Title (Units): **COMP7300 Financial Technology (3,3,0)**

Course Aims: To provide students with an in-depth understanding on IT applications in the financial industry. Students will gain concepts about the operations in the financial sector, as well as the latest technologies adopted in this field. Practical elements will also be included to allow students to experience the use and development of technologies to support the operations and decision making of financial processes.

Prerequisite: Postgraduate Student Standing

Course Intended Learning Outcomes (CILOs):
Upon successful completion of this course, students should be able to:

No.	Course Intended Learning Outcomes (CILOs)
	Knowledge
1	Explain the basic concepts and operations in the financial industry
2	Justify the latest technologies used in the financial sector
3	Reflect the skills to develop financial applications
	Professional Skill
4	Evaluate the functions of selected financial applications
5	Implement an application to support financial operations

Calendar Description: This course provides an in-depth knowledge of technology applications in the financial industry. After completing the course, students will understand the financial concepts and operations, and the impacts of information technology to the financial sector. Students will also practice the use of selected financial applications and learn how to develop an application to support financial operations.

Teaching and Learning Activities (TLAs):

CILOs	Type of TLA
1-3	Students will attend lectures for the financial operations. They will also get the knowledge about the current applications in the financial industry, and development skills to implement financial applications.
4	Students will practice selected financial applications via laboratory sessions.
5	Students will work on a project to apply the development skills for financial application implementation.

Assessment:

No.	Assessment Methods	Weighting	CILOs to be addressed	Description of Assessment Tasks
1	Continuous assessment	50%	1-5	Continuous assessments are designed to measure how well the students have learned the knowledge of technology applications in the financial industry and the ability to manipulate the functions of current financial applications. A project is designed to evaluate students' capability to develop a financial application.
2	Examination	50%	1-3,5	Final examination questions are designed to evaluate how far students have achieved their intended learning outcomes.

Assessment Rubrics:

Excellent (A)	• Achieves all five CILOs, demonstrating a good mastery of both the theoretical and practical aspects of the knowledge and skills associated with financial information system development and administration • Able to develop and present sound arguments and correct solutions to problems in financial information system development and administration, accompanied by in-depth analysis and insight • Demonstrates a thorough understanding and solid knowledge of financial information system development and administration • Able to draw on a variety of techniques and relevant knowledge and appropriately apply them to new situations and problems of implementation and practice of financial information systems
Good (B)	• Achieves all five CILOs, demonstrating a good understanding of financial information system development and administration • Able to develop solutions to problems in financial information system development and administration, accompanied by adequate explanations • Demonstrates a competent level of knowledge of financial information system development and administration • Able to make use of appropriate techniques and knowledge and apply them to situations and problems of implementation and practice of financial information systems
Satisfactory (C)	• Achieves most of the five CILOs, demonstrating a basic level of understanding of financial information system development and administration • Able to provide acceptable solutions to problems in financial information system development and administration • Demonstrates an adequate level of knowledge of financial information system development and administration • Able to make use of some techniques and knowledge and apply them to familiar situations of implementation and practice of financial information systems
Fail (F)	• Achieves less than two of the five CILOs, with little understanding of financial information system development and administration • Unable to provide solutions to simple problems in financial information system development and administration • Knowledge of concepts in the financial information system development and administration falling below the basic minimum level • Unable to apply techniques and knowledge to situations or problems of implementation and practice of financial information systems

Course Content and CILOs Mapping:

Content		**CILO No.**
I	Introduction to Financial Industry and its operations	1-5
II	Technologies Adopted in Financial Industry	1, 2, 4
III	Development of Financial Applications	1, 3, 5

References:

- Michael King, Fintech Explained: How Technology is Transforming Financial Services, Rotman-UTP Publishing, 2023.
- Randall E. Duran, Financial Services Technology: Processes, Architecture, and Solutions, Cengage Learning, 2017.
- Peter A. Maxwell, Financial Technology: Finance to Create a Better World for Everyone, Technology 101 Book 31, Kindle Edition, 2023.
- Niels Pedersen, Financial Technology: Case Studies in Fintech Innovation, 1st Edition, Kogan Page, 2020.
- Zaigham Mahmood, Industry Use Cases on Blockchain Technology Applications in IoT and the Financial Sector, 1st Edition, IGI Global, 2021.
- Matthew F. Dixon, Machine Learning in Finance: From Theory to Practice, 1st Edition, Springer, 2020.
- Parag Y. Arjunwadkar, FinTech: The Technology Driving Disruption in the Financial Services Industry, 1st Edition, Auerbach Publications, 2020.

- Seth C. Oranburg, A History of Financial Technology and Regulation, Cambridge University Press, 2022.
- Imran Bashir, Mastering Blockchain − Fourth Edition: Inner Workings of Blockchain, from Cryptography and Decentralized Identities, to DeFi, NFTs and Web 3, Packt Publishing, 4th Edition, 2023.
- Ronald W. Melicher, Edgar A. Norton. Introduction to Finance: Markets, Investments, and Financial Management, Wiley, 2013.

Course Content:

Topic

I. Introduction to Financial Industry and its operations
   A. Types of financial sector, e.g. banking, insurance, and capital market
   B. Financial concepts
   - Deposit taking and lending
   - Cheque processing
   - Remittance
   - International trade
   - Credit card processing
   - Trading and surveillance
   - Electronic payments
   - Cryptocurrency
   - Applications of FinTech

II. Technologies Adopted in Financial Industry
   A. Traditional financial information systems
   - Financial electronic communication networks
   - Payment processing systems
   - Clearing and settlement systems
   - Financial decision support systems
   - Front office and back office systems
   B. Disruptive technologies
   - Blockchain technologies
   - AI and Data analytics
   - Other emerging technologies used in the industry

III. Development of Financial Applications
   A. Database design
   B. Prototyping
   C. Agile development methodologies