

THE MECHANICS OF FINTECHAND ARTIFICIAL INTELLIGENCE

POSTGRADUATE CERTIFICATE DELIVERED BY DISTANCE LEARNING OVER 18 WEEKS

Contact: www.iff-training.com Tel: +44(0)20 7017 7190 Email: cs@iff-training.com



COURSE INFORMATION DELIVERED BY DISTANCE LEARNING OVER 18 WEEKS

WHAT YOU WILL LEARN

There is no question the future of banking is digital in this highly competitive and fast-moving environment. Despite the complex processes, heavy compliance burdens as well as richness in data, there is no reason why your organisation can't commercialise the rewards of FinTech and artificial decision-making.

You will learn how FinTech and AI can help you work more effectively and have a greater impact on your business. Understand the strategic implications of FinTech and AI on the financial industry, where technology offers competitive advantages and how cross-industry digital value chains can improve existing business models. Regardless of your role this course will teach you the business requirements on digital technology in financial services, giving you the confidence to lead meaningful conversations across your business.

COURSE AT A GLANCE

- Unit 1 An introduction to FinTech and AI
- Unit 2 Digital transformation in banking
- Unit 3 The fundamentals of AI in FinTech
- Unit 4 Open banking/PSD2
- Unit 5 FinTech and AI in retail banking, wealth management and investment management
- Unit 6 FinTech and sustainable finance
- Unit 7 Cryptocurrencies
- Unit 8 Regulatory aspects of FinTech
- Unit 9 Ethics and AI for financial services applications

AFTER COURSE YOU WILL BE ABLE TO:

- ★ Identify the right cases for digital technologies in the financial services
- \bigstar Apply basic artificial intelligence concepts in a banking context
- ★ Use Open Banking to create new business models
- ★ Apply FinTech concepts in the area of Green Finance and ESG risk management
- ★ Employ cryptocurrencies just as any other currency
- ★ Analyse and understand the implications from a regulatory perspective
- ★ Act ethically and be compliant with data privacy rules

COURSE LEADER CHRISTIAN SPINDLER



After gaining both a PhD in Physics and an MBA, Christian Spindler has gained extensive experience in the data science and AI industries. He has also delivered a broad range of management consulting for data analytics in financial services with his latest role as Senior Manager at PwC.

He has developed and run numerous training programmes with audiences of up to 200 people. Projects have included: data analytics and advanced data science modelling techniques; development of automated machine learning software for portfolio management; transaction monitoring and fraud detection; development of machine learning software for liquidity forecasting; investigation of the LIBOR manipulation based on volatility data (VIX) using machine learning and many more.

HOW YOU WILL LEARN

- A new module is released every two weeks
- You can study the units online, save them to your computer or print them out
- You set the pace for yourself
- · No need to travel or take time off work cost effective
- Apply the knowledge, skills and expertise to your work straight away

POSTGRADUATE CERTIFICATE

To make your studies more relevant and valuable, the course is validated by the Business School at Middlesex University at a Postgraduate Certificate level. For those wishing to receive a Postgraduate Certificate from Middlesex University, an additional marked assignment of 5000 words will need to be submitted, based on a continuing case study that runs throughout the duration of the course.

PRICE

Standard Price – £1999 With Postgraduate Certificate- £2359

* VAT may be payable depending on your location – see online booking page for details.

HOW TO APPLY

Tel: +44 (0)20 7017 7190 Email: cs@iff-training.com

APPLY ONLINE HERE

CUSTOMISED TRAINING

IFF's bespoke digital training solutions will help you address your specific key business challenges. The programme is designed for you, with content focusing on the issues you and your teams are facing. The fully branded digital course will be hosted by us, and unlike other online courses, your employees will receive a specialist qualification at the end of the programme from a London University.

- Tailored content 100% targeted to cover your business needs
- No travel or time out of the office 100% Distance Learning
- Value for money train teams of staff at the same time
- Risk free we've been doing this for 30 years

We will meet you anywhere in the world. If you would like one of our consultants to talk about your needs in more detail or if you would like more information on our customised training solutions, please contact Jeff Hearn (Managing Director) on +44 (0)20 7017 7190 or email: jhearn@iirltd.com

COURSE SYLLABUS



UNIT 1 AN INTRODUCTION TO FINTECH AND AI

Unit Learning Aims and Objectives

- ★ Explain the scope of FinTech and which gaps in traditional financial services it fills
- ★ Review the landscape of FinTech companies around the world
- Describe the relations of FinTech to traditional financial services
- ★ Describe the value chains of FinTech and where it makes use of Artificial Intelligence (AI)

UNIT CONTENT

FinTech – Scope and Interfaces to Traditional Financial Services

- What are key characteristics of FinTech, what has it in common with concepts such as InsureTech, LegalTech?
- Where do FinTech trends emerge, what are global similarities and what are local differentiators?
- What is the monetary market share of FinTech on all financial services, in which areas do we see and anticipate strongest growth?

FinTech Technology

- What are the working hypotheses of FinTech regarding technology accessibility, processes and legal foundation?
- Is FinTech necessarily mobile?
- How is FinTech related to and dependent on Big Data technology? Which of the HiFive criteria apply for FinTech applications?
- In which parts of the value chain is FinTech related to Artificial Intelligence? Which concepts of AI is FinTech exploiting now and what is anticipated for the future?

UNIT 2 DIGITAL TRANSFORMATION IN BANKING

Unit Learning Aims and Objectives

- ★ Explain what digital transformation constitutes and why it triggers the emergence of FinTech
- ★ Understand the obstacles traditional financial services face with digital transformation
- ★ Review the state of digital transformation within traditional financial services

UNIT CONTENT

Data Systems

- How are traditional data systems in banks built up? Why is the traditional setup often limiting the implementation of modern FinTech concepts?
- How are modern FinTech data systems structured and why? An overview of APIs, document data stores, graph data bases

Digital Tools

- Web-services
- Analytics environments
- Robotic process automation

Digital Processes

- Why are tools alone not enough to create digital financial services
- Digital process design

Digital Culture

- Data hygiene
- Security first
- · Acknowledgement of uncertainty about future requirements

UNIT 3 THE FUNDAMENTALS OF AI IN FINTECH

Unit Learning Aims and Objectives

- ★ Describe scope and terms of Artificial Intelligence
- ★ Explain requirements and development of AI
- ★ Understand capabilities and limitations of AI
- ★ Describe key generic use cases for AI in FinTech

UNIT CONTENT

Why Now?

- Computational power
- Ubiquitous data availability
- Modern algorithms

What is AI?

- The AI effect
- Machine learning, expert systems and internet of things
- Hardware implementation
- Applications

Machine Learning

- Basic working principles of machine learning
- Linear vs. nonlinear models
- Shallow vs. deep learning
- Frameworks and implementation

Limitations

- Availability of high-quality data
- · Interpretability of machine learning model decisions
- · Correlation vs. causation

Anomaly Detection

- Why is anomaly detection one of the most important techniques in business?
- Anomaly detection using autoencoders
- Anomaly detection in financial transactions

Natural Language Processing

- Classifying financial transactions with NLP
- Understanding banking contracts
- Investment research with NLP

Recommender Engines

- Amazon's recommendations also work in FinTech
- The mechanism of recommender engines

UNIT 4 Open Banking / PSD2

Unit Learning Aims and Objectives

- ★ Explain the Open Banking / PSD2 directive
- ★ Describe implications of Open Banking on FinTech
- ★ Review FinTech case studies that employ Open Banking

UNIT CONTENT

Open Banking Regulation

• PSD2 pillar 1 and 2

COURSE SYLLABUS



Open Banking Applications

- Data portability and open banking impact on competitive dynamics
- Understanding churn, market insights, understanding 'Lost Pipeline'
- Build your own bank on ORCA

Open Banking Security

- EBA's Regulatory Technology Standard (RTS)
- Strong authentication technologies
- PSD2 reference architecture
- Biometric identification
- Adapting to the General Data Protection Regulation

UNIT 5 FINTECH AND AI IN RETAIL BANKING, WEALTH MANAGEMENT AND INVESTMENT MANAGEMENT

Unit Learning Aims and Objectives

- ★ Explain the fundamental process in retail banking
- ★ Describe where FinTech can add value in these processes
- ★ Explain the fundamental process in wealth management
- ★ Describe where FinTech can add value in these processes
- ★ Explain the fundamental process in investment management
- ★ Describe where fintech can add value in these processes

UNIT CONTENT

Payment Services

- The individual steps in the electronic payment process
- How FinTech accesses, accelerates and automates these steps
- The role of aggregation platforms (e.g. WeChat)
- Technology for payment services

Robo Advisory

- The Robo advisory business case
- Live Robo advisory examples and comparison of selected offers

Report Generation

- Introduction to NLP for speech generation
- Live example of financial report generation
- Applications of report generation

KYC / AML

- Al techniques for automating Know Your Client (KYC) and Anti-Money Laundering (AML) processes
- The client2vec algorithm

Credit Risk Management

· End-to-end example for AI based credit scoring

Fraud Screening

- Credit card fraud screening
- Transaction fraud screening

Portfolio Management

- How FinTech can provide competitive advantages in investing
- Alternative data
- Crowd investment
- FinTech and factoring

UNIT 6 FINTECH AND SUSTAINABLE FINANCE

Unit Learning Aims and Objectives

- ★ Explain the environmental, social and governmental component in sustainable finance
- Understand sustainable finance from a risk management perspective
- ★ Describe how technology can add value above the statusquo for higher quality sustainable finance products

UNIT CONTENT

Overview Sustainable Finance

- The UN SDGs and the principles of responsible investment
- Green finance instruments
- FinTech for ESG risk assessment

DB ESG Screening Tool

- Introduction to ESG reporting, opportunities for FinTech
- Deep dive into DB Alpha Dig

DAA TCFD Scenario Analysis

- Introduction to climate risk reporting and the Task Force on Climate Related Financial Disclosures (TCFD)
- · How FinTech enables climate risk assessment
- Deep dive into scenario analyses and stress testing

UNIT 7 CRYPTOCURRENCIES

Unit Learning Aims and Objectives

- ★ Explain Distributed Ledger Technology
- ★ Describe similarities and differences of important cryptocurrencies
- ★ Understand the role of cryptocurrencies in different applications

UNIT CONTENT

Introduction to the Distributed Ledger Technology

- **Overview of Current Cryptocurrencies**
- Bitcoin, Ether
- The case study of Facebook's Libra

Business Cases for Cryptocurrencies

- Global trade finance
- Payment services

Auditing Cryptocurrencies

- Cryptocurrency accounting practices
- · Technology for auditing cryptocurrencies

UNIT 8 REGULATORY ASPECTS OF FINTECH

Unit Learning Aims and Objectives

- ★ Explain which elements of FinTech fall under conventional banking regulation
- ★ Describe relations of FinTech to data privacy regulation, AML and KYC

COURSE SYLLABUS

UNIT CONTENT

Robo Advisory Regulation

- Case study of two US Robo advisory models
- Robo advisory regulation around the world

FinTech and Supervision

- When does FinTech require a banking license?
- The special case of microfinance applications

GDPR

• The European GDPR as basic framework for data protection regulation concerning FinTechs

UNIT 9 ETHICS AND AI FOR FINANCIAL SERVICES APPLICATIONS

Unit Learning Aims and Objectives

- ★ Explore ethical questions around the application of AI for FS
- ★ Review the position of global supervisory organisations
- ★ Examine AI interpretability and bias in data hands-on
- ★ Describe measures and approaches to secure responsible use of AI for FS

UNIT CONTENT

Ethical AI Development in the FinTech Space

- Singapore's FEAT principles
- Europe's ethical AI guidelines
- The Algo.Rules

Interpretability of AI Models

• The difference of explainability and interpretability of AI models

- · Global interpretability
- Local interpretability
- FinTech related examples

Bias and De-Biasing of Data

- Intentional and unintentional bias in data
- How biased data lead to biased AI models
- Examples of the bias problem
- De-biasing of data



OPTION OF A POSTGRADUATE CERTIFICATE WITH MIDDLESEX UNIVERSITY



You have the unique opportunity to choose a validated option for this course and receive a postgraduate certificate on completion. This programme is quality assured by Middlesex University and you will receive a Middlesex award on successful completion. However, if university validation isn't important to you there is still the opportunity to take the standard non-validated course.

WHAT DOES THE CERTIFICATE ENTAIL?

In addition to studying all the units and passing the short self assessment tests after each unit, you will need to submit a 5000 word assignment at the end of the course which will be assessed. The assignment will be a cumulative project that you will work through and build upon during each stage of the course.

If you wish to book on the certification course there will be an assessment fee of ± 360 .

ENTRY REQUIREMENTS

Participants wishing to undertake the Postgraduate Certificate are required to have a degree or equivalent qualification (or relevant work experience).

Participants wishing to undertake the course but not receive the Postgraduate Certificate are not required to have any formal qualifications.

ABOUT OUR PARTNER MIDDLESEX UNIVERSITY

History

Middlesex University is a large London based university with a history in higher education dating from 1878. In 1992 it was granted the Royal Charter making it a university. The university offers a broad range of courses through four academic schools of Arts and Education; Business; Engineering and Information Sciences; Health and Social Sciences and their Institute for Work Based Learning.

Middlesex University has over 34,000 students studying on its courses worldwide, both at its own campuses and also with partner institutions, making it one of the largest providers of British university education to international students. Middlesex University has a long history of successful collaborations with the corporate sector. It was the first academic institution to develop industry specific MBA programmes (Shipping & Logistics and Oil & Gas) delivered 100% by distance learning.

INTERNATIONAL REACH

Middlesex University is committed to meeting the needs and ambitions of a culturally and internationally diverse range of students by providing challenging academic programmes. It has a major international business school based in London with overseas campuses in Dubai and Mauritius and a global portfolio of partnerships delivering high quality validated programmes in business and management.

Staff and students come from a wide spectrum of cultures and backgrounds with a common interest in executive education that is world class, modern and applicable. Middlesex University Business School is proud of its dedicated teachers and its rich range of learning resources including distance learning and virtual learning environments.

BENEFITS OF STUDYING FOR A POSTGRADUATE CERTIFICATE WITH US

A MIDDLESEX POSTGRADUATE CERTIFICATE:

- Is project based and practical
- Offers networking opportunities during and after the course
- Provides exceptional teaching staff
- Delivers applied learning experiences
- Combines academic rigour with individual support

HOW IS THE COURSE VALIDATED?

This programme is quality assured by Middlesex University and after successfully completing your studies you will receive a Postgraduate Certificate from Middlesex University. Middlesex Certificates are recognised worldwide.

QUALITY

The Quality Assurance Agency (QAA) visited Middlesex in 2015 and noted in its report that its auditors had confidence in the University's current and likely future management of its academic standards and of the learning opportunities available to students.

THE UNIVERSITY IS A MAJOR PROVIDER OF BUSINESS AND MANAGEMENT EDUCATION, WITH AN IMPRESSIVE TRACK RECORD OF WORKING IN PARTNERSHIP WITH THE PUBLIC AND THE PRIVATE SECTOR, AS WELL AS INTERNATIONAL ORGANISATIONS





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