

Syllabus for the postgraduate course

Module:
Banking and Corporate Finance:

[The Risk & Finance Lab](#)

In



**Universität
Zürich** UZH

ETH

Eidgenössische Technische Hochschule Zürich
Swiss Federal Institute of Technology Zurich

in corporation with

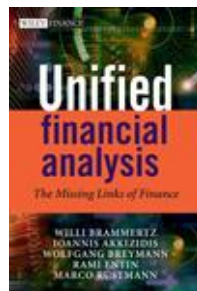
Zürich University
of Applied Sciences



Wolters Kluwer
Financial Services

theoretical material is based on the book

[Unified Financial Analysis, the Missing Links of Finance](#)



Zürich 2015



Week	Material for Theory	FinAnLab execution - system Summix
1 st Week 22.02.2015	<p><u>lecture 1</u></p> <p>Introduction to Financial Analysis</p> <p><u>Material:</u></p> <ul style="list-style-type: none"> Chapter 1: Evolution of Financial Analysis, Chapter 2: Finding the Elements <p>Financial contracts, the central element</p> <p><u>Material:</u></p> <p>Chapter 3: Financial Contracts</p>	<p><u>FinAnLab</u></p> <ul style="list-style-type: none"> None
2 nd Week 27.02.2015	<p><u>lecture 2</u></p> <p>Role of market conditions</p> <p><u>Material:</u></p> <ul style="list-style-type: none"> Chapter 4: Market Risk Factors) <p>Basis of credit risk</p> <p><u>Material</u></p> <ul style="list-style-type: none"> Chapter 5: Counterparty 	<p><u>FinAnLab 1</u></p> <p style="text-align: right;"><u>1.0</u></p> <ul style="list-style-type: none"> Introduction to Summix (riskpro™) Scope and targets of FinAnLab Installing Summix (riskpro™)
3 rd Week 06.03.2015	<p><u>lecture 3</u></p> <p>Basis of credit risk (Cont)</p> <p><u>Material</u></p> <ul style="list-style-type: none"> Chapter 5: Counterparty <p>Behavioral effects on financial contracts</p> <p><u>Material</u></p> <ul style="list-style-type: none"> Chapter 6: Behavior 	<p><u>FinAnLab 2</u></p> <p style="text-align: right;"><u>1.5</u></p> <p><u>Linking Theory & Practice – Real Life Data</u></p> <ul style="list-style-type: none"> Data Inputs Extracting Contract Data from different database sources Loading contract data into Model: Selection – Aggregation Demo <p><u>Discussing Meaning of Models</u></p> <ul style="list-style-type: none"> Introduction to models
Extended Risk-Lab		
<p><u>07.03.2015</u></p> <p><u>FinAnLab 3 & 4</u></p> <p><u>Setting Market Data</u></p> <ul style="list-style-type: none"> Showing how to configure the market risk factors 		



<ul style="list-style-type: none"> • Currencies, FX, Indices, Product Rates, Term Structures, etc • Volatility Correlation Matrices <p><u>Balance Sheets & Portfolios</u></p> <ul style="list-style-type: none"> ▪ Meaning of Balance Sheets & Portfolios ▪ Typical BS & Portfolio Structures ▪ Adding & Deleting Accounts <p><i>Enhancing the institution's accounts</i></p> <p><u>Mapping Financial Contracts</u></p> <ul style="list-style-type: none"> ▪ Real Life Contracts & Contract Types ▪ Examples of different Financial Contracts: ▪ Mapping credit risk related contract types ▪ Different attributes set in Financial Contracts <p><i>Enhancing the institution's Financial Contracts</i></p> <p><u>Setting changes in Market Conditions</u></p> <ul style="list-style-type: none"> ▪ Deterministic Shocks in risk factors, Shifting market risk factors ▪ Setting Forward rate models <ul style="list-style-type: none"> • LIBOR market model ▪ Static Monte Carlo Models <p><i>Enhancing Market Data & Setting New Market Conditions</i></p>		
<p>4th Week 13.03.2015</p>	<p><u>lecture 4</u></p> <p>Financial events</p> <p><u>Material</u></p> <p>Chapter 8: Financial Events and Liquidity</p>	<p><u>FinAnLab 5</u></p> <p style="text-align: right;"><u>1.5</u></p> <p><u>Counterparty Data</u></p> <ul style="list-style-type: none"> ▪ Counterparty: <ul style="list-style-type: none"> • Characteristics • Hierarchies & Group Structures • Ratings & PDs ▪ Rating Systems <p><u>Counterparty Data referring to Financial Contracts</u></p> <ul style="list-style-type: none"> ▪ Mapping credit risk types of Financial Contracts ▪ Setting counterparty related attributes in Financial Contracts <p><i>Enhancing the Counterparty Data</i></p>



<p>5th Week 20.03.2015</p>	<p><u>lecture 5</u> Value & Income <u>Material</u> Chapter 9: Value, Income and FTP</p>	<p><u>TASKS</u></p> <ul style="list-style-type: none"> ▪ Proposing to the different groups the tasks that have to work out until the end of the course (tasks are based on real case studies)
<p>6th Week 27.03.2015</p>	<p><u>lecture 6</u> Sensitivity measures <u>Material</u> Chapter 10: Sensitivity</p>	<p><u>FinAnLab 6</u> <u>1</u></p> <p><u>Modelling Behaviour / strategies</u></p> <ul style="list-style-type: none"> ▪ Defining the Behaviour in regards to Market risk <ul style="list-style-type: none"> • Replication • Prepayment • Selling • Drawing ▪ Defining the Credit risk (counterparty) related Behaviour <ul style="list-style-type: none"> • Migration Matrices • Recovery Observations & Patterns • Use at Default & Facilities <p><i>Enhancing the Behaviour Characteristics</i></p>
Easter Break		
<p>7th Week 17.04.2015</p>	<p><u>lecture 7</u> Risk measures <u>Material</u> Chapter: 11 Risk</p>	<p><u>FinAnLab 7</u> <u>1</u></p> <p><u>Relationship between contracts & Financial Events</u></p> <p><u>Financial events</u></p> <ul style="list-style-type: none"> ▪ Demonstrating the Financial Events throughout the life of Financial Contracts ▪ Liquidity gap analysis ▪ Credit Risk losses and Liquidity ▪ Credit Risk Recovery and Liquidity ▪ Liquidity Spreads & Discounting <ul style="list-style-type: none"> • Credit Spreads and Liquidity • Market Valuation and Liquidity • Funding liquidity via strategies (Behaviour modelling) <p><i>Analysing Financial Events</i></p> <p><u>Value</u></p> <ul style="list-style-type: none"> ▪ Valuation Rules



		<ul style="list-style-type: none"> ▪ Credit Spreads ▪ Reporting Value <p><i>Analysing Value</i></p> <p><u>Test Model Cases</u></p> <ul style="list-style-type: none"> ▪ Presentation of the Cases <p>Group building and allocation of Cases</p>
<p>8th Week 24.04.2015</p>	<p><u>lecture 8</u></p> <p>Introduction on dynamic simulation</p> <p><u>Material</u> Chapter: 13 General Mechanisms</p>	<p><u>FinAnLab 7</u></p> <p style="text-align: right;"><u>1.5</u></p> <p><u>Relationship between contracts & Financial Events</u></p> <p><u>Financial events</u></p> <ul style="list-style-type: none"> ▪ Demonstrating the Financial Events throughout the life of Financial Contracts ▪ Liquidity gap analysis ▪ Credit Risk losses and Liquidity ▪ Credit Risk Recovery and Liquidity ▪ Liquidity Spreads & Discounting <ul style="list-style-type: none"> • Credit Spreads and Liquidity • Market Valuation and Liquidity • Funding liquidity via strategies (Behaviour modelling) <p><i>Analysing Financial Events</i></p> <p><u>Value</u></p> <ul style="list-style-type: none"> ▪ Valuation Rules ▪ Credit Spreads ▪ Reporting Value <p><i>Analysing Value</i></p> <p><u>Test Model Cases</u></p> <ul style="list-style-type: none"> ▪ Presentation of the Cases ▪ Group building and allocation of Cases
<p>9th Week 08.05.2015</p>	<p><u>lecture 9</u></p> <p>Dynamic Simulation: Banking</p> <p><u>Material</u> Chapter: 14 Bank</p>	<p><u>FinAnLab 8</u></p> <p style="text-align: right;"><u>1.5</u></p> <p><u>Sensitivity</u></p> <ul style="list-style-type: none"> ▪ Market Sensitivities <ul style="list-style-type: none"> • Relationship between events and sensitivity ▪ Credit default sensitivities: <ul style="list-style-type: none"> • Index Sensitivity (for counterparty risk) • Setting Credit risk factors



		<ul style="list-style-type: none"> • Defining potential exposure & haircuts ▪ Reports <ul style="list-style-type: none"> • Interest sensitivity gap • Duration and key rate duration • Convexity • The Greeks • Sensitivities in potential credit exposure <p><u>Risk</u></p> <ul style="list-style-type: none"> ▪ Setting correlation data <ul style="list-style-type: none"> • Var-covar • Historical ▪ Setting and reporting VaR for <ul style="list-style-type: none"> • Market Risk based on <ul style="list-style-type: none"> ○ Historical simulation ○ Covariance matrix ○ Monte Carlo simulation • Credit Risk based on <ul style="list-style-type: none"> ○ CreditMetrics ▪ Setting and Reporting the Expected Shortfall ▪ Setting Stress Testing <ul style="list-style-type: none"> • Market Risk • Credit Risk <p><i>Analysing Sensitivity & Risk Results</i></p>
10 th Week 15.05.2015	<p><u>lecture 10</u></p> <p><u>Material</u></p> <p>Chapters:</p> <ul style="list-style-type: none"> ▪ 18 Financial Laboratory ▪ 19 Unified Financial Language 	<p><u>FinAnLab 9</u> <u>2</u></p> <p><u>Dynamic simulation</u></p> <ul style="list-style-type: none"> ▪ Markets <ul style="list-style-type: none"> • What-If scenarios (Economic scenarios) • Dynamic Monte Carlo ▪ New Production ▪ Adding Special Accounts ▪ Dynamic CP conditions ▪ Dynamic Behaviour
11 th Week 22.05.2015		<p><u>FinAnLab 10</u> <u>3</u></p> <p><u>Dynamic simulation / reporting</u></p> <ul style="list-style-type: none"> ▪ What if Simulation ▪ Dynamic Monte Carlo (Risk) <ul style="list-style-type: none"> • Value



		<ul style="list-style-type: none"> • Income • Cash Flows ▪ Combining dynamic simulation with Strategies ▪ Combining Credit VaR (CreditMetrics) with dynamic simulation <p><u>Continuing Work on the individual cases per Group</u></p>
12 th Week 29.05.2015		<p><u>FinAnLab 11</u></p> <p style="text-align: right;"><u>3</u></p> <p><u>Continuing Work on the individual cases per Group</u></p>
13 th Week 30.05.2015	<p><u>Option</u> <u>FinAnLab 12</u></p> <p style="text-align: right;"><u>3</u></p> <p><u>Continuing Work on the individual cases per Group</u></p>	
19 th Week 13.06.2015	Test	Presentation of the Models