

課 綱 Course Outline

理工學院學士班

中文課程名稱 Course Name in Chinese	金融科技導論				
英文課程名稱 Course Name in English	Intro to FinTech				
科目代碼 Course Code		班 別 Degree			
修別 Type	選	學分數 Credit(s)	3.0	時 數 Hour(s)	3.0
先修課程 Prerequisite					
課程目標 Course Objectives					
金融科技(Financial Technology, FinTech)是目前全球金融業與科技業的焦點，它所引發的破壞式創新，正挑戰既有金融服務的供給方式和消費行為。 1. 瞭解與 FinTech 相關的概念與理論 財務基礎、密碼學、量化交易、機器學習、最佳化等 2. 實做與 FinTech 相關的專題與系統 學界/業界出題、學生解題					
課程大綱 Course Outline					
1. Intro to the course 2. Math for fintech 3. Technical indicators, quantitative trading, backtest, dynamic programming 4. Intro to bitcoin and blockchain 5. Hash function and elliptic curve digital signature algorithm (ECDSA) 6. Portfolio optimization 7. Ethereum and Other Blockchain/Cryptocurrency 8. Performance indices, feature selection for ML 9. Imbalanced dataset, cost-sensitive classification 10. Missing data imputation in ML 11. Advanced Functions and Post-Quantum Cryptography for Blockchain 12. Intro to the final project 13. Invited talk 14. Invited talk 15. AI/ML applications in finance 16. Final exam					
資源需求評估(師資專長之聘任、儀器設備的配合．．．等) Resources Required(e.g. qualifications and expertise, instrument and equipment, etc.)					
課程要求和教學方式之建議 Course Requirements and Suggested Teaching Methods					
Percentages Homework: ~30% Term project: ~35% Final exam: ~35% Grade computation					

<p>Raw score computation in double precision ==> Rounding to nearest integers ==> Final letter grades</p> <p>Final grades are based on scores and ranking. The instructors reserve the rights to Adjust percentage of each categories if necessary</p> <p>Determine the way to combine scores and ranking</p> <p>No-change policy: We will not change the final grades once they are sent to the academic affairs office, unless it is due to mistakes on our part.</p> <p>Grade statistics: Usually we have 25% of A+ and A</p>
<p>其他</p> <p>Miscellaneous</p>