

SYLLABUS

1. Information regarding the program

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| 1.1 Higher education institution | UNIVERSITY OF ORADEA |
| 1.2 Faculty | FACULTY OF ECONOMIC SCIENCES |
| 1.3 Department | DEPARTMENT OF INTERNATIONAL BUSINESS |
| 1.4 Field of study | ECONOMICS AND INTERNATIONAL BUSINESS |
| 1.5 Cycle of study | CYCLE I - BACHELOR |
| 1.6 Program of study/Degree | INTERNATIONAL BUSINESS / BACHELOR'S DEGREE |

2. Information regarding the discipline

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|-------------------------|--|--------------|---|------------------------|----|------------------------|---|
| 2.1 Name of discipline | Financial and actuarial mathematics (FSTE-0780) | | | | | | |
| 2.2 Course titleholder | Associate Prof. PhD Ioana Teodora MESTER | | | | | | |
| 2.3 Seminar titleholder | Associate Prof. PhD Ramona Marinela SIMUȚ | | | | | | |
| 2.4 Year of study | I | 2.5 Semester | I | 2.6 Type of assessment | Cv | 2.7 Type of discipline | I |

(I) Compulsory; (O) Elective; (F) Facultative

3. Estimated totaltime(hours/semester of activities)

| | | | | | |
|--|------------|--------------------------|----|-------------|----------|
| 3.1 Number of hours/week | 2 | out of which: 3.2 course | 1 | 3.3 seminar | 1 |
| 3.4 Total of hours in the Curriculum | 28 | out of which: 3.5 course | 14 | 3.6 seminar | 14 |
| Distribution of hours: | | | | | 72hours |
| Studying the workbook, course book, bibliography and notes | | | | | 30hours |
| Supplementary documentation in the library, on electronic specialty sites and in the field | | | | | 16 hours |
| Preparing seminars/laboratories, themes, projects, portfolios and essays | | | | | 25 hours |
| Tutorship | | | | | 0hour |
| Assessment activities | | | | | 1 hour |
| Other activities..... | | | | | 0 hours |
| 3.7 Total hours of individual study | 72 | | | | |
| 3.9 Total hours/semester | 100 | | | | |
| 3.10 Number of credits | 4 | | | | |

4. Pre-requisites (if applicable)

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| 4.1 Curriculum | - |
| 4.2 Skills | - |

5. Conditions(if applicable)

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| 5.1. concerning the course activities | PowerPoint |
| 5.2. concerning the seminar/laboratory activities | PowerPoint |

| 6. Specific skills acquired | |
|-----------------------------|--|
| Professional skills | <ul style="list-style-type: none"> • C1.3 Applying methods, techniques and principles proper for observing different types, processes and goods and/or services trading phenomena • C4.3 Applying the methods and / or appropriate software to measure the typical situations / standard for database management |
| Transversal Skills | <ul style="list-style-type: none"> • CT1. Applying the principles, norms and values of professional ethics within their rigorous, effective and accountable work strategy • CT3. Identifying the opportunities of continuous formation and values – the efficient implementation of the resources and educational techniques for the personal development. |

7. Objectives of discipline (resulting from the grid of specific skills acquired)

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| 7.1 General objective of discipline | <ul style="list-style-type: none"> ▪ Getting the students used to the main notions used in mathematics, which will offer the students the possibility to develop mathematical models for the economic phenomena, as well as to use modern methods and techniques of organization and management. ▪ Developing the abstractisation and interpretation skills of the results. |
| 7.2 Specific objectives | <ul style="list-style-type: none"> ▪ Knowing and understanding mathematical notions. ▪ Knowing and understanding mathematical notions applied in economics. ▪ Knowing and understanding financial mathematics notions. ▪ Explaining the mathematical apparatus used in economics ▪ Explaining the mathematical results. ▪ Explaining the formulas used in actuarial and financial calculus ▪ Developing the generalization abilities in order to use mathematics for the analysis of economic phenomena ▪ Getting used to mathematical calculus ▪ Developing a positive attitude towards the importance of mathematics in economy ▪ Promoting a value-centered scientific environment |

8. Contents

| 8.1 Course (C) | Teaching methods | Observations |
|--|---|--------------|
| 8.1.1. Introductory course Introduction in the probability theory. | Lecture, conversation, examples, explanation, demonstrations, exercises | 1 hour |
| 8.1.2. Introduction in the probability theory | Lecture, conversation, examples, explanation, demonstrations, exercises | 1 hour |
| 8.1.3. Discrete random variables. Definition, specific values. | Lecture, conversation, examples, explanation, demonstrations, exercises | 1 hour |
| 8.1.4. Particular discrete random variables | Lecture, conversation, examples, explanation, demonstrations, exercises | 1 hour |
| 8.1.5. Continuous random variables. Definition, specific values. | Lecture, conversation, examples, explanation, demonstrations, exercises | 1 hour |
| 8.1.6. Particular continuous random variables. | Lecture, conversation, examples, explanation, demonstrations, exercises | 1 hour |
| 8.1.7. The simple and composed interest | Lecture, conversation, examples, explanation, demonstrations, exercises | 1 hour |

| | | |
|--|---|--------------|
| 8.1.8. Present and future value of a single payment | Lecture, conversation, examples, explanation, demonstrations, exercises | 1 hour |
| 8.1.9. Staggered payments. | Lecture, conversation, examples, explanation, demonstrations, exercises | 1 hour |
| 8.1.10. Financial investments. Stocks and shares. | Lecture, conversation, examples, explanation, demonstrations, exercises | 1 hour |
| 8.1.11. The volatility of financial assets | Lecture, conversation, examples, explanation, demonstrations, exercises | 1 hour |
| 8.1.12. The risk of financial assets | Lecture, conversation, examples, explanation, demonstrations, exercises | 1 hour |
| 8.1.13. Life expectancy. Biometric functions. Mortality tables. | Lecture, conversation, examples, explanation, demonstrations, exercises | 1 hour |
| 8.1.14. Life insurances. Death insurances. | Lecture, conversation, examples, explanation, demonstrations, exercises | 1 hour |
| Bibliography 1. Meșter, Ioana Teodora, <i>Economic Statistics</i> , Editura Universității din Oradea, 2013. 2. Salvatore, D., Reagle, R., <i>Schaum's Outline of Statistics and Econometrics</i> , McGraw Hill, 2011 | | |
| 8.2 Seminar (S) | Teaching methods | Observations |
| 8.2.1. Introductory seminaire. Solving probability – related exercises | Lecture, explanation, exercises | 1 hour |
| 8.2.2. Solving probability – related exercises | Lecture, explanation, exercises | 1 hour |
| 8.2.3. Exercises related to discrete random variables | Lecture, explanation, exercises | 1 hour |
| 8.2.4. Exercises related to discrete random variables | Lecture, explanation, exercises | 1 hour |
| 8.2.5. Exercises related to continuous random variables | Lecture, explanation, exercises | 1 hour |
| 8.2.6. Exercises related to particular continuous random variables | Lecture, explanation, exercises | 1 hour |
| 8.2.7. The simple and composed interest | Lecture, explanation, exercises | 1 hour |
| 8.2.8. Present and future value of a single payment | Lecture, explanation, exercises | 1 hour |
| 8.2.9. Staggered payments. | Lecture, explanation, exercises | 1 hour |
| 8.2.10. Test | Lecture, explanation, exercises | 1 hour |
| 8.2.11. Exercises related to the present and future value of a single payment Exercises related to Interests and financial turn-overs | Lecture, explanation, exercises | 1 hour |
| 8.2.12. Exercises related to the volatility of financial assets . Exercises related to the risk of financial assets | Lecture, explanation, exercises | 1 hour |
| 8.2.13. Exercises related to life expectancy. Biometric functions. Mortality tables. | Lecture, explanation, exercises | 1 hour |
| 8.2.14. Exercises related to life insurances. Death insurances. | Lecture, explanation, exercises | 1 hour |
| Bibliography 1. Meșter, Ioana Teodora, <i>Economic Statistics</i> , Editura Universității din Oradea, 2013. 2. Salvatore, D., Reagle, R., <i>Schaum's Outline of Statistics and Econometrics</i> , McGraw Hill, 2011 | | |

9. Corroboration of the contents of the discipline with the expectations of the epistemic community, professional associations and employers representing the field of study of the program

- The course content is consistent with what is being studied in other universities in our country and abroad.
- To better adapt the contents of the discipline to market

demandstherehavebeenmeetingsheldwiththerepresentatives of severalcompanies in Oradea.

10. Assessment

| Type of activity | 10.1 Assessment criteria | 10.2 Assessment methods | 10.3 Percentage of the final grade |
|--|---|-------------------------------------|------------------------------------|
| 10.4 Course (C) | The assimilation of notions. Specific language coherence. | Written paper | 60% |
| 10.5 Seminar (S) | The capacity to correctly solve a exercise. | 1 written paper during the semester | 40% |
| 10.9 Minimum performance standard | | | |
| <ul style="list-style-type: none">▪ The ability to use basic concepts to solve a simple math/financial problem.▪ The correct interpretation of the values obtained in a financial mathematics problem.▪ Obtaining at least the 4,50 grade at the written paper during the exam session | | | |

| Date | Course titleholder: | Seminar titleholder: |
|------------|---|---|
| 28.09.2020 | Associate Professor, Ioana Teodora MEȘTER, PhD | Associate Professor Ramona Marinela SIMUȚ, PhD |
| | E-mail address: imester@uoradea.ro | E-mail address: simut.ramona@yahoo.com |

Director of Department,

Associate Professor, Dorin Paul BĂC, PhD

Date of approval in
the Department:

29.09.2020

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Dean,
Professor Alina Bădulescu, PhD

Date of approval in
The Council of the
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30.09.2020

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¹State the contact information (telephone, e-mail, web page, etc) of the academic institution beneficiary of the *Syllabus*

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