COURSE OUTLINE

(1) GENERAL

SCHOOL	School of Finance and Statistics		
ACADEMIC UNIT	Department of Banking and Financial Management		
LEVEL OF STUDIES	**Undergraduate**		
COURSE CODE	ΧΡΟΤΠ01	**SEMESTER**	6th or 8th
COURSE TITLE	Economics of Information		

INDEPENDENT TEACHING ACTIVITIES *if credits are awarded for separate components of the course, e.g. lectures, laboratory exercises, etc. If the credits are awarded for the whole of the course, give the weekly teaching hours and the total credits*	WEEKLY TEACHING HOURS	CREDITS
Lectures	4	7.5
Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).		

COURSE TYPE *general background, special background, specialised general knowledge, skills development*	Specialised general knowledge
PREREQUISITE COURSES:	
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	Greek language used in lectures, but the course material is mostly in English.
IS THE COURSE OFFERED TO ERASMUS STUDENTS	No
COURSE WEBSITE (URL)	https://eclass.unipi.gr/courses/XTD162/

(2) LEARNING OUTCOMES

Learning outcomes

The course learning outcomes, specific knowledge, skills and competences of an appropriate level, which the students will acquire with the successful completion of the course are described.

Consult Appendix A
- *Description of the level of learning outcomes for each qualifications cycle, according to the Qualifications Framework of the European Higher Education Area*
- *Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and Appendix B*
- *Guidelines for writing Learning Outcomes*

After completing the "Information Economics " course, students are expected to:
- Describe the different aspects of the market efficiency hypothesis
- Understand the concept of asymmetric information
- Describe the concept of market failure
- Distinguish between the primary and secondary markets
- Analyse the relationship between asymmetric information and the bid-ask spread in the organized market
- List the different manifestations of the concept of asymmetric information in the market such as front running
- Recognize the relationship of market efficiency in terms of information and the existence of information costs in the organized market

General Competences

Taking into consideration the general competences that the degree-holder must acquire (as these appear in the Diploma Supplement and appear below), at which of the following does the course aim?

Search for, analysis and synthesis of data and information,   Project planning and management

- Search, analysis and synthesis of data and information, using the necessary technologies
- Adaptation to new situations
- Decision making
- Independent work
- Teamwork
- Work in an international environment
- Work in an interdisciplinary environment
- Exercise of criticism and self-criticism
- Production of free, creative and inductive thinking

(3) SYLLABUS

The course purpose is to present the concept and role of information in the context of the market microstructure literature. The course introduction includes the definition of an organised (primary and secondary) market, the equilibrium of a market under conditions of complete information and the equilibrium under asymmetric information (market participants with different information sets). Among others, the following key concepts will be examined:

- The different forms of market efficiency (special focus on informational efficiency)
- The concept of asymmetric information (Stiglitz [22])
- Market failure (Akerlof [1])
- Private and public information
- The concept of market microstructure (O'Hara [17], Hasbrouck [13])
- The relationship between asymmetric information in the context of the secondary market
- The relationship between information, market efficiency and price disclosure (Grossman & Stiglitz [12], among others).
- Algorithmic trading and high-frequency trading (O'Hara [18])
- High-frequency transactions and the Grossman & Stiglitz [12] paradox (Stiglitz [21]).
- The different manifestations of asymmetric information in the market, including front running, insider trading, predatory trading, trading on rumors, etc. (Brunnermeier [4], Brunnermeier & Pedersen [6] among others)
- The relationship between asymmetric information and market liquidity (Foucault et al. [9])

In this context, a series of market microstructure models that include the concept of asymmetric information will be analyzed in detail. Interest will be focused on (simultaneous or sequential) trading asymmetric information models ((Kyle [15]) and (Glosten & Milgrom [10]) respectively). The role of liquidity and asymmetric information in the 2008 Global Financial Crisis of 2008 (Gorton & Metrick [11]) will be examined also as well as in the recent reform process of the key benchmark rates (USA, Eurozone, United Kingdom, Japan, etc.)(Duffie & Stein [8]).

(4) TEACHING and LEARNING METHODS - EVALUATION

DELIVERY *Face-to-face, Distance learning, etc.*	Face to face lectures (2 per week) and live or web meetings with the students
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY *Use of ICT in teaching, laboratory education, communication with students*	Information and communication technologies used: • Latex (Beamer) presentations used for the weekly lectures of the course • Short videos with information on basic concepts of the course • Intensive use of the electronic application e-class (University of Piraeus) for posting course material (pdf and ppt files, videos, MS Word and Excel files, links with related material, etc.) • Use of the students e-mails for sending material relevant to the course (additional articles, videos, etc.) • Uploading the exercise sets (and their solutions) in the e-class platform • Intensive use of the e-class application and the lecturer's e-mail for solving students' queries daily. Ability to use the MS Teams application for distance learning if there is such a need (covid19 cases in the classroom, etc.) or for solving students' queries

TEACHING METHODS

The manner and methods of teaching are described in detail.
Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, placements, clinical practice, art workshop, interactive teaching, educational visits, project, essay writing, artistic creativity, etc.

The student's study hours for each learning activity are given as well as the hours of non-directed study according to the principles of the ECTS

Activity	Semester workload
Lectures	52
Solving the problem sets	30
Submission of short essay	10
Study and analysis of the material included in the e-class platform	30
Independent study	65.5
Course total	187.5

STUDENT PERFORMANCE EVALUATION

Description of the evaluation procedure

Language of evaluation, methods of evaluation, summative or conclusive, multiple choice questionnaires, short-answer questions, open-ended questions, problem solving, written work, essay/report, oral examination, public presentation, laboratory work, clinical examination of patient, art interpretation, other

Specifically-defined evaluation criteria are given, and if and where they are accessible to students.

The student evaluation includes:
• Five (5) problem sets to be solved by the students during the course. The problem sets score counts for 10% of the final course grade. Problem sets in MS excel format available in the e-class platform. Problem set solutions submitted also in excel format via e-mail. Summary solutions for both problem sets are provided in the last lecture of the course. The summary solutions are available in the e-class platform too (at the end of the course).
• Submission of short essay on an information economics related topic. A list with the candidate topics is available in the e-class platform. Students are encouraged to submit new topics every year (in

	addition to those included in the list). The essay topic is agreed between each student and the teacher. Instructions on the format of the essay etc are also available in the e-class platform. The short essay counts for 20% of the final course grade.
	• The final examination of the course (in Greek). It includes (between 35 to 45) multiple choice questions covering the entire syllabus (including the problem sets). No negative marking is applied in the multiple-choice questions. The multiple-choice exam score counts for the 80% of the final grade.
	• The following relationship summarizes the weighting scheme of the final grade:
	Final Grade = 10%*(Score on the Problem Sets) +20%*(Short Essay)+ 80%*(Score of Final Exam) (Relationship 1)
	• (Relationship 1), for the calculation of the final grade, is included in the course syllabus (available in the e-class platform).

(5) ATTACHED BIBLIOGRAPHY

- Suggested bibliography:

1. Akerlof, G. A. (1970). The market for" lemons": Quality uncertainty and the market mechanism. The Quarterly Journal of Economics, 488-500.
2. Athens Stock Exchnage, (2015). The Athex Rulebook, Athens Stock Exchnage, Athens
3. Barberis, N., & R. Thaler, (2002). A Survey of Behavioral Finance, NBER Working Paper No. 9222
4. Brunnermeier, K. M., (2001). Asset Pricing under Asymmetric Information: Bubbles, Crashes, Technical Analysis and Herding, Oxford University Press, Oxford
5. Brunnermeier, K. M., (2009). Bubbles, The New Palgrave Dictionary of Economics, (Edited by S. Durlauf and L. Blume), (2nd edition), Palgrave Macmillan, New York
6. Brunnermeier, M. K., & Pedersen, L. H. (2005). Predatory trading. The Journal of Finance, 60(4), 1825-1863.
7. Cartea, Á., Jaimungal, S., & Penalva, J. (2015). Algorithmic and high - frequency trading, Cambridge University Press, Cambridge
8. Duffie, D., & Stein, J. C., (2015), Reforming LIBOR and other financial market benchmarks, Journal of Economic Perspectives 29(2), 191-212
9. Foucault, T., Pagano, M., & Roell, A., (2013). Market liquidity: theory, evidence, and policy. Oxford University Press, Oxford
10. Glosten, L. R., & P. R. Milgrom, (1985). Bid, Ask and Transaction Prices in a Specialist Market with Heterogeneously Informed Traders. Journal of Financial Economics, Vol. 14(1), 71-100
11. Gorton, G., & Metrick, A. (2012). Securitized banking and the run-on repo. Journal of Financial Economics, 104(3), 425-451.
12. Grossman, S. J., & Stiglitz, J. E. (1980). On the impossibility of informationally efficient markets. The American Economic Review, 70(3), 393-408.

13. Hasbrouck, J., (2007). Empirical Market Microstructure: the Institutions, Economics, and Econometrics of Securities Trading, Oxford University Press, Oxford

14. Kindleberger, P. C., & R.Z. Aliber, (2005). Manias, Panics and Crashes: A History of Financial Crises, Palgrave–MacMillan, New York

15. Kyle, S. A., (1985). Continuous Auctions and Insider Trading, Econometrica, Vol. 53, 1315-1336

16. Lehalle, C. A., & Laruelle, S. (Eds.). (2013). Market microstructure in practice. World Scientific, Singapore

17. O'Hara, M., (1997). Market Microstructure Theory, Blackwell Publishing, Oxford

18. O'Hara, M. (2015). High frequency market microstructure. Journal of Financial Economics, 116(2), 257-270.

19. Rodrik, D. (2015). Economics Rules: Why Economics Works, when it Fails, and how to Tell the Difference. Oxford University Press, Oxford

20. Roll, R. (1984). A simple implicit measure of the effective bid-ask spread in an efficient market. The Journal of Finance, 39(4), 1127-1139

21. Stiglitz, J. E. (2014). Tapping the brakes: Are less active markets safer and better for the economy? In Federal Reserve Bank of Atlanta 2014 Financial Markets Conference Tuning Financial Regulation for Stability and Efficiency, April (Vol. 15).

22. Stiglitz, J. E. (2017). The Revolution of Information Economics: The Past and the Future (No. w23780). National Bureau of Economic Research.

- Related academic journals:

- The Quarterly Journal of Economics
- The American Economic Review
- The Journal of Finance
- Journal of Economic Perspectives
- Journal of Financial Economics
- Review of Financial Studies
- Econometrica
- Finance Research Letters