

**NUS School of Computing**  
**Master of Science in Digital Financial Technology (MSc DFinTech)**  
*(Effective from AY2022/2023)*

**A. Essential Modules (28MC)**

1. FT5001 (2MC) Fintech Innovations for Consumers
2. FT5002 (2MC) Digital Transformation at Financial Institutions
3. FT5003 (2MC) Blockchain Innovations
4. FT5004 (2MC) Programming for Blockchain Applications
5. FT5005 (4MC) Machine Learning for Finance
6. BMD5301 (4MC) Introduction to Finance for FinTech Professionals
7. BMD5302 (4MC) Financial Modelling for FinTech Professionals
8. IT5001 (4MC) Software Development Fundamentals
9. IT5003 (4MC) Data Structures and Algorithms

Students who have taken modules similar to BMD5301, IT5001, and IT5003 can replace these modules by taking the following replacement modules\*:

10. IT5004 Enterprise Systems Architecture Fundamentals,
11. IT5005 Artificial Intelligence, or
12. IT5006 Fundamentals of Data Analytics.

**\*Note:** Students who wish to take replacement modules are required to submit their request to the School of Computing for prior approval. All other core modules are required for all students.

**B. Elective Modules (12MC)**

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

**Vertical #1. Computing Technologies**

1. CS5224 (4MC) Cloud Computing
2. CS5231 (4MC) Systems Security
3. CS5321 (4MC) Network Security
4. CS5331 (4MC) Web Security
5. CS5421 (4MC) Database Applications Design and Tuning
6. CS5439 (4MC) Software Security
7. IS4234 (4MC) Compliance and Regulation Technology
8. IS5008 (4MC) Technology Risk and Cyber Resilience
9. IS5009 (4MC) Topics in Financial Technology Solutions

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

1. CS5242 (4MC) Neural Networks and Deep Learning
2. CS5246 (4MC) Text Processing on the Web
3. CS5339 (4MC) Theory and Algorithms for Machine Learning
4. CS5344 (4MC) Big-Data Analytics Technology
5. CS5446 (4MC) AI Planning and Decision Making
6. IS5006 (4MC) Intelligence Systems Deployment
7. IS5126 (4MC) Hands-on with Applied Analytics
8. IS5152 (4MC) Data-Driven Decision Making

**Vertical #3. Digital Financial Transactions and Risk Management**

1. BMF5342 (4MC) Technological Disruptions in Finance and Data Analytics
2. BMF5354 (4MC) Financial Regulation in a Digital Age
3. BMF5355 (4MC) Financial Institutions, Markets, Systems and Technology
4. BMF5358 (4MC) Entrepreneurship in Financial Technology
5. BT4013 (4MC) Analytics for Capital Market Trading and Investment

6. BT4016 (4MC) Risk Analytics for Financial Services
7. CS5233 (4MC) Simulation and Modelling Techniques
8. FE5103 (4MC) Equity Products and Exotics
9. FE5226 (4MC) C++ in Financial Engineering
10. FE5221 (2MC) Trading Principles and Fundamentals
11. FE5223 (2MC) Introduction to Electronic Financial Market
12. FE5222 (4MC) Advanced Derivatives Pricing
13. FE5108 (4MC) Portfolio Theory and Investments

**C. Capstone Project (12MC)**

FT5007 FinTech Capstone Project

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