

Syllabus  
**AQM2202 – Computer-Aided Analysis of Financial Markets  
(Value at Risk)**

Prof. Dr. John E. Junarsin  
Sommersemester 2022

<b>Niveau</b>	Bachelor	
<b>Credits</b>	3	
<b>SWS</b>	2	
<b>Workload</b>	90h	
<b>Prerequisites</b>	None Deskriptive Statistik (AQM1021) und Induktive Statistik (AQM2011) strongly suggested	
<b>Time</b>	See LSF	
<b>Room</b>	Online, to be announced via moodle	
<b>Start Date</b>	See LSF	
<b>Lecturer</b>	<b>Name</b>	Prof. Dr. John E. Junarsin
	<b>Office</b>	-
	<b>Virtual Office</b>	to be announced via Moodle
	<b>Office Hours</b>	By appointment
	<b>Phone</b>	-
	<b>Email</b>	-

## Brief description

The course Financial Management consists of a lecture over two semester hours (30 contact hours). The lecture deals with sophisticated approaches of financial management in the context of strategic and operational financial target-oriented corporate management.

At the end of the course, students will have mastered the specialist terminology of financial management and will be able to explain and differentiate between the specialist terms using examples. They are able to describe and systematize the tasks of financial management in companies (and groups). Students will be able to explain the current development of the financial markets on the basis of key indicators. They will be able to explain the liquidity cycle in companies and the factors influencing financial requirements. The students master short-term liquidity planning and the (prospective) cash flow statement and are able to prepare liquidity and finance plans. They are able to describe and differentiate between the most important financing instruments as sources of financing. You will be familiar with the instruments used to control risks in financial management. The module serves primarily to broaden and deepen knowledge. The course also contributes significantly to the acquisition of instrumental competence.

## Contents and Indicative Timetable

Ses- sion	Topic	Rea- ding(s)
1	Syllabus	-
	Risk management overview	Bricks
2	Why are financial institutions special?	Chapter 1
	Risks of financial institutions	Chapter 7
3	Interest rate risk I	Chapter 8
4	Interest rate risk II	Chapter 9
5	Credit risk I	Chapter 10
6	Credit risk II	Chapter 11
7	Liquidity risk	Chapter 12
8	Foreign exchange risk	Chapter 13
9	Market risk	Chapter 15
10	Technology and other operational risks	Chapter 17
11	Capital adequacy	Chapter 20
12	Futures and forwards	Chapter 22
13	Options, caps, floors, and collars	Chapter 23
14	Swaps	Chapter 24
	Course wrap-up	-
15	Case 1: Value and risk: Enterprise risk management at Statoil	Bricks
	Case 2: Carrefour S.A.	

## Course Intended Learning Outcomes and their Contribution to Program Intended Learning Outcomes / Program Goals

Program Intended Learning Outcomes		Course Intended Learning Outcomes	Assessment Method		
After completion of the program the students will be able...		After completion of the course the students will be able...	Written Exam	Scientific Essay	Oral Exam
			50%	30%	20%
			Individual performance	Group Work	Individual performance
1 <b>Expert Knowledge</b>					
1.1	...to demonstrate their distinguished and sound competencies in General Business Administration.	... identify and define various risks in finance.	x	x	x
1.4	... to solve business problems using quantitative methods and on the basis of sound data research skills.	... quantify risks using the measures Value at Risk and Expected Shortfall with different methods (analytical, simulation)	x	x	x
1.5	... demonstrate a sound expert knowledge in their specializatio.	... name the advantages and disadvantages of different risk measures and different measurement methods	x	x	x
2 <b>Digital Skills</b>					
2.2	..effectively use the information systems available in the business environment to solve problems.	... use MS-Excel to quantify the value at risk via historical simulations and Monte Carlo simulations ... locate financial data on the Internet and prepare it in such a way that it can serve as input for software solutions		x	x
3 <b>Critical Thinking and Analytical Competence</b>					
3.1	...to implement adequate methods in a competent manner and to apply them to complex problems.	... critically evaluate the calculation methods presented and use them appropriately depending on the question at hand	x	x	x
3.2	..interpret results comprehensively, reflect critically and develop their own holistic solution alternatives for complex issues.	... critically interpret and reflect on the results of calculations	x	x	x
4 <b>Ethical Awareness</b>					
	... to interpret results comprehensively, to reflect critically and to develop own holistic solution alternatives for complex questions.	... recognize the importance of the "risk" component in decisions that affect return on investment. ... develop an awareness of the disadvantages of different risk measures that may encourage excessive risk taking	x	x	x
5 <b>Communication and Collaboration Skills</b>					
5.1	... express complex issues in clear written form.	... formulate answers to questions about lecture materia	x		
5.2	... show their oral expression skills through convincing presentations..	... present the results of the risk calculation of an example portfolio			x
5.3	... to work successfully in a team and demonstrate this in the context of practical tasks.	... work on the portfolio task as well as other Excel tasks in the team		x	
6 <b>Internationalization</b>					

## Teaching and learning concept

The course combines theoretical and practical elements. The participants and I will work on the topic with the help of overviews, examples, presentations and tasks, but will take a user-oriented view. The course starts with a theoretical input phase (what is risk? classical risk measures, VaR, different methods of VaR calculation). The theoretical phase is followed by an implementation phase using Excel. In a further part the students work out special topics and present them to their fellow students.

Active participation and repetition is an important part of the teaching concept and a good preparation for the exam at the end of the theory phase.

## Literature and course materials

Saunders, A. and Cornett, M. (2020), *Financial Institutions Management: A Risk Management Approach*, 10<sup>th</sup> ed., McGraw-Hill, Boston, MA.

Hull, J. (2018), *Risk Management and Financial Institutions*, 5<sup>th</sup> ed., John Wiley & Sons, Hoboken, NJ.

Bruner, R., Eades, K., and Schill, M. (2014), *Case studies in finance: Managing for corporate value creation*, 7<sup>th</sup> ed., McGraw-Hill, New York, NY.

Fraser, J. and Simkins, B., and Narvaez, K. (2015), *Implementing Enterprise Risk Management: Case Studies and Best Practices*, John Wiley & Sons, Hoboken, NJ.

Other relevant articles and case studies.

## Examination

This semester's exam requirement is a written exam, quantifying the risk of a financial portfolio, and collaboration.

### BCR4 (PO2019):

The written exam is written as a module exam together with the course Financial Management. The total duration of the exam is 90 minutes. Of this, 30 minutes are allotted to AQM2202. The complete module has to be taken (including Financial Management).

### All others: BCR6 (PO2016); BSWP (PO2016, no PO2019!); BIB (all POs) and ISP:

The duration of the exam is 60 minutes.

## Scientific essay and oral examination

For the quantification of the risk of a financial portfolio, different portfolios are presented, whose risk is to be determined with the help of Excel. The procedure is to be explained in a quarter-hour lecture/conversation (e.g. via Skype, AlphaView) to the lecturer. Here also an interpretation of the results should take place. Here, it must be ensured that all participants have speaking contributions. In addition, a written elaboration of max. 5-6 pages has to be handed in. Furthermore, the cooperation is included in the grade! The cooperation can only be assessed if you were sufficiently present.

The grade is composed of 50% written exam and 50% work assignment/co-work.

## **Other Informationen: Expectations of the contribution on quantification**

**Presence.** You are required to attend at least 80% of total lectures held. Any violation against this rule may cause the ineligibility to get a final grade.

**Class participation.** You are highly expected to contribute ideas, thoughts, experiences, and arguments to class discussion. Although overviews of key points and issues will be provided, I strongly recommend that you comprehend materials in details, raise questions and ideas, and create a “lively” class, meaning that you must read and prepare readings assigned prior to coming to the class.

**An experiential approach.** Continuously and consistently, you are assigned to construct experiential observations and solve managerial cases or problems, and subsequently report findings to the professor.

**Internet exploration.** You are encouraged to harness the advancement of information and communications technology (ICT) in exploring knowledge and opportunities. Remember that in today's competitive environment, a smart person is not one who could answer all questions, but rather someone who knows where to find solutions.

## **Assessment (all others)**

<b>Item</b>	<b>Weight</b>	<b>Due Date</b>
Class participation	30%	The end of lecture
Assignments	30%	Submission schedule
Final exam	40%	To be announced

**Assignments.** You will be randomly distributed into pairs. Besides functioning as a discussion forum, the group will analyze cases and/or facts assigned by the professor, and present them before all participants. Cases might be inspired by or taken from various sources, including the textbook.

Late submissions will not be accepted without a prior approval of the professor. All requests for extension should be directed to the professor by e-mail ([john.junarsin@ugm.ac.id](mailto:john.junarsin@ugm.ac.id)). An extension will be granted for medical reasons upon receipt of a medical certificate, or in exceptional circumstances in consultation with the professor.

**Final exam.** An individual final paper purports to examine your knowledge and mastery of concepts learned throughout the lectures.

## **Plagiarism**

Pforzheim University conforms to a Code of Conduct that highly honors honesty in assessment. You must be aware of the regulations concerning misconducts, which prohibit the following behaviors or actions:

- No part of your work is copied from other people's work, except where due acknowledgements are made,
- No part of your work is written by another person, except where such a collaboration has been endorsed by the professor, and
- No part of your work has been submitted for assessment in another course, both within Pforzheim University and at other universities, except where it has been authorized by the professor.