



## Course Syllabus

<b>Course Code</b> META-524	<b>Course Title</b> Virtual Economies in the Metaverse	<b>ECTS Credits</b> 10
<b>Prerequisites</b> None	<b>Department</b> Digital Innovation	<b>Semester</b> Fall/Spring
<b>Type of Course</b> Elective	<b>Field</b> Metaverse	<b>Language of Instruction</b> English
<b>Level of Course</b> 2 <sup>nd</sup> Cycle	<b>Lecturers</b> Dr. George Giaglis and Dr. Ariana Polyviou	<b>Year of Study</b> 1 <sup>st</sup>
<b>Mode of Delivery</b> Face to face	<b>Work Placement</b> N/A	<b>Corequisites</b> N/A

### Course Objectives:

The main objectives of the course are to:

1. Explain how the origin and evolution of money ties in with digital money and assets used in virtual economies in the Metaverse
2. Discuss concepts that relate to supply, demand, their equilibrium, and its shifts
3. Analyse the role of macroeconomic factors and policy in the context of virtual economies

### Learning Outcomes:

After completion of the course students are expected to be able to:

1. Distinguish between the real, digital, and virtual economy
2. Identify and explain the advantages and disadvantages of virtual economies in the metaverse.
3. Explain the basic economic concepts in virtual economies.
4. Apply concepts that relate to supply, demand, their equilibrium, and its shifts to virtual economies

### Course Content:

#### 1. Introduction to virtual economies

- Introduction to virtual economies and definitions
- The basic economic problem
- Advantages and disadvantages of virtual economies and metaverse
- Types of virtual economies in the metaverse
- Virtual economies, cryptocurrencies, and the metaverse

- 2. Money, markets and virtual economies**
  - The evolution of money
  - Functions of money
  - Market mechanisms
  - Basic economic concepts in virtual economies
  - Value creation in virtual economies
- 3. Economic agents**
  - Economic agent and rational choice
  - The concept of utility
  - Behavioral factors – Alternatives to rational choice
- 4. Demand elasticity and types of goods**
  - Elasticity in consumer demand
  - Types of goods and consumer elasticity
  - Complementary and substitute goods and elasticity
  - Special topics in goods and demand
- 5. Virtual microeconomics - Part 1**
  - Economic Supply
  - Economic Demand
- 6. Virtual microeconomics - Part 2**
  - Supply-Demand Equilibrium and Shifts
  - Division of labor
- 7. Virtual macroeconomics and monetary policy - Part 1**
  - Macroeconomy and virtual economies
  - Monetary policy and virtual economies
- 8. Virtual macroeconomics and monetary policy - Part 2**
  - Inflation and deflation
  - Managing gross virtual product (GVP)
  - Special topics in virtual monetary policy
- 9. Game theory and mechanism design in virtual economies**
  - Introduction to game theory
  - Pure and mixed strategy Nash equilibria
  - Repeated games
  - Introduction to mechanism design
- 10. Gamification in virtual economies**
  - Motivation and psychology in games
  - Gamification in virtual economies
- 11. Interface between the virtual and real economy**
  - Secondary markets
  - Regulatory responses
- 12. Special topics in virtual economies**
  - Growth and future of the virtual economy
  - The political economy of virtual economy
  - Virtual economy and post-scarcity

**Learning Activities and Teaching Methods:**

- Faculty Lectures
- Guest-Lectures Seminars
- Directed and Background Reading
- Case Study Analysis
- Academic Paper Discussion
- Simulations
- Student-led Presentations
- In-Class Exercises

**Assessment Methods:**

- Interactive activities and classroom participation
- Assignments
- Final exams

**Assessment Methods in alignment with Intended Learning Outcomes:**

Assessment Method	Weighting	Intended Learning Outcomes to be assessed			
		LO1	LO2	LO3	LO4
Interactive activities	24%	✓	✓	✓	✓
Assignments	16%	✓	✓	✓	✓
Exams	60%	✓	✓	✓	✓

**Student Study Effort Expected:**

Student Study Effort Expected	Hours
Lectures	12h
Assignments	50h
Interactive activities and forum participation	45h
Reading and research	140h
Exam	3h
<b>Total</b>	<b>250h</b>

**Required Textbooks / Readings:**

Title	Author(s)	Publisher	Year	ISBN
Virtual Economies: design and analysis	Vili Lehdonvirta	MIT Press	2017	9780262535069

**Recommended Textbooks / Readings:**

- Bank of England. (2014). Money in the modern economy: an introduction. [online] Available at: <https://www.bankofengland.co.uk/quarterly-bulletin/2014/q1/money-in-the-modern-economy-an-introduction>. [Accessed 18 May 2022].
- Chernomas, R. (1984). Keynes on Post-Scarcity Society. *Journal of Economic Issues*, [online] 18(4), pp.1007–1026. Available at: <https://www.jstor.org/stable/4225503> [Accessed 18 May 2022].
- Graeber, D. (2014). *Debt: the first 5,000 years*. Brooklyn, NY: Melville House.
- Jackson, M.O. (2011). A Brief Introduction to the Basics of Game Theory. [online] Available at: [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1968579](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1968579). [Accessed 18 May 2022].
- Mankiw, N.G. and Taylor, M.P. (2017). *Economics*. 4th ed. Andover Cengage Learning., Chapters 1 & 2.
- Szabo, N. (2002). *Shelling Out: The Origins of Money* | Satoshi Nakamoto Institute. [online] Available at: <https://nakamotoinstitute.org/shelling-out/>. [Accessed 18 May 2022].
- University of Nicosia – BLOC511 - Introduction to Blockchain Digital Currency MOOC: A Brief History of Money.