FIN306: Course Introduction

Financial Technology and Data Science with Bloomberg

Welcome

- **FIN306: FinTech and ~~Disruptive Innovation~~ Data Science**
- **Level 5 (BSc FinTech, Semester 2)**

Note on Module Name

The official module name in university systems is "FinTech and Disruptive Innovation" (administrative). The course content focuses on **Financial Technology and Data Science** with Bloomberg Terminal expertise. This reflects the module's evolution and will be updated in university systems next academic year.

Who I Am

- Professor of Finance and Financial Technology, Ulster University Business School
- Background: applied econometrics and financial markets; interested in how AI/ML are reshaping finance
- Prior industry: currency trading and liquidity management
- Teaches: quantitative finance, econometrics, and data science for finance
- Focus:
  - Applied econometrics + ML for finance (forecasting, anomaly detection)
  - Portfolio optimisation and risk
  - Digital finance adoption/infrastructure and regulation

Who I Am

- Emphasis: ethical data use, reproducibility, and building confidence, curiosity, and resilience
- Software: tsfe (Time Series Econometrics), fml (Financial ML)
- Recent work: IEEE Internet of Things Journal (2025); IEEE TEC (2024)
- Professional: Chartered Statistician (RSS); Advanced Data Science Professional (Alliance for Data Science Professionals)
- Office hours: by appointment · Email: b.quinn1@ulster.ac.uk

Course at a Glance

- 12-week module combining statistical foundations with practical Bloomberg Terminal expertise
- **Weeks 1-3**: Foundations (statistical inference, data science principles)
- **Weeks 4-6**: FinTech applications (platforms, robo-advisors)
- **Weeks 7-9**: Machine learning and validation
- **Weeks 10-12**: Advanced topics and synthesis
- See: Module Overview for complete schedule

Lab Structure

From **Week 2 onwards**, labs follow a **Homework → In-Class** structure:

- **Homework** (Colab notebooks): Learn concepts with accessible tools
  - Complete before class
  - Accessible from any device
  - Prepares you for Bloomberg work
- **In-Class** (Bloomberg Terminal): Apply with professional data
  - ~20 terminals available in Belfast Campus Bloomberg Room
  - Instructor support during sessions
  - Efficient use of limited terminal access

Week 1: Foundation lab uses Colab only (no Bloomberg yet)

Assessments

- **Coursework 1 : Responsible Data Science in FinTech (30%)**
  - Week 6: Submission deadline (recorded 5-min presentation + 6–8 slides + data risk register 1–2 pp, 8–12 risks, one ZIP via Blackboard)
  - Brief on Blackboard; topic confirmation by Week 5
  - Focus: Data quality, selection bias, and responsible practice evaluation
- **Coursework 2 : Applied Data Science with Critical Reflection (70%)**
  - Week 13: Due date (see Blackboard)
  - Brief released: Week 7
  - Format: Technical report (2,500 words) + completed scaffold notebook
  - Focus: Critical analysis and reflection on methodology

Full details: Module Handbook on Blackboard

How We Work

- **Student workflow**:
  - Review chapter → Complete homework lab (Colab) → Attend in-class Bloomberg session
  - Run notebooks, tweak parameters, document learning
  - Ask questions early (office hours, lab sessions)
- **Course materials**:
  - Chapters: Context and theory
  - Slides: Lecture previews
  - Labs: Hands-on practice (Colab + Bloomberg)
  - All available on course website

Expectations : From You

- **Come prepared**: Review chapter and complete homework lab before in-class Bloomberg session
- **Practise actively**: Modify code, experiment with parameters, document what changed and why
- **Ask early**: Use office hours and raise questions during lab sessions
- **Academic integrity**: Cite sources, explain reasoning, submit original work

Expectations : From Me

- Clear weekly structure with runnable examples
- Timely feedback on assessments
- Office hours and active support during labs
- Transparent rubrics and realistic, assessment-aligned tasks
- Professional standards with approachable delivery

Resources

- **Course Website**: https://quinfer.github.io/financial-data-science
  - All chapters, slides, and labs
  - Module-specific schedule and assessments
- **Colab Notebooks**: https://github.com/quinfer/fin510-colab-notebooks/labs/
  - Homework labs (Weeks 1+)
  - One-click access via "Open in Colab" buttons
- **Bloomberg Terminal**:
  - Belfast Campus Bloomberg Room (~20 terminals)
  - Bloomberg Market Concepts (BMC) certification recommended
  - In-class sessions begin Week 2
- **Module Handbook**: Blackboard $\rightarrow$ Course Content $\rightarrow$ Module Handbook
  - Complete assessment details, rubrics, academic policies

Contact

- Email: b.quinn1@ulster.ac.uk
- Office hours: By appointment
- Course site: https://quinfer.github.io/financial-data-science

Welcome Aboard

Let's build practical, evidence-based skills in financial data science with professional Bloomberg Terminal expertise.

Next: Week 1 Foundations slides → Lab 0 (Colab) → Week 1 lecture