

# O1 Course Package

## Advanced Topics in Bank Risk Management

**O1/A3 Syllabus IP6 - UAIC**  
**Intensive Programme**  
**Iași, March 2017**

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## Change History

Version	Date	Author(s)	Changes
0.1	September 1st, 2016	Silviu Ursu	Preliminary version for the IP3 announcement
0.2	October 31st, 2016	Alin Andrieș, Sorin Anton, Cezar Chirilă, Silviu Ursu	First draft to be distributed to partners
0.3	December 31st, 2016	Alin Andrieș, Sorin Anton, Cezar Chirilă, Silviu Ursu	Content updated based on feedback from local and international partners Updated timetable with the IP activities
0.4	January 31st, 2017	Silviu Ursu	Final version to be distributed to participants

## Disclaimer

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## 1. Course Information

<b>Higher education institution</b>	Alexandru Ioan Cuza University of Iasi
<b>Course Name</b>	Advanced Topics in Bank Risk Management
<b>Level of course unit</b>	Master (2nd cycle)
<b>Language of instruction</b>	English
<b>Type of course unit</b>	Compulsory
<b>Mode of delivery</b>	Intensive (face-to-face and distance learning)
<b>Year of study</b>	2
<b>Semester of study</b>	4
<b>ECTS credits</b>	6
<b>Contact hours</b>	42
<b>Course coordinator(s)</b>	Silviu Ursu, Alin Andrieş, Sorin Anton, Cezar Chirilă

This course is designed as an intensive programme offered in two weeks (19 March – 1 April 2017) within the International Project **INTQUANT** (Creating an International Semester for Master Programmes in Quantitative Finance), Funding Scheme: Erasmus+ Strategic Partnerships (Key Action 2), involving four partner universities - University of Applied Sciences bfi Vienna (UAS), University of Bologna (UNIBO), University of Economics in Katowice (UEK) and Alexandru Ioan Cuza University of Iași (UAIC).

The course will be organized by the Faculty of Economics and Business Administration of UAIC Iași in cooperation with Banca Comercială Română S.A. and will be taught as a combination of case study, lectures and tutorials offered by the local professors and distinguished guest experts. Successful accomplishment will provide participants with 6 ECTS that can be acknowledged within the Master programme of each partner University. The IP venue is the R building of the Alexandru Ioan Cuza University of Iași, located in Lăpușneanu Street 14, Iași. Lectures will be held in room 402. Laboratories will be available for the activities within the working teams.

## 2. Learning Outcomes

### General learning outcomes:

At the end of this course, students are able to:

- Demonstrate an in-depth understanding of the main types of risks faced by financial institutions and banks and of the risk models used for their management;
- Apply academic knowledge in a practical finance and risk management context;
- Analyse situations and scenarios from case studies relating to realistic risk-focus business problems and strategic and tactical asset allocation at local level;

- Summarise case findings in a team report, present and defend these in a clear and effective way;
- Assess critically both theirs' and other teams' case reports during the presentation and solutions phase;
- Work in an international team environment and develop the ability to formulate and defend their point of view in a constructive manner;
- Use intercultural creativity to achieve an agreed outcome;
- Understand how culture affects the work in international teams;
- Select appropriate communication tools for international teams.

**Specific learning outcomes:**

At the end of this course, students are able to:

- Apply academic knowledge in a practical bank risk management context;
- Identify relevant theoretical course coursework and translate it into solutions for concrete bank risk management issues;
- Demonstrate an in-depth understanding of the institutional details of a company in the field of banking;
- Prepare a set of solutions to a bank risk management case study;
- Build a scorecard and use it for credit decision.

**3. Prerequisites and co-requisites**

<b>Curriculum-based</b>	Introduction in Risk Management
<b>Competence-based</b>	-

Participating students should have a basic understanding of the role, activities, and sources of risk for banks. Good knowledge of mathematical and statistical concepts for assessing risks and some basic programming skills are also required.

It is expected that students will demonstrate a general interest in the area of credit risk management and will seek to develop more practical skills in an international setup. References and lecture notes will offer background to the topics and will be explored on a self-study basis and class discussion, both prior and during the onsite phase of the course. In addition, the business case provided by the industry partner will allow for the application of the academic knowledge and skills developed in class to real world risk setting. This will demand analytical thinking, problem solving, as well as the ability to critically assess current company practices.

**4. Course contents**

The aim of this intensive programme is to introduce participants into the practice of credit risk management, with an emphasis on credit scoring and scorecard development.

Lending is a major function performed by financial institutions. It involves many different types of risk, among which the most important one is credit risk. Though the essential elements of credit risk are still unchanged, financial institutions and investors are facing credit risk in many different, and often novel, forms. The rapid development makes it hard for even sophisticated investors, such as financial institutions, to properly understand, assess, and manage the credit risk involved in their transactions.

The latest global financial crisis has brought to the forefront the need for better credit risk measurement. The ability to distinguish between good and bad customers represents a key factor in conducting banking transactions.

Alexandru Ioan Cuza University of Iasi in cooperation with Banca Comercială Română will offer the intensive programme using the following model for the organization of the course:

- **Phase 1 (offsite):** Preparatory reading and preparation for questions
- **Phase 2 (onsite):** Presence phase during the course (March 19 – April 1, 2017)

The onsite course will start with an introduction given by local and guest academic lecturers to the required theoretical background in credit risk management and also to programming (R or SAS), a tool for the scorecard development process.

This will be followed by an input into a business case supplied by the representative of the local industry partner - Banca Comercială Română S.A. The aim of the case study is to build and calibrate a scorecard for individuals.

Intercultural learning will be an integral part of the onsite local course experience. In addition to the diversity of the case group, consisting of students that will represent each of the four participating higher education institutions, a local expert will provide an input into topics such as cross cultural training, intercultural stimulation, cultural awareness training, and how to work in international teams.

## 5. Recommended or required readings

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### Main readings - Credit Risk Management

For the offsite preparation, the following book is mandatory:

- (1) Apostolik, R., Donohue, C., Went, P., *Foundations of banking crisis: an overview of banking, banking risks, and risk-based banking regulation*, John Wiley & Sons, New Jersey, 2009.

The following references offer a comprehensive description of various concepts underlying credit scoring and/or provide support to the regulatory framework on credit risk:

- (2) Anderson, R., *The Credit Scoring Toolkit. Theory and Practice for Retail Credit Risk Management and Decision Automation*, Oxford University Press, New York, 2007.
- (3) Van Gestel, T., Baesens, B., *Credit Risk Management. Basic Concepts: Financial Risk Components, Rating Analysis, Models, Economic and Regulatory Capital*, Oxford University Press, New York, 2009.
- (4) *Regulamentul nr. 5/2013 privind cerințe prudențiale pentru instituțiile de credit*, Banca Națională a României, <http://www.bnr.ro/apage.aspx?pid=404&actId=326618>
- (5) *Regulamentul nr. 575/2013 al Parlamentului European și al Consiliului din 26 iunie 2013 privind cerințele prudențiale pentru instituțiile de credit și societățile de investiții și de modificare a Regulamentului (UE) nr. 648/2012*, <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2013:176:0001:0337:RO:PDF>

#### **Additional readings on bank risk management**

- (6) Karas, M., *10 practical steps to build a credit scoring model*, Intelligent Risk - April, 2015, pp. 26-32.
- (7) Bessis, J., *Risk Management in Banking*, 3<sup>rd</sup> edn. Wiley finance series, 2009.
- (8) van Greuning, H., Brajovic Bratanovic, S., *Analyzing Banking Risk: A Framework for Assessing Corporate Governance and Risk Management*. World Bank Publications, 2009.
- (9) Saunders, A., Cornett, M., *Financial Institutions Management: A Risk Management Approach*, 8th edn, McGraw Hill, 2014.
- (10) Saunders, A., Allen, A., *Credit risk management in and out of the financial crisis: new approaches to value at risk and other paradigms*, 3<sup>rd</sup> edn. Wiley finance series, 2010.
- (11) Sironi, A., Resti, A., *Risk management and shareholders' value in banking: from risk measurement models to capital allocation policies*. John Wiley & Sons, 2007.

#### **Additional readings on intercultural learning and case study method:**

- (12) Lewis, R. (2012). *When Teams Collide: Managing the International Team Successfully*. London: Nicholas Brealey Publishing.
- (13) Council of Europe (2007). *Intercultural Learning in European Youth Work: Which Ways Forward?* Budapest: Directorate of Youth and Sport. Retrieved from [[http://www.coe.int/t/dg4/youth/Source/Resources/Publications/2010\\_ICL\\_in\\_Europe\\_an\\_Youth\\_Work\\_en.pdf](http://www.coe.int/t/dg4/youth/Source/Resources/Publications/2010_ICL_in_Europe_an_Youth_Work_en.pdf)]
- (14) Ellet, W. (2007). *The Case Study Handbook: How to Read, Discuss and Write Persuasively About Cases*. Boston: Harvard Business Review Press.
- (15) Shapiro, B. (2014). *Hints for Case Teaching*. Boston: Harvard Business Publishing. Retrieved from [[http://hbsp.harvard.edu/he-main/resources/documents/web-files/M00016\\_Hints\\_for\\_Case\\_Teaching\\_Brochure.pdf](http://hbsp.harvard.edu/he-main/resources/documents/web-files/M00016_Hints_for_Case_Teaching_Brochure.pdf)]

## **6. Learning activities and teaching methods**

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This course will be taught as a combination of lectures, additional reading materials, class discussions, group work and an in-depth case study with a credit risk management focus.

## 6.1. Pre-Reading / Offsite Preparation

Participating students will have to prepare themselves on the topic of credit risk management prior to attending the two-week onsite phase of the course. Specific details on the required preparatory theoretical readings and the case study developed by the local lecturer with the industry representative will be provided one month before the start of the intensive programme. The credits allocation for this phase is 3 ECTS.

Students should have a notion of the basic definitions of credit scoring, scorecard, probability of default (PD), loss given default (LGD) and recovery rate, EAD (exposure at default).

## 6.2. Presence and Onsite Preparation

The onsite course will start with a series of lectures and tutorials given by local and guest academic lecturers to the required theoretical and methodological background in credit scoring. The topics will include:

1. Introduction to credit scoring
2. Scoring at different customer stages (application score, fraud score, performance score, behavioural score, early warning score, collection score, profit score);
3. Score types (score target, counterpart vs. facility score, internal vs. external score)
4. Scorecard development process
5. Limitations

In addition, an introduction to programming in R or SAS will be offered during the first week of the intensive programme. The specific content of the preliminary part will be adjusted depending on the assessment of the participants' individual offsite preparation.

This will be followed by an input into a case on credit scorecard development supplied by the representative of the local industry partner - Banca Comercială Română S.A. The local industry representative together with the lecturers will also provide additional coaching. Students will be given the opportunity to collect background information on the company and also ask specific questions about the case.

The second part of this phase will consist of team working on the case. Students will be organized in international teams of four students, comprising a representative of each participating higher education institution, and will have to provide their own set of solutions in a case report. They will present their report on the Friday of the second week. A jury that includes the industry representative, the university lecturer and the director of the master programme from the host university will evaluate the report and communicate the final grade and ranking of participating teams. The credits allocation for this phase is 3 ECTS.

## 7. Assessment methods and criteria

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Students are assessed based on the quality of their work in a group of international students, clarity of speech and ideas and quality of argument, introduction and conclusion

in the presentation of their case study report, and also on the clarity of description of main risk models and accuracy of their application in bank risk management.

Assessment methods consist of:

- **written examination (30%)**
- **written case study report (30%)**
- **presentation of case study (40%)**

The offsite individual preparation based on pre-assigned required readings will be assessed through a written examination including multiple choice, true-false, short or extended answers, including essays.

The onsite learning will be assessed through a case study report and its presentation. Each group will have to deliver a written document containing their solutions set to the case by the due date, and present it on Friday of the second week.

Additional information on the assessment method will be discussed during the first onsite lecture.

In order to pass this IP course, a student must achieve a score of at least 50%.

## 8. ECTS credits and workload

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Successful participation in the course will provide participants with 6 ECTS credits. The distribution of credits among specific activities is as follows: 3 ECTS credits for the first phase of pre-reading/offsite preparation and 3 ECTS credits for the second phase of presence and onsite preparation.

## APPENDICES

### Assessment Methods and Criteria

No	Assessment criteria (based on the course learning objectives)	Assessment methods	Weight (%)
1	<ul style="list-style-type: none"> <li>▪ Clarity of description of the credit risk taxonomy, the credit products and the credit process</li> <li>▪ Clarity of explanation of the usage by banks of various tools to reduce the overall risk of their portfolio</li> <li>▪ Accuracy of application of a credit analysis</li> </ul>	<b>Written test</b> (individual)	<b>30%</b>
2	<ul style="list-style-type: none"> <li>▪ Accuracy of application and calibration of a credit scoring model</li> <li>▪ Depth of analysis of a business case on credit scorecard development</li> <li>▪ Originality of analysis of a business case on credit scorecard development</li> </ul>	<b>Case Report</b> (group work)	<b>30%</b>
3	<ul style="list-style-type: none"> <li>▪ Quality of work in a team of international students</li> <li>▪ Clarity of speech and ideas</li> <li>▪ Quality of argument, introduction and conclusion in the presentation of the group report</li> </ul>	<b>Oral presentation of the case report</b>	<b>40%</b>
<p><b>Minimum performance standard</b></p> <ul style="list-style-type: none"> <li>▪ Demonstration of the ability to identify, analyse and interpret relevant information on credit products, credit process, types of credit risk and tools for credit risk management, to apply and calibrate a credit scoring model, and to develop a credit scorecard, taking the responsibility for tasks specific to the role in an international team.</li> <li>▪ A minimum passing score of 50%, computed as <math>F = 0.30 \cdot T + 0.30 \cdot R + 0.40 \cdot P</math>, where F – final grade, T – written test grade, R – group report grade, P – presentation grade.</li> </ul>			

## TIMETABLE – 19.03-01.04.2017

Week	Date	Topic	Assignments / Tasks	References
-	<b>Offsite phase</b> 15.02.2017- 19.03.2017	Credit risk The credit process and credit risk management	Compulsory readings for individual offsite preparation	(1) Ch.4&5, pp.79-143.
1	<b>MONDAY</b> <b>20.03.2017</b> 08:30–12:00 14:00–17:00 R402	08:30–09:00 <b>Registration</b> 09:00–09:15 <b>Welcome &amp; General Information (Silviu Ursu)</b>  09:15–10:15 <b>Cross-cultural contexts and added value of international mobility</b> (Dorina Moisă)  10:30–12:00 <b>Assessment of Offsite Preparation</b>  14:00–17:00 <b>Credit risk management</b> (Cezar Chirilă)	Lecture (compulsory attendance)  <b>10:30 – Written test on individual offsite preparation</b>  Lecture and tutorial (compulsory attendance)	Lecture and tutorial materials will be handed out in class
1	<b>TUESDAY</b> <b>21.03.2017</b> 09:00–12:00 14:00–17:00 R402	09:00–12:00 <b>Development of rating models in SAS</b> (Cezar Chirilă)  14:00–17:00 <b>Presentation of the case study by BCR representative</b> (Cezar Chirilă)	Lecture and tutorial (compulsory attendance)  Participation at the presentation of the case and discussion (compulsory attendance)	Lecture and tutorial materials will be handed out in class  Case to be provided onsite by BCR
1	<b>WEDNESDAY</b> <b>22.03.2017</b> 09:00–12:00 14:00–17:00 R402	09:00–12:00 <b>Introduction to credit scoring, scoring at different customer stages, score types</b> (Sorin Anton)  14:00–17:00 <b>Scorecard development</b>	Lecture and tutorial (compulsory attendance)  Lecture and tutorial (compulsory)	(3) Chapter 2, pp. 93-114.  (2) Chapters 17- 19, pp. 355-418.

		<b>process</b> (Alin Andrieș)	attendance)	
1	<b>THURSDAY</b> <b>23.03.2017</b> 09:00–12:00 14:00–17:00 R402	09:00–12:00 <b>Scorecard calibration, validation and management issues</b> (Alin Andrieș)  14:00–17:00 <b>Scorecard implementation</b> (Alin Andrieș)	Lecture and tutorial (compulsory attendance)  Lecture and tutorial (compulsory attendance)	(2) Chapters 20-26, pp. 419-526.
1	<b>FRIDAY</b> <b>24.03.2017</b> R402, R407, R417, C710	09:00–12:00 <b>Working on the case in international teams</b>  14:00–17:00 <b>Case study in international teams</b>	Discussion with local instructors Team work  Team work	
2	<b>MONDAY</b> <b>27.03.2017</b> R402, R407, R417, C710	<b>Case study in international teams</b>  14:00–17:00 <b>Progress meeting</b>	Team work  Videoconference with BCR representatives	
2	<b>TUESDAY</b> <b>28.03.2017</b> R402, R407, R417, C710	<b>Case study in international teams</b>	Team work	
2	<b>WEDNESDAY</b> <b>29.03.2017</b> R402, R407, R417, C710	<b>Case study in international teams</b>	Team work <b>12:00 – Submission of case report &amp; case data files</b>	
2	<b>THURSDAY</b> <b>30.03.2017</b> R402, R407, R417, C710	<b>Work in international teams on presentation of case report</b>	Team work	
2	<b>FRIDAY</b> <b>31.03.2017</b> 09:00–12:00 R402	09:00–12:00 <b>Assessment of onsite preparation</b>	<b>09:00 – Oral presentation of the case report by individual teams</b>	

## SOCIAL AND CULTURAL ACTIVITIES (OPTIONAL)

- **Monday, 20<sup>th</sup> of March 2017** – tour of the city of Iași (17.30);

- **Saturday, 25<sup>th</sup> of March 2017** – trip to Romanian country side (departure at 09.00)
- **Friday, 31<sup>st</sup> of March 2017** – good-bye party / lunch