# NUS School of Computing
# Master of Science in Digital Financial Technology (MSc DFinTech)
*(Effective from AY2023/2024)*

## Elective Courses (12 units)

Students are strongly encouraged to take the elective courses from one vertical track, but are not restricted to do so.

### Vertical #1. Computing Technologies

| Courses | Units | Available in Semester 1 | Available in Semester 2 |
|---|---|---|---|
| CS5224 Cloud Computing | 4 | | ✓ |
| CS5231 Systems Security | 4 | ✓ | |
| CS5321 Network Security | 4 | | ✓ |
| CS5331 Web Security | 4 | | ✓ |
| CS5421 Database Applications Design and Tuning | 4 | | ✓ |
| CS5439 Software Security | 4 | ✓ | |
| FT5008 Contemporary Topics in Blockchain Applications | 2 | ✓ | |
| IS4234 Compliance and Regulation Technology | 4 | ✓ | |
| IS5008 Technology Risk and Cyber Resilience | 4 | | ✓ |
| IS5009 Topics in Financial Technology Solutions | 4 | | ✓ |
| IT5004 Enterprise Systems Architecture Fundamentals | 4 | ✓ | |

### Vertical #2. Financial Data Analytics and Intelligence

| Courses | Units | Available in Semester 1 | Available in Semester 2 |
|---|---|---|---|
| CS5242 Neural Networks and Deep Learning | 4 | ✓ | |
| CS5246 Text Processing on the Web | 4 | | ✓ |
| CS5339 Theory and Algorithms for Machine Learning | 4 | | ✓ |
| CS5344 Big-Data Analytics Technology | 4 | ✓ | |
| CS5446 AI Planning and Decision Making | 4 | ✓ | |
| FT5009 Contemporary Topics in Financial Data Analytics | 2 | ✓ | |
| FT5011 Deep Learning for Finance | 4 | | ✓ |
| IS5006 Intelligence Systems Deployment | 4 | | ✓ |
| IS5126 Hands-on with Applied Analytics | 4 | ✓ | |
| IS5152 Data-Driven Decision Making | 4 | | ✓ |
| IT5005 Artificial Intelligence | 4 | ✓ | |
| IT5006 Fundamentals of Data Analytics | 4 | | ✓ |

Vertical #3. Digital Financial Transactions and Risk Management

| Courses | Units | Available in Semester 1 | Available in Semester 2 |
|---|---|---|---|
| BMF5342 Technological Disruptions in Finance and Data Analytics | 4 | ✓ | |
| BMF5354 Financial Regulation in a Digital Age | 4 | ✓ | |
| BMF5355 Financial Institutions, Markets, Systems and Technology | 4 | ✓ | |
| BMF5358 Entrepreneurship in Financial Technology | 4 | ✓ | |
| BT4013 Analytics for Capital Market Trading and Investment | 4 | ✓ | |
| BT4016 Risk Analytics for Financial Services | 4 | | ✓ |
| CS5233 Simulation and Modelling Techniques | 4 | | ✓ |
| FE5105 Corporate Financing and Risk | 4 | ✓ | |
| FE5108 Portfolio Theory and Investments | 4 | ✓ | |
| FE5221 Trading Principles and Fundamentals | 2 | ✓ | |
| FE5222 Advanced Derivatives Pricing | 4 | ✓ | |
| FE5223 Introduction to Electronic Financial Market | 2 | ✓ | |
| FE5224 Current topics in Applied Risk Management | 2 | | ✓ |
| FE5225 Machine Learning and FinTech | 4 | | ✓ |
| FE5226 C++ in Financial Engineering | 4 | ✓ | |
| FE5227 Commodities Fundamentals and Modelling | 2 | | ✓ |
| FT5010 Algorithmic Trading Systems Design and Deployment | 4 | | ✓ |

*Important: Courses in this list may be subject to change as decided by the Departments.*