Course Syllabus

Financial Modeling

Basic Information

This is a course, which contributes to MSc award in Economics.

Title of the Academic Program	Master's Degree Programs in English "Banking"
Type of the course	mandatory
Course period	From February 12th till June 1st, 1 semester (19 weeks)
Study credits	3 ECTS credits
Duration	108 hours
Language of instruction	English
Academic requirements	– BSc degree in Economics, Management or equivalent (transcript of records), – good command of English (certificate or other official document)

Course Description

The Course "Financial Modeling" (Б1.В.О6) is aimed at introducing the idea of Financial Modeling and its application in banking industry, at providing students with a thorough understanding of how to build a robust financial model from start to finish to suite research and professional goals in the field of banking and finance. The participants of the course also gain an insight into what a financial model is, what basic parts it usually consist of, what specific financial and economic fields it is used for, how to tailor the outputs of the financial model to end users, interpret the results and run sensitivities, as well as how to perform some degree of testing to reduce the incidence of modeling errors and discrepancies.

The course is also aimed at the amplification of scientific and professional knowledge obtained by the students during the previous stages of the learning process, the formation of valuable practical skills necessary for conducting an independent research project in the field of banking and finance with the application of dynamic and well-built and balanced financial model, as well as at enhancing the student's ability to carry out necessary calculations to cover revenues, to determine operating and maintenance costs, capital expenditure, depreciation and amortisation, debt and equity financing and taxation leading to the build-up of integrated financial statements for the entity in question. As any financial model is dynamic in nature, students also practice their ability to run different scenarios and adjust the timing of key events.

While taking the course students get acquainted with ways of using financial models in business and banking industry, approaches to building a strong well-organised financial model and apply it correctly in order to assess the influence of different macro-economic factors on banking activities. Students also get the necessary basic knowledge, which is applied to present the research results justified by the chosen financial model. The techniques covered during the course all aim to help students produce models that are flexible, robust, transparent and user-friendly in nature. Properly designed, the financial model is capable of sensitivity analysis, i.e. calculating new outputs based on a range of data variations.

Special Features of the Course

The course Financial Modeling is one more important step towards the well-written Master's Thesis as it provides all the basic knowledge, tools and techniques for using a financial model in a Master's Thesis. The structure of the course is aimed to help MSc students carry out Financial Modeling in economics, banking and finance as well as any other field of science without any encumbrances and with the guarantee to get trustworthy relevant results through application of suitable and robust modeling techniques. The course is highly interactive, comprising of a mix of basic and necessary theoretical aspects, terminology, group discussions and pair activities, instructor-led demonstrations, lectures, presentations, case studies and Excel-based exercises for participants to undertake during the seminar sessions as well as individually as a part of home assignment.

The mathematical tools for analysing and forecasting the research data inputs in a model, general structure of a financial model, calculation algorithms for

conducting model sensitivity analysis to determine effects of changes in input variables on key outputs as well as ways to correctly report on gained results have been presented extensively in this course in a very systematic manner so that students can apply their own financial model in the Research Project and defend the Masters' Thesis with less difficulties. Due to this course, master's degree students will be able to design a financial model to process a comprehensive list of input assumptions and to provide outputs that reflect the anticipated real life interaction between data and calculated values for a particular project with ease.

The course expects Master's students to perform many practical assignments aimed at building a robust and flawless model specifically for their applied research needs, to do a lot of extra reading in order to cover the content in the course material individually. It also implies that students should devote much time to this course by extensive practising and reading through relevant material on the evolution of modeling in Finance and Credit fields, as well as getting more information from numerous texts and journals in research on ways that financial models are applied in real-life industries and academic research fields. These materials are available in the University library and from the internet. The result of good and extensive literature review might be a written paper on one of the relevant issues stated in the research project. The course materials (individual assignments, practical tasks, case studies, articles, papers, financial models templates, Excel spreadsheets, reports and presentations) have been made easy to understand, user-friendly and open for discussions during individual meetings with the scientific advisor.

Consequently, the course Financial Modeling is designed to cover the following key objectives:

Introduce the idea of using financial models in research, real-life situations in the field of business, economics, finance and banking;

Explain the background and usage of sensitivity analysis necessary for calculating new outputs based on a range of data variations;

Underline the difference between what makes a good well-built financial model and a bad one;

Follow a logical, structured and disciplined approach towards model building;

Understand and know the interrelated parts (sheets) within the structure of a standard financial model for businesses and distinguish the peculiarities of financial models built for banks and other financial intermediaries;

Build a model according to the basic structure (or significant parts of one) from start to finish analysing the collected input variables and making valuable financial forecasts;

Learn how to translate key financial and commercial aspects into Excel;

Understand better how to tailor the outputs of the model towards end users and interpret the results in accordance with the Financial Modeling goals and aims;

Improve knowledge of Excel functionality for those working in the area of business, finance and banking;

Learn ways and useful tools to reduce the incidence of modeling errors and discrepancies.

The course thus implies extensive individual research work and practice as well as regular meeting and individual consultations with the personal scientific advisor who should supervise and assist the process of designing and building the suitable financial model which later will be applied in the student's Master's Thesis.

Course Aim[1]

The Course Financial Modeling is aimed at expanding scientific and professional knowledge obtained by them during the learning process on the previous educational stages, helping them acquire useful basic theoretical and practical skills and abilities necessary for building their own financial model on any type of business or financial institution step-by-step, which they later should be able to apply during the scientific research project in the field of banking and finance.

Thus, the purpose of this course is to acquaint students with the basics of Financial Modeling and with the general structure or interrelated parts of any financial model, to provide them with good understanding of company's or bank's past and through a variety of professional Financial Modeling techniques to teach them make accurate projections of the business's future performance. The goal of this course eventually is not only to understand how to build a specific financial model of any company or any financial institution, but also to extract the modeling techniques used by analysts worldwide and to apply those techniques to any investment or to any financial project.

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[1] Пояснения и примеры можно найти в книге - Kennedy, D (2007) Writing and Using Learning Outcomes – A Practical Guide. Quality Promotion Unit, University College Cork. Available from www.NAIRTL.ie

The course is also aimed at encouraging students to learn the nature, concepts, steps and procedures for carrying out a trustworthy applied research or any other research study in general using Financial Modeling methods.

Course Objectives[1]

On completion of this course, students will be able to:
1.   carry out a critical analysis of problem situations based on a systematic approach, develop an action strategy (Universal Competence-1):
2.   analyse the problem situation as a system, identifying its components and connections between them (Universal Competence -1.1);
3.   apply innovative financial technologies for analysis in the field of monetary policy, finance, payment system, financial market (Professional Competence -2):
4.   predict the consequences of design, economic and financial decisions using innovative technologies (Professional Competence -2.2);
5.   develop, implement and use an integrated financial risk management system, including indicators and criteria for an acceptable (significant) risk level, adequate ways to influence risk, monitor and evaluate the effectiveness of the risk management system (Professional Competence -4), in particular:
6.   develop and implement a risk management system (Professional Competence -4.1);
7.   monitor usage, evaluate effectiveness and reassess/restructure the integrated risk management system if needed (Professional Competence -4.2).

Learning Outcomes of the Course

The intended course learning outcomes outline that on successful completion of this course, students should be able to:
• show their basic theoretical knowledge and terminology in the field of Financial Modeling as a fundamental building block of analysis in investment banking;
• clearly identify specific aspects, benefits and drawbacks of applying financial models in banking industry for financial institutions and intermediaries;
• develop useful skills and abilities to design and build a robust, appropriate and strong financial model and to apply this model correctly when carrying out scientific research of any type in the field of banking and finance;

• clearly identify a topic of Financial Modeling that overlaps the students personal activities and undoubtedly distinguish between basic model for a company and a financial model for a bank, including the differences in presenting such financial statements as a) Income statement b) Cash flow statement c) Balance sheet d) Depreciation schedule e) Working capital f)Debt schedule and other;

• have knowledge of basic principles of designing and building a business model for a bank using important financial measures and correlation coefficients (like EBITDA, EBIT, EBT Margin, Earnings ore share EPS, COGS, SG&A, EPS, Capital Expenditures CAPEX, PP&E, Discounted Cash Flow DCF, Net Present Value NPV, Unlevered Free Cash Flow UFCF, Weighted Average Cost of Capital WACC, Beta, Unlevered Beta, Risk-Adjusted Performance Measures RAPM , Coverage Ratios CR, ROA and ROE, Internal rate of return IRR etc.) with regards to the legal requirements and regulations on the banks' business activities (Basel Accords);

• generate the need for self-education and improvement of professional knowledge and skills;

• master the methods of analytical work related to the financial aspects of the activities of commercial and non-commercial organizations of various organizational and legal forms, including financial and credit institutions, state government and local government bodies and other;

• develop the ability to select appropriate theoretical and practical approaches to applied research and to use correct financial models within the chosen problematic area;

• master the skill to clearly and correctly interpret the company's and bank's financial data into a valuation analysis using the modeling methods, and the skill to analyse and use various sources of information for financial and economic calculations;

• develop the skill of building the strong financial model and clearly understand financial statements, including a) basic concepts b) historical analysis c) projections making process and d) model flow between the statements;

• broaden the skill of independent research planning and using modern information technologies in the conduct of applied scientific research;

• develop the skills for processing the results obtained, analysing and presenting them in the form of Financial Modeling Reports (presentations, scientific articles, public defence of obtained results);

• explain the concepts and processes of applying financial models in Banking and Finance as well as show the ability to build a complete financial model for any research or corporate/personal practical purpose.

The Course Financial Modeling Part 1 was designed to expand Master's students basic knowledge in financial analysis and give them more necessary skills which would help them to undertake Master's thesis project as smoothly as possible with compulsory application of Financial Modeling techniques and principles. After accomplishing this course, students would be in a good position to tale and pass the final assessment test successfully and finally finish the course and apply the knowledge, skills and abilities gained during the course in their research project on Banking and Finance. Above all, students will be able to answer such questions as the following:

• What is a financial model and when does a simple model become a financial model?

• Why is a financial model sometimes called a "projection model"?

• What are the integral parts of a usual financial model and what parts of it may be specific and argued upon, and what are unified?

• What does a complete common financial model look like and in what way can a financial model deal with a debt?

• What is the general layout of a model and what are the key metrics used in financial models?

• What is debt modeling or sculpting and how is it carried out within a financial model?

• How are Business models connected with banking activities and what is Bank Capital?

• In what ways do banks and financial intermediaries, financial institutions of different types apply or use financial models in their daily activities?

Furthermore, after taking the course students will learn how to interpret different financial models and how to apply them in their personal applied research project (master's Thesis), specify independent and dependent variables for the data input, check for the validity and reliability of companies or bank's financial reports and statistical data. During the course, students will be exposed to the broad range of practical assignments and task used in Financial Modeling for specific purposes and institutions.

We are sure that this course can help Master's Degree students to think clearly, to design their own financial model relevantly and to come to trustworthy conclusions based on appropriate evidence and sound argument. It can moreover

enable Master's students to consolidate their basic knowledge in Banking and Finance fields and their general understanding of surroundings, and will help them to hold their own in a discussion and to critically analyse the claims and arguments made by others.

Teaching and Learning Methods

The teaching and learning processes are both organized and managed though the online learning platforms and Electronic Learning Management system (Moodle) on the basis of E-learning site of the Siberian Federal University [https://e.sfu-kras.ru/]. All the students get free access to the electronic course and perform the assignments according to the plan, stay connected with each other and with the professor / tutor via the messages system as well as the "Forum/ Chat" boxes within the online educational platform.

Individual work of a student implies a big amount of accumulative and analytical work with academic and study resources (course-books, study-books, journals and other publications, available through the system of online electronic library of Siberian Federal University [https://bik.sfu-kras.ru/]). Other types of individual assignments with detailed descriptions and manuals are all uploaded to the electronic course and are assigned by the teacher in due date and time according to the plan. The assessment of individual work of a student is performed by the professor and/or tutor with subsequent comments, recommendations and remarks on the result and performance.

Lectures are given online according to the academic plan in the full amount via the video-conferencing platforms (Zoom, Google Meet, Microsoft Teams and other). Presentations for lectures are all available for download and personal use on the electronic course [https://e.sfu-kras.ru/course/view.php?id=10283].

Seminars are also managed and held online via the video-conferencing platforms, through assignments at the electronic course, as well as using additional open online resources. These include resources for integrating games, pair and group work, brainstorming activities, discussion sessions, competitive thinking and interactive assignments (such as Quizlet, Kahoot, Google Forms, Google Docs, Google Spreadsheets, Jam Board, Padlet, YouTube, TED-Talks, TED-Ed videos, Zoom Sessions etc.). The course is aimed at the practical expertise in the field of using financial modelling principle in research process for banking and finance fields. Consequently, most of the assignments during the seminars are performed with the application of the abovementioned educational resources and tools in

order to make the students easier and faster apply the skills and knowledge they have acquired within the framework of their personal research topic.

A variety of teaching and learning methods are applied in this Course, as multifaceted approach to developing and building financial models, studying, collecting and analysing the necessary theoretical material and financial data and some other aspects of Financial Modeling can all help the students write and prepare an excellent MSc Thesis with a strong testable hypothesis and well-built robust model. First Part of the Course can also prepare the student for the next step of Financial Modeling after successfully finishing the FM 1 stage.

Based on content and the needs of the Course, the main teaching and learning methods used during the course should be highlighted:

1.   Lectures: the first step to master the Financial Modeling basic skills would be to get inside the topic and underline the importance of modeling in many areas of economic activities. The goal of lectures basically is to identify the scope and purpose of the course, the purpose of building a financial model, necessary resources to collect input data, types of calculations in Excel needed for successful completion of the student's financial model for an entity or a financial intermediary, and advanced planning for multimedia development or collaborative course development needs. Due to lectures the students will get the general know-how and modeling basics, as well as learn the important issues of model design, such as:

- the overall model development process and items to cover during the design phase;

- typical layout, structure and flow of a suitable financial model;

 - adopting a template approach to achieve consistency between model worksheets;

- using 'control accounts' as the key building blocks for the calculations of a financial model.

2.   Small and large group discussions. These activities, usually carried out under the Course Instructor or/and the Academic Supervisor observation, are aimed at developing critical thinking among those students who have embarked on a new research stage and are interested in doing a well-written and trustworthy research provided by the correct presentation of data collected and analysed. Modeling techniques give student a necessary opportunity to put forward the received results in the most appropriate and user-friendly comprehensive way. Such techniques may also enhance the student's peer-reviewing skills, help them

detect and discern various mistakes in calculations and data presenting, as well as help them glance at their own research proposal from a variety of angles.

3.   Literature reviews: critical analysis of the articles and the results gained by a variety of high-profile scientists and practicians in the field of banking, finance and economics through application of Financial Modeling methods.

4.   Self-study. This learning method takes up the most part of the student's individual work and suggests broadening their understanding of the main principles, prerequisites and hardships of conducting an Applied Research in Economics, Banking and Finance. Self-study approach is also valuable for course participants to master the application of modeling for various purposes (including financial reports, individual enterprises financial performance etc.). A variety of useful sources (articles, students' books, Excel templates and spreadsheets, financial reports etc.) are suggested by the Course Instructor as a required minimum for the completion of the course. Topics for the self-study assignments may include:
1) Bank as a set of stochastic financial processes.
2) Multiplicative stochastic models in banking and finance.
3) The simplest multiplicative stochastic model of financial resource dynamics.
4) Monitoring of the stochastic dynamics of financial resources.
5) Recurrent models of the dynamics of financial resources.
6) Multistage dynamics based on the multiplicative model of the stochastic model.
7) Recurrent dynamic models taking into account the management capabilities of the funds involved.
8) Building a functional relationship between the amount of funds raised and the costs of attracting them.

5.   Public presentations learning method is used for more detailed and profound studying of the problematic aspects of the separate parts of the Course. The presentations are prepared directly for individual and group meetings with the Course Instructor and Tutors as well as with the individual student's scientific advisor on demand, who can supervise the work in accordance with the Student's applied research Project Plan and Educational Program requirements and standards. The topics for presentations include the following:

1. Production and organizational modeling of the bank's activities.

2. General approaches to the study of the bank's activities, stemming from the macroeconomic theory.

3. Production-organizational model of the bank's behaviour in conditions of perfect competition.

4. Equilibrium with perfect competition.

5. Building and distinguishing models of behaviour of a monopolistic bank.

6. Description of the Mont-Klein financial model.

7. Models of oligopoly. The application of the Mont-Klein model for the analysis of the policy of regulating the deposit rate.

8. Models of bank competition. Competition on Bertrand in banking models.

9. Free competition and the optimal number of banks.

10. Effect of regulation of deposit rates on loan rates.

11. Competition and problems of the organizational structure of banks.

12. Using financial modeling for constructing the production functions and forecasting results of a financial firm.

13. Construction of the production function without taking into account financial intermediary activity.

14. Construction of production function, taking into account financial intermediary activity.

6.   Problem-based learning. The methods inclines the specific and relevant (to the issue and topic of the Thesis) problem stated in an article, report, video, presentation, review etc. and the student's approach to solving it in the specific environment. The I Course instructor and tutors guide and direct the students by asking questions, exploring options, suggesting alternatives, and encouraging them to develop criteria to make informed reasonable choices. Overall goal is to develop capacity for independent action, initiative, and relevant level of responsibility.

7.   E learning: Independent assignments in e-learning platform. Primary motivation for student enrolment in online SFU courses is the flexibility and convenience afforded with such teaching method and its delivery. Student acceptance of e-learning as a legitimate and convenient way to access higher education is one additional factor driving increased enrolments in online courses. Students located on a residential campus may, for a variety of reasons including scheduling conflicts, prefer an online alternative to a face-to-face course.

8.	Case-study analysis approach is based on studying the details of some real-life cases in investment banking, project investment planning, finance and other fields from the point of view of prerequisites for some specific incidents and various consequences that affected the enterprise or institution in that or other way. Such a learning method is necessary for students to acknowledge the usability and benefits of financial modeling for different purposes. Through case-studies the students will be able to:

- explore the practical uses and examples of financial modeling;
- get to know Excel and identify the issues and risks for its use in building financial models;
- document and plan their own model's layout and design and learn important guidelines to follow when building personal financial model for the purpose of applied research project;
- find their way around an inherited financial model, and audit and check its output for accuracy.

9.	Extensive reading: reading assignments in journals, monographs, etc., reading assignments in supplementary books.

Course (module) Structure

Learning Activities	Hours
Lectures	12
Practice sessions / Seminars,	24
Self-study Assignments	72
Final Assessment (including preparation)	-
Total study hours	**108** **3 ECTS**

Course (module) Outline

Week	Lectures	Practice sessions / Seminars	Assignments	Hours[2]
Course Chapter 1 « Basic concepts of financial modelling and optimization approach.»				
1-2	1.1. Lecture Introduction to Financial Modeling. Balance sheet. https://e.sfu-kras.ru/pluginfile.php/1248073/mod_resource/content/1/Lecture%202_Financial%20Modeling%20Part%202.pdf Purpose: To focus upon formulating modeling principles.	1.1. Seminar session: Positioning a mid-size overseas bank to do business in the USA https://e.sfu-kras.ru/mod/assign/view.php?id=607929	Practical assignment: analyzing the report on introduction to Financial Modeling. Class discussions and summary, individual tasks from e-learning platform https://e.sfu-kras.ru/mod/resource/view.php?id=602448

Assignment: Individual reading and summary assignment. Limits for financial modeling in banking due to regulations and standards. https://e.sfu-kras.ru/mod/assign/view.php?id=275629

Assignment: Assignment Video watching and discussion, defining the TOPIC of your research https://e.sfu-kras.ru/mod/assign/view.php?id=975951 | 2 lectures + 2 seminars + 8 ind. work |
| 3-4 | 1.2. Lecture General approaches to the study of the activities of the Bank arising from macroeconomic theory. Systemic risk: https://e.sfu-kras.ru/mod/lesson/edit.php?id=27564 | 1.2. Seminar session: group work and discussion Seminar and Video watching: Seminar and Video watching: and discussion Financial modeling and valuation – banking sector https://www.y | Individual work: Essay writing: Diversification of banking activities https://e.sfu-kras.ru/mod/assign/view.php?id=607916 Purpose: To focus upon formulating a design of your financial model.

Group work: The ECB Podcast - How can banks be part of the solution? Supervisory priorities in crisis times VIDEO https://e.sfu-kras.ru/mod/assign/view.php?id=1141178

Individual Assignment for reading and Compiling a glossary of financial terms: https://e.sfu- | 2 lectures + 2 seminars + 8 ind. work |

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[2] Hours designed for Classroom sessions, Web-sessions, Home Assignments etc.

	[0](#)	outube.com/watch?v=xm146p8vTJU&feature=youtu.be Seminar session on Analysing the company's and bank's financial statements [https://e.sfu-kras.ru/mod/assign/view.php?id=1141717](#)	kras.ru/mod/glossary/view.php?id=607917 Individual task: Limits for financial modeling in banking due to regulations and standards. [https://e.sfu-kras.ru/mod/assign/view.php?id=275629](#)	
5-6	1.3. Lecture : Financial Models of the Banks' Activities [https://e.sfu-kras.ru/mod/resource/view.php?id=602450](#)	1.3. Seminar sessions: (In-class and/or online) Cash flow available for debt service (CFADS) [https://e.sfu-kras.ru/mod/workshop/view.php?id=275590](#) discussion and peer-reviews.	Individual practical assignment: Test: Financial Modeling terms QUIZ [https://e.sfu-kras.ru/mod/scorm/view.php?id=538244](#) Individual reading: Article analysis and assignment -Three theories of bank's activities: [https://e.sfu-kras.ru/mod/resource/view.php?id=602451](#) Reading, online article: Individual task: Credit valuation adjustment (CVA) Consider a financial model using bank statements in Excel [https://e.sfu-kras.ru/mod/assign/view.php?id=1030416](#) Report on an article in a Journal: Article review- Banking capital and operational risks: comparative analysis of regulatory approaches for a bank (Elena A. Medova, Pia E.K. Berg-Yuen) [https://e.sfu-kras.ru/pluginfile.php/1249268/mod_resource/content/1/Banking%20capital%20and%20operating%20risks.pdf](#)	2 lectures + 2 seminars + 8 ind. work
7-8	1.4. Lecture Basel I, II, III accords in brief. [https://e.sfu-kras.ru/pluginfile.php/1249298/mod_resource/con](#)	1.4. Seminar sessions: video watching and discussion: Individual task and subsequent group	Individual assignment: TEST: Qualitative VS Quantitative methods in research [https://e.sfu-kras.ru/mod/quiz/view.php?id=991216](#) Individual assignment: Collecting and analysing data on Stochastic Financial Model types [https://e.sfu-](#)	2

	tent/1/d424_i nbrief.pdf	discussion: Watching and discussing the video Money as Debt I - Revised Edition 2009 (Full Movie) https://e.sfu-kras.ru/mod/as sign/view.php ?id=686621 Group assignment: Seminar and discussion for the Lecture #4 Evaluation of all the contributions of students to the content of the Electronic Course on SFU E-Learning Platform.	kras.ru/mod/assign/view.php?id=275617 Individual reading: Simon Benninga. Financial Modeling (3rd edition), Uses Excel. The MIT Press Cambridge, 2008 (Chapter 4-5). https://e.sfu-kras.ru/pluginfile.php/1248064/mod_resour ce/content/1/Benninga_financial_modelling _with_Excel.pdf Individual reading: Shelagh Heffernan. Modern Banking, Cass Business School, City University, London, 2015. (Chapter 3-4) https://e.sfu-kras.ru/pluginfile.php/711644/mod_resourc e/content/2/modern_banking.pdf	lectures + 3 seminars + 8 ind. work
	Course Chapter 2 « Methods and models for analyzing the dynamics of financial indicators and building financial forecasts »			
8-9	2.1. Lecture: Financial Modeling in the context of Investment Banking and Financial Research (INTRODU CTION) https://e.sfu-kras.ru/mod/ resource/vie w.php?id=60 2449	2.1. Seminar sessions: group work and pair work - Describing and comparing Macro-prudential policy and megaregulator s (Central banks) https://e.sfu-kras.ru/mod/re source/view.p hp?id=275596 Group assessment	Individual assignment: Critical reviews of articles - Everyone will critique an article found in a major mass communication journal. The critiques should be 3-5 pages long and are due the week after we talk about the method in class. https://e.sfu-kras.ru/mod/workshop/view.php?id=203050 Individual assignment: Final assessment, Part 1: Preparing your Literature Review Report https://e.sfu-kras.ru/mod/assign/view.php?id=1000459 Individual task: Individual task: Collecting and analysing data on Stochastic Financial Model types https://e.sfu-kras.ru/mod/assign/view.php?id=275617 Individual reading: C.N.Kothari, Research	1 lectures + 3 seminars + 8 ind. work

		task - Video watching: Building Financial Models for banks https://e.sfu-kras.ru/mod/assign/view.php?id=608180 Workshop: Presentation on the application of Stochastic Financial Models https://e.sfu-kras.ru/mod/assign/view.php?id=275617	Methdology_Methods and techniques, Chapter 3 "Research design principles", pp. 32-54. https://e.sfu-kras.ru/mod/folder/view.php?id=975955 Individual reading: Danielle Stein Fairhurst. Financial Modeling in Excel® For Dummies® Published by: John Wiley & Sons, Inc, 2017. (Chapter 2-4). https://e.sfu-kras.ru/mod/resource/view.php Individual task: Individual practical task: Macroprudential Policy and Megaregulator for financial modelling – for and against essay writing and discussion https://e.sfu-kras.ru/mod/assign/view.php?id=275618 Individual reading: JohnSs. Tjia. Building Financial Models (Second edition): The complete guide to designing, building, and applying projection models, McGRAW-HILL, 2009 (Chapter 6-7) https://e.sfu-kras.ru/pluginfile.php/1248065/mod_resource/content/1/Building_Financial_Models.pdf	
11-13	2.2. Lecture: The search algorithms and ways to justify the methods and models for analysing the dynamics of financial indicators and building financial forecasts _ Balance-sheet: https://e.sfu-kras.ru/mod/lesson/edit.php?id=275597	2.2. Seminar sessions: The understanding the importance of research ethics and integrate research ethics into the research process http://www.slideshare.net/HIMANIPADIA/project-on-equity-analysis-on-banking-sector 2.3. Seminar sessions Group assignment: https://e.sfu-	Individual assignment: video watching and analysing Search algorithms: preparing your academic Literature review https://e.sfu-kras.ru/mod/assign/view.php?id=1011915 Individual assignment: Short revision quiz in the electronic course on the basic data collection tools and techniques https://e.sfu-kras.ru/mod/quiz/view.php?id=1020567 OUTCOME: Upon the completion of the full cycle of the activity, you will be able to distinguish the qualities of a literature review and begin to reflect on the value of a literature review to your own project. Individual reading: Individual task- essay writing based on a documentary: Banking on Bitcoin	BITCOIN DOCUMENTARY	Crypto News	Blockchain	Digital Money	Capitalism https://e.sfu-kras.ru/mod/assign/view.php?id=1154969	1 lectures + 3 seminars + 8 ind. work

		kras.ru/mod/resource/view.php?id=275598	Individual reading: Individual assignment on Macroprudential Policy and Megaregulator for financial modeling: analyse the dynamics of the main macroeconomic indicators of the three countries for 2007 – 2017. Build the graphs representing results. https://e.sfu-kras.ru/mod/assign/view.php?id=275618	
14-15	2.3. Lecture Financial Models of the Banks' Activities(Continuation) https://e.sfu-kras.ru/pluginfile.php/1249049/mod_resource/content/1/Financial%20Modeling_Lecture%206_Fin%20Models%20of%20Banks%20.pdf	2.3. Seminar sessions: Building Financial Models for banks https://e.sfu-kras.ru/pluginfile.php/1249049/mod_resource/content/1/Financial%20Modeling_Lecture%206_Fin%20Models%20of%20Banks%20.pdf Group work: video watching and discussion on the topic "Writing a research proposal" https://e.sfu-kras.ru/mod/assign/view.php?id=1028624 Group assignment: ways to use a Research proposal template https://e.sfu-kras.ru/mod/resource/view.php?id=102868	Individual practical task: Online test on statistics and econometrics for banking https://e.sfu-kras.ru/mod/assign/view.php?id=1164915 Individual reading: 1. Simon Benninga. Financial Modeling (3rd edition), Uses Excel. The MIT Press Cambridge, 2008 (Chapter 5-8). https://e.sfu-kras.ru/pluginfile.php/1248064/mod_resource/content/1/Benninga_financial_modelling_with_Excel.pdf Individual reading: Shelagh Heffernan. Modern Banking, Cass Business School, City University, London, 2015. (Chapter 5-6) https://e.sfu-kras.ru/pluginfile.php/711644/mod_resource/content/2/modern_banking.pdf	1 lectures + 3 seminars + 8 ind. work

		[6](#)		
16-17	2.4. Lecture Data input in a financial model [https://e.sfu-kras.ru/mod/resource/view.php?id=275864](#)	2.4. Seminar sessions: Financial Modeling Revision Test (basic financial terms and concepts) [https://e.sfu-kras.ru/mod/assign/view.php?id=275866](#) Group activity: Seminar activity: Reading and analysing_ Bank Portfolio Allocation [https://e.sfu-kras.ru/mod/book/edit.php?cmid=275867](#)	Individual assignment: Test: Financial modelling basic ratios _Online seminar testing [https://e.sfu-kras.ru/mod/assign/view.php?id=1176158](#) Individual assignment: Individual task: watching the webinar and performing the tasks - Webinar: Financial Modeling Best Practices presentation by the Financial Modeling Institute [https://e.sfu-kras.ru/mod/assign/view.php?id=1168944](#) Group Chat discussion at E-Learning Platform and Project writing on the topic and conclusions made after watching and discussing the film "Money as Debt" [https://e.sfu-kras.ru/mod/chat/view.php?id=608245](#) Individual task: Video-based practical assignment: VIDEO: Variables and data analysis in econometric and financial models: [https://e.sfu-kras.ru/mod/page/view.php?id=1164918](#) Individual test: Test: Financial Modelling Basic Liquidity and cash ratios [https://e.sfu-kras.ru/mod/assign/view.php?id=1182612](#) Individual reading: Article review: The baking modelling theories. [https://e.sfu-kras.ru/mod/assign/view.php?id=275873](#) Individual assignment: Case Study The Markowitz Portfolio Theory application experience [https://e.sfu-kras.ru/mod/assign/view.php?id=275873](#) Group work: Video-based discussion Risk Capital Attribution and Risk-Adjusted Performance Measurement VIDEO Lecture [https://e.sfu-kras.ru/mod/page/view.php?id=1187919](#)	1 lectures + 3 seminars + 8 ind. work
			Final assessment (credited/ not credited)	
18		Final assessment week	Individual assignments: Test: Financial modelling basic ratios _Online seminar testing [https://e.sfu-](#)	

		3.3. Seminar session The presentation on - Bank Portfolio Allocation tools https://e.sfu-kras.ru/mod/book/edit.php?cmid=275867	kras.ru/mod/assign/view.php?id=1176158 Test: Financial Modelling Basic Liquidity and cash ratios https://e.sfu-kras.ru/mod/assign/view.php?id=1182612 Individual task on Portfolio selection https://e.sfu-kras.ru/pluginfile.php/711935/mod_resource/content/1/The%20Markowitz%20Portfolio.pdf (presentations and peer reviews) Group work and Video-based discussion Risk Capital Attribution and Risk-Adjusted Performance Measurement VIDEO Lecture https://e.sfu-kras.ru/mod/page/view.php?id=1187919 Test: RAROC and its application in banking and finance https://e.sfu-kras.ru/mod/assign/view.php?id=1187930 Evaluation of the final mark for the exam is comprised of the sum of these activities: - points which a student managed to get during the seminar sessions, online and in-class activities, online and in-class testing, group discussions and peer-reviewing activities (maximum 70% of the final evaluation result); - points for the final evaluation Testing at the Course and points for the public presentation of individually built financial model for the academic research project (maximum 30% of the final evaluation result)	0 lectures + 3 seminars + 8 ind. work
Total hours	**12**	**24**	**72**	**108**

Course Instructor(s) and Tutor(s), Contact information

Course Instructors and tutors are responsible for marking and commenting on particular student's assignments; they will also keep a close watch on the progress and on any difficulties that Master's degree students might encounter and will provide assistance during the course.

Students have to mail their tutor-marked assignments to their tutors or instructors well before the due date (at least two working days are required). All types of obligatory assignments will be marked by the Instructor or the Tutor and returned to students as soon as possible.

Students should try their possible best to attend the tutorials in due date. This is the only chance to have face-to-face contact with the instructor or tutor and to ask questions which are answered instantly. Any problem encountered in the course of the study may be risen during the meetings. To gain the maximum benefit from course tutorials, students are advised on preparing a question list before attending the meetings. Moreover, a lot can be learned from active participations in discussions with your course instructor and tutor.

Course Instructor: Professor Irina A. Yankina Contact information: iyankina@sfu-kras.ru +7(3912)-21-22-45 Educational Institution: SibFU the Chair of digital financial technologies of Sberbank of Russia Office hours: Krasnoyarsk, Maerchak Street 3, Department office № 7-12, Mon.-Friday: 9:00 a.m.-5:30 p.m.	
Course Instructor (Lecturer): Professor Smirnova, Elena Valentinovna Contact information: (e-mail/phone/Skype etc.) seleval2008@yandex.ru / +7 (391) 221-23-07, 8-963-190-88-07 Office hours: Krasnoyarsk, Maerchak Street 3, Department office № 7-12, Mon.-Friday: 9:00 a.m.-5:30 p.m.	

Class instructor (Lab Instructor): Associate prof. Olga S. Bavrova

Contact information: okhudyakova@sfu-kras.ru

+7(913)-509-39-26

Educational Institution: SibFU

the Chair of digital financial technologies of Sberbank of Russia

the Academic research laboratory of behavioral economics and communication development

Office hours: Krasnoyarsk, Maerchak Street 3, Department office № 7-12, Mon.-Friday: 9:00 a.m.-5:30 p.m.

Assessment

Forms of assessment

Assessment of students' performance during the course is carried while participation of students in seminars, group discussions and workshops. On finishing the course students should prepare a specific Literature Review on future research object with a problem unsolved, make a presentation on proposed Master Degree Thesis and theoretically prove the relevance and topicality of the Thesis, as well as substantiate the planned research methods.

Assessments methods: Papers and presentations.

1. Attendance/Participation - 10%

Students are expected to come to class (online or offline) prepared to participate in class activities, discussions, and assignments. To facilitate the discussion, you should familiarize yourself with the readings before you come to class. Students may be asked to come prepared with a list of several questions for discussion based on the day's readings. Attendance will count as part of your participation grade The meetings scheduled on the syllabus are mandatory. Final assessment result will be affected by lack of attendance.

2. Topical assignments for every module on the syllabus - 50%

This is intended to be a course where you learn by practicing the techniques and algorithms used for conducting and successful completion of scientific research in practically any field of science. Therefore, you will be asked to complete several short practical assignments, which will form an important component of your overall grade. Detailed instructions will be handed out for each assignment, but in brief, they will be as follows:

- Reading and performing critical reviews of at least 5 articles correspondent to the topic of your research. You will be asked to conduct a written review of the methods used as well as the application of described methodology in your research.

- Individual assignments on the Electronic course, such as watching and analysing the video, answering comprehension questions, writing up a terminology dictionary for your research, writing a discursive essay dedicated to one of the topics etc.

- Archival/Object Analysis: You will be asked to provide an analysis of an object of your research or drawing observations about historical context and macro/micro-economic background associated with this research object(s).

These assignments will all be graded on coherence and organization, degree and depth of thoughtfulness of expression in writing, grammar and spelling, and completeness (how fully did you complete assignment).

3. Risk and return on financial assets: portfolio valuation tools - 40%

It is supposed to be one of the chapters or parts of your research project. Each student will design and write out a full text of a project of their own choice. The goal will be to produce a well-designed, researched, and written analysis of any method and model for analyzing the dynamics of financial indicators and building financial forecasts of approximately 10 pages in length (excluding bibliography). It should be correspondent with the topic of your thesis research. You are expected to demonstrate mastery and understanding of financial models, qualitative and quantitative research methods and their applications in the completion of your project. Students will be asked to submit work in different phases of the course, such as:

- Abstract - 5%

For this project students will write a brief summary (abstract) of their proposed research. The abstract should be no more than 250 words in length. The purpose of the abstract is to describe succinctly every major aspect of the proposed project: a brief background of the project; specific aims or hypotheses (what do you hope to learn/what are your questions); unique features of the project;

methodology to be used; significance and novelty, practical application of the proposed research.

- Literature Review-5%

This section should contain a more in-depth explanation of a student's research objectives by contextualizing it within a body of scholarly literature (al least 10 different sources of literature).

- Methods and models for analyzing the dynamics of financial indicators and building financial forecasts in your research in banking -10%

This section of your thesis should answer the questions of where, who, how, and when. For this project you will write up a short description of how the research will be carried out (2-5 pages long or a 5-7 slides of presentation). You should include: a detailed description of specific modelling methods to be employed to accomplish your research goals; a justification of why these are the most appropriate methods, valuation tools and financial models to use; a discussion of the ways in which the results will be collected, analysed, and interpreted; a projected timeline (work plan), and a discussion of potential difficulties and limitations.

- Completed research project presentation on your chosen methods and models for analysing the dynamics of financial indicators and building financial forecasts -20%

This is your final project which implies making a public presentation (ppt/pptx format, about 15 slides) and discussion of your chosen methods and models for analyzing the dynamics of financial indicators and building financial forecasts with your teacher and the group members.

Attendance Policy

The Organizational and methodical ensuring of the educational process at the course "Research methods in Banking and Finance" is based on local regulations SFU on using of the system of the test units or points within all the courses and modules during the academic term. Attending workshops and seminars is mandatory.

Web page of the course

The webpage of the course https://e.sfu-kras.ru/course/view.php?id=10283
(hyperlink)

is available through E-learning SibFU web site: www.e.sfu-kras.ru. You must be logged in to access this course. Course Guide and all accompanying materials are also available at the course web-page.

Core reading

Selected chapters of the books:
- Allen N. Berger, Philip Molyneux, John O. S. Wilson The oxford handbook BANKING. - Oxford University Press 2010, 1020 p.
- Building financial models (second edition): the complete guide to designing, building, and applying projection models. John s. Tjia, 2009. - McGraw-Hill (available at URL: https://e.sfu-kras.ru/mod/folder/view.php?id=602441)
- Financial Modeling in Excel ® by Danielle Stein Fairhurst, 2017 by John Wiley & Sons, Inc., Hoboken, New Jersey (available at URL: https://e.sfu-kras.ru/mod/folder/view.php?id=602441)
- Financial Modeling. Simon Benninga with a section on Visual Basic for Applications by Benjamin Czaczkes, THIRD EDITION, 2008. - The MIT Press Cambridge, Massachusetts London, England (available at https://e.sfu-kras.ru/mod/folder/view.php?id=602441)
- Introduction to Statistical Methods for Financial Models by Thomas A. Severini, 2018. - CRC Press, Northwestern University, Evanston, Illinois, USA (available at URL: https://e.sfu-kras.ru/mod/folder/view.php?id=602441)
- Modern Banking. Shelagh Heffernan Professor of Banking and Finance, Cass Business School, City University, London. 2015, 739 p.

Papers and articles:
- Allen N. Berger, Philip Molyneux, John O. S. Wilson The oxford handbook BANKING. - Oxford University Press 2010, 1020 p. – pdf
- Cambridge University Press, Cambridge Core papers and publications [https://libproxy.bik.sfu-kras.ru:2349/core/].
- The directory of open access journals [https://www.doaj.org/].

Electronic journals papers:
- Sulandari, Santi, Prihartanti, Nanik, Ali, Qonita, Salimah, Marida Rahma, Savitri, Amanda Intan, Wijayanti, Mei. Gender, Research Approach, Type of Research, and Completion Period of the Minor Thesis ("Skripsi"). International Journal of Education and Literacy Studies, v8 n1 p32-39 Jan 2020.

8 pp. (Electronic): https://bik.sfu-kras.ru/elib/view?id=eric-EJ1246222&service=eds

• Alkis Küçükaydin, Mensure, Gökbulut, Yasin. The Impact of a Research Methods Course on Teacher Candidates' Epistemological Beliefs. Australian Journal of Teacher Education, v45 n3 Article 2 p18-33 Mar 2020. 17 pp. (Electronic) https://bik.sfu-kras.ru/elib/view?id=eric-EJ1256908&service=eds

• Quintero, Jessica M., Peña, Cindy. Proposing a New Research Method: Convivencia Testimonial. American Association for Adult and Continuing Education, Paper presented at the American Association for Adult and Continuing Education 2020 Conference (Online, Oct 27-30, 2020). 6 pp. (Electronic) https://bik.sfu-kras.ru/elib/view?id=eric-ED611646&service=eds

• Benfell, Adrian. Modeling functional requirements using tacit knowledge: a design science research methodology informed approach. Requirements Engineering; Mar2021, Vol. 26 Issue 1, p25-42, 18p. (Electronic) https://bik.sfu-kras.ru/elib/view?id=aci-148891959&service=eds

Facilities, Equipment and Software

For completion of the course, a student will need a laptop or a personal computer equipped with the newest version of any Operational system (for example, Microsoft® Windows XP), regular and high-quality internet access, as well as the Microsoft Office pack (including the Power point presentations, Microsoft Excel and other, for example, Microsoft® Office Professional Plus 2007 or the latest version or any of its available analogues.

An appropriate antivirus system is recommended in order to avoid possible drawbacks while downloading files from the internet in open sources.