ethical implications of the adoption of Artificial Intelligence.
	3	Apply traditional techniques of statistical analysis on realistic datasets.
	4	Assess statistical conclusions of the selected datasets.

9	Module Assessment		
Learning Outcome Number	**Coursework 60%**	**Exam**	**In-Person 40%**
1 - 2			**x**
3 - 4	**x**		

10	Breakdown Learning and Teaching Activities	
Learning Activities	**Hours**	**Details of Duration, Frequency and other comments**
Scheduled Learning (SL) includes lectures, practical classes and workshops as specified in timetable	48	2hr lecture x12, 2hr Lab/Seminar x12)
Directed Learning (DL) includes placements, work-based learning, peer group learning external visits, on-line activity, Graduate+, peer learning, as directed on VLE	60	Work-based learning, online activities, practical exercises (3 x 12)
Private Study (PS) includes preparation for exams	92	Coursework preparation (7.6 x 12)
Total Study Hours:	200	