PROGRAMME SPECIFICATION

KEY FACTS

Programme name	MSc Financial Technology and Systems
Award	MSc
Exit Awards	PG Dip, PG Cert
School	School of Science & Technology
Department or equivalent	Engineering
Programme code	PSFITE
Type of study	Full-time
Total UK credits	180
Total ECTS	90
Partner (partnership programmes only)	None
Type of partnership	Choose an item.

PROGRAMME SUMMARY

The MSc in Financial Technology and Systems will prepare you for a successful career in open banking as financial systems architect, data scientist and systems engineer, risk manager and product owner/manager, entrepreneur. Financial Technology involves the area of applying the latest cutting-edge technologies such as blockchain, decentralised finance, authentication, big data to make use of banking / financial data for innovation and more innovative financial services. The MSc in Financial Technology and Systems will develop your specialist skills in open banking architectures, regulations, ethics, social values, financial engineering, data protection, cyber security, financial data analytics and data presentation. The next generation of innovations will be driven by open banking technologies providing more personalised and customised financial services to end users. In addition, cutting edge data sharing and mining technologies will allow competitors in the financial services industries to work more collaboratively for fraud prevention and improved service provisioning.

The course covers the technical fintech architectures, data science, programming principles, risk management, legal and regulatory compliance and ethics, data protection, social values and cyber security frameworks that are the foundation for open banking. It will allow you to understand the building blocks and the associated techniques that can help you develop innovative and novel open banking and complimentary financial services applications such as insuretech and regulatory tech. You will develop your knowledge and skills through experts who carry out world-class research in these topics.

The course will include lectures, coursework, lab-based hands-on activities and a group project that will equip you to pursue a practical MSc in Financial Technology and Systems. During the group project you will work as a team to identify a new business opportunity in digital finance and develop a value proposition and pitch for investment. During the final

dissertation you will work with a real-world problem in the open banking and digital finance by developing, applying and evaluating new techniques, architectural frameworks, protocols and risk frameworks that can overcome the current technological, regulatory and automation challenges.

The course is designed for those who have completed a first degree in Engineering, Mathematics, Economics, Computer Science and Banking and Finance with more technical experience.
The programme also gives you an optional trip to experience first-hand some of the latest financial inclusion activities that are currently taking place using fintech companies in India.

Aims

The programme aims to prepare you with the knowledge, skills and values needed for a technical career in the financial services sector by:

- equipping you with the knowledge, understanding, skills and techniques required by a financial services technologist
- developing your knowledge in specialised and advanced topics in financial technology
- enabling you to evaluate technical, ethical and social dimensions that underpin the next generation open banking technologies
- enabling you to learn from experienced researchers the latest technologies that can help to innovate new open banking solutions

There are three types of awards that you can achieve:

Postgraduate Certificate in Financial Technology and Systems
For all of you completing the Postgraduate Certificate you will have had the opportunity to examine the theories related to the analysis, design, and evaluation of financial and open banking technologies and demonstrated sufficient ability in at least four taught modules (60 credits), which can be any combination of modules among those available.

Postgraduate Diploma in Financial Technology and Systems
For all of you completing the Postgraduate Diploma, in addition to the above you will have explored the theory and practice, and demonstrated ability in all the different aspects of open banking and financial technology including in data analysis techniques, designing and developing new architectures and evaluating systems for security vulnerability and regulatory compliance. This equates to passing all six taught modules and the group design project worth a total of 120 credits.

MSc in Financial Technology and Systems
For all of you competing the MSc in Financial Technology and Systems, in addition to the above you will demonstrate your technical, legal and regulatory knowledge through an independent project work that meets the requirements for example of an external client or a research-led project where you will develop a demonstrator or a prototype to validate a hypothesis, value proposition or a newer open banking application. This will be achieved through your individual project, which carries 60 credits and can only commence once you have gained 120 credits from the taught modules.

WHAT WILL I BE EXPECTED TO ACHIEVE?
On successful completion of this programme, you will be expected to be able to:

Knowledge and understanding:

- demonstrate knowledge and critical awareness of current issues and the development of financial systems
- develop strong financial technology, data analytics and innovation skills related to the financial services industry
- review and critically evaluate the literature and current developments and challenges in open banking systems such as data privacy and automated regulatory compliance
- identifying and managing technical and financial risks and uncertainty associated with financial technology-based applications.

Skills:

- design, develop adapt and critically evaluate financial technology systems and software
- use the latest hardware and software to develop high-performance systems which are scalable for future applications
- design and build new financial technology platforms that can handle real-time big data
- develop new value propositions that can build onto new ventures in open banking

Values and attitudes:

- gain skills about professional ethics and data privacy and security
- define a technical goal and encourage and lead others in order to achieve it
- rigorously assess alternative approaches and novel designs and implementations
- assess the nature of intellectual property and its ownership, and respect it accordingly

HOW WILL I LEARN?

The teaching and learning methods used are such that the levels of both specialisation of content and self-study are aimed at increasing your wider knowledge as you progress through each module and programme. This progression will be guided by active researchers in block chain, decentralised financial technology, data science, programming, cyber security and entrepreneurship. In addition, there will be a group project where you will develop a new innovative open banking prototype based on a novel value proposition. Finally, you will work on an individual project containing an original piece of work that will be done independently with appropriate academic support and where appropriate with a relevant industrial partner.

The standard format is that each of the taught modules are delivered through a series of 20 hours lectures and 10 hours tutorial/practical sessions. Lectures are normally used to:

(i) present and exemplify the concepts underpinning a particular subject;
(ii) highlight the most significant aspects of the syllabus;
(iii) indicate additional topics and resources for private study.

Tutorials are used to help you better relate the theory to practice on the concepts covered through formal lectures.

Practical sessions are similar to the tutorials. However, they provide a more hands on experience to better understand the theoretical foundations through the use of state-of-the-art software tools.

You are expected to undertake independent study and substantial coursework assignments for each module, amounting to approximately 120 hours per 15 credit modules.

There is a group project where you will apply the innovation and entrepreneurial aspects you learn on the course to work with an industry to develop a new concept from ideation to prototype. This will be a teamwork and will train you to think outside the box to be innovative and also at the same time to product manage a new idea product develop development which is a unique feature of this programme.

Coursework assignment take a variety of forms including writing software, written work, group work and presentations. They are primarily formative.

The individual project is a substantial task that develops a prototype and is performed under the supervision of an academic who is an expert in the topic. The project will be assessed through a written report, project management and a short viva. During the project you will be given a list of possible project topics and you will be expected to choose a topic that is exciting and relevant to your future career aspirations. You will be expected to demonstrate how your project addresses one of the UN's 17 sustainable development goals.

The individual project can be carried out as a 6-month internship e.g. in one of the leading companies with which City has an established relationship.

In addition to lectures, practical sessions and tutorials, each student will be assigned a personal tutor, and the programme is supported by City's Moodle virtual learning environment, which will provide the supporting lecture and tutorial materials.

WHAT TYPES OF ASSESSMENT AND FEEDBACK CAN I EXPECT?

Typically, you will be assessed through written examinations and coursework assignments. The assessment of some modules will be coursework only, as detailed in each module specification. The written examination will include theoretical questions, essays and practical questions requiring in-depth analysis and understanding of some of the foundations of financial systems.

Assessment and Assessment Criteria

Assessment criteria are descriptions, based on the intended learning outcomes, of the skills, knowledge or attitudes that you need to demonstrate in order to complete an assessment successfully, providing a mechanism by which the quality of an assessment can be measured. Grade-related criteria are descriptions of the level of skills, knowledge or attributes that you need to demonstrate in order to achieve a certain grade or mark in an assessment, providing a mechanism by which the quality of an assessment can be measured and placed within the overall set of marks. Assessment Criteria and Grade-Related Criteria will be made available

to you to support you in completing assessments. These may be provided in programme handbooks, module specifications, on the virtual learning environment or attached to a specific assessment task.

Feedback on assessment

You will receive both formal written feedback and informal feedback that can help you to improve your work. In some instances where group work is involved you will be given verbal feedback at the end of each presentation and assessment which can help you to improve in the future. You should use any written feedback to identify areas for improvement so that your quality of work improves in subsequent submissions. You can also discuss your feedback with your module tutors and researchers.

Feedback will be provided in line with our Assessment and Feedback Policy. In particular, you will normally be provided with feedback within three weeks of the submission deadline or assessment date. This would normally include a provisional grade or mark. For end of module examinations or an equivalent significant task (e.g. an end of module project), feedback will normally be provided within four weeks. The timescale for feedback on final year projects or dissertations may be longer.

The full policy can be found at: https://www.city.ac.uk/about/education/quality-manual/6-assessment

Assessment Regulations

In order to pass your programme, you should complete successfully or be exempted from the relevant modules and assessments and will therefore acquire the required number of credits.

The pass mark for each module is 50%

If you fail an assessment component or a module, the following will apply:

1. Compensation: where you fail up to a total of 20 credits at first or resit attempt (15 for a Postgraduate Certificate), you may be allowed compensation if:
   - Compensation is permitted for the module involved (see the What will I Study section of the programme specification), and
   - It can be demonstrated that you have satisfied all the Learning Outcomes of the modules in the Programme, and
   - A minimum overall mark of no more than 10% below the module pass mark has been achieved in the module to be compensated, and
   - An aggregate mark of 50% has been achieved overall.

Where you are eligible for compensation at the first attempt, this will be applied in the first instance rather than offering a resit opportunity.

If you receive a compensated pass in a module you will be awarded the credit for that module. The original component marks will be retained in the record of marks and your original module mark shall be used for the purpose of your Award calculation.

2. Resit: where you are not eligible for compensation at the first attempt, you will be offered one resit attempt.

If you are successful in the resit, you will be awarded the credit for that module. The mark for each assessment component that is subject to a resit will be capped at the pass mark for the module. This capped mark will be used in the calculation of the final module mark together with the original marks for the components that you passed at first attempt.

If you do not meet the pass requirements for a module and do not complete your resit by the date specified you will not progress and the Assessment Board will require that you be withdrawn from the Programme.

If you fail to meet the requirements for the Programme, the Assessment Board will consider whether you are eligible for an Exit Award as per the table below.

If you would like to know more about the way in which assessment works at City, please see the full version of the Assessment Regulations at:
https://www.city.ac.uk/__data/assets/pdf_file/0007/453652/s19.pdf

WHAT AWARD CAN I GET?

Master's Degree:

	HE Level	Credits	Weighting (%)
Taught	7	120	67
Dissertation	7	60	33

Class	% required
With Distinction	70
With Merit	60
Without classification	50

Postgraduate Diploma:

	HE Level	Credits	Weighting (%)
Taught	7	120	100

Class	% required
With Distinction	70
With Merit	60
Without classification	50

Postgraduate Certificate:

	HE Level	Credits	Weighting (%)
Taught	7	60	100

Class	% required
With Distinction	70
With Merit	60
Without classification	50

WHAT WILL I STUDY?

Taught Component

You are expected to pass the 8 core components.

Module Title	SITS Code	Module Credits	Core/ Elective	Compensation Yes/No	Level
Finance and Accounting - Fundamentals	SMM099	0	Core	No	7
Foundations of Fintech	EPM965	15	Core	Yes	7
Big Data in Finance	INM447	15	Core	Yes	7
Cyber Security, Resilience and Fraud	INM448	15	Core	Yes	7
Regulatory Compliance, Ethics, Social Values	EPM961	15	Core	Yes	7
Digital Innovation and Fintech Start-up	EPM962	30	Core	No	7
Financial Markets and Financial Intermediation	SMM940	15	Core	Yes	7
Systems Risk Management	EPM963	15	Core	Yes	7

Dissertation component

Module Title	SITS Code	Module Credits	Core/ Elective	Compensation Yes/No	Level
Dissertation	EPM930	60	Core	No	7

You are normally required to complete all the taught modules successfully before progressing to the dissertation stage.

TO WHAT KIND OF CAREER MIGHT I GO ON?

MSc Financial Technology and Systems students can expect to achieve employment as system analysts, data scientists, systems engineers, technical architects, blockchain developers, cyber security consultants and product managers. The emphasis of this programme is in an area where City has renowned expertise and many of City's exciting links with the financial services technology platform providers. This will give students an opportunity to work in the financial services technology sector, insurance sector and regulatory and compliance sectors. The skills are transferrable to other sectors too as most sectors are now moving through digital transformation integrating their internal information systems with external 3rd party application service providers. In addition you will be able to use your innovative and strategic thinking skills to work as a Head of Innovation or Product Owner.

If you would like more information on the Careers support available at City, please go to: https://www.city.ac.uk/careers/your-career

WHAT STUDY ABROAD OPTIONS ARE AVAILABLE?

None

WHAT PLACEMENT OPPORTUNITIES ARE AVAILABLE?

- *Internships*: you can participate in our professional placement programme, which is supported by the Corporate Relations and Employability Unit (CREU). This will enable you to undertake your dissertation within an industrial or research placement over an extended period compared to regular projects.

WILL I GET ANY PROFESSIONAL RECOGNITION?

- None

HOW DO I ENTER THE PROGRAMME?

Entry Requirements: You should have a UK first or second-class honours degree (or equivalent) in a subject area such as engineering, computer science, economics or mathematics. We will also accept applicants with degrees in finance or other related subjects where they can demonstrate some exposure to statistics, probability or computer programming. However, this will be at the discretion of the programme management team. We recommend your personal statement explains why you are interested and passionate about this programme, what your current career progression challenges and how this programme will enable you to succeed in your future aspirations.

English Language Requirements: If your first language is not English, the following qualification is also required:

IELTS: 6.5

- For the availability of scholarships please email the Programmes Office at the email provided

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Information is provided subject to Terms and Conditions for study at City, University of London.