

## Module Outline

**Module Code** : RE2706  
**Module Title** : Real Estate and Infrastructure Finance  
**Semester** : Semester 2, Academic Year 2022/2023  
**Faculty** : Assistant Professor Fan Mingxuan  
**Department** : Real Estate  
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### Overview

This module examines real estate and infrastructure finance institutions and instruments that focus on debt. It equips students with the essential skills to analyse and evaluate real estate and infrastructure financing decisions. The topics include: institutional landscape of real estate and infrastructure financing; mortgage mechanics; different mortgage instruments; residential financing analysis and borrower choices; residential underwriting and lending policies; development, project and infrastructure financing; and housing financing innovations.

### Learning Outcomes

Through this module, student will be able to:

- Understand basic mortgage concepts and the development of housing financing institutions
- Ability to use a financial calculator and Excel financial functions to solve mortgage calculation problems.
- Understand the features of ARMs
- Ability to evaluate the effective borrowing cost of alternative loans
- Understand the pros and cons of alternative mortgage loan products
- The students will understand how to make important mortgage decisions, such as refinancing.
- In addition, the students will understand how to calculate effective cost of multiple loans. This lecture will also cover a brief introduction of CPF scheme in Singapore.
- Understand the mortgage loan underwriting process
- Understand the use of CPF for home purchase
- Understand the macroeconomic trends and housing finance risks

### Module Prerequisite(s)

Nil

### Module Preclusion(s)

Nil

### General Guide & Reading

Nil

### Tentative Schedule & Outline

Lesson/ Week	Date	Topic	Activity
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			(preparation / cases & assignments / follow-up readings & resources)
1	Jan 9 - 13	<ul style="list-style-type: none"> <li>Module outline</li> <li>Review of time value of money</li> <li>Review of mortgage basics</li> </ul>	
2	Jan 16 - 20	<ul style="list-style-type: none"> <li>Adjustable-rate mortgages (ARM): I</li> </ul>	
3	<b>Jan 23 - 27</b> <b>*CNY</b> <b>Holiday 22-24 Jan</b>	<ul style="list-style-type: none"> <li>Adjustable-rate mortgages (ARM): II</li> </ul>	Tutorial 1
4	Jan 30 - Feb 3	<ul style="list-style-type: none"> <li>Incremental borrowing cost</li> <li>Refinancing decisions</li> <li>Effective cost of multiple loans</li> </ul>	Tutorial 1
5	Feb 6 - 10	<ul style="list-style-type: none"> <li>Mortgage loan qualification</li> <li>CPF Financing</li> </ul>	Tutorial 2
6	Feb 13 - 17	<ul style="list-style-type: none"> <li>In-class quiz</li> <li>Residential financing analysis</li> </ul>	Tutorial 2
<b>Recess Week 18 Feb to 26 Feb 2023</b>			
7	Feb 27 - Mar 3	<ul style="list-style-type: none"> <li>Investment in income-producing real estate</li> <li>Financial leverage and investment return</li> </ul>	Tutorial 3
8	Mar 6 - 10	<ul style="list-style-type: none"> <li>Infrastructure as an asset class</li> </ul>	Tutorial 3
9	Mar 13 - 17	<ul style="list-style-type: none"> <li>Project financing contract and loan agreements</li> </ul>	Tutorial 4
10	Mar 20 - 24	<ul style="list-style-type: none"> <li>Project finance structuring and debt sizing</li> </ul>	Tutorial 4
11	Mar 27 - 31	<ul style="list-style-type: none"> <li>In-class quiz 2</li> <li>Public-private partnerships</li> </ul>	Tutorial 5
12	<b>Apr 3 - 7</b> <b>*Good</b> <b>Friday 7</b> <b>Apr (Fri)</b>	<ul style="list-style-type: none"> <li>Green project financing</li> </ul>	Tutorial 5
13	Apr 10 - 14	<ul style="list-style-type: none"> <li>Revision</li> </ul>	
<b>Reading Week 15 Apr to 21 Apr 2023</b>			
<b>Examination Weeks 22 Apr to 6 May 2023</b>			

### Assessment

Assessment Components	Weightage (%)
Flipped classroom	10
Tutorial participation	10
Quizzes	20
Open Book E-Examination	60
<b>Total</b>	<b>100</b>

### Academic Honesty & Plagiarism

Academic integrity and honesty is essential for the pursuit and acquisition of knowledge. The University and School expect every student to uphold academic integrity & honesty at all times. Academic dishonesty is any misrepresentation with the intent to deceive, or failure to acknowledge the source, or falsification of

information, or inaccuracy of statements, or cheating at examinations/tests, or inappropriate use of resources.

Plagiarism is “the practice of taking someone else’s work or ideas and passing them off as one’ own” (The New Oxford Dictionary of English). The University and School will not condone plagiarism. Students should adopt this rule - You have the obligation to make clear to the assessor which is your own work, and which is the work of others. Otherwise, your assessor is entitled to assume that everything being presented for assessment is being presented as entirely your own work. This is a minimum standard. In case of any doubt, you should consult your instructor.

**Additional guidance is available at:**

- <http://www.nus.edu.sg/registrar/administrative-policies-procedures/acceptance-record#NUSCodeofStudentConduct>
- <http://nus.edu.sg/osa/resources/code-of-student-conduct>

**About me:**

Mingxuan Fan is a visiting assistant professor in the Department of Real Estate at the NUS business school. She holds a PhD in Applied Economics from the University of Wisconsin-Madison. She teaches Real Estate Finance and Sustainable Real Estate Development. Her research interest lies in the field of environmental and urban economics.